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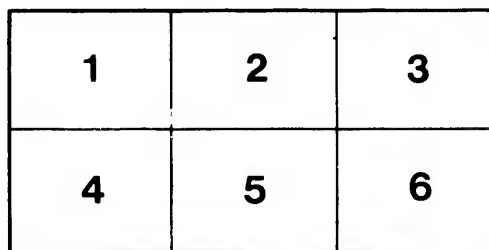
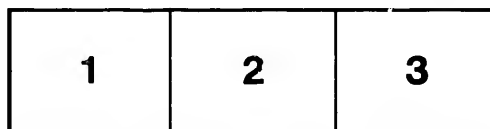
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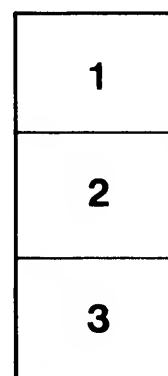
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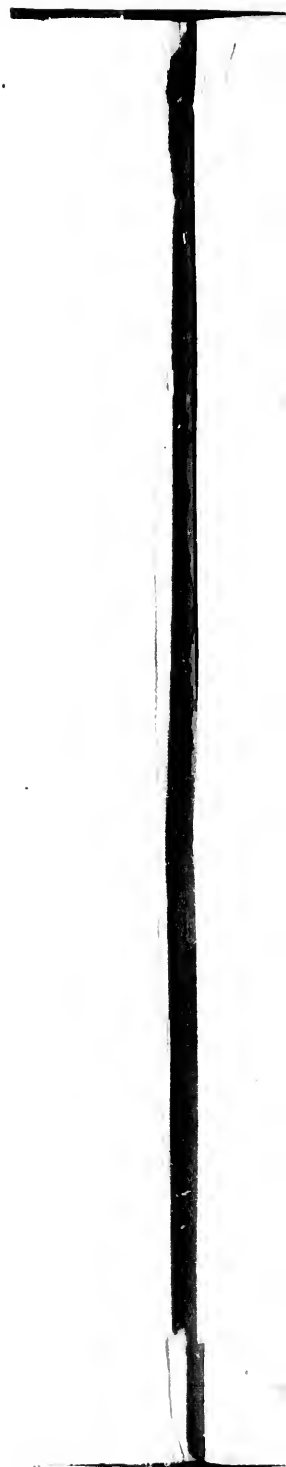
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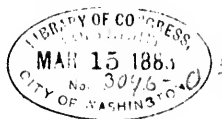
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8
Pilot
SIGN OF THE
LITTLE ADMIRAL.



BUSINESS ESTABLISHED
1770.



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5

PREFACE
TO ELDRIDGE'S COAST PILOT,

No. 2.

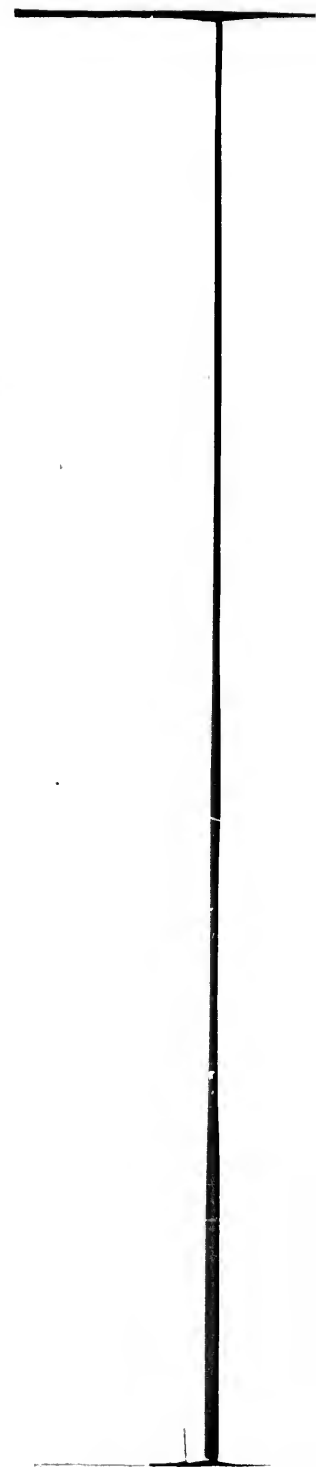
AFTER an experience of more than thirty years in surveying and compiling Charts of different parts of the Coast of the United States for the use of Mariners, and also obtaining information from every known source of marine intelligence which the country at the present time affords, the author is confident that this work will meet the wants of a large class of seamen who have heretofore given his publications the preference. His aim has not been beauty of style or language, but clearness and accuracy. The shifting nature of certain parts of the Coast, together with the change in Baouys, Lights, etc., may occasionally present deviations from the present directions. With these imperfections, he presents "Pilot, No. 2" to the public, hoping that it may long prove a safe and unerring guide to those who navigate within its limits.

In a work of this kind absolute accuracy is nearly impossible. Mariners are therefore earnestly requested to note all errors or omissions which they may discover, and forward the same to the author.

GEORGE ELDRIDGE,
Hydrographer.

CHATHAM, MASS.

4



IMPORTANT TO MARINERS.

My experience during the last thirty years in making surveys, for the purpose of constructing Marine Charts, demonstrates great uncertainty in the use of the Mariner's Compass, both on sea and land. I have no doubt that many of the shipwrecks that are constantly occurring, are in consequence of its not being known that the Compass was deranged from the effects of the local attraction of iron or other magnetic substances accidentally placed within the reach of its influence on the needle on board the vessel. These unsuspected causes may also exist, and powerfully attract the Compass in the iron used in the construction of the vessel, also in cargoes, such as iron, coal, etc.

In the construction of vessels no magnetic material should be allowed within ten feet of the Compass, and superintendents of building should allow none but the purest non-magnetic copper or composition which has been selected and carefully tested to be placed within the above mentioned distance from the Binnacle.

No class of men appear more ignorant of the uncertainties of the Magnetic Needle from various causes than Mariners. The most of them make no

effort to test their Compasses in fine weather, and are therefore helpless in ascertaining what course they are steering in thick or bad weather.

The Liquid Compass, though a superior instrument in many respects (especially in its traversing quickly in smooth water, and not oscillating in rough water), is no protection as many suppose from the evils arising from local attraction.

From the above, the intelligent Mariner by inspecting the "Pilot" will readily perceive that an error in the course may lead to difficulty. In order, therefore, to insure confidence and safety in sailing at night or in thick weather into harbors, rivers, bays, and also through sounds, his Compass should be tested often.

GEORGE ELDRIDGE,
Hydrographer,

INDEX.

LIGHTHOUSES AND LIGHT-SHIPS.

	PAGE
Absecom Lighthouse,	220
Assateague Lighthouse,	252
Amelia Island Main Lighthouse	427
Amelia Island Range Beacons,	427
Alligator Reef Lighthouse,	436
American Shoal Lighthouse,	437
Aransas Pass Lighthouse,	522
 Bass River Lighthouse,	15
Bishop and Clerks Lighthouse,	16
Brant Point Lighthouse,	23
Bird Island Lighthouse,	56
Brenton's Reef Light-ship,	72
Beaver Tail Lighthouse,	73
Bristol Ferry Lighthouse,	79
Borden's Flats Lighthouse,	80
Bullock's Point Lighthouse,	83
Block Island Northern Lighthouse,	96
Block Island Southeast Lighthouse,	97
Block Island Range Lights,	98
Blackwell's Island Lighthouse,	134
Bartlett's Reef Light-ship,	142
Bridgeport Harbor Lighthouse,	162
Black Rock Harbor Lighthouse,	164
Bergen Point Lighthouse,	214

	PAGE
Barnegat Lighthouse,	217
Brandywine Shoal Lighthouse,	226
Bombay Hook Lighthouse,	247
Back River Lighthouse,	265
Bell's Rock Lighthouse,	296
Bowler's Rock Lighthouse,	302
Blakistone's Island Lighthouse,	309
Body Island Lighthouse,	382
Bull's Bay Lighthouse,	396
Battery Gladden Lighthouse,	480
Biloxi Lighthouse,	488
Barataria Bay Lighthouse,	506
Bolivar Point Lighthouse,	517
Brazos Santiago Lighthouse,	523
Bayside and Wilson's Beacons,	201
Cross Rip Light-ship	3
Cape Poge Lighthouse,	28
Cuttyhunk Lighthouse,	43
Clark's Point Lighthouse,	49
Conimient Point Lighthouse,	83
Cedar Island Lighthouse,	114
Cornfield Point Light-ship,	124
Conover and Chapel Hill Beacons,	201
Corner Stake Lighthouse,	214
Cape May Lighthouse,	224
Cape Henlopen Main Lighthouse,	225
Cape Henlopen Beacon Lighthouse,	225
Cross Ledge Lighthouse,	227
Cherry Island Beacon Range,	228
Cohansey Lighthouse,	246
Cape Charles Lighthouse,	260
Cape Henry Lighthouse,	262

INDEX.

V

PAGE

217
226
247
265
296
302
309
382
396
480
488
506
517
523
201

3
28
43
49
83
114
124
201
214
224
225
225
227
228
246
260
262

Cove Point Lighthouse,	271
Craighill Channel Lighthouses,	273
Crancy Island Lighthouse,	287
Cherrystone Lighthouse,	332
Crisfield Harbor Lighthouse,	347
Clay Island Lighthouse,	351
Choptank River Lighthouse,	359
Currituck Beach Lighthouse,	381
Cape Hatteras Lighthouse,	383
Cape Lookout Lighthouse,	386
Cape Fear Lighthouse,	391
Cape Fear Range Beacon,	391
Cape Roman Lighthouse,	395
Charleston Main Lighthouse,	398
Cockspur Island Beacon,	411
Cape Canaveral Lighthouse,	432
Carrysfors Reef Lighthouse,	436
Cedar Keys Lighthouse,	467
Cape St. George Lighthouse,	472
Cape San Blas Lighthouse,	474
Choctaw Pass Channel Beacon No. 5,	480
Choctaw Pass Channel Beacon No. 6,	480
Cat Island Lighthouse,	491
Chandeleur Lighthouse,	498
Calcasieu Pass Lighthouse,	514
Dumpling Rock Lighthouse,	47
Dutch Island Lighthouse,	87, 93
Dumpling Lighthouse,	104
Delaware Breakwater Range Light,	225
Deepwater Point Range Beacons,	228
Delaware Breakwater Lighthouse,	243
Deepwater Shoals Lighthouse,	291

PAGE

271
273
287
332
347
351
359
381
383
386
391
391
395
398
411
432
436
467
472
474
480
480
491
498
514

47
87, 93
104
225
228
243
291

	PAGE
Dutch Gap Canal Lights,	291
Daufuskie Range Beacons,	415
Dry Tortugas Lighthouse,	456
Dog River Bar Beacon No. 1,	479
Dog River Bar Beacon No. 2,	480
Dog River Bar Beacon No. 3,	480
Dog River Bar Beacon No. 4,	480
Edgartown Lighthouse,	28
East Chop Lighthouse,	31
Eel Grass Ground Light-ship,	99
Eaton's Neck Lighthouse,	130
Execution Rocks Lighthouse,	132
East Beacon Lighthouse (Sandy Hook),	200
Elm Tree and New Dorp Beacons,	201
Elbow Beacon,	215
Egg Island Lighthouse,	246
Egmont Key Lighthouse,	462
East Pascagoula River Lighthouse,	485
Fuller's Rock Lighthouse,	84
Falkner's Island Lighthouse,	125
Fire Island Lighthouse,	193
Fort Tompkins Lighthouse,	202
Finn's Point Beacon Range,	228
Fenwick's Island Lighthouse,	250
Fort Carroll Lighthouse,	274
Fort Washington Lighthouse,	310
Fishing Battery Lighthouse,	371
Frying-pan Shoals Light-ship,	389
Fort Sumter Lighthouse,	398
Fort Ripley Lighthouse,	399
Fig Island Range Beacons,	412

INDEX.

vii

PAGE		PAGE
291	Fowey Rocks Lighthouse,	435
415	Fort Point Lighthouse,	517
456	Fort Mifflin Bar Range Beacons,	229
479	Five Fathom Bank Light-ship,	223
480	Fourteen-foot Bank Light-ship,	226
480		
480		
28	Gay Head Lighthouse,	40
31	Goat Island Lighthouse,	74
99	Gardiner's Island Lighthouse,	112
130	Great Captain's Island Lighthouse,	129
132	Great Beds Lighthouse,	211
200	Greenbury Point Lighthouse,	272
201	Georgetown Lighthouse,	394
215	Galveston Light-ship,	516
246		
462	Handkerchief Light-ship,	3
485	Harding's Beach Lighthouse,	12
84	Hyannis Harbor Lighthouse,	17
125	Hcn and Chickens Light-ship,	44
193	Horton's Point Lighthouse,	125
202	Highland (Navesink) Lighthouses,	199
228	Hereford Inlet Lighthouse,	222
250	Horse Shoe Lower Range Beacons,	229
274	Horse Shoe Upper Range Beacons,	229
310	Hawkin's Point Lighthouse,	274
371	Hooper's Straits Lighthouse	345
389	Havre-de-Grace Lighthouse,	371
398	Hatteras Inlet Lighthouse,	384
399	Hunting Island Lighthouse,	403
412	Hilton Head Range Lights,	406
	Horn Island Lighthouse,	483
	Head of the Passes Lighthouse,	500
	Head of the Passes Jetty (East) Lighthouse,	501

	PAGE
Head of the Passes Jetty (West) Lighthouse,	501
Half Moon Reef Lighthouse,	520
Hog Island Lighthouse,	258
Jane's Lighthouse,	341
Jordan's Point Lighthouse,	291
Jones Point Lighthouse,	310
Jupiter Inlet Lighthouse,	433
Key West Lighthouse,	450
Lime Rock Lighthouse. . . .	74
Long Beach Bar Lighthouse,	118
Little Gull Island Lighthouse,	123
Lloyd's Harbor Lighthouse,	185
Light-ship, off Northeast end of Five Fathom Bank,	230
Leading Point Lighthouse,	274
Lazaretto Point Lighthouse,	274
Lambert's Point Lighthouse,	287
Lower Cedar Point Lighthouse,	309
Love Point Lighthouse,	368
Little Cumberland Island Lighthouse,	426
Monomoy Lighthouse,	9
Muscle Bed Shoals Lighthouse,	79
Mystic Lighthouse,	104
Montauk Point Lighthouse,	108
Middle Ground Lighthouse,	127
Maurice River Lighthouse,	241
Mispillion Creek Lighthouse,	245
Mahon's River Lighthouse,	245
Mathias Point Lighthouse,	309

INDEX.

ix

PAGE		PAGE
501	Morris Island Range Beacons, . . .	398
520	Martin's Industry Light-ship, . . .	406
258	Mobile Point Lighthouse, . . .	479
	Merrill's Shell Bank Lighthouse, . . .	493
341	Matagorda Lighthouse, . . .	520
291		
310	Nantucket Great Point Lighthouse, . . .	22
433	Nobska Point Lighthouse, . . .	34
	Ned's Point Lighthouse, . . .	54
450	Norwalk Lighthouse, . . .	169, 128
	North Brother Lighthouse, . . .	134
74	New London Lighthouse, . . .	140
118	Newcastle Range Beacons, . . .	228
123	New Point Comfort Lighthouse, . . .	266
185	Naval Hospital Lighthouse, . . .	287
	Nansemond River Lighthouse, . . .	288
230	Northwest Channel Lighthouse, . . .	452
274		
274	Old Gay Rock Lighthouse (Wickford Har-	
287	bor), . . .	91
309	Old Field Point Lighthouse, . . .	130
368	Old Point Comfort Lighthouse, . . .	284
426	Ocracoke Lighthouse, . . .	385
	Oak Island Range Beacons, . . .	392
9	Oyster Beds Beacon, . . .	413
79		
104	Pollock Rip Light-ship, . . .	2
108	Palmer's Island Lighthouse, . . .	50
127	Prudence Island Lighthouse, . . .	78
241	Pomham Rocks Lighthouse, . . .	84
245	Point Judith Lighthouse, . . .	96
245	Plum Island Lighthouse, . . .	121
309	Penfield Reef Lighthouse, . . .	128

	PAGE
Princess Bay Lighthouse,	211
Passaic Lighthouse,	215
Port Penn Beacon Range,	227
Point Lookout Lighthouse,	270, 308
Point of Shoals Lighthouse,	291
Pool's Island Lighthouse,	369
Piney Point Lighthouse,	309
Paris Island Range Lights,	407
Pensacola Lighthouse,	477
Pensacola Bar Beacon,	478
Pass Christian Lighthouse,	495
Pass-a-Loutre Lighthouse,	499
Point Isabel Lighthouse,	523
Rose Island Lighthouse,	74
Race Rock Lighthouse,	123
Robbins' Reef Lighthouse,	202
Reedy Island Lighthouse,	228, 248
Rattlesnake Shoal Light-ship,	397
Round Island Lighthouse,	485
Shovelful Light-ship,	3
Succonnesset Light-ship,	7
South Shoal Light-ship,	24
Sankaty Head Lighthouse,	24
Sow and Pigs Light-ship,	43
Sabine's Point Lighthouse,	83
Sassafras Point Lighthouse,	84
Stonington Harbor Lighthouse,	101
Stratford Point Lighthouse,	126
Sand's Point Lighthouse,	131
Stepping Stones Lighthouse,	132
Saybrook Lighthouse,	147

INDEX.

xi

PAGE

211
215
227
270, 308
291
369
309
407
477
478
495
499
523

74
123
202
228, 248
397
485

3
7
24
24
43
83
84
101
126
131
132
147

Southwest Ledge Lighthouse,	157
Stamford Lighthouse,	172
Shinnecock Lighthouse,	192
Sandy Hook Light-ship,	199
Scotland Light-ship,	200
Sandy Hook Lighthouse,	200
Ship John Shoal Lighthouse,	227
Schooner Ledge Range Beacons,	229
Schuylkill Range Beacons,	249
Stingray Point Lighthouse,	268, 301
Smith's Point Lighthouse,	269, 307
Sharp's Island Lighthouse,	356, 271
Sandy Point Lighthouse,	272
Seven Foot Knoll Lighthouse,	273
Solomon's Lump Lighthouse,	343
Sullivan's Island Range Beacons,	398
Sapelo Main Lighthouse,	422
St. Simon's Lighthouse,	424
St. John's River Lighthouse,	430
St. Augustine Lighthouse,	431
Sombrero Key Lighthouse,	437
Sand Key Lighthouse,	438
St. Mark's Lighthouse,	469
Sand Island Lighthouse,	479
Ship Island Lighthouse,	486
St. Joseph's Lighthouse,	492
South Pass Lighthouse,	500
South Pass Jetty (East) Lighthouse,	501
South Pass Jetty (West) Lighthouse,	501
Southwest Pass Lighthouse,	504
Ship Island Shoal Lighthouse,	507
Southwest Reef Lighthouse,	509
Sabine Pass Lighthouse,	515

PAGE

	PAGE
Tarpaulin Cove Lighthouse,	37
Throg's Neck Lighthouse,	133
Tucker's Beach Lighthouse,	218
Tinicum Island Range Beacons,	229
Thomas' Point Lighthouse,	272
Thimble Shoal Lighthouse,	283
Too's Point Lighthouse,	296
Tortugas Harbor Lighthouse,	457
Turkey Point Lighthouse,	371
Tybee Lighthouse,	410
Tybee Beacon,	410
Tybee Knoll Cut Range Beacons,	412
Timbalier Lighthouse,	507
Trinity Shoal Light-ship,	509
West Chop Lighthouse,	31
Wing's Neck Lighthouse,	59
Whale Rock Lighthouse,	87
Warwick Lighthouse,	88, 89
Watch Hill Lighthouse,	99
West Beacon (Sandy Hook),	201
Winter Quarter Shoal Light-ship,	252
Wilmington Lighthouse,	249
Wolf Trap Lighthouse,	267
Windmill Point Lighthouse,	268
White Shoal Lighthouse,	291
Watt's Island Lighthouse,	238
Wolf Island Range Beacon,	422
York Spit Lighthouse,	266

HARBORS, RIVERS, BAYS, SOUNDS, ETC.

	PAGE
Apponang River,	91
Arthur Kill River,	213
Absecom Inlet,	220
Annapolis Harbor,	329
Antepoison Creek,	305
Altamaha Sound, Ga.,	424
Atchafalaya Bay, La.,	509
Apalachicola Bay, Fla.,	473
Aransas Pass, Tex.,	521
Bass River Harbor,	14
Buzzard's Bay,	44
Back River Harbor (Buzzard's Bay),	59
Bristol Harbor,	80
Block Island,	96
Branford Harbor,	156
Bridgeport Harbor,	162
Black Rock Harbor,	164
Byram River,	176
Barnegat Inlet,	216
Brigantine Inlet,	220
Back River Harbor, Va.,	294
Breton's Bay,	320
Big Annemessex River,	348
Broad Creek (Choptank Bay),	353
Back Wye River,	367
Big Wye River,	367
Bohemia River,	375

	PAGE
Bush River,	378
Back River, Maryland,	380
Beaufort Harbor and Morehead City, N. C.,	388
Bull's Bay Harbor,	396
Beaufort River, S. C.,	409
Biloxi, Miss.,	488
Barataria, La.,	506
Brazos River, Tex.,	519
Brazos Santiago, Tex.,	522
Centreville, or New Harbor,	19
Cotuit Port Harbor,	21
Cuttyhunk Harbor,	45
Cohasset Narrows,	60
Cataumet Harbor,	63
Cutchogue Harbor,	117
Cockenoe's Island Harbor,	167
Cos Cob Harbor,	174
Cohansey Creek,	246
Christiana Creek,	249
Chincoteague Inlet,	255
Corrotoman River,	305
Coan River,	313
Currioman Bay,	317
Cherrystone Inlet,	332
Chesconessex Creek,	337
Cedar Straits,	343
Crisfield Harbor,	347
Choptank Bay,	356
Choptank River,	360
Coxe's Creek (Eastern Bay),	362
Crab Alley Creek (Eastern Bay),	363
Chester River,	368

INDEX.

XV

PAGE		PAGE
378	Chesapeake and Delaware Canal (Entrance),	376
380	Cape Lookout Shoals,	386
388	Cape Lookout Cove,	387
396	Cape Fear,	389
409	Cape Fear River (Entrance to Wilmington),	391
488	Charleston Harbor,	398
506	Calibogue Sound,	415
519	Cumberland Sound, Fla.,	427
522	Cape Canaveral Slue, Fla.,	433
	Charlotte Harbor, Fla.,	461
19	Cedar Keys Harbor, Fla.,	466
21	Cape San Blas Shoals, Fla.,	475
45	Calcasieu Pass, La.,	514
60	Corpus Christi Pass, Tex.,	522
63		
117	Dartmouth Harbor,	47
167	Dutch Island Harbor,	93
174	Darien River,	170
246	Delancey's Cove,	178
249	Delaware Bay and River,	223
255	Delaware Breakwater,	243
305	Duck Creek,	247
313	Dona River,	246
317	Dimer's Creek,	306
332	Dividing Creek,	306
337	Doboy Sound, Ga.,	422
343	Dry Tortugas Islands,	455
347		
356	Edgartown Harbor,	28
360	East Greenwich Harbor,	89
362	East Harbor (Fisher's Island),	106
363	Elizabethport Harbor,	213
368	East River (Mobjack Bay),	300

	PAGE
Eastern Bay,	362
Elk River,	375
East Pass (St. George's Sound), Fla.,	471
East Pascagoula, Miss.,	484
 Fall River Harbor,	78
Fort Pond Bay,	110
Fisher's Island Sound,	98
Fire Island Inlet,	193
Fairhaven Landing,	326
Fishing Bay,	352
Front Wye River,	367
Frying Pan Shoals Sluc,	390
Florida Reefs,	435
 Great Wood's Holl Harbor,	36
Gardiner's Bay,	112
Gooseberry Neck Channel,	67
Greenport Harbor,	118
Guilford Harbor,	151
Greenwich Cove,	174
Great Captain's Island Harbor,	175
Great Egg Harbor,	221
Great Machipongo Inlet,	258
Great Wicomico River,	306
Guilford Creek,	341
Gunpowder River,	378
Georgetown and Winyah Bay, S. C.,	393
Grand Grosier Isle and Isle-au-Breton,	499
Galveston Bay, Tex.,	516
 Harwich,	14
Hyannis Harbor,	16

INDEX.

xvii

PAGE		PAGE
362	Hog Island Harbor,	65
375	Hadley's Harbor,	66
471	Huntington Bay,	181
484	Huntington Harbor,	184
	Hempstead Harbor,	187
78	Hart and City Island Harbor,	189
110	Hereford Inlet,	222
98	Hampton Creek,	289
193	Herring Bay,	325
326	Hunger's Creek,	333
352	Hunting Creek,	340
367	Holland's Straits,	344
390	Hooper's Straits,	345
435	Harris' Creek (Choptank Bay),	356
	Hongar River,	353
36	Havre-de-Grace,	371
112	Hatteras Inlet,	384
67	Hillsborough Inlet,	435
118		
151	Indian River Inlet,	433
174		
175	Jamesport Harbor,	116
221	James River,	290
258	Jupiter Inlet,	434
306		
341	Killingsworth Harbor,	150
378	Kedge's Straits,	343
393	Kent Island Narrows,	364
499	Key West Harbor,	450
516		
	Little Wood's Holl Harbor,	34
14	Little Captain's Island Harbor,	172
16	Lloyd's Harbor,	185

	PAGE
Little Neck Bay,	189
Little Egg Harbor,	218
Little Machipongo Inlet,	257
Lower Machodoe River,	315
Little Choptank River,	354
Leeds Creek (St. Michael's River),	366
Muskeget Channel,	26
Mattapoiset Harbor,	54
Morris Cove,	160
Milford Harbor,	161
Mamaroneck River,	177
Manhasset Bay,	188
Maurice River,	241
Mispillion Creek,	245
Mahon's River,	245
Metomkin Inlet,	256
Magothy Bay,	281
Mobjack Bay,	297
Mattox Creek,	318
Magothy River,	331
Machotank Creek,	336
Muddy Creek and Messongo Creek,	341
Manokin River,	349
Middle River,	380
Musquito Inlet, Fla.,	431
Manatee River, Fla.,	464
Mobile Bay, Ala.,	479
Mississippi Sound, Miss.,	483
Mississippi City, Miss.,	490
Marianne Pass (Mississippi Sound),	493
Matagorda Bay, Tex.,	519

INDEX.

xix

PAGE

Nantucket Harbor,	22
New Bedford Harbor,	49
No Man's Land Channel,	42
Newport Harbor,	72
Narragansett Pier,	95
Noank and Mystic Harbor,	104
Napeague Harbor,	111
New London Harbor,	139
Niantic Bay and Harbor,	145
New Haven Harbor,	157
Norwalk River,	170
Nissequage River,	181
Northport Harbor,	183
New Rochelle Harbor,	191
New York Bays and Harbor,	196
Newark Bay,	215
Norfolk Harbor,	286
Nansemond River,	288
North River (Mobjack Bay),	299
Nomini Bay,	316
Naswaddox Creek,	334
Nandua Creel,	335
Nanticoke River,	351
Northeast River,	374
North and South Santee Rivers,	395
North Edisto River, S. C.,	401
Nassau Sound, Fla.,	429
New River Inlet,	435
Northwest Channel, Fla.,	452
Onset Bay,	61
Orient Harbor,	120
Oyster Bay,	185

	PAGE
Oceohannock Creek,	335
Onancock Creek,	337
Ocracoke Inlet,	385
Ossabaw Sound, Ga.,	417
Oregon Inlet,	382
Pocasset Harbor,	62
Providence River,	83
Pawtuxet Harbor (R. I.),	91
Plum Gut Passage,	121
Port Jefferson Harbor,	179
Pelham Bay and Hutchinson's River,	192
Perth Amboy Harbor,	212
Petersburg Harbor,	294
Poquosin River,	295
Piankatank River,	300
Potomac River,	307
Port Tobacco River,	323
Pawtuxent River (Maryland),	324
Pungoteague Creek,	336
Pocomoke Sound,	338
Pocomoke River,	340
Port Royal Sound, S. C.,	405
Pensacola Bay, Fla.,	477
Pass Christian, Miss.,	494
Pass-a-Loutre, La.,	499
Quick's Hole,	39
Quisset Harbor,	65
Rio Grande Entrance,	523
Robinson's Hole,	39
Red Brook Harbor,	62

INDEX.

xxi

PAGE		PAGE
335	Raritan River (Entrance to Delaware and	
337	Raritan Canal),	241, 213
385	Rockaway Inlet,	194
417	Reedy Island Harbor,	247
382	Rappahannock River,	302
	Rebellion Roads,	400
62	Rebecca Shoal,	455
83		
91	Stags Harbor (Outer),	12
121	Stags Harbor (Inner),	14
179	Succonesset Point Channel,	22
192	Sippecan Harbor,	56
212	Sakonnet River,	70
294	Stonington Harbor,	101
295	Sag Harbor,	114
300	Southold Landing,	120
307	Saybrook Harbor,	147
323	Sachem's Head Harbor,	153
324	Stratford Harbor,	162
336	Sheffield Island Harbor,	168
338	Stamford Harbor,	171
340	Southport Harbor,	165
405	Smithtown Bay,	180
477	Stony Brook Harbor,	180
494	Shinnecock Inlet,	193
499	Sandy Hook Bay,	209
	Sandy Hook Cove,	210
39	South Amboy Harbor,	211
65	Salem Creek,	249
	Schuykill River,	249
523	Sand Shoal Inlet,	259
39	Ship Shoal Inlet,	260
62	Severn River (Mobjack Bay),	299

	PAGE
Smith's Creek, or Winter Harbor,	318
St. Mary's River,	319
St. Clement's Bay,	321
South River,	328
St. Michael's River (Eastern Bay),	365
Sassafras River,	370
South Edisto River,	402
St. Helena Sound, S. C.,	403
Savannah River,	412
Sapelo Sound, Ga.,	420
St. Simon's Sound, Ga.,	424
St. Andrew's Sound, Ga.,	426
St. John's River, Fla.,	429
St. Augustine Harbor, Fla.,	431
Straits of Florida (remarks in navigating),	443
San Carlos Bay, Fla.,	460
St. Catherine's Sound, Ga.,	419
St. Mark's River, Fla.,	469
St. Joseph's Bay, Fla.,	475
St. Andrew's Bay, Fla.,	476
St. Rosas Bay, Fla.,	477
Shieldsboro, Miss.,	496
South Pass, La.,	500
Southwest Pass, La.,	504
Ship Island Shoal, La.,	507
Shell Keys,	512
Southwest Pass (Vermillion Bay), La.,	513
Sabine Pass,	515
San Luis Pass,	519
 Tarpaulin Cove Harbor,	 37
Taunton River,	80
Thimble Islands Harbor,	154

INDEX.

xxiii

PAGE		PAGE
318	Tangier Sound,	341
319	Treadhaven Creek (Choptank Bay),	359
321	Turtle Harbor (Florida Reefs),	449
328	Tortugas Harbor,	457
365	Tampa Bay, Fla.,	462
370	Timbalier Bay, La.,	507
402	Trinity Shoal,	503
403	Tiger Shoal Slue,	512
412		
420	Vineyard Haven Harbor,	31
424		
426	Waquoit Bay,	22
429	Wareham River,	57
431	Wild Harbor,	64
443	Westport Harbor, Mass.,	68
460	Warren River,	82
419	Wickford Harbor,	91
469	Westerly Harbor,	104
475	West Harbor (Fisher's Island),	107
476	Westbrook Harbor,	149
477	Westport Harbor, Conn.,	166
496	Watchapreague Inlet,	256
500	Ware River (Mobjack Bay),	299
504	Wicomico River,	350, 322
507	West River,	327
512	Wye River (Eastern Bay),	366
513	Wassaw Sound, Ga.,	416
515		
519	York River,	296
	Yeocomico River,	314
37		
80		
154		

INDEX TO

SAILING DIRECTIONS.

	PAGE
Bearse's Shoal Channel,	10
Chesapeake Bay (Entrance),	274
Chesapeake Bay, from Cape Henry to Baltimore,	276
Chesapeake Bay (Entrance) North Channel,	279
Cape Florida to Key West (Hawk Channel),	443
Chatham to Pollock Rip (in thick weather),	8
Delaware Bay and River, from Five Fathom Bank Light-ship to Philadelphia (Ship Channel).	232
Delaware Bay and River (Coaster's Channel),	235
Delaware Bay and River (Cape May Channel),	239
Execution Rocks to Riker's Island,	137
Fisher's Island Sound, from Watch Hill to Dumpling Lighthouse,	100
Fisher's Island Sound, from Dumpling Lighthouse to Watch Hill,	100
Hampton Roads,	285
James River,	292
Long Island Sound, from Point Judith to Execution Rocks (South Channel),	135

INDEX.

XXV

PAGE

Long Island Sound, from Race Rock Light-house to Execution Rocks (North Channel),	136
Long Island Sound, from Execution Rocks to Point Judith Lighthouse (South Channel),	138
Long Island Sound, from Execution Rocks to Little Gull Island Lighthouse (North Channel),	139
Monomoy Point Rip,	11
Narragansett Bay, from Brenton's Reef Lightship to Providence (Ship Channel, Eastern Passage),	84
Narragansett Bay (Western Passage),	86
Narragansett Bay, from Beaver Tail Lighthouse to Providence (Western Passage),	88
Shovelful and Handkerchief Shoals,	10
Vineyard Sound, from Chatham to Light-ship off Sow and Pigs (South Channel),	4
Vineyard Sound, from Sow and Pigs Lightship to Chatham (South Channel),	5
Vineyard Sound, from Chatham to Sow and Pigs Light-ship (North Channel),	6
Vineyard Sound, from Sow and Pigs Lightship to Chatham (North Channel),	7
Vineyard Sound (Main Ship Channel),	9

REGULATIONS.

For navigating South Pass, La.,	503
---	-----

INDEX TO
ANCHORAGE.

	PAGE
Annapolis Roads,	331
Anclote Keys, Fla.,	465
Black Point,	147
Bombay Hook Roads,	247
Chatham (South Side),	11
Cotuit or Deep Hole,	20
Coaster's Island,	76
Crane Neck Point,	180
Chincoteague,	253
Cape Charles,	280
Cape Canaveral,	433
Chandeleur Island,	498
Cape May Lighthouse,	243
Falmouth,	33
Hammonasset Point,	152
Hampton Roads,	283
Hampton Cove,	290
Key Biscayne Bay,	446
Lynn Haven Roads,	282
Legare Anchorage,	448
Menemsha Bight,	41
Maurice River,	239

INDEX.

xxvii

	PAGE
Nantucket (South Side),	25
No Man's Land,	42
Point Lookout,	308
Pawtuxent River,	325
Quick's Hole,	40
Steward's Bend,	11
Sakonnet River,	71
Stratford Point,	163
Smith's Island,	261
Ship Island,	486
Throg's Neck and Riker's Island,	138
Thomas' Point,	329
Tybee Roads,	410

PAGE

331

465

147

247

11

20

76

180

253

280

433

498

243

33

152

283

290

446

282

448

41

239

INDEX TO

DANGERS OFF THE COAST.

	PAGE
Assateague Lighthouse to Hog Island Light- house,	254
Branford Reef,	155
Body Island to Cape Hatteras,	383
Cape Henlopen to Cape Charles,	250
Cape Henlopen to Fenwick's Island Light- house,	254
Chesapeake Bay,	262
Cape Henry to Currituck Lighthouse,	382
Currituck Lighthouse to Body Island Light- house,	382
Cape Lookout to Cape Fear,	389
Cape Fear to Georgetown Lighthouse,	393
Cape San Blas to Pensacola Bay,	479
Chandeleur Island to Grand Grosier Isle,	498
Calcasieu Pass to Sabine Pass,	516
Cape San Blas,	475
Egmont Key Lighthouse to Cedar Keys,	469
Fenwick's Island to Assateague Lighthouse,	254
Georgetown to Cape Roman Lighthouse,	395
Galveston Bank,	519
Galveston Bar to Matagorda Bay,	521

xxix

t-	254	155	383	250
t-	254	262	382	254
t-	382	389	393	479
	389	479	498	516
	475	469	254	395
				519
				521

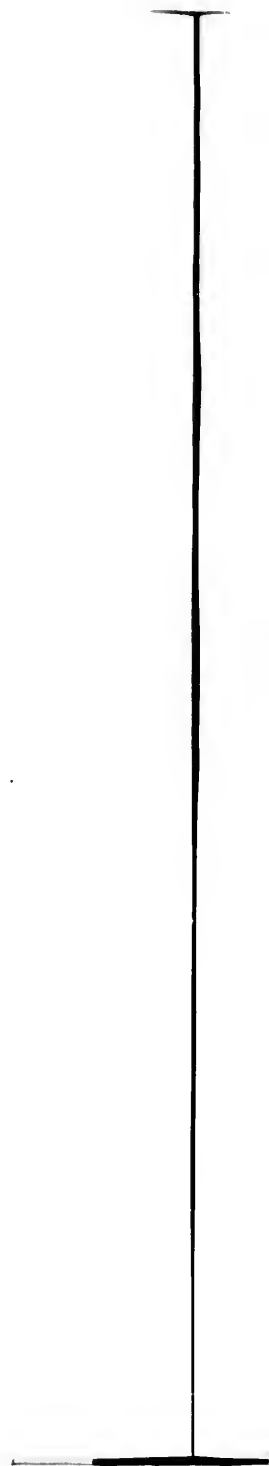
INDEX TO
CURRENTS.

	PAGE
Block Island and Point Judith,	134
Chesapeake Bay (Entrance),	276
Delaware Bay (Entrance),	241
Fisher's Island Sound,	134
Gulf of Mexico,	524
Hell Gate,	138
Long Island Sound,	135
Montauk Point to Block Island,	108
Mobile Bay,	482
Mississippi Sound,	497
Muskeget Channel,	27
Race,	134
Race to Middle Ground Lighthouse,	134
Vineyard Sound and Nantucket Shoals,	44

INDEX TO

WHISTLING BUOYS AT THIS DATE (1882).

PAGE		PAGE
. 134	Buzzard's Bay,	66
. 276	Block Island and Montauk Point,	108
. 241	Brigantine Shoals,	218, 220
. 134	Cerberus Shoal,	110
. 524	Cape Henlopen Channel,	230
. 138	Cape Charles,	261
. 135	Cape Canaveral,	433
. 108	Fire Island Inlet,	194
. 482	Gedney's Channel (Sandy Hook Bar),	203
. 497	Galveston Bar,	517
. 27	Savannah River (Entrance),	410
. 134	South Pass, La.,	502
. 134		
. 44		



ELDRIDGE'S COAST PILOT.

From Chatham Lights to Monomoy Light.

For several years past the furious storm waves have been wearing away the Beach which extends from Chatham Village to Monomoy Light, leaving dangerous sand Bars, which, at this date (1881) extend a long distance from shore; heavy draught vessels bound to the southward, after passing the Whistling Buoy off New Harbor Bars, should give these dangers a wide berth.

Monomoy and Nantucket Shoals.

From Monomoy Point to Nantucket South Shoal, and also in Nantucket and Vineyard Sounds there are a large number of sand shoals, the currents of both flood and ebb set very strong across these dangers, and the depth of water upon them changes, especially during heavy Easterly gales. *A better knowledge of the location of these shoals can be obtained by inspecting Eldridge's Chart of Vineyard Sound and Nantucket Shoals, than by any written description.*

Pollock Rip.

The Eastern part of this shoal is marked at this date (1881) with a Red Buoy. Chatham Lights bear from it **N. $\frac{1}{4}$ E.** distance about $7\frac{1}{4}$ miles, Monomoy Point Light **W.** by **N. $\frac{3}{4}$ N.**, distance $3\frac{1}{4}$ miles. During the last 40 years the water upon this dangerous shoal has been gradually increasing in depth. In 1832 some part of it was dry at low tide; in 1842, the least depth at low tide upon it was 3 feet; in 1852, 5 feet; in 1862, 6 feet; in 1872, 7 feet; and in August, 1880, 8 feet. From 1 to $1\frac{1}{2}$ miles to the Northward of the Pollock Rip there are at this date (1881) many Ridges

of sand, or Broken Rips, which are constantly changing in depth, and should be avoided by large or heavy draught vessels.

Broken Part of Pollock Rip.

The centre of this Shoal, upon which the sea breaks tremendously during heavy easterly gales, lies about $4\frac{1}{2}$ miles **E.** by **S.** $\frac{3}{4}$ **S.**, from Monomoy Point Lighthouse. During the last 30 years this broken ground has extended seaward about $\frac{1}{10}$ of a mile; the surveys that have been made across it from time to time, during that period, show changes in the depth of water in the Ship Channel.

Ship Channel.

In 1852, on a direct course **E.** by **S.** $\frac{1}{4}$ **S.** from Pollock Rip Light-ship, not less than 30 feet water was found in this Channel at low tide. In 1862, 24 feet; in 1872, 20 feet; and in August, 1881, 16 feet.

Northeast Channel.

The depth of water in this channel since 1851, has been constantly changing. A careful survey in August (1882), shows not less than 20 feet, on a direct course **NE.** $\frac{1}{4}$ **N.** from Pollock Rip Light-ship.

Pollock Rip Light-ship.

This Light-ship, which is intended to guide vessels across broken part of Pollock Rip, in both Ship and Northeast Channels, at this time (1882) shows 2 Red fixed Lights, and has a first-class steam Fog Signal, which in thick weather is sounded 5 seconds' duration, followed by an interval of 55 seconds.

Bearings and Distances from Pollock Rip Light-ship, at this date (1882).

	Distance.
Chatham Lighthouses, N. $\frac{1}{4}$ E.	$8\frac{1}{8}$ miles.
Monomoy Point Lighthouse, NW. by W. $\frac{1}{4}$ W.	$3\frac{1}{4}$ "
Shovelful Light-ship, W. $\frac{1}{4}$ N.	$3\frac{1}{4}$ "
Handkerchief Light-ship, W. by S. $\frac{1}{2}$ S.	$6\frac{7}{8}$ "
Great Point Lighthouse, (Nantucket) SW. $\frac{1}{4}$ S.	$10\frac{5}{8}$ "
Sankaty Head Lighthouse, S. by W. $\frac{3}{4}$ W.	$15\frac{5}{8}$ "

Red Buoy on Northern side of Ship	Distance.
Channel, SE. by E. $\frac{3}{4}$ E.	$2\frac{1}{8}$ miles.
Little Round Shoal, SW. by S. $\frac{1}{2}$ S.	3 "
Great Round Shoal, South	5 "

Shovelful Light-ship.

This Light-ship, which, at this date (1881), shows a Fixed Red Light, has a fog-bell and horn, and is intended as a guide to vessels passing Stone Horse Shoal.

Bearings and Distances from Shovelful Light-ship at this Date (1882).

Pollock Rip Light-ship, E. $\frac{1}{4}$ S.	Distance.
Monomoy Point Lighthouse, . . . N. by E. $\frac{1}{8}$ E.	$3\frac{1}{4}$ miles.
Red Buoy off Shovelful Rip, . . . W. $\frac{1}{2}$ N.	$1\frac{1}{2}$ "
Handkerchief Light-ship, SW. by W. $\frac{1}{2}$ W.	$\frac{5}{8}$ "
Great Point Lighthouse, SW. by S. $\frac{5}{8}$ S.	$8\frac{7}{8}$ "

Handkerchief Light-ship.

This Light-ship, which, at this date (1881), shows a fixed White Light, has a fog-bell and horn, and is intended as a guide to vessels passing Handkerchief Shoal

Bearings and Distances from Handkerchief Light-ship at this Date (1881).

Shovelful Light-ship, NE. by E. $\frac{1}{2}$ E.	Distance.
Red Buoy off Southern part of Handkerchief, N. by E.	4 miles.
Great Point Lighthouse (Nantucket), S. $\frac{1}{4}$ W.	$\frac{1}{4}$ "
Bass River Anchorage in 3 fathoms water, N. by	$6\frac{1}{8}$ "
W. $\frac{1}{2}$ W.	$9\frac{1}{4}$ "
Bishop and Clerks Lighthouse, NW. $\frac{1}{4}$ W.	$9\frac{3}{4}$ "
Cross Rip Light-ship, W. $\frac{1}{4}$ S.	$10\frac{3}{8}$ "
Great Round Shoal, SE. by E. $\frac{1}{2}$ E.	$7\frac{1}{2}$ "

Cross Rip Light-ship.

This Light-ship, which, at this date (1881), shows a fixed White Light, has a fog-bell and horn, and is intended as a guide to vessels passing between Cross Rip and Horse Shoe Shoal.

**Bearings and Distances from Cross Rip Light-ship
at this date (1882).**

	Distance.
Handkerchief Light-ship, E. $\frac{1}{4}$ N.	10 $\frac{3}{8}$ miles.
Bishop and Clerks Lighthouse, NE. by N. $\frac{3}{4}$ N.	7 $\frac{5}{8}$ "
Great Point Lighthouse (Nantucket), SE. by E. $\frac{3}{4}$ E.	11 $\frac{1}{2}$ "
Cape Poge Lighthouse, W. $\frac{1}{8}$ S.	7 $\frac{1}{2}$ "
West Chop Lighthouse, W. by N. $\frac{5}{8}$ N.	14 $\frac{1}{4}$ "
Succomesset Light-ship, NW. $\frac{3}{4}$ N.	8 $\frac{1}{4}$ "
Outer Buoy off Nantucket Point Rip, E. by S. $\frac{5}{8}$ S.	13 $\frac{1}{2}$ "
Buoy off Great Round Shoal, E. by S.	17 "
Buoy off Eastern part of Tuckernuck Shoal, SE. $\frac{1}{4}$ E.	5 $\frac{1}{4}$ "
Buoy off SE. part of Horse Shoe Shoal, E. $\frac{1}{8}$ S.	2 $\frac{3}{16}$ "

**Sailing Directions from Chatham to Light-ship
off Sow and Pigs, by way of Nantucket and
Vineyard Sounds, with favorable winds and fair
weather.**

From the Northeastward at this date (1882), bring Pollock Rip Light-ship to bear **SW. $\frac{1}{4}$ S.**, and run for it on this course. When Nantucket Great Point Lighthouse is made, bring it in range of this Light-ship; and run for it in range, carrying at this time about 20 feet water across the Broken Ground; * leave the Pollock Rip Light-ship close to on the Starboard hand, and steer for Shovelful Light-ship, bearing about **W. $\frac{1}{4}$ N.**; the Sand Ridges on the Northern part of Stone Horse Shoal, near Shovelful Light-ship, are constantly changing in depth; heavy draught vessels should therefore go through Butler's Hole, which is to the Northward of this shoal. With Southwesterly winds vessels may stand off to the Eastward of the Broken Ground until Pollock Rip Light-ship and Monomoy Lighthouse are in range; then run for them in range, bearing about **NW. by W. $\frac{1}{4}$ W.**, carrying at this date about 16 feet water at low tide through the Ship Channel; leave the Pollock Rip Light-ship close to on the Starboard hand, and steer for Shovelful Light-ship bearing about **W. $\frac{1}{4}$ N.**, leaving it close to on the Starboard hand; thence **SW. by W. $\frac{1}{2}$ W.** to Handkerchief Light-ship, leaving this also a short distance on the Starboard hand, and make good the course **W. $\frac{1}{2}$ S.** 8 $\frac{1}{8}$ miles to Red Buoy off **SE.** part of Horse Shoe Shoal. In running this last course **W. $\frac{1}{2}$ S.**, particular attention must be paid to the current, especially near the full and change of the moon, at which times it runs very strong; the Flood sets about **SE.** and Ebb **NW.**

* At low tide heavy draught vessels should use this Channel with caution, as the depth of water across the Ridges during the last 30 years has been constantly changing.

Masters of vessels at night time or in thick weather, especially with light winds, should govern themselves accordingly, as circumstances require. As soon as the Cross Rip Light-ship is made, bring it to bear **W.** by **N.**, and steer for it on this course, leaving it close to on either hand. From this last-named Light-ship to West Chop Light the course is **W.** by **N.** $\frac{5}{8}$ **N.**; distance $14\frac{1}{2}$ miles. In order to clear Hedge Fence and Squash Meadow Shoals, care should be taken to bring this last-named Light as soon as it is made to bear **W.** by **N.** $\frac{5}{8}$ **N.**; continue the course **W.** by **N.** $\frac{5}{8}$ **N.** for West Chop Light, until Nobska Point Light bears **NW.** by **W.**; then steer for it on this course, until about midway the Sound, or Tarpaulin Cove Light bears **W.** $\frac{3}{4}$ **S.**; then make good the course **W.** by **S.** $\frac{3}{4}$ **S.**, leaving the Middle Ground well on the Port, until the Light-ship off Sow and Pigs bears **W.** $\frac{1}{2}$ **N.**, when you may run for it without danger. The above directions from Chatham to Light-ship off Sow and Pigs, will answer for day or night.

For vessels coming from the westward, bound through Vineyard and Nantucket Sounds, it is, of course, only necessary to reverse the foregoing directions; but, for convenience, we shall give directions from Sow and Pigs Light-ship to Chatham.

Sailing Directions from Sow and Pigs Light-ship through Vineyard and Nantucket Sounds to Chatham, with favorable winds and fair weather.

Leave the Light-ship off Sow and Pigs about $\frac{1}{4}$ mile on the Port hand, and steer **E.** until Gay Head Light bears **SW.**, then make good the course **NE.** until Tarpaulin Cove Light bears about **W.** $\frac{5}{8}$ **S.**, on which bearing keep it, and steer about **E.** $\frac{5}{8}$ **N.**, leaving the Middle Ground well on the Starboard. When Nobska Light bears **NW.** by **W.**, in order to clear the Hedge Fence, make good the course, especially with Light Winds and Eastern Tide, **SE.** by **E.**, until West Chop Light bears **W.** by **N.** $\frac{5}{8}$ **N.**, on which bearing keep it, and steer **E.** by **S.** $\frac{5}{8}$ **S.**, for Light-ship off Cross Rip; leave this Light-ship close to on either hand, and in order to clear the **SE.** part of Horse Shoe, steer **E.** by **S.** about $2\frac{1}{2}$ miles, thence **E.** $\frac{3}{4}$ **N.** for Handkerchief Light-ship, making allowance for the current as before mentioned; when this is made bring it to bear **E.** $\frac{1}{2}$ **N.**, and steer for it on this course,

leaving it on the Port hand, and make good the course **NE.** by **E.** $\frac{1}{2}$ **E.** for the Light-ship off the North part of Stone Horse Shoal,* leaving it close to on the Port hand, and run for Pollock Rip Light-ship, bearing about **E.** $\frac{1}{4}$ **S.** If the wind is favorable to go through the Northeast Channel, get the last-named Light-ship in range of Great Point Lighthouse, (Nantucket), bearing **SW.** $\frac{1}{4}$ **S.**, and run out with them in range (**NE.** $\frac{1}{4}$ **N.**), carrying at this date (1882) about twenty feet water at low tide across the Broken Ground; if the wind is not favorable to go out this last-named Channel, get the Pollock Rip Light-ship and Monomoy Light-house in range, bearing **NW.** by **W.** $\frac{1}{4}$ **W.**, and run out with them in range (**SE.** by **E.** $\frac{1}{4}$ **E.**), carrying at this time through the Ship Channel about 16 feet water at low tide. These directions will answer for night or day.

By the North Channel.

[NOTE. From Bishops and Clerks Lighthouse, to the Western part of L'Hommedieu Shoal by way of North Channel, there are several shoal spots in the Channel-way; it is therefore advisable for heavy draught vessels bound through Vineyard Sound, to go by way of Cross Rip Light-ship.]

Follow the directions before given from Chatham to Sow and Pigs Light-ship, until up with Handkerchief Light-ship, which leave on the Starboard hand, and make good the course **NW.**, with the Lighthouse on Bishop and Clerks well open on the Port; leave this Lighthouse about $\frac{1}{2}$ mile on the Port hand, and steer **NW.**, leaving the Buoy off Hallett's Rock† about 300 yards on the Starboard hand. When past this Buoy, steer **W.** by **S.** $\frac{1}{4}$ **S.**, leaving the Bell Buoy off **W.SW.** Ledge on the Starboard, and the Buoy painted in Horizontal Stripes off Middle Ground on the Port hand; when Succonesset Light-ship is made, bring it to bear **W.** $\frac{1}{2}$ **S.**, and run for it on this course, leaving the Black Buoy off the Northeast part.

* The Sand Ridges on the Northern part of Stone Horse Shoal, near Shovelful Light-ship are constantly changing in depth; heavy draught vessels should therefore go through Butler's Hole, which is to the northward of this Shoal.

† Hallett's Rock which has 8 feet water upon it at low tide, is marked upon its western part with a Buoy painted in Red and Black Horizontal Stripes; Bishop and Clerks Lighthouse bears from this Buoy **S.** by **E.** $\frac{1}{4}$ **E.**, distance, $1\frac{1}{2}$ miles.

of Horse Shoe on the Port, and the Red Buoy off Wreck Shoal on the Starboard hand. Leave Succunneset Light-ship close to on the Starboard, and make good the course **W. $\frac{3}{4}$ N.**, leaving the buoy with Horizontal Stripes off Small Shoal on the Port hand. When Nobska Lighthouse bears West, then steer for it, leaving the Black Buoy off the Western part of L'Hommedieu Shoal on the Port, and the Red Buoy off Falmouth Flats on the Starboard hand; after passing the last-mentioned buoys the course is **W. by S. $\frac{3}{4}$ S.** through the Sound, leaving the Middle Ground well on the Port hand. When the Light-ship off the Sow and Pigs bears West, you may run for it without danger.

If it is night when you come to Succunneset Light-ship, you should not attempt to pass to the Northward of L'Hommedieu Shoal, but may bring the said Light-ship to bear **NE. by N.**, on which bearing keep it, and steer **SW. by S.**, which course will take you well to the Eastward of L'Hommedieu and Hedge Fence Shoals; continue the course **SW. by S.** until West Chop Light bears **W. by N. $\frac{5}{8}$ N.**, then steer for it without fear, and follow the directions before given.

For vessels coming from the Westward, bound through Vineyard Sound, by way of the North Channel, it is of course only necessary to reverse the above directions, but for convenience we shall give directions from Sow and Pigs Light-ship to Chatham.

Sailing Directions from Sow and Pigs Light-ship to Chatham, by way of North Channel in Daytime, with favorable winds and fair weather.

Leave the Light-ship off the Sow and Pigs about $\frac{1}{4}$ mile on the Port hand, and steer East until Gay Head Lighthouse bears **SW.**, then make good the course **NE.** until Tarpaulin Cove Lighthouse bears **W. $\frac{5}{8}$ S.**, on which bearing keep it, and steer **E. $\frac{5}{8}$ N.**, leaving the Middle Ground well on the Starboard hand; give Nobska Lighthouse a berth of about $\frac{1}{2}$ mile, and make good the course **E.NE.** until it bears West, on which bearing keep it, and steer East, keeping a sharp lookout for the Black Buoy off the Western part of L'Hommedieu Shoal. Leave this buoy a short distance on the Starboard hand, and make good the course East until Succunneset Light-ship * bears **E. $\frac{3}{4}$ S.**, then run for it on this bearing, leaving the Buoy painted in Red and Black Horizontal

* About $\frac{1}{2}$ mile southeast from Succunneset Shoal is a Light-ship which shows one fixed White Light; Bishop and Clerks Lighthouse bears from this Light-ship **E. $\frac{1}{2}$ N.**, distance, $8\frac{1}{2}$ miles; Cape Poge Lighthouse, **S. by W. $\frac{1}{2}$ W.**, 7 miles.

Stripes off small shoal* on the Starboard hand; give Succunnesset Light-ship a berth of about 200 yards, leaving it on the Port hand, and make good the course **E. $\frac{1}{2}$ N.**, leaving the Red Buoy off Wreck Shoal on the Port, and the Black Buoy off Northwest part of Horse Shoe Shoal, well on the Starboard hand. When abreast this last buoy, make good the course **E. by N. $\frac{1}{2}$ N.**, passing midway between the Bell Buoy off **W.SW.** Ledge and the Horizontal Striped Buoy off Middle Ground; when past these last buoys, steer more Easterly, leaving the Bishop and Clerks Lighthouse about $\frac{1}{2}$ mile on the Starboard, and the Horizontal Striped Buoy off Hallet's Rock on the Port hand. When this last-named Light-house bears **SW.** about $\frac{1}{2}$ mile, the course is **SE.** for Handkerchief Light-ship; when this Light-ship is made, bring it to bear **SE.**, and steer for it, when the courses are as before given.

Sailing Directions from Whistling Buoy off Chatham to Pollock Rip Light-ship in thick weather.

From the Northward follow the Cape Shore in about 10 fathoms water, until you hear the Whistling Buoy off New Harbor Bars. Chatham Lights bear from this buoy **W. $\frac{3}{4}$ S.**, distance $2\frac{1}{4}$ miles. Leave this buoy close to on the Starboard hand, and make good the course **S. $\frac{1}{2}$ W.**, carrying from 5 to 10 fathoms water, until you hear the fog signal at Pollock Rip Light-ship; bring this signal, as soon as it is heard, to bear **SW. $\frac{1}{4}$ S.**, and steer for it on this course, when you will cross the Broken part of Pollock Rip, at this date (1882), in not less than 20 ft. water; when up w. Pollock Rip Light-ship, which may be left on either hand, make good the course **W. $\frac{1}{4}$ N.** for Shovelful Light-ship, and follow the directions before given from Chatham to Light-ship off Sow and Pigs.

If you wish to cross the Broken part of Pollock Rip in Ship Channel, when abreast the Whistling Buoy off New Harbor Bars, make good the course **S. $\frac{1}{2}$ E.**, carrying from 8 to 11 fathoms water, until the Fog Signal at Pollock Rip Light-ship bears **NW.** by **W. $\frac{1}{4}$ W.**; you must then run for it on this bearing. At this date (1882), there is 16 ft. water in this channel. When abreast Pollock Rip Light-ship, proceed as before directed.

* The Buoy painted in Red and Black Horizontal Stripes on Northern part of small shoal bears **W. $\frac{1}{4}$ S.** from Succunnesset Light-ship, distance $1\frac{1}{4}$ miles.

In running from the Whistling Buoy off Chatham to Pollock Rip Light-ship, a careful attention to the current is important. The Flood sets **SW.** by **S.**, and that of the ebb, **NE.** by **N.**

When the Pollock Rip Light-ship is off her Station.

If the Pollock Rip Light-ship should be off her station, bring Chatham Lights to bear **N.** by **W.** $\frac{1}{2}$ **W.**, on which bearing keep them, and steer **S.** by **E.** $\frac{1}{4}$ **E.** until Monomoy Light* bears **NW.** by **W.**, then run for it on this bearing until the Light-ship off Stone Horse bears **W.** $\frac{1}{4}$ **N.**, then follow the directions before given from Chatham to Lightship off Sow and Pigs. Monomoy Light, bearing from **NW.** by **W.** to **NW.** by **W.** $\frac{1}{4}$ **W.**, is the best course for vessels to cross the broken part of Pollock Rip, providing there is not any error in their compasses.

Sailing Directions for Southern, or Main Ship Channel, in Daytime, with favorable winds and fair weather.

The passage into Nantucket and Vineyard Sounds to the Southward of Great Round Shoal, was formerly called the Main Ship Channel, but at this date (1881), there are neither Light-ships nor buoys to mark the best water, it is therefore advisable for vessels bound through these Sounds, to go by way of the northern channel, where there are Light-ships, and also buoys to mark the dangers.

From the Northward, bring Nauset three lights to bear **N.** $\frac{1}{2}$ **W.**, on which bearing keep them, and run **S.** $\frac{1}{2}$ **E.** until Sankaty Head Light bears **SW.**, then run for this last-named Light on this course until Nantucket Light (Great Point) bears **W.** $\frac{1}{4}$ **S.**, the course is then **W.** by **N.** $\frac{1}{4}$ **N.**, about 21 miles to Cross Rip Light-ship. If this last course is made good, the Red Buoy off the Southern part of Great Round Shoal will be left about $1\frac{1}{4}$ miles on the Starboard, and the Black Buoy off Nantucket Point Rip, about 1 mile on the Port hand; when up with Cross Rip Light-ship, the courses are as before given, from Chatham to Light-ship off Sow and Pigs. Vessels from the Westward, bound through the Sound, need only to reverse the above courses.

* Monomoy Lighthouse at this date (1881), shows a fixed White Light.

Bearse's Shoal Channel.

Vessels of not more than 10 feet draught may safely, at this date (1881), pass through this channel on the first of the Western tide; it is not safe, however, for this draught with an Easterly current.

Sailing Directions for Bearse's Shoal Channel in Daytime, with favorable winds and fair weather.

Vessels bound over the shoals, should when past the Whistling Buoy off Chatham, bring Monomoy Light to bear **SW.** by **W.**, and steer for it on this course until about two or three cables length from the shore, which they may follow to the Southward until Monomoy Light bears **NW.** by **N.**, on which bearing keep it, and steer **SE.** by **S.**, passing between two buoys, one Black, the other Red; when the water deepens to 10 fathoms, they are then in Butler's Hole, and may steer for Shovelful Light-ship, and proceed as before directed, from Chatham to Light-ship off Sow and Pigs.

Bearse's Shoal, during the last few years, has been rapidly extending to the Northward, making the passage between the Beach and Shoal at this date (1881), very narrow.

Passage between Handkerchief and Shovelful Shoals.

The Southern entrance to this channel, which, at this date (1881), has a depth of not less than $3\frac{1}{2}$ fathoms at low tide, is about $\frac{3}{4}$ mile to the Westward of Shovelful Light-ship. The current sets strong through this passage, and vessels of more than 6 feet draught should not attempt it unless they have a commanding breeze, and the buoys can also be seen.

Sailing Directions for the Passage between Handkerchief and Shovelful Shoals in Daytime, with favorable winds and fair weather.

Vessels from the Eastward should follow the directions before given until up with Shovelful Light-ship, then steer for the Red Buoy off Shovelful Shoal; this buoy bears from this Light-ship, at this date (1881), **W. $\frac{1}{2}$ N.** about $\frac{1}{2}$ mile; leave the last mentioned buoy about 200 yards on the Starboard hand, and run to the

Northwestward. With light winds and Northerly current, keep nearest the Shovelful, but if the current is setting to the Southward keep the Handkerchief best aboard; as you sail in, keep a sharp lookout for the Black Buoy off the Southeast part of the Handkerchief; when past this last buoy, which is left on the Port hand, make good the course **N. $\frac{1}{2}$ W.**, leaving the Buoys with Horizontal Stripes on Roger's Shoal on the Port hand. If bound to the Westward, when Monomoy Light bears **SE. $\frac{1}{2}$ E.**, steer **W.** by **N. $\frac{1}{2}$ N.**

See Eldridge's Chart of Vineyard Sound and Nantucket Shoals, which is a better guide than any written directions.

Monomoy Point Rip.

At this date (1881), small vessels, of not more than 6 feet draught, by the following directions, may, on the first part of the Western tide, pass around Monomoy Point across this Rip without danger, but should not attempt it on the Eastern Tide. Monomoy Point Rip is liable to great changes, and vessels unacquainted should use this passage with caution.

Sailing Directions for Monomoy Point Rip in Day-time, with favorable winds and fair weather.

From the Eastward, bring Monomoy Point Light to bear **SW.** by **W.**, and run for it on this course until about two or three cables length from the shore, which you may follow to the Southwestward, keeping about that distance from it until past the Rip, when the course is more Westerly. These courses are reversed by vessels bound to the Eastward.

Anchorage off Chatham.

Vessels may find shelter off Chatham, with winds from **SW.** to **N.NW.** by way of **West.** The best anchorage for large vessels is about one mile from shore, in from $5\frac{1}{2}$ to 7 fathoms water, Chatham Lighthouses bearing **N.NW.**, and Monomoy Lighthouse **SW.**

Steward's Bend Anchorage.

Small vessels, or those of not more than 8 or 10 feet draught, may anchor in what is called Steward's Bend, in from 4 to 5 fathoms water. Monomoy Point Lighthouse bears from this last

anchorage **SW.** $\frac{1}{2}$ **W.**, distance about $1\frac{1}{2}$ miles, Pollock Rip Light-ship **SE.** by **S.**, $3\frac{3}{4}$ miles. Vessels, on leaving this last anchorage, may, on the Western Tide, pass through the Bearse's Shoal Channel. See directions before given.

OUTER STAGE HARBOR.

This Harbor, which lies at the head of Chatham Bay, is 6 miles Northeasterly from Monomoy Lighthouse, about three miles Southwesterly from Chatham Lighthouses, and about $12\frac{1}{2}$ miles East-Northerly from Lighthouse on Bishop and Clerks.

Remarks.

This Harbor (in which there is good holding ground) is somewhat exposed to Southwesterly winds, but large vessels well found in ground tackle, generally ride safely in it during all gales. Small vessels, or those of not more than 11 feet draught, during Southwesterly gales can find shelter in the Southern part of this harbor under the lee of Common Flats. This last anchorage is called Beach Island Channel.

Harding's Beach Lighthouse.

Upon this Beach there has been recently erected a Lighthouse, which, at this date (1881), shows a fixed light. This light, on a range with Chatham Lights, leads clear of Kill Pond Bar, and also Common Flats, up to the anchorage in Stage Harbor.

A channel buoy painted in white and black perpendicular stripes with bush on top, without numbers, has been placed in about $3\frac{1}{2}$ fathoms water at low tide, nearly on a line with the northern Chatham Light, and the new light (recently erected) on Harding's Beach; this Buoy bears **W.** by **S.** $\frac{1}{4}$ **S.**, nearly from the last named light, distance $\frac{7}{8}$ mile, and is intended to guide vessels at night-time up to the anchorage in Beach Island Channel, and also Outer Stage Harbor.

Sailing Directions for Outer Stage Harbor and Beach Island Channel, in Daytime, with favorable winds and fair weather.

Vessels of not more than 14 feet draught, from the Eastward, may follow the directions before given, for the passage between Handkerchief and Shovel Shoals, until up with the Black Buoy, off Southeast part of Handkerchief. When abreast this buoy, which is left on the Port hand, make good the course **N. $\frac{3}{4}$ E.**, leaving the Red Buoy off **SW.** and **NW.** part of Common Flats, on the Starboard hand. When the Lighthouse on Harding's Beach and Chatham Lights are in range, bearing **E. by N. $\frac{1}{4}$ N.**, run for them in range, keeping a sharp lookout for the Channel Buoy with bush on top; vessels of more than 11 feet draught may anchor about 250 yards to the Northward of the buoy, in about 5 fathoms water, good holding ground.

Vessels of not more than 11 feet draught, bound into Beach Island Channel, may leave the Channel Buoy with bush on top close to on the Starboard hand, and make good the course **SE. by S. $\frac{1}{2}$ S.**, about $\frac{1}{4}$ mile, and anchor a short distance Southeast from Red Buoy off Middle Ground, in about $2\frac{1}{2}$ fathoms water at low tide.

From the Westward, by way of South Channel, when past the Buoy off **SE.** part of Horse Shoe Shoal, make good the course **NE.**; as soon as the Light on Harding's Beach is made, bring it in range with the Northern Chatham Light, and run for them in range, bearing **E. by N. $\frac{1}{4}$ N.**, and proceed as before directed.

From the Westward, by way of the North Channel, follow the directions before given, from Sow and Pigs Light-ship to Chatham by way of North Channel, until past the Bishop and Clerks Lighthouse; bring the said Lighthouse to bear **W. $\frac{1}{2}$ S.**, on which bearing keep it, and steer **E. $\frac{1}{2}$ N.**, leaving the Red Buoy off Kill Pond Bar, well on the Port hand; as soon as Harding's Beach Light is made, bring it in range with the Northern Chatham Light, and run for them in range, bearing **E. by N. $\frac{1}{4}$ N.**, and follow the directions before given.

The above directions for Stage Harbor may be used for day or night.

INNER STAGE HARBOR.

This harbor lies between Chatham Lighthouses and Harding's Beach Lighthouse. In entering it, the channel is narrow, crooked and shallow; from 8 to 9 feet water can be carried in at high tide. At this date (1881), there is a Marine Railway at this place. Vessels bound into Inner Stage Harbor should anchor in Beach Island Channel and take Pilots.

It is High Water in Inner Stage Harbor about 30 minutes later than at Boston; common tides rise from 4 to 5 feet.

HARWICH.

Upon the southern shore of the Sound, from $2\frac{3}{4}$ to $6\frac{1}{2}$ miles to the Westward of Harding's Beach Lighthouse, there are several Wharves, the first of which is called South Harwich landing, the next Harwich Port, and lastly West Harwich. Vessels bound to these wharves usually anchor in from four to five fathoms water, without the bars, and wait for high water. With a good pilot, from 8 to 10 feet water can be carried to these wharves at high tide.

High Water.

It is high water at Harwich about the same time that it is at Inner Stage Harbor.

BASS RIVER HARBOR.

This harbor is Northeasterly about $4\frac{3}{4}$ miles from Bishop and Clerks Lighthouse, **N.** by **W.** $\frac{1}{2}$ **W.** $9\frac{1}{4}$ miles from Handkerchief Light-ship, and **NW.** $\frac{1}{2}$ **W.** $8\frac{1}{2}$ miles from Monomoy Light-house.

Remarks.

This harbor, in which there is good holding ground, is somewhat exposed to Southerly winds, but large vessels, well found in ground tackle, generally ride safely in it during all gales; the best anchor-

age for large vessels is in about 4 fathoms water, with Bass River Light bearing about **N. by E. $\frac{1}{4}$ E.** Small vessels may anchor in about 2 fathoms water to the Northward of Black Buoy off the Northeastern part of Dog Fish Bar, where they will lie somewhat sheltered in Southwesterly winds.

Bass River Lighthouse.

This Lighthouse is upon the Northern shore of the Sound, and at this date (1881), shows a fixed Light.

Bearings and Distances from Bass River Lighthouse.

	Distance.
Monomoy Lighthouse, SE. $\frac{1}{4}$ S. nearly,	9 $\frac{3}{4}$ miles
Handkerchief Light-ship, S. by E. $\frac{1}{2}$ E.	10 $\frac{3}{4}$ "
Buoy off SE. part of Horse Shoe Shoal, SW. by S. $\frac{3}{4}$ S. , 12 "	
Lighthouse on Bishop and Clerks, SW. $\frac{1}{4}$ W. ,	5 $\frac{3}{4}$ "
Red Buoy off Kill Pond Bar, SE. ,	3 $\frac{1}{10}$ "

Sailing Directions for Bass River Harbor in Day-time, with favorable winds and fair weather.

Vessels from the Eastward, passing between Handkerchief and Shovel Shoals (see directions for that passage), should, when abreast the Black Buoy, No. 1, off southeast part of Handkerchief, make good the course **NW. $\frac{1}{2}$ W.**, leaving the Horizontal Striped Buoys on Roger's Shoal on the Starboard, and the Black Buoy off **NW.** part of Handkerchief on the Port hand. When Bass River Lighthouse bears **N. by E. $\frac{1}{2}$ E.**, run for it on this course until the water shoals to 3 or 4 fathoms at low tide, then anchor.

Vessels from the Eastward may follow the directions before given, from Chatham to Light-ship off Sow and Pigs until abreast Handkerchief Light-ship, which may be left a short distance on the Starboard hand, and in order to clear the Handkerchief Shoal, steer **NW.** about $\frac{3}{4}$ mile; the course is then **N.NW.** until Bass River Light bears **N. by E. $\frac{1}{2}$ E.**, then proceed as before directed.

From the Westward, by way of South Channel, follow the directions before given, from Sow and Pigs Light-ship to Chatham until past the Red Buoy off Southeast part of Horse Shoe Shoal, then make good the course **N.NE.**; as soon as Bass River Light is made, bring it to bear **N. by E. $\frac{1}{2}$ E.**, and follow the directions before given.

From the Westward, by way of North Channel, follow the directions before given, from Sow and Pigs Light-ship to Chatham by way of North Channel, until about $1\frac{1}{2}$ miles past the Lighthouse on Bishop and Clerks, then bring Bass River Light to bear **N.** by **E.** $\frac{1}{2}$ **E.**, and proceed as before directed.

Vessels of light draught may bring Bass River Light to bear **N.NE.**, and run for it on this course; when the Breakwater is made, steer for it; leave this Breakwater about 200 yards on the Port hand, and anchor about 250 yards Northeast from the Black Buoy off the Northeast part of Dog Fish Bar, in from 8 to 12 feet water at low tide; there is, however, very little shelter here in southerly winds; with a pilot, small vessels of light draught, at high water, can enter Bass River.

Ice at Bass River Harbor.

During severe winters, with Northerly winds, this harbor is more free from ice than any other in the Vineyard Sound, the only danger to be avoided is during Easterly gales, when the ice moves out of Chatham Bay; at such times, for safety, vessels should, if possible, make Hyannis Harbor.

It is high water at Bass River Harbor about 40 minutes later than it is at Boston. Common tides rise about 4 ft.

HYANNIS HARBOR.

This Harbor, in which there is a Breakwater, is situated Northwesterly 13 miles from Handkerchief Light-ship, Northwesterly $3\frac{1}{2}$ miles from Bishop and Clerks Lighthouse, and Northeasterly about $8\frac{1}{2}$ miles from Succunnesset Light-ship.

Remarks.

This Harbor is somewhat exposed to Southerly winds, but vessels well found in ground tackle generally ride safely in it during all winds. About 16 feet water can be carried into it at low tide.

Bishop and Clerks Lighthouse.

Upon the northern point of this Rocky Shoal (which extends about 1 mile North and South), a Lighthouse has been erected,

which, at this date (1881), shows a flashing white light. A fog bell is struck during thick weather.

Bearings and Distances from Bishop and Clerks Lighthouse.

	Distance.
Bass River Lighthouse, NE. $\frac{1}{4}$ E.	5 $\frac{3}{4}$ miles.
Monomoy Point Lighthouse, E. by S. $\frac{1}{2}$ S. , nearly	11 $\frac{1}{2}$ "
Handkerchief Light-ship, SE. $\frac{1}{4}$ E.	9 $\frac{3}{4}$ "
Cross Rip Light-ship, SW. by S. $\frac{3}{4}$ S.	7 $\frac{5}{8}$ "
Hyannis Harbor Lighthouse, N. by W. $\frac{1}{4}$ W. , nearly	4 "
Succunnet Light-ship, W. $\frac{1}{2}$ S.	8 $\frac{5}{8}$ "

Hyannis Harbor Lighthouse.

This Lighthouse is erected inside the Breakwater, on the main land, and at this date (1881), shows a Red Fixed Light.

**Sailing Directions for Hyannis Harbor in Daytime,
with favorable winds and fair weather.**

From the Eastward, follow the directions before given, from Chatham to Sow and Pigs Lightship, until up with Handkerchief Lightship, then make good the course **NW.**, with the Bishop and Clerks Lighthouse well on the Port bow, leave this Lighthouse about $\frac{1}{2}$ mile on the Port hand; when it bears South make good the course **NW.**, leaving the buoy with Horizontal Stripes off Hallet's Rock well on the Starboard hand; continue the course **NW.** until Hyannis Harbor Light bears **N. by E. $\frac{1}{2}$ E.**, then run for it on this course, leaving the Bell Buoy off **W.SW.** Ledge and Black Buoy off **SW.** Ground on the Port, and the Red Buoy off Gardner's Rock, and Spindle on Great Rock, on the Starboard hand. When the east end of the Breakwater, upon which there is a spindle, bears **W. by N.**, then haul up **N. by W.**, or **N.NW.**, run $\frac{1}{4}$ mile, and anchor in about 3 fathoms, muddy bottom.

Vessels of not more than 14 feet draught, from the Westward, by way of South Channel, may, when about 1 mile past the buoy off Southeast part of Horse Shoe Shoal, make good the course **N. by W.**; as soon as the Lighthouse in Hyannis Harbor is made, bring it to bear North, and run for it on this course until the Bishop and Clerks Lighthouse bears **SE.**, then steer **NW.** until the harbor light bears **N. by E. $\frac{1}{2}$ E.**, then run for it on this course, and follow the

directions before given; on these last courses the Bishop and Clerks Lighthouse will be left on the Starboard, and the buoys on the Broken Ground and Middle Ground well on the Port hand. *These last directions will answer for night or day.*

From the Westward, by way of North Channel,* follow the directions before given, from Sow and Pigs Light-ship to Chatham by way of North Channel, until up with Succunnesset Light-ship, leave this Light-ship about 200 yards on the Port hand, and make good the course **E. $\frac{1}{2}$ N.**, leaving the Red Buoy off Wreck Shoal on the Port, and the Black Buoy off Northwest part of Horse Shoe Shoal well on the Starboard hand. When past this last buoy, make good the course **E. by N. $\frac{1}{2}$ N.**, leaving the Bell Buoy* off **W.S.W.** Ledge on the Port hand. When Hyannis Harbor Light bears **N.** by **E. $\frac{1}{2}$ E.** follow the directions before given.

If it is night, when you are abreast Nobska Pt. Light, you should not attempt to pass to the Northward of L'Hommedieu Shoal, but may bring the said Light to bear **N.W.** by **W.**, on which bearing keep it, and steer **SE.** by **E.** until West Chop Light bears **W.** by **N. $\frac{1}{2}$ N.**, then make good the course **E. by S. $\frac{1}{2}$ S.** When Succunnesset Light-ship bears **NE.** by **N.**, then run for it on this course, leaving the Hedge Fence and L'Hommedieu Shoals well on the Port hand; leave Succunnesset Light-ship about 200 yards on the Port hand, and steer **E. $\frac{1}{2}$ N.** about 2 miles, when the course is **E. by N. $\frac{1}{2}$ N.** until Hyannis Harbor Light bears **N.** by **E. $\frac{1}{2}$ E.**, then run for it, keeping a sharp lookout for the Spin-dle on the Eastern end of the Breakwater; after passing this, haul up **N.** by **W.** or **N.NW.**, and run about $\frac{1}{4}$ mile, and anchor in about 3 fathoms water, at low tide, muddy bottom. In beating into Hyannis Harbor, when abreast the Buoy off the **SW.** Ground, do not approach at *low tide* nearer than $2\frac{1}{4}$ fathoms water to either shore.

In passing to the Northward of Bishop and Clerk's Lighthouse, in order to avoid the Gazelle Rock, and Senator Shoal (in thick weather or night time), do not approach Pt. Gammon in less than 3 fathoms water. The former, which has but 5 feet upon it at low tide, bears **S.** by **E.**, about $\frac{1}{10}$ mile from Point Gammon; the latter which has 7 feet water upon it, bears about **SE.** by **S.**, $\frac{2}{10}$ mile from this point.

* This is a Spar Buoy in winter.

In order to avoid the Bishop and Clerks, in thick weather, do not approach them in less than $3\frac{1}{4}$ fathoms water.

There are many rocks and shoals in the vicinity of the Bishop and Clerks, Point Gammon, and Hyannis Harbor, relative to the position of which, see Eldridge's Chart of Vineyard Sound and Nantucket Shoals on a large scale.

High Water.

It is high water in Hyannis Harbor 53 minutes later than at Boston; common tides rise about $3\frac{1}{2}$ feet.

CENTREVILLE OR NEW HARBOR.

The centre of this harbor lies about $2\frac{1}{4}$ miles to the westward of Hyannis Breakwater.

Remarks.

In entering Centreville Harbor there are many Rocks and Ledges, most of which are marked at this time with beacons and buoys. About 9 feet water can be taken in at low tide. The Harbor is somewhat exposed to Southerly winds.

Sailing Directions for Centreville Harbor in Day time, with favorable winds and fair weather.

From the Eastward, follow the directions before given for Hyannis Harbor until about one mile past the Bishop and Clerks Lighthouse; then bring this Lighthouse to bear **E.SE**, and make good the course **W.NW.**, leaving the Bell Buoy off **W.SW.** Ledge, and the Horizontal Striped Buoy off Hodges Rock, on the Starboard hand, continue the course **W.NW.**, until Centreville Spire is on a range with the Garnet Rocks,* bearing about **N. $\frac{1}{4}$ W.**, then run in on this range, leaving the Red Buoy off Bearse's Rock close to on the Starboard, and the Beacon on Colliers Ledge, and buoys on the Rocks well on the Port hand; give the Garnet Rocks a berth of about $\frac{1}{3}$ mile, leaving them on the Starboard hand, when abreast these rocks run **N. $\frac{1}{2}$ W.** about $\frac{1}{2}$ mile, and anchor in about $3\frac{1}{4}$ fathoms water, sticky bottom.

* Garnet Rocks are always above water.

From the Westward, follow the directions before given until up with Succomeset Light-ship, which leave about 200 yards on the Port hand, and make good the course **E. $\frac{1}{2}$ N.** about two miles, leaving the Red Buoy off Wreck Shoal on the Port hand, then steer **E. by N. $\frac{1}{2}$ N.**, until Centreville Spire is on a range with the Garnet Rocks, then follow the directions before given.

High Water.

It is high water in Centreville harbor about the same time that it is at Hyannis Harbor.

DEEP HOLE OR COTUIT ANCHORAGE.

This Hole, or Cotuit Anchorage, lies about $5\frac{3}{4}$ miles Southwesterly from Hyannis Breakwater, $7\frac{1}{2}$ miles West Northerly from Bishop and Clerks Lighthouse, and Northeasterly $3\frac{1}{2}$ miles from Succomeset Light-ship.

Remarks.

Large vessels generally anchor in from 3 to 4 fathoms water to the Eastward of the buoy off Lone Rock; but vessels of not more than 8 feet draught, may anchor in soft bottom about $\frac{3}{4}$ mile to the Northward of this buoy, in what is called Deep Hole.

These anchorages are somewhat exposed to winds, blowing on the Northern shore of the Sound, especially the latter at high tide.

Sailing Directions for Deep Hole or Cotuit Anchorage in Daytime, with favorable winds and fair weather.

From the Eastward, leave the Bishop and Clerks Lighthouse about $\frac{1}{2}$ mile on the Port hand; when it bears South make good the course **W. by N. $\frac{1}{4}$ N.**, leaving the buoys off **W.S.W.** Ledge, and Colliers Ledge Beacon well on the Starboard hand, when past this Beacon, keep a sharp lookout for the Bell Buoy* off Lone Rock. This buoy is painted in Red and Black horizontal stripes, and is placed off the Southern side of the Rock, which has about 3 feet

* This is a Spar Buoy in winter

water upon it at low tide; as soon as the buoy is made, vessels of more than 8 feet draught should bring it to bear **W.** by **N.**, and run for it on this course, and anchor a short distance to the Eastward of it in about 3 fathoms at low tide. Vessels of less than 8 feet draught may steer for the Bell Buoy bearing **W.** by **N.** until they make the buoys marking the passage into Deep Hole, then run in, leaving the Red Buoys on the Starboard and the Black Buoy on the Port hand, and anchor in from 8 to 9 feet water at low tide, soft bottom. If the buoys marking this channel should be missing, strangers should anchor a short distance to the Northeast of the Bell Buoy.

Vessels from the Westward, of not more than 10 feet draught, may follow the directions before given from Sow and Pigs Light-ship by the North Channel, until up with Succunneset Light-ship; then leave the Red Buoy off the Eastern part of Succunneset shoal, which bears about **N.** by **W.** $\frac{1}{2}$ **W.** $\frac{1}{2}$ mile from the Light-ship, close to on the Port hand, and make good the course **NE.**; as soon as the Bell Buoy off Lone Rock is made, keep it well on the Port bow and anchor to the Northeast of it, as before directed.

Vessels of more than 10 feet draught, from the Westward, should follow the directions before given for the North Channel until up with Succunneset Light-ship, which leave about 200 yards on the Port hand, and make good the course **E.** $\frac{1}{2}$ **N.** about 2 miles; the course is then **E.** by **N.** $\frac{1}{2}$ **N.** until the Beacon on Colliers Ledge is on a range with Centreville Spire bearing **N.** by **E.** $\frac{1}{2}$ **E.**, then haul in **N.NW.**, which will take you to the Eastward of the shoals called the Fishing Kips; continue the course **N.NW.** until the Bell Buoy off Lone Rock bears **W.** by **N.**, then proceed as before directed.

COTUIT PORT.

Small vessels of light draught bound to Cotuit Port, should anchor off the Bell Buoy on Lone Rock, and wait for high water and a pilot.

High Water.

It is high water in Deep Hole or Cotuit Bar about 55 minutes later than at Boston.

SUCCONNESSET POINT CHANNEL.

At low tide, vessels of not more than 7 feet draught, from the Eastward or Westward, may by keeping from $\frac{1}{3}$ to $\frac{1}{2}$ mile from shore, safely pass this point in about 8 feet water. In order to clear the flats, which extend from the Northern shore of the Sound, vessels bound to the Eastward should, when Succunneset Light-ship bears **SE.**, steer **E. $\frac{1}{2}$ N.**

WAQUOIT BAY.

About 2 miles to the Westward of Succunneset Point, lies the entrance to Waquoit Bay, which will only admit small vessels. at high water, of not more than 4 feet draught. The tides rise and fall but very little at this place.

NANTUCKET HARBOR.

The Bell Broy off the entrance to this harbor bears **S.** by **W.** $\frac{3}{4}$ **W.** from Handkerchief Light Ship, distance, 11 miles, and **SE.** by **S.** $11\frac{3}{4}$ miles from Cross Rip Light-ship.

Nantucket Great Point Lighthouse.

On Great Point, Northern part of Nantucket Island, is a Light-house, which, at this date (1881), shows a fixed light, which is intended to guide vessels through the Sound, and also to Bell Buoy off Nantucket Bar.

Nantucket (Great Point) Lighthouse bears from

	Distance.
Monomoy Point Lighthouse, SW. by S. $\frac{3}{4}$ S. . . .	$10\frac{1}{2}$ miles.
Shovelful Light-ship, SW. by S. $\frac{5}{8}$ S. . . .	$8\frac{7}{8}$ "
Handkerchief Light-ship, S. $\frac{1}{4}$ W. . . .	$5\frac{1}{8}$ "
Bishop and Clerks Lighthouse, SE. by S. $\frac{1}{2}$ S. . . .	$14\frac{3}{8}$ "
Cross Rip Light-ship, SE. by E. $\frac{3}{8}$ E. . . .	$11\frac{1}{2}$ "
Brant Point Lighthouse, NE. by N. $\frac{1}{2}$ N. . . .	$6\frac{1}{2}$ "

Brant Point Lighthouse.

This Lighthouse is erected on Brant Point, West side of entrance to Nantucket Harbor, and at this date (1881) shows a fixed Light; it bears from the Bell Buoy,* which, at this time, is placed off the Bar in three fathoms water, **S. $\frac{3}{4}$ E.**, distance $1\frac{1}{2}$ miles.

Remarks.

The Harbor of Nantucket is difficult of access, on account of a Sand Bar which extends across its entrance; the depth and location of the Channel is constantly changing, and there are not usually more than 4 or 5 feet water in it at low tide. A Bell Buoy in summer is placed in 3 fathoms water, off the Bar, about **N. $\frac{3}{4}$ W.** from Brant Point Lighthouse, distance $1\frac{1}{2}$ miles, which marks the entrance. At night, Range Lights are employed, but these cannot be successfully used only by those acquainted with the location of the Buoys. Under the existing circumstances, it is therefore advisable for strangers in vessels of more than 6 or 7 feet draught to take pilots.

Since the above was written, an appropriation has been made by the United States Government, for the purpose of improving this harbor.

Sailing Directions for Nantucket Harbor in Day-time, with favorable winds and fair weather.

Vessels from the Eastward, of not more than 7 feet draught, when past Shovel Light-ship, may make good the course **SW.** by **S.**, with Nantucket (Great Point) Lighthouse well on the Port bow; give this Lighthouse a berth of about a mile, leaving it on the Port hand; when it bears **E.** by **S.**, steer about **SW.** by **S. $\frac{1}{2}$ S.**, when you will soon make the Bell Buoy off Nantucket Bar; then, a little before High Water, run in, leaving the outer Bar Buoy, which is Red, with a bush on top, close to on the Starboard hand; after passing this Buoy, leave the Red Buoys on the Starboard, and Black Buoys on the Port hand; haul round Brant Point at a distance of 100 yards, leaving it on the Starboard hand, and steer about **SW.** for the anchorage off the wharves.

From the Westward, bring Cross Rip Light-ship to bear

* This is a Spar Buoy with bush on top in winter.

NW. $\frac{1}{2}$ W., distance $\frac{1}{2}$ mile, and make good the course
SE. $\frac{1}{2}$ E. 5 miles to the Black Buoy, off the Eastern part of
 Tuckernuck Shoal; leave this buoy close to on the Starboard hand,
 and steer **S.SE.** $6\frac{1}{2}$ miles to Bell Buoy, off Nantucket Bar, and
 follow the directions before given.

High Water.

It is high water in Nantucket Harbor about one hour later than
 at Boston; common tides rise about $3\frac{1}{4}$ feet.

NEW SOUTH SHOAL.

The centre of this Shoal bears **S. $\frac{1}{2}$ E.** nearly from Sankaty
 Head Light, distance $19\frac{1}{2}$ miles; least depth of water found
 upon it August, 1875, 8 feet. About 3 miles to the Southward of the
 above Shoal there has been placed a Light-ship, which shows at
 this date (1881), 2 fixed White Lights, and has a bell, horn, and
 gun, which are used as signals in thick weather.

Bearings and Distances from New South Shoal Light-ship.

	Distance.
Southern part of Fishing Rip, East ,	17 miles.
Sankaty Head Light, N. $\frac{3}{4}$ W. ,	$22\frac{1}{2}$ "
Block Island Southeast Lighthouse, W.NW. ,	78 "
Sandy Hook Light-ship, West , nearly	186 "

High Water.

It is high water on Nantucket Shoals about $\frac{1}{4}$ hour later than
 at Boston; common tides rise from 3 to 4 feet.

Currents.

The current of flood sets strong to the Northeastward across the
 shoals, and that of the ebb to the Southwestward.

For a better idea of these shoals, see Eldridge's Chart of Vine-
 yard Sound and Nantucket Shoals on a large scale.

Sankaty Head Lighthouse.

Upon Sankaty Head, the eastern extremity of Nantucket Island,
 is a Lighthouse, which shows within the circle of 12 miles a fixed

light varied by flashes, beyond that distance it is a flashing light, with flashes of 10 seconds duration once in every minute, the fixed light not being seen. These flashes can be seen in clear weather from the deck of a common vessel about 20 miles, and sometimes much farther.

Bearings and Distances from Sankaty Head Lighthouse.

	Distance.
Pollock Rip Light-ship, N. by E. $\frac{3}{4}$ E. ,	15 $\frac{5}{8}$ miles.
Monomoy Lighthouse, N. $\frac{3}{4}$ E. ,	16 $\frac{1}{2}$ "
Shovelful Light-ship, N. $\frac{1}{2}$ E. ,	15 "
Handkerchief Light-ship, N. $\frac{1}{2}$ W. ,	13 $\frac{1}{4}$ "
Nantucket (Great Point) Lighthouse, N. by W. $\frac{1}{2}$ W. ,	7 $\frac{1}{2}$ "
South Shoal Light-ship, S. $\frac{3}{8}$ E. ,	22 $\frac{1}{2}$ "

Anchorage off the Southeastern part of Nantucket between Sankaty Head Lighthouse and Tom Never's Head.

If a vessel should be compelled, during heavy Northerly winds, to seek shelter under Nantucket Island, she should follow the directions before given from Chatham to Sow and Pigs Light-ship until about $\frac{1}{2}$ mile past Shovelful Light-ship, then make good the course South, leaving the Black Buoy off the southern part of Stone Horse on the Port, and the Black Buoy off Nantucket Point Rip well on Starboard hand. Nantucket (Great Point) Lighthouse bears from this buoy **SW.** by **W.** $\frac{1}{2}$ **W.** 3 miles; when this last Light-house bears **W.** by **N.**, you are then past the Rip, and may haul more Westerly, following the shore, and keeping about $\frac{1}{2}$ mile from it to Sankaty Lighthouse; after passing this Lighthouse, if daytime, keep a sharp lookout for the Pochick Rip, which extends off from the shore, nearly abreast Siasconset village; the best water across this shoal at this date (1881), is 17 feet, which is about $\frac{1}{4}$ mile from shore; there are several small spots without this channel at this time, having from 6 to 9 feet water upon them; in heavy weather these may be avoided, by keeping a sharp lookout; when past this Rip continue the course to the Southward until the water becomes smooth, then anchor; from this anchorage you can pass to the Northward or Southward of Nantucket Island, as circumstances require.

There is good anchorage about $\frac{1}{2}$ mile from shore, between Tom Never's Head and the Old Man's Shoal; with winds from **NW.** to **NE.** this anchorage may be used in the winter season by vessels bound to the Northeastward.

MUSKEGET CHANNEL.

This channel, which has a depth of about 3 fathoms water at low tide, lies between Chappaquiddick Island on the West and Muskeget Island on the East, and has many sand shoals in it, which are constantly changing in depth and location; the currents of flood and ebb set strong in and out this passage; it is therefore advisable for strangers, in vessels of more than 8 or 10 feet draught, to not attempt this channel without a pilot.

Sailing Directions for Muskeget Channel in Day-time, with favorable winds and fair weather.

From the Eastward, when up with Cross Rip Light-ship, make good the course **W. by N.** until Cape Poge Lighthouse bears **SW.**, then run for it on this course until about $1\frac{1}{4}$ miles from it, or the water shoals to about $3\frac{1}{4}$ fathoms, then follow the shore to the Southward, keeping in about 3 fathoms water, leaving the Black Buoys off Cape Poge and Tom's Shoal* on the Starboard, and the Black and Red Buoys off Hawes' Shoal on the Port hand. After passing the Black Buoy off Tom's Shoal, bring Cape Poge Light to bear North, and make good the course South, keeping a sharp lookout for Skiff's Island Shoal, which is left on the Starboard hand. As soon as the buoy off the Western part of Mutton Shoal is made, run for it, bearing about South; leave this last buoy close to on the Port, and make good the course **S.SW.**, which will take a vessel to sea clear of all dangers.

From the Westward, bring West Chop Lighthouse to bear **W.** by **N.** $\frac{1}{2}$ **N.**, and make good the course **E.** by **S.** $\frac{1}{2}$ **S.** until Cape Poge Lighthouse bears **SW.**, then proceed according to directions before given.

* The Black Buoy off Tom's Shoal bears **S. $\frac{1}{2}$ E.** from Cape Poge, distance $2\frac{1}{4}$ miles.

Coming from sea bound through Muskeget Channel, as soon as Cape Poge Lighthouse is made, bring it to bear North and run for it on this course, keeping a sharp lookout for Skiff's Island Shoal* and the Red Buoy off the Western part of Mutton Shoal; Cape Poge Lighthouse bears from this last Buoy North, distance 6 miles; as soon as the Buoy is made, bring it to bear North, and run for it on this course, leave it close to on the Starboard and Skiff's Island Shoal on the Port hand, and make good the course **N.** $\frac{1}{2}$ **E.**, $3\frac{1}{4}$ miles to Black Buoy off Tom's Shoal, which is left on the Port hand; from this last Buoy make good the course **N.** by **E.** to Vineyard Sound, leaving the Red and Black Buoys off Hawes' Shoal on the Starboard hand.

Between Skiff's Island Shoal and Mutton Shoal the passage is narrow, and the current rapid; in the channel between them there are from 20 to 30 fathoms water; strangers should therefore not attempt to pass through this channel in thick weather or night time.

At this date (1881), there is a channel of 12 feet water at low tide, between Skiff's Island Shoal and Wasque Point, relative to the position of which see Eldridge's Chart of Vineyard Sound and Nantucket Shoals on a large scale.

Vessels from the Eastward of not more than 8 or 9 feet draught may follow the directions before given until Cape Poge Lighthouse bears **N.** by **W.** $\frac{1}{2}$ **W.**, on which bearing keep it and steer **S.** by **E.** $\frac{1}{2}$ **E.**; on this course they will pass the rips between the buoys off Mutton Shoal and Rocky Rip in not less than 10 feet water, at this date (1881). These sand ridges have, during the last 20 years, been constantly changing in depth. Vessels, therefore, using this channel, should proceed with caution. Coming from sea, it is only necessary to reverse these courses.

Currents.

The current of flood sets strong to the Northward through Muskeget Channel, and that of the ebb to the Southward.

* In 1875 Skiff's Island Shoal was dry at low tide.

EDGARTOWN HARBOR.

This harbor lies West Southerly about 11 miles from Cross Rip Light-ship, and Southeasterly about 9 miles from West Chop Lighthouse; about 15 ft. water can be carried into the Inner Harbor at low tide.

Cape Poge Lighthouse.

Upon Cape Poge, the northern extremity of Chappaquiddick Island, is a Lighthouse, which at this date (1881), shows a fixed light, which is intended to guide vessels through Vineyard Sound, and also into Edgartown harbor.

Cape Poge Light Bears from

Cross Rip Light-ship, W. $\frac{1}{8}$ S. ,	7 $\frac{1}{2}$ miles.
Succunnesset Light-ship, S. by W. $\frac{1}{2}$ W. ,	7 " "
East Chop Lighthouse, SE. $\frac{1}{4}$ E. nearly	6 $\frac{1}{10}$ " "

Edgartown Lighthouse.

This Lighthouse is erected upon the northern side of entrance to this harbor, and at this date (1881), shows a fixed light. Edgartown Lighthouse bears from Cape Poge Lighthouse **SW.** by **W.** $\frac{3}{4}$ **W.**, distance 3 miles.

Remarks.

Vessels of not more than 15 feet draught may enter the Inner Harbor at low tide, and lie above the Lighthouse secure from all winds. The outer harbor is exposed to Northerly and Northeasterly winds.

Sailing Directions for Edgartown Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, follow the directions before given, from Chatham to Sow and Pigs until up with Cross Rip Light-ship, then bring it to bear **E.** $\frac{1}{2}$ **S.**, on which bearing keep it on and steer **W.** $\frac{1}{2}$ **N.**; as you draw near Cape Poge Lighthouse, keep a sharp lookout for the Black Buoy off the flats. Cape Poge Lighthouse

bears from this Buoy **SW.** by **S.** about $\frac{3}{4}$ mile; when this Buoy is made, leave it a short distance on the Port hand, and steer about **W.** by **S.** until Edgartown Lighthouse bears **SW.** $\frac{1}{2}$ **S.**, then run in about **SW.** by **S.** $\frac{1}{2}$ **S.**, leaving the Black Buoy on the Port and Red Buoy on the Starboard hand; when the Red Buoy, which bears about **SE.** $\frac{1}{2}$ **E.** from the last-named Lighthouse, distance $\frac{1}{4}$ mile, is made, leave it a short distance on the Starboard hand and run in and anchor in Mid-Channel above the light. If intending to anchor above the upper wharf, keep near the wharves to avoid the Shoal off Chappaquiddick Point.

From the Westward, after passing West Chop Lighthouse, bring it to bear **W.** by **N.** $\frac{1}{2}$ **N.**, and make good the course **E.** by **S.** $\frac{1}{2}$ **S.** until Cape Poge Lighthouse bears **SE.** by **S.** $\frac{1}{4}$ **S.**, then steer for it on this course, leaving the Black Buoy off the Eastern part of Squash Meadow Shoal, well on the Starboard hand, *and in order to avoid the Rocks which lie on the Western side of the Channel*, continue the course for Cape Poge, until the water deepens to about 8 fathoms, then with Edgartown Lighthouse bearing **SW.** $\frac{1}{2}$ **S.**, steer **SW.** by **S.**, leaving the Outer Buoy which is Black, well on the Starboard hand; continue the course **SW.** by **S.**, leaving the Black Buoy on the Port, and the Red Buoy on the Starboard hand; leave the Red Buoy (which bears **SE.** $\frac{1}{2}$ **E.** about $\frac{1}{4}$ mile from the last-named Lighthouse) a short distance on the Starboard hand, and anchor as before directed.

Vessels from the Westward may pass to the Westward or within Squash Meadow Shoal by the following directions: When past West Chop Lighthouse, run for the Black Buoy off East Chop, leaving it close to on the Starboard hand, and steer for Cape Poge Lighthouse, bearing about **SE.**; on this course the Black Buoy on Squash Meadow Shoal will be left on the Port hand; continue the course **SE.** until Edgartown Light bears **SW.** $\frac{1}{2}$ **S.**, then in about 8 fathoms water, run in about **SW.** by **S.**, leaving the Outer Buoy (Black) well on the Starboard hand, and follow the directions before given.

Sailing Directions for Edgartown Harbor at Night-time, with favorable winds and fair weather.

Vessels of not more than 8 or 9 feet draught, from the Eastward, may bring Cross Ship Light-ship to bear **E.** by **S.**, on which bearing keep it, and run **W.** by **N.** until Edgartown Light bears **SW.** $\frac{1}{2}$ **S.**, then run for it on this bearing under short sail until Cape Poge

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Light bears **E.** by **S.**, then steer **S.S.W.**, until Edgartown Light bears **W. ½ S.**, then run in leaving the last-named Light about 250 yards on the Starboard hand; when this Light bears North, haul up **W.** by **N.** or **W.N.W.**, until it bears **E.N.E.**, then anchor in from 3 to 3½ fathoms water, where you may lie secure from all winds.

Vessels of not more than 8 or 9 feet draught, from the Westward, may, after passing West Chop Light, bring it to bear **W.** by **N. ½ N.**, and make good the course **E.** by **S. ½ S.**, until Cape Poge Light bears **SE.** by **S. ½ S.**, then run for it on this course until Edgartown Light bears **SW. ½ S.**, then in about 8 fathoms water run for this last-mentioned Light on this course, and follow the directions before given.

At night, vessels of not more than 11 feet draught from the Eastward or Westward, may follow the directions before given until Edgartown Light bears **W.** by **S.**, then anchor in from 4½ to 6 fathom water, sticky bottom, and if possible wait until daylight before entering the Inner Harbor. At this anchorage, during heavy Northerly and Northeasterly gales, there is a sharp sea, but the holding-ground is excellent, and large vessels well found in ground-tackle, generally ride safely in all winds.

It sometimes happens that vessels of more than 8 or 9 feet draught are compelled to enter Edgartown Inner Harbor at night. To such the following may be of great advantage:

Edgartown Light bears from the Red Buoy, which is intended to be left on the Starboard hand in entering the Inner Harbor, **NW. ½ W.**, distance about ¼ mile or 500 yards; but vessels of 12 feet draught can at this date (1881) pass 100 yards within it; and vessels of not more than 8 or 9 feet draught, 250 yards within it. In entering the Inner Harbor at night, the eye must therefore measure the distance from this Buoy to the Light.

Beating into Edgartown Harbor at Night.

In beating into Edgartown Harbor at night, after passing Cape Poge and the Outer Buoy off the Flats, make use of the lead, and tack when the bottom changes from soft to hard; on the Western side of the Channel the water shoals suddenly from 5 fathoms to 12 feet.

High Water.

It is high water in Edgartown Harbor 46 minutes later than at Boston; common tides rise about 2 feet.

VINEYARD HAVEN OR HOLMES HOLE HARBOR.

This Harbor lies West-Northerly about 14 miles from Cross Rip Light-ship, and East-Northerly about 20 miles from Sow and Pigs Light-ship.

West Chop Lighthouse.

Upon the Western side of entrance to Vineyard Haven Harbor, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels through Vineyard Sound, and also into this Harbor. At this time a Steam Whistle is placed near this Lighthouse, giving Blasts of 3 seconds, with intervals of 27 seconds.

West Chop Lighthouse bears from

	Distance.
Cross Rip Light-ship, W. by N. $\frac{5}{8}$ N.	14 $\frac{1}{4}$ miles.
Buoy with Red and Black Horizontal Stripes off	
Eastern end of Hedge Fence, W. $\frac{3}{4}$ N.	4 $\frac{3}{4}$ "
Buoy with Red and Black Horizontal Stripes off	
Western end of Hedge Fence, SW. by W. $\frac{1}{2}$ W.	2 "
Buoy off East end of Middle Ground, SE. nearly	$\frac{1}{2}$ "

East Chop Lighthouse.

This Lighthouse, which is erected on East Chop, Eastern side of entrance to this Harbor, shows at this date (1881), a fixed Red Light, which is intended to guide vessels through Vineyard Sound, and also into this Harbor.

East Chop Lighthouse bears from

	Distance.
Buoy with Red and Black Horizontal Stripes, off East-	
ern part of Hedge Fence, West	3 $\frac{1}{2}$ miles.
Black Buoy, off West part of Squash Meadow Shoal,	
W.NW.	1 $\frac{1}{4}$ "

Remarks.

From 3 to 5 fathoms water can be carried into Vineyard Haven Harbor at Low Tide, but it is exposed to winds from North to **E. NE.**

Sailing Directions for Vineyard Haven Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, follow the directions before given, from Chatham to Sow and Pigs Light ship, until up with Cross R.p. Light-ship, then make good the course **W. by N. $\frac{5}{8}$ N.**; and, in order to clear Squash Meadow and Hedge Fence Shoals, as soon as West Chop Light is made, bring it to bear **W. by N. $\frac{1}{2}$ N.**, and run for it on this course; when the Harbor opens, shorten sail and run in about midway between the two Lights (course about **SW. by S.**), and anchor in from $3\frac{1}{4}$ to $4\frac{1}{2}$ fathoms water at low tide; the best anchorage is in $3\frac{1}{4}$ fathoms water, with East Chop Light bearing about East. The above directions will answer for day or night.

From the Westward, follow the directions before given, until abreast Tarpanlin Cove Light, then, in order to clear the Middle Ground, bring this last-named Light to bear **W. $\frac{1}{2}$ S.**, on which bearing keep it, and steer **E. $\frac{1}{2}$ N.** until the Red Light on East Chop bears **S. by E. $\frac{1}{2}$ E.**; then run for it on this course, leaving the Red Buoy on the flat Ground* off West Chop well on the Starboard hand; when about midway between the lights on the East and West Chops, shorten sail, and run in (course about **SW. by S.**), until East Chop Light bears East, then anchor in about $3\frac{1}{4}$ fathoms water at low tide. The last directions will answer for day or night.

Beating into Vineyard Haven Harbor.

In beating into this harbor at night time, when abreast the Light on East Chop, be careful to avoid the Eastern side, which is very bold, and you will have 5 fathoms water at one cast of the Lead, and be ashore at the next before you can tack, but you may boldly stand into 3 fathoms on the Western side without danger.

High Water.

It is High Water in Vineyard Haven (or Holmes Hole Harbor) 15 minutes later than at Boston; mean rise and fall of tides $1\frac{3}{4}$ feet.

* In entering this Harbor, especially at night, heavy draught vessels should give the flat ground off West Chop a wide berth.

South Channel between Middle Ground and West Chop.

Vessels from the Eastward or Westward may pass to the Southward of the Middle Ground by the following directions: From the Eastward, leave the Buoy,* painted in Red and Black Horizontal Stripes, off East end of Middle Ground, close to on the Starboard hand, and make good the course **W.** by **S.**, keeping about $\frac{1}{3}$ mile from the Vineyard Shore; when abreast the Buoy painted in Red and Black Horizontal Stripes, off West end of Middle Ground, steer more Southerly, leaving the next Buoy off Lucas' Shoal on either hand, and run out of the Sound.

From the Westward, when past the Buoy on Lucas' Shoal (which bears **S.** $\frac{1}{2}$ **E.** from Tarpaulin Cove Light, distance $2\frac{1}{2}$ miles), steer **NE.** by **E.** for the Horizontal Striped Buoy off West end of Middle Ground; leave this Buoy close to on the Port hand, and steer about **E.** by **N.**, keeping about $\frac{1}{3}$ mile from the Vineyard Shore, as soon as the Buoy off the East end of Middle Ground is made, bring it to bear about **E.** by **N.**, and run for it on this course; leave this last-named Buoy close to on the Port hand, and follow the directions before given.

About 4 fathoms water can be carried through this passage at low tide.

FALMOUTH ROADS.

The best anchorage for heavy draught vessels in these Roads is in about $4\frac{1}{2}$ fathoms water, sticky bottom, with Nobska Light on a range with Tarpaulin Cove Light, bearing **W.** by **S.** $\frac{3}{4}$ **S.**, and West Chop Light **S.** by **E.**; small vessels, in order to avoid the current, may anchor nearer the shore, in about 3 fathoms water.

Remarks.

Falmouth Roads are exposed to Southeasterly Winds, but the holding ground is excellent, and large vessels, well found in ground tackle, may ride safely in them during all gales; they may also be left at night or day, by vessels bound East or West.

* West Chop Light bears from Buoy off East end of Middle Ground about **SE.**, distance $\frac{1}{2}$ mile.

**Sailing Directions for Falmouth Roads in Daytime,
with favorable winds and fair weather.**

From the Eastward, when abreast Cross Rip Light-ship, follow the directions before given, from Chatham to Sow and Pigs Light-ship, until West Chop Light bears **S** by **E**, on which bearing keep it, and steer **N**. by **W**., until Nobska Lighthouse is on a range with Tarpaulin Cove Lighthouse, then anchor in about $4\frac{1}{2}$ fathoms water, good holding ground; small vessels, in order to avoid the current, may go nearer the shore, and anchor in about 3 fathoms water.

From the Westward, follow the directions before given, from Sow and Pigs Light-ship to Chatham, until Nobska Light bears **NE**., then run in, leaving the last-mentioned Light about $\frac{3}{4}$ mile on the Port hand, and anchor as before directed, in about $4\frac{1}{2}$ fathoms water, with West Chop Lighthouse bearing **S**. by **E**., and Nobska Lighthouse on a range with Tarpaulin Cove Lighthouse. Heavy draught vessels, in crossing the Sound, bound to and from Falmouth Roads, should be careful to avoid a shoal having but 14 feet water upon it at low tide; West Chop Lighthouse bears from the centre of this danger **SW**. by **S**., distance $2\frac{1}{4}$ miles. Buoy on Western end of Hedge Fence **SSE**., distance about 1 mile. Buoy off the Western end L'Hommedieu Shoal, **NE**. by **E**., about $\frac{1}{2}$ mile.

LITTLE WOODS HOLL HARBOR.

This harbor lies Northwesterly about $3\frac{3}{4}$ miles from West Chop Lighthouse; West-Northerly $10\frac{1}{2}$ miles from Succonesset Light-ship; East-Northerly 5 miles from Tarpaulin Cove Lighthouse; and $\frac{1}{2}$ mile Northwesterly from Nobska Point Lighthouse.

Nobska Point Lighthouse.

Upon Nobska Point, Eastern side of entrance to Woods Holl Harbor, is a Lighthouse, which at this date (1881), shows a fixed White Light, and has a Fog Bell near it; this light is intended to guide vessels through the North Channel, and also into Woods Holl Harbor.

Nobska Point Lighthouse bears from

	Distance.
Succunnesset Light-ship, W. $\frac{3}{4}$ N.	10 miles.
Buoy off West end of L'Hommedieu Shoal, W. $\frac{5}{8}$ N	3 $\frac{1}{2}$ "
Buoy off West end of Hedge Fence, W. NW.	4 $\frac{1}{2}$ "
West Chop Lighthouse, NW. $\frac{1}{2}$ N.	3 $\frac{1}{4}$ "
Tarpaulin Cove Lighthouse, E. by N. $\frac{3}{4}$ N.	5 $\frac{3}{4}$ "

Remarks.

Small vessels, of not more than 6 or 7 feet draught, may find shelter in this harbor from all winds.

Sailing Directions for Little Woods Holl Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, haul round Nobska Point at a distance of about $\frac{1}{2}$ mile, leaving it on the Starboard hand; when the Light-house bears North, steer about **NW.**; as you sail in, you will see on the Port hand the Black Buoy off the Eastern part of Coffin's Rock, and nearly ahead the Red Buoy off Southwest side of Lone Rock; the former bears **W. by S. $\frac{3}{4}$ S.**, from Nobska Light, distance $\frac{1}{2}$ mile; the latter about **W. by N.**, distance $\frac{1}{2}$ mile. In order to clear the Rocks, which extend off from the shore on the Starboard side, bring the last-mentioned Buoy (off Lone Rock) to bear **NW.**, and run for it on this course, leaving the Black Buoy off Coffin's Rock well on the Port hand; when past the Red Buoy off Lone Rock (which is left on the Starboard hand), the Harbor will be open, bearing about **N. $\frac{1}{2}$ E.**, when you may run in, keeping about midway, and anchor above the wharf in from 6 to 8 feet water at low tide.

From the Westward, follow the directions before given, until Nobska Light bears **NE.**, then make good the course for it, until about $\frac{1}{2}$ mile from the Light or the water shoals to 4 fathoms; you will then see the Black Buoy off Coffin's Rock, and farther in the Red Buoy off Lone Rock, then proceed according to directions before given.

Beating into Little Woods Holl Harbor.

In beating into this Harbor, care should be taken to avoid the Rocks, which lie near the shore, one of which has but little water on in at low tide, and bears about West from Nobska Light, distance 350 yards; at this date (1881), it is not buoyed.

High Water.

It is high water in Little Woods Holl Harbor 2h. 44m. before it is at Boston; mean rise and fall of tides $1\frac{3}{4}$ feet.

GREAT WOODS HOLL HARBOR.

This Harbor, which lies about $1\frac{1}{4}$ miles Northwesterly from Nobska Point Lighthouse, is well sheltered from all winds; with a good pilot, about 19 feet water can be taken in at low tide.

Sailing Directions for Great Woods Holl Harbor, in Daytime, with favorable winds and fair weather.

From the Eastward, when past the Buoy off the East end of Middle Ground, bring West Chop Lighthouse to bear **SE. $\frac{1}{2}$ E.**, on which bearing keep it, and steer **NW. $\frac{1}{2}$ W.**; as you approach the North shore, keep a sharp lookout for the buoys marking the entrance of the harbor; as soon as these are made, and the passage is fairly open, bearing about **N. by W.**, then run in on this last course, passing between the Black Buoy off Nonnameset Point, and the Red Buoy off the Western part of Great Ledge; when about midway between these two buoys, make good the course about North $\frac{3}{4}$ mile to Red Buoy off Parker's flats (which is left close to on the Starboard); when past this Buoy, continue the course North about 350 yards, thence about **NW. by W.**, passing between the Red and Black Buoys off Railway Ledge, and Grassy Island; when about 300 yards past these Buoys you may anchor in from 5 to 7 fathoms water, and lie secure from all winds.

From the Westward, follow the directions before given, until Nobska Light bears **NE. by E.**, then run for it on this course, keeping a sharp lookout for the Buoys of Nonnameset Point and Great Ledge; when these are made, run in, as before directed.

Vessels of less than 8 feet draught from the Eastward may enter Great Woods Holl Harbor by the following directions:

Give Nobska Point a berth of about $\frac{1}{2}$ mile, leaving it on the Starboard hand; when the Lighthouse bears North, steer about **NW.**; as you sail in, you will see on the Port, the Black Buoy off the Eastern part of Coffin's Rock, and nearly ahead the Red Buoy

off the Southwestern side of Lone Rock. Bring the last-mentioned Buoy to bear **NW.**, and run for it on this course; when abreast of this Buoy, which is left close to on the Starboard hand, make good the course **W.** by **N.**; crossing the flats in about 8 feet water, continue the course **W.** by **N.**, until the water deepens to 4 fathoms, or the Red Buoy off Parker's Flats bears **N.** by **W.**, then run in according to directions before given.

In sailing into the Harbor of Great Woods Holl, particular attention must be paid to the current, which, in some places, runs strong. Strangers, with a *favorable and commanding breeze*, may safely enter this harbor by the above directions, but should not attempt to beat in without a pilot. It is advisable, however, for large or heavy draught vessels to take pilots.

The passages leading from Vineyard Sound to Buzzard Bay, between the Elizabeth Isles, are Quick's Hole, Robinson's Hole, and Woods Hole. The Harbors Great and Little Woods Holl have been named Woods Holl, but the passage through still retains its original name Woods Hole.

At this date (1881), there is an extensive Guano Factory at Great Woods Holl Harbor.

High Water.

It is High Water in Great Woods Holl Harbor 3h. 30m. before it is at Boston; common tides rise about 4 feet.

Improvements have recently been made in the Channel leading through Woods Hole to Buzzard's Bay, but it is advisable for strangers, bound through this dangerous passage, to take pilots.

TARPAULIN COVE HARBOR.

This Cove lies about $4\frac{1}{2}$ miles to the Westward of Woods Hole; West-Northerly about 7 miles from West Chop Lighthouse; about $4\frac{1}{2}$ miles to the Eastward of Quick's Hole; and East-Northerly, 12 miles from Sow and Pigs Light-ship.

Tarpaulin Cove Lighthouse.

This Lighthouse is erected upon the Western side of entrance to this Cove, and at this date (1881), shows a fixed White Light, varied by flashes.

Tarpaulin Cove Lighthouse bears from

	Distance.
Shoalest part of Middle Ground, W. $\frac{1}{4}$ N.	6 miles.
Buoy off West End of Middle Ground, NW. by	
W. $\frac{1}{2}$ W.	2 $\frac{3}{4}$ "
Buoy off Lucas' Shoal, N. $\frac{1}{2}$ W.	2 $\frac{3}{4}$ "
Gay Head Lighthouse, NE. $\frac{1}{4}$ N.	8 $\frac{1}{2}$ "

Remarks.

Tarpaulin Cove affords good anchorage in Westerly and Northerly Winds, but is exposed to Easterly and Southerly Winds, especially heavy **E.S.E.** gales, which bring in a sharp sea. The holding ground is excellent, and large vessels, well found in ground tackle, may ride safely in all winds; at such times, if possible, small vessels should make a harbor at Woods Holl.

Sailing Directions for Tarpaulin Cove Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, bring Tarpaulin Cove Light to bear **W. $\frac{1}{2}$ S.**, and run for it on this course; when the harbor is fairly open, run in, and anchor to the Eastward of the Buoy off Single Rock, about midway the Cove, in from 2 $\frac{1}{2}$ to 3 fathoms water. Large or heavy draught vessels should anchor in about 5 $\frac{1}{2}$ fathoms water, with Gay Head Lighthouse just open with Lighthouse Point.

From the Westward, after passing Quick's Hole, give the North Shore a berth of at least $\frac{1}{2}$ mile, until Tarpaulin Cove opens, then run in, leaving the Black Buoy off Cove Rock on the Port hand, and anchor to the Eastward of the Buoy off Single Rock in from 2 $\frac{1}{2}$ to 3 fathoms water.

Sailing Directions for Night time.

From the Eastward, at night, bring Tarpaulin Cove Light to bear **W. $\frac{1}{2}$ S.**, and run for it on this course, *under short sail*, until the water shoals to about 8 fathoms, then run in about **N.NW.**, and anchor in from 5 to 3 fathoms water.

From the Westward, at night, give Tarpaulin Cove Light a berth of about $\frac{1}{3}$ mile, leaving it to the Westward; and, in order to clear Cove Rock (which bears **E.** by **N. $\frac{1}{2}$ N.**, from the Light, distance $\frac{1}{6}$ mile), do not approach the Lighthouse Point nearer than 6

fathoms water, when the Light bears **SW.**, then anchor in about 3 fathoms water.

Beating into Tarpaulin Cove.

In beating in, the principal dangers are Cove Rock, and Single Reek, both of which lie on the Western side, and are marked with Buoys; there is also a sunken Rock, having but little water upon it, which bears about **NE.** by **N.** from the Lighthouse; this Rock lies off about 300 yards from the Northeastern side of the Cove, and at this date (1881), is not buoyed.

High Water.

It is High Water in Tarpaulin Cove 3h. and 24m. before it is in Boston; common tides rise and fall about $2\frac{1}{2}$ feet.

ROBINSON'S HOLE.

The first passage from Vineyard Sound into Buzzard's Bay (which lies about $2\frac{1}{2}$ miles to the Westward of Tarpaulin Cove Lighthouse), is called Robinson's Hole; its entrance bears **N.NE.** from Gay Head Lighthouse, distance about 6 miles. The currents run strong through this passage, and there are several sunken Rocks in the Channel; strangers should not, therefore, attempt to pass through it.

QUICK'S HOLE.

This passage, which leads from Vineyard Sound into Buzzard's Bay, is about $\frac{3}{4}$ mile wide, and has a depth of from 5 to 7 fathoms water; it lies about 4 miles to the Westward of Tarpaulin Cove Lighthouse, and its entrance bears **N. $\frac{3}{4}$ E.** from Gay Head Lighthouse, distance about 5 miles. There is a rapid current through this passage, but the dangers are marked with Buoys; heavy draught vessels can, therefore, with favorable and commanding breezes, safely pass through this Channel.

Shelter in Westerly Winds.

Vessels may find good shelter in Quick's Hole, with winds from **S. by W.** to **NW.** by **N.** by way of West; the best anchorage for large vessels in such winds is in about 4 fathoms water, with the Red Buoy off the Ledge bearing **E.NE.**, distance $\frac{1}{3}$ mile. Small vessels, in order to avoid the currents, may anchor nearer the shore, in about 3 fathoms water.

Shelter in Easterly Gales.

Vessels compelled to seek shelter in Quick's Hole during heavy Easterly or Northeasterly gales, should anchor in about $5\frac{1}{2}$ fathoms water, with the Red Buoy off Quick's Hole Ledge bearing about **E.NE.**

**Sailing Directions for Quick's Hole in Daytime,
with favorable winds and fair weather.**

From the Eastward, intending to pass through Quick's Hole into Buzzard's Bay, follow the directions before given, from Chatham to Sow and Pigs Light-ship, until Gay Head Lighthouse bears **S. by W.**, then keep a sharp lookout for the Black Buoy, which marks the Shoal water, which extends off from the Southeast part of Nashawena Island; when this last-named Buoy is made, leave it about 200 yards on the Port hand, and steer about **N. $\frac{1}{2}$ W.** through the passage, leaving the Red Buoy off Quick's Hole Ledge on the Starboard hand; continue the course **N. $\frac{1}{2}$ W.**, keeping in the middle of the passage, when you will soon see nearly ahead the Buoy off Lone Rock, which may be left $\frac{1}{3}$ mile on either hand; when past the last-named buoy, if bound to New Bedford, see directions for that Harbor.

At Night.

Strangers should not attempt this passage at night, unless necessity compels; in such cases keep the Western shore best aboard.

Gay Head Lighthouse.

Upon Gay Head, the Western end of Martha's Vineyard, a Lighthouse has been erected, which at this date (1881), shows every 10 seconds a flashing Light, every fourth flash being Red. In clear weather this Light should be visible about 20 miles.

Bearings and Distances from Gay Head Lighthouse.

	Distance.
Tarpaulin Cove Lighthouse, NE. $\frac{3}{4}$ N. , nearly . . .	8 $\frac{1}{8}$ miles.
Quick's Hole, entrance, N. $\frac{3}{4}$ E. , nearly . . .	5 $\frac{1}{2}$ "
Light-ship off Sow and Pigs, NW. by W. $\frac{1}{2}$ W. . . .	7 $\frac{1}{4}$ "
Block Island (Southeastern Lighthouse), W. $\frac{7}{8}$ S. . . .	34 $\frac{1}{4}$ "
Block Island (Northern Lighthouse), W. $\frac{1}{6}$ S. . . .	34 "
Point Judith Lighthouse, W. by N. . . .	29 "

Devil's Bridge.

This dangerous Reef (some parts of which are bare at low tide) extends off more than $\frac{1}{2}$ mile from the Northern side of Gay Head. It is marked on its outer part with a Black Buoy. Gay Head Lighthouse bears from this Buoy **SE. by S. $\frac{1}{2}$ S.**, distance about $\frac{3}{4}$ mile.

The Devil's Bridge is very dangerous in thick weather or when the Light cannot be seen, the only sure guide at such times is to use the Lead and not approach it in less than 10 fathoms water.

MENEMSHA BITE.

This Bite, in which vessels may find shelter (especially in summer) with winds from East to **W.SW.** by way of South, lies East-Northerly about $2\frac{1}{2}$ miles from Gay Head Lighthouse. The best anchorage for large vessels is in from 7 to 9 fathoms water, sticky bottom, with Gay Head Light bearing about **W. by S.**; small vessels may anchor nearer the shore in about 5 fathoms water. A strict watch should be kept while lying here, and the Bite should be left (especially in winter) on the first indications of Northerly or Northwesterly winds, which bring in a heavy sea.

Channel between No Man's Land and Squip-nocket Point.

This passage, which is about $1\frac{1}{2}$ miles wide, has a depth of about 5 fathoms water at low tide; the principal dangers to be avoided are Old Man's Ledge and Lone Rock, both of which at this date (1881) are marked with buoys.

Sailing Directions.

From the Eastward or Seaward, intending to pass between No Man's Land and the Southern part of Martha's Vineyard, when Gay Head Lighthouse is made, bring it to bear **N.** by **W.** $\frac{1}{2}$ **W.** and run for it, leaving the Eastern part of No Man's Land well on the Port hand; when past this you will see on the Port hand the Black Buoys of the Eastern parts of Old Man's Ledge and Lone Rock, and on the Starboard, the Red Buoy which lies off the Southwest part of Squipnoeket Point Shoal; when past the Black Buoys (which are left on the Port hand) steer more Westerly, and if bound into Vineyard Sound, leave the Buoy off the Devil's Bridge well on the Starboard hand and follow the directions before given.

From the Vineyard Sound leave the Buoy off the Devil's Bridge about $\frac{3}{4}$ mile on the Port hand, and when it bears **NE.** steer about **S.SE.**, keeping about $\frac{3}{4}$ mile from shore; when from 2 to 3 miles past Gay Head Light keep a sharp lookout for the Black Buoys off Lone Rock and the Old Man's Ledge, when these are made leave them about $\frac{1}{2}$ mile on the Starboard hand and make good the course **SE.** by **S.** which will clear all dangers.

NO MAN'S LAND CHANNEL.

The Old Man's Ledge, which has about 6 feet water upon it at low tide, is marked off its Eastern part with a Black Buoy, No. 1. This Buoy bears from the East end of No Man's Land **N.** $\frac{1}{2}$ **W.**, distance about $1\frac{1}{2}$ miles. Vessels bound East or West through this Channel may pass about midway between this Buoy and the Island; about 4 fathoms water may be carried through this passage.

Anchorage under No Man's Land.

Vessels may find shelter on the Northwestern side of No Man's Land in Southerly or Southeasterly winds. The best anchorage is in about 4 fathoms water, with the West end of the Island bearing **W.SW.**, distance about $\frac{1}{2}$ mile. A strict watch at all seasons of the year should be kept while lying here, and the anchorage should be left on the first indications of Northwesterly winds.

Cuttyhunk Lighthouse.

On the Western part of Cuttyhunk Island is a Lighthouse which at this date (1881) shows a fixed Light, which is intended to guide vessels into Vineyard Sound and Buzzard's Bay.

Bearings and Distances from Cuttyhunk Lighthouse.

	Distance.
Gay Head Lighthouse, SE. $\frac{1}{4}$ S. , nearly	6 $\frac{1}{4}$ miles.
Sow and Pigs Light-ship, SW. by W. , nearly	2 $\frac{1}{2}$ "
Hen and Chickens Light-ship, NW. $\frac{1}{4}$ W.	3 $\frac{1}{2}$ "
Buoy off Sow and Pigs, SW. by W. $\frac{1}{2}$ W.	1 $\frac{1}{2}$ "
Buoy off Northwest part of Ribbon Reef, NW. $\frac{1}{4}$ N.	1 $\frac{1}{2}$ "

Sow and Pigs Reef.

This dangerous Reef (which is bare in some places) extends off about 1 $\frac{1}{2}$ miles **SW. by W.** from Cuttyhunk Lighthouse. On its Western end is placed a Red Can Buoy, No. 2, with the words Sow and Pigs on its head. This Buoy marks the Western part of Sow and Pigs Reef for vessels bound into Buzzard's Bay, and is not intended for a guide through the Vineyard Sound. In thick weather, to avoid the Sow and Pigs, do not approach them in less than 10 fathoms water, especially on the Northwestern part where they are very bold, and this depth will take a vessel very near them.

Vineyard Sound, or Sow and Pigs Light-ship.

This Light-ship is placed about a mile to the Southwestward of the outer end of the Reef and marks the Western entrance to Vineyard Sound. At this date (1881) it shows two fixed white Lights, and has a powerful steam Whistle, which in thick weather gives blasts of 6 seconds duration at intervals of 45 seconds.

Bearings and Distances from Sow and Pigs Light-ship.

	Distance.
Cuttyhunk Lighthouse, NE. by E. nearly	2 $\frac{1}{2}$ miles.
Gay Head Lighthouse, SE. by E. $\frac{1}{2}$ E. , nearly	7 $\frac{1}{4}$ "
Hen and Chickens Light-ship, N. $\frac{3}{4}$ W.	3 $\frac{3}{8}$ "
Brenton's Reef Light-ship, W. by N. $\frac{3}{4}$ N.	17 $\frac{3}{4}$ "
Point Judith Lighthouse, W. $\frac{5}{8}$ N.	22 $\frac{1}{4}$ "
Block Island Northern Lighthouse, W. $\frac{3}{4}$ S.	28 "
Block Island Southeast Lighthouse, W. by S. $\frac{1}{2}$ S.	28 $\frac{1}{4}$ "
Buoy off Western part of Sow and Pigs, NE. $\frac{3}{4}$ N.	1 "

CURRENTS AND TIDES

In Vineyard Sound, and across Monomoy and Nantucket Shoals.

It is high water between Gay Head and Cuttyhunk Island (entrance to Vineyard Sound) 3h. 45m. before it is at Pollock Rip; it is therefore evident that the main body of the current of flood must run to the Eastward, and that of the Ebb to the Westward, through Vineyard Sound, and across Monomoy and Nantucket Shoals.

In order to obtain a correct knowledge of the time when the current turns in this Sound, see *Eldridge's Tide and Current Tables*, which are published annually.

BUZZARD'S BAY.

Hen and Chickens Reef.

This dangerous Reef, some part of which is dry at about half tide, extends off Southeasterly about $1\frac{1}{4}$ miles from Gooseberry Neck, North side of entrance to Buzzard's Bay; the outermost dry Rock upon this Reef is called the Old Cock, upon which is placed an Iron Spindle, 36 feet high, with open Cage Work; the outer part of this Reef is also marked with a Black Buoy, which, in entering Buzzard's Bay, is left on the Port hand.

Hen and Chickens Light-ship.

About one mile **SE.** by **S.** from Spindle on the Old Cock, is placed a Light-ship which at this date (1881), shows a fixed white Light, which is intended to guide vessels into Buzzard's Bay.

About one mile Southwest from this Light-ship is placed a Whistling Buoy.

Bearings and Distances from Hen and Chickens Light-ship.

	Distance.
Wing's Neck Lighthouse, NE. by E. $\frac{1}{2}$ E.	21 $\frac{1}{4}$ miles.
Dumpling Rock Lighthouse, NE. $\frac{1}{2}$ E.	6 $\frac{3}{8}$ "
Buoy with Horizontal Stripes off South side Wilkes' Ledge, NE. by E. $\frac{3}{4}$ E.	6 "
Black Buoy off South part of Mishaum Ledge, NE. by E.	3 $\frac{1}{4}$ "
Buoy painted in Horizontal Stripes off North side of Ribbon Reef, SE. $\frac{1}{2}$ E.	2 $\frac{1}{8}$ "
Cuttyhunk Lighthouse, SE.	4 "
Sow and Pigs Light-ship, S. $\frac{3}{4}$ E.	3 $\frac{7}{8}$ "
Red Buoy off South part of Schuyler Ledge, * W. $\frac{3}{4}$ N.	8 "
Brenton's Reef Light-ship, W. $\frac{1}{2}$ N.	16 $\frac{1}{8}$ "
Point Judith Lighthouse, W. $\frac{1}{4}$ S.	21 $\frac{1}{2}$ "
Block Island North Lighthouse, W. by S. $\frac{1}{2}$ S.	28 $\frac{1}{4}$ "
Block Island Southeast Lighthouse, SW. by W. $\frac{1}{2}$ W.	29 $\frac{1}{4}$ "

CUTTYHUNK HARBOR.

This harbor, which is near the Northeastern part of Cuttyhunk Island, lies East-Southerly about 5 miles from Hen and Chickens Light-ship, and West-Southerly about 3 miles from the Northern entrance of Quick's Hole.

Remarks.

In approaching this harbor from the Westward there are several dangers, most of which at this date (1881), are marked with buoys; it is well sheltered for small vessels in winds from **E. SE.** to **W.** by **N.** by way of South, but is open to Northeasterly winds; from 2 $\frac{1}{2}$ to 4 fathoms water may be taken into it at low tide.

Sailing Directions for Cuttyhunk Harbor in Day-time, with favorable winds and fair weather.

From the Eastward follow the Northern shore of Nashawena Island to the Westward, keeping about $\frac{1}{2}$ mile from it; as you sail

* Schuyler Ledge, which has about 7 feet water upon it at low tide, lies about $\frac{1}{2}$ mile South from Sakonnet Rocks.

in you will see the buoys at the entrance of the harbor; the first is Black, and is left on the Starboard hand; when abreast this buoy, or it bears **N.NE.**, haul up about **SW.** by **S.** $\frac{1}{2}$ **S.**, and anchor in about $3\frac{1}{4}$ fathoms water, the upper buoy, which is Red, bearing about **W.** by **S.**

Beating into Cuttyhunk Harbor.

In beating into this harbor (from the Eastward) the only dangers to be avoided are Gull Island Ledges, which are marked with Black Buoys, both of which are left to the Northward.

From the Westward bring Cuttyhunk Lighthouse to bear from East to **SE.** by **E.**, and run for it on this course; when about $\frac{1}{2}$ mile from it, follow the shore (which is quite bold) to the Northeastward, keeping about that distance from it, when you will soon make the buoys at the entrance of the harbor. When the Red Buoy* off the Northern part of Whale Rock bears **ESE.**, then run for it, and leave it about 200 yards on the Starboard hand; when past this buoy you will see a short distance to the Southeastward a Buoy painted in Horizontal Stripes, this lies off the Northeast part of Edward's Rock; leave this last-named buoy close to on the Starboard hand, and haul up **S.** by **E.** or **SSE.**, and anchor in about $3\frac{1}{4}$ fathoms water.

June, 1873, the centreboard of the schooner engaged in the survey of Cuttyhunk harbor struck a rock about **NW.** by **N.** $\frac{1}{4}$ mile from Red Buoy off Northeast part Whale Rock. We searched for this Rock several times without success.

From the Westward, another way to enter this harbor is to bring the Hen and Chickens Light-ship to bear **W.** by **S.** and steer **E.** by **N.** for Penikese Island; when this Island is made, bring its Southern point, which is bold, to bear East, and run for it on this course; leave it about 300 yards on the Port hand, and steer East until the point bears **N.NW.**, then make good the course **SSE.**, passing about midway between the Buoy painted in Horizontal Stripes on Middle Ledge, and the Black Buoy off Southwest part of Gull Ledge; when past these, the Buoy with Horizontal Stripes off Edward's Rock will be seen; leave this last-named buoy on the Starboard hand, and anchor as before directed.

* The Red Buoy off Whale Rock bears about **E.** by **N.** $\frac{1}{4}$ mile from the Northeastern part of Cuttyhunk.

High Water.

It is high water in Cuttyhunk Harbor 3h. 40m. before it is at Boston. Common tides rise about $3\frac{1}{2}$ feet.

DARTMOUTH HARBOR.

The entrance to this harbor is Northwesterly about $2\frac{1}{2}$ miles from Dumpling Rock Lighthouse, and West-Southerly about 2 miles from Lighthouse at Clark's Point.

Dumpling Rock Lighthouse.

Upon Dumpling Rock, off Round Hill, Northwest side of Buzzard's Bay, is a Lighthouse which at this date (1881), shows a fixed white Light, which is intended to guide vessels into Buzzard's Bay, and also New Bedford and Dartmouth Harbors. At this date (1881), a fog-bell is placed near this Lighthouse.

Dumpling Rock Lighthouse bears from

	Distance.
Red Buoy off West Island Ledge, W. by S. $\frac{1}{4}$ S.	$3\frac{3}{4}$ miles.
Black Buoy off East part Great Ledge, W. $\frac{3}{4}$ N.	$1\frac{1}{4}$ "
Red Buoy off Northwest part Sand Spit, N.NW.	$\frac{1}{2}$ "
Horizontal Striped Buoy off South part Wilkes' Ledge, N. $\frac{1}{2}$ W.	$1\frac{3}{4}$ "
Black Buoy off South part Mishanm Ledge, NE. $\frac{1}{4}$ E.	$3\frac{1}{2}$ "
Cuttyhunk Lighthouse, N. by E. $\frac{3}{4}$ E.	$7\frac{3}{8}$ "
Light-ship off Hen and Chickens, NE. $\frac{1}{2}$ E.	$6\frac{7}{8}$ "

Remarks.

In approaching Dartmouth Harbor there are many dangers, most of which, at this date (1881), are marked with Buoys. With a favorable wind about 8 feet water can be taken into this harbor at low tide.

Sailing Directions for Dartmouth Harbor in Day-time, with favorable winds and fair weather.

From Quick's Hole (when past the Buoy off Lone Rock) make good the course **N. by W.** until Dumpling Rock Lighthouse bears

W.NW., then run for it on this course, leaving the Buoys off Great Ledge on the Starboard, and the Red Buoy off the Sand Spit, which has 7 feet water upon it, well on the Port hand; continue the course **W.NW.** for the Light until about $\frac{1}{2}$ mile from it, you will then see to the Northwestward, about $\frac{1}{2}$ mile from shore, a small Rocky Islet, about 10 or 15 feet above water; this is White Rock. When this Rock bears **N.NW.**, run about **N. $\frac{1}{2}$ W.**, leaving it well on the Port hand; when abreast this Rock you will see on the port the Black Buoy off the Eastern part of Hussey's Rock; continue the course about **N. $\frac{1}{2}$ W.**, leaving the last named Buoy on the Port, and the Horizontal Striped Buoys on Middle Ledge, and Lone Rock on the Starboard hand; when past the last named Buoys steer about **NW. by N.**, entering about midway the River; leave the Red Buoy off the West side of Dartmouth Rock about 100 feet on the Starboard hand, and when abreast it, make good the course **N. by W. $\frac{1}{2}$ W.**, until the end of the Wharf bears **NE. by N.**, then run for it on this course, which will take you in the deepest water. When about 200 yards from the Wharf the channel is very narrow; it is therefore necessary to proceed with caution.

From the Westward leave the Light-ship off Hen and Chickens Reef close to on the Port hand, and make good the course **NE. by E. $\frac{1}{2}$ E.**, leaving the Black Buoy off the South part of Mochaum Ledge, which has 7 feet water upon it, well on the Port hand. When Dumpling Rock Lighthouse bears **N.NE.** then run for it on this course, leaving the Buoy painted in Red and Black Horizontal Stripes off the South part of Wilkes' Ledge, which has 7 feet water upon it, and the Red Buoy off the Western part of Sand Spit, which has 7 feet water upon it, both on the Starboard hand; the latter bears **S.SE.** from Dumpling Rock Lighthouse, distance $\frac{1}{2}$ mile. As you approach this Lighthouse, you will see a short distance to the Southward of it a Black Buoy; pass about midway between this last named one and the Buoy off the Sand Spit, and steer **NE. by N.** until White Rock (before mentioned) bears **N.NW.**, then steer **N. $\frac{1}{2}$ W.**, and proceed as before directed.

There are many dangers in approaching this harbor, it is therefore not advisable for strangers to attempt to beat in without a pilot.

For a better knowledge of the dangers in approaching and entering Dartmouth Harbor, see *Eldridge's Chart of Buzzard's Bay on a large scale.*

High Water.

It is high water in Dartmouth Harbor 3h. 20m. before it is at Boston. Common tides rise about $3\frac{3}{4}$ feet.

NEW BEDFORD HARBOR.

The entrance to this harbor is West-Northerly about 11 miles from Wood's Hole, North about 9 miles from Quick's Hole, North-easterly about $3\frac{3}{4}$ miles from Dimpling Rock Lighthouse, and Northeasterly about 11 miles from Hen and Chickens Light-ship.

Clark's Point Lighthouse.

Upon the Fort at Clark's Point, West side of entrance to New Bedford Harbor, is a Lighthouse, which at this date (1881), shows a fixed White Light.

Dangers.

In approaching New Bedford Harbor there are many dangers, which at this time are marked with Buoys.

Clark's Point Lighthouse bears from

	Distance.
Black Buoy off South part West Island SE. Ledge, which has 3 feet water upon it, NW. by W. $\frac{1}{4}$ W.	$4\frac{1}{8}$ miles.
Red Buoy off Southwest part West Island SW. Ledge, which is nearly dry at low tide, NW. $\frac{1}{4}$ W.	$3\frac{1}{10}$ "
Red Buoy off South part Mosher Ledge, which has 6 feet water upon it, NW. $\frac{3}{4}$ N.	$2\frac{3}{4}$ "
Horizontal Striped Buoy off West side Henrietta Rock, which has 11 feet water upon it, NW. $\frac{3}{4}$ N.	1 "
Red Buoy off West side of Packet Rock, which has 4 feet water upon it, NW.	$1\frac{1}{2}$ "
Horizontal Striped Buoy off Hursell's Rock, which has 14 feet water upon it, N. by W. $\frac{3}{4}$ W.	$3\frac{1}{8}$ "
Black Buoy off East side Phinney's Rock, which has 10 feet water upon it, N. $\frac{1}{2}$ W.	$2\frac{3}{4}$ "
Red Buoy off Southwest side Church Rock, which has 8 feet water upon it, N. $\frac{1}{4}$ W.	$2\frac{1}{8}$ "

Red Buoy off West side Decatur Rock, which has 5 feet water upon it, N. $\frac{1}{4}$ W.	Distance. 1 $\frac{3}{4}$ miles.
Black Buoy off East side North Ledge, which has 5 feet water upon it, N. by W. $\frac{1}{4}$ W.	1 $\frac{3}{4}$ "
Black Buoy off East side Great Ledge, which has 3 feet water upon it, N. $\frac{1}{2}$ E.	3 $\frac{1}{4}$ "
Buoy with Horizontal Stripes off SE. side Middle Ledge, which has 3 feet water upon it, N. by E. $\frac{3}{4}$ E.	2 $\frac{1}{4}$ "
Buoy with Horizontal Stripes off Northeast side Inez Ledge, which has 7 feet water upon it, N. by E. $\frac{3}{4}$ E.	1 $\frac{3}{4}$ "
Buoy with Horizontal Stripes off South side Lone Rock, which has 2 feet water upon it, NE. by N. $\frac{1}{2}$ N.	2 $\frac{1}{5}$ "
Red Buoy off South side Bent's Ledge, which has 3 feet water upon it, NE. by N. $\frac{1}{4}$ N.	1 $\frac{5}{8}$ "

By a close inspection of Eldridge's Chart of Buzzard's Bay (on a large scale) a better knowledge can be obtained of the depth and location of the above dangers than by any written description.

Palmer's Island Lighthouse.

On the Northeast extremity of Palmer's Island, West side of entrance to New Bedford Inner Harbor, is a Lighthouse which at this date (1831), shows a fixed White Light.

Remarks.

New Bedford Outer Harbor.

This harbor lies between Clark's Point, Palmer's Island and Scoutient Neck, and affords good shelter with winds from SW. to E. SE. by way of North; about 19 feet water at low tide can be carried in as far as the Beacon on Egg Island Flats, and about 17 feet $\frac{1}{2}$ mile above this point.

New Bedford Inner Harbor.

This harbor of refuge, which lies above Palmer's Island, is one of the best on the coast of the United States; vessels of 14 feet draught at low tide can go about $\frac{1}{4}$ mile above Palmer's Island Lighthouse, from this point about 11 feet can be carried up to the Bridge. In approaching New Bedford there are generally three

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passages used, called Dumpling Rock or West Channel, Middle Channel and Ship Channel; the first two mentioned should not be attempted by strangers at night, or when the Buoys cannot be seen. Providing there is no error in the compass and Clark's Point Light is visible, the Eastern or Ship Channel, can, with favorable winds, be safely entered at night by strangers.

By the West Channel.

Sailing Directions for New Bedford Harbor in Day-time, with favorable winds and fair weather.

From the Westward, leave the Light-ship off Hen and Chickens close to on the Port hand, and make good the course **NE.** by **E.** $\frac{1}{2}$ **E.**, leaving the Black Buoy off the South side of Mishaum Ledge, which has 7 feet water upon it, well on the Port hand; when Dumpling Rock Light bears **N.NE.**, then run for it on this course, leaving the Buoy with Horizontal Stripes off South part Wilkes' Ledge, which has 7 feet water upon it, on the Starboard hand; as you approach Dumpling Rock Lighthouse you will see the Red Buoy off the Western part of Sand Spit, which has 7 feet water upon it, and the Black Buoy off Dumpling Rock; the Lighthouse bears from the former **N.NW.**, distance $\frac{1}{2}$ mile; the latter Buoy lies but a short distance from the Light. Pass about midway between these two last named Buoys, and make good the course **NE.** by **N.** until Clark's Point Lighthouse bears **NW.** by **N.** $\frac{1}{2}$ **N.**, the course is then about **N.** $\frac{1}{2}$ **E.** As you sail in, you will see on the Port the Black Buoy off the Eastern part of the Rock called Old Bartlemy, which lies but a short distance to the Eastward of the Fort at Clark's Point, and farther in the Black Buoy off the Eastern part of Butler's Flats, both these last named Buoys are left on the Port hand; on the Starboard will be seen the Beacon on the Southwest part of Egg Island Flats, and also a Red Buoy a short distance Southeast from the Beacon, these last named are left on the Starboard hand. Leave the Black Buoy off Butler's Flats close to on the Port hand, and steer **N.** by **W.** $\frac{3}{4}$ **W.**, when you will soon see the Buoys which mark the narrow channel between Palmer's Island and Fort Flats. When up with the first Black Buoy (which is left on the Port hand) the course is more Northerly, leaving the Black Buoys on the Port, and the Red ones on the Starboard hand. When past Palmer's Island Light steer about

North until the outer part of the first Wharf on the Eastern side of the harbor bears **SE. $\frac{3}{4}$ E.**, on which bearing keep it and steer **N.W. $\frac{3}{4}$ W.** for Taber's Wharf; this last course will take a vessel in the deepest water, about 11 feet at low tide.

At low tide, it is advisable for vessels of more than 11 feet draught to anchor in about $3\frac{1}{2}$ fathoms water, with Palmer's Island Light bearing about **SW. by S.**, distance 300 yards, and wait for flood tide.

By the Middle Channel.

Sailing Directions for New Bedford Harbor in Day-time, with favorable winds and fair weather.

Vessels from Quick's Hole may, when past the Buoy off South part of Lone Rock, make good the course **N. $\frac{3}{4}$ W.**; as soon as Clark's Point Lighthouse is made, bring it to bear North and run for it on this course, leaving the Buoys off Great Ledge well on the Port hand, and the Black Buoy off Phinney's Rock, and Red Buoys on Church and Decatur Rocks on the Starboard hand; continue the course for Clark's Point Lighthouse, bearing North until about a mile from it, then steer more Easterly, leaving the Black Buoy off the Eastern part of North Ledge well on the Starboard hand; when the Black Buoys off Old Bartlemy Rock and Butler's Flats are made, then follow the directions before given.

This last-mentioned Channel should not be attempted at night, as a slight deviation from the course may lead to difficulty.

By the Eastern or Ship Channel.

Sailing Directions for New Bedford Harbor in Day-time, with favorable winds and fair weather.

From the Westward, leave the Light-ship off the Hen and Chickens close to on the Port hand, and make good the course **E. by N. $\frac{3}{4}$ N.**, leaving the Black Buoy off the South part of Misham Ledge, which has 7 feet water upon it, and the Buoy painted in Red and Black Horizontal Stripes, off Wilkes' Ledge, which has 7 feet water upon it, well on the Port hand. When Dumping Rock Lighthouse bears **NW.**, steer about **NE. by N.**, leaving the Buoy with Horizontal Stripes off Hursell's Rock on the Port hand; when Clark's Point Lighthouse bears **NW.** by

N. $\frac{1}{2}$ N., then run for it on this course, leaving the Red Buoys off Mosher's Ledge, Henrietta, and Packet Rocks on the Starboard, and the Black Buoy off Eastern part of North Ledge on the Port hand. Continue the course for Clark's Point Light, bearing **NW.** by **N. $\frac{1}{2}$ N.**, until about a mile from it; then steer about **N. $\frac{1}{2}$ E.**, leaving the Black Buoy off Butler's Flats close to on the Port hand, and follow the directions before given.

From Quick's Hole, when past the Buoy off South part of Lone Rock, steer **N.** by **E.** until Clark's Point Lighthouse is made, then bring it to bear **NW.** by **N. $\frac{1}{2}$ N.**, and follow the directions before given.

From Woods Hole, when past the Buoy off Wepecket Shoal, steer **WNW.** until Clark's Point Lighthouse bears **NW.** by **N. $\frac{1}{2}$ N.**, then proceed according to directions before given.

By Ship Channel.

Sailing Directions for New Bedford Harbor at Night-time, with favorable winds and fair weather.

Vessels at night, from the Westward, bound to New Bedford, must bring the Light-ship off the Hen and Chickens, to bear **W.** by **S. $\frac{1}{2}$ S.**, on which bearing keep it, and steer **E.** by **N. $\frac{1}{2}$ N.**, until Dumpling Rock Light bears **NW.**, then steer **NE.** by **N.**, until Clark's Point Light bears **NW.** by **N. $\frac{1}{2}$ N.**, then run for it on this course, until about a mile from it; then, in $4\frac{1}{2}$ fathoms water at low tide (soft bottom), with Dumpling Rock Light bearing **SW. $\frac{1}{2}$ S.**, and Palmer's Island Light **N. $\frac{3}{4}$ W.**, steer **N.** by **E.** until Palmer's Island Light bears **N.** by **W. $\frac{1}{2}$ W.**, then run for it, keeping a sharp look out for the Buoy off Butler's Flats, which is left on the Port hand. When about half way from Clark's Point Light to Palmer's Island Light, anchor in about 3 fathoms water, and wait for daylight; at low tide, when Clark's Point Light bears **WSW.**, it is advisable for vessels of more than 12 feet draught to anchor in from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water.

Beating into New Bedford Harbor.

The best guide for beating into New Bedford Harbor is Eldridge's Chart of Buzzard's Bay on a large scale.

High Water.

It is high water in New Bedford Harbor 3h. 7m. before it is at Boston; common tides rise about 4 feet.

MATTAPOISET HARBOR.

This Harbor lies Northeasterly $15\frac{1}{2}$ miles from Light-ship off Hen and Chickens; Northeasterly $8\frac{1}{2}$ miles from Dumpling Rock Light; and Northeasterly about $9\frac{1}{2}$ miles from Wood's Hole.

Ned's Point Lighthouse.

Upon Ned's Point, East side of Mattapoiset Harbor, Northwest side of Buzzard's Bay, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels into Mattapoiset Harbor, and also up Buzzard's Bay.

Remarks.

This harbor affords good shelter, with winds from S.S.W. to East by way of North, but is exposed to Southeasterly winds; about 15 feet water, at low tide, can be carried up as far as the Lighthouse, and above this, anchorage may be found in from 7 to 12 feet abreast of the village.

Sailing Directions for Mattapoiset Harbor in Day-time, with favorable winds and fair weather.

From the Westward, bring the Light-ship off Hen and Chickens to bear **W.** by **S.** $\frac{1}{4}$ **S.**, on which bearing keep it, and steer **E.** by **N.** $\frac{1}{4}$ **N.**, until Dumpling Rock Lighthouse bears **NW.**, then make good the course **NE.** $\frac{1}{2}$ **E.**; on these two last courses the Ledges off the Northern shore of Buzzard's Bay will be left well on the Port hand; continue the course **NE.** $\frac{1}{2}$ **E.** until Ned's Point Lighthouse (on the Eastern side of Mattapoiset Harbor) bears **NW.** by **N.** $\frac{1}{2}$ **N.**, then run for it on this course, leaving the Horizontal Striped Buoy on Nye's Ledge, and Black Buoy off Southeast part of Mattapoiset Ledge, both on the Port hand; when past these two last buoys, several more will be seen on the Port;

the first is Black, and lies near Gallatin Rock; when this Buoy bears **NW.**, run for it on this course, and leave it about 100 yards on the Port hand; continue the course **NW.** passing about midway between two Buoys, one Black, the other Red; when the Lighthouse bears **N.NE.**, steer **N.** by **W.** $\frac{1}{2}$ **W.**, leaving the Buoy with Horizontal Stripes, off Barstow Rock, well on the Starboard hand; when the Lighthouse bears **NE.** by **E.**, then anchor in from $2\frac{1}{2}$ to 3 fathoms water, soft bottom.

At low tide, about 7 feet water can be carried up to the Long Wharf. Vessels bound to Mattapoiset (may, therefore, at low tide), when past the Horizontal Striped Buoy off Barstow Rock, steer **NW.** by **N.** $\frac{1}{2}$ **N.**, until the water shoals to about two fathoms; then anchor and wait for high tide.

At Night.

Small vessels of not more than 8 feet draught (may, at low tide), follow the directions before given, until the Light at Mattapoiset Harbor bears **N.NW.**, then run for it on this course until about $\frac{1}{2}$ mile from it, then haul in about **NW.** by **W.**, or **W.NW.**, and anchor in from $2\frac{1}{2}$ to 3 fathoms water, soft bottom; the Light bears from this anchorage **NE.** by **E.**

The Lighthouse, in its present location (1881), is not any guide on a direct course for the deepest water into Mattapoiset Harbor.

Beating into Mattapoiset Harbor.

In approaching and entering this Harbor, there are many Sunken Rocks and Ledges, most of which, at this date (1881), are buoyed. In beating in, strangers can obtain a better knowledge of these dangers, by inspecting Eldridge's Chart of Buzzard's Bay, on a large scale, than by any written directions.

High Water.

It is High Water in Mattapoiset Harbor 3h. 14m. before it is at Boston; common tides rise about 4 feet.

SIPPICAN HARBOR.

This Harbor lies Northeasterly $19\frac{1}{2}$ miles from Light-ship off Hen and Chickens; East-Northerly $8\frac{1}{2}$ miles from the City of New Bedford; North about $11\frac{1}{4}$ miles from entrance to Woods Hole; and Northwesterly about $2\frac{3}{4}$ miles from Bird Island Lighthouse.

Bird Island Lighthouse.

Upon a small, low islet, called Bird Island, East of entrance to Sippican Harbor, West side of Buzzard's Bay, is a Lighthouse, which at this date (1881), shows a fixed Light, varied by white flashes; this Light is intended to guide vessels into Sippican, Wareham, and also up the Bay.

Bird Island Lighthouse bears from

	Distance.
Horizontal Striped Buoy off Nye's Ledge, NE. $\frac{1}{4}$ E.	4 miles.
Black Buoy off Southeast part Bowbell Ledge, NE. $\frac{3}{4}$ E.	$1\frac{1}{2}$ "
Red Buoy off Southern part of SW. Ledge, NW. by W. $\frac{1}{4}$ W.	$2\frac{1}{4}$ "
Red Buoy off Northern part SW. Ledge, W. by N. $\frac{1}{2}$ N.	$2\frac{1}{4}$ "
Wing's Neck Lighthouse, W. $\frac{1}{4}$ S.	$2\frac{5}{8}$ "
Black Buoy off South part Abial's Ledge, W. by S. $\frac{3}{4}$ S.	$2\frac{3}{8}$ "
Red Buoy off Southwest part Dry Ledge, SW.	$2\frac{1}{10}$ "

Remarks.

In entering this Harbor, when past the first Wharf, the Channel is narrow and crooked, and there are several Sunken Rocks, which at this date (1881), are not buoyed; about 12 feet at low tide may be taken up abreast the second Wharf, but only 9 feet can be carried to the Village, and about 4 feet to the upper Wharf.

Sailing Directions for Sippican Harbor in Daytime, with favorable winds and fair weather.

From the Westward, follow the directions before given for Matapoiet Harbor until Bird Island Lighthouse is made, then bring it to bear **NE. by N.**, and run for it on this course, when you will

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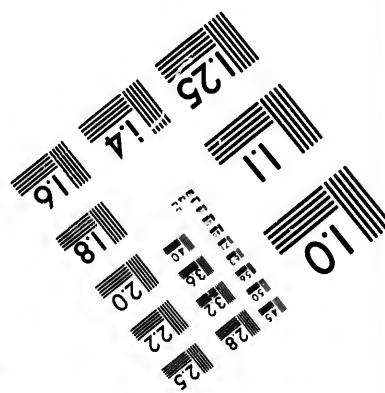
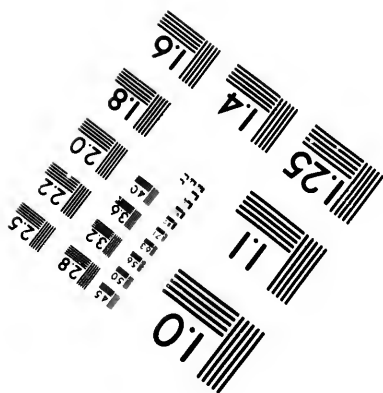
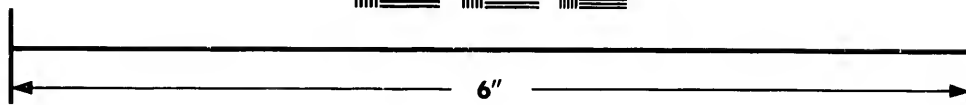
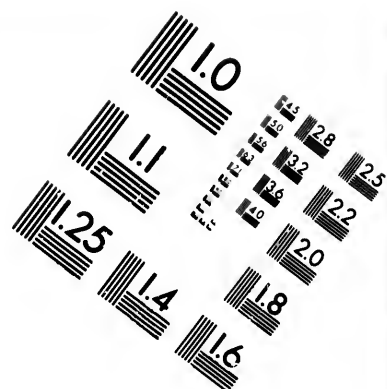
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see the Black Buoy off the Southeast part of Bowbell Ledge; Bird Island Lighthouse bears from this last-named Buoy **NE. $\frac{3}{4}$ E.**, distance $1\frac{1}{2}$ miles; leave the Buoy off Bowbell Ledge about $\frac{1}{8}$ mile on the Port hand, and steer **N. by E. $\frac{1}{2}$ E.**, until the next Black Buoy off Charles Neck bears **N. by W. $\frac{1}{2}$ W.**, then run for it on this course, leaving it about 50 yards on the Port hand; when past the last-mentioned Buoy, continue the course **N. by W. $\frac{1}{2}$ W.**, when you will see the Buoy off Black Rock, which bears **S. SE.** from the outer end of Nye's Warf, distance about 175 yards; leave the last-named Buoy a short distance on the Port hand, and anchor between Nye's Warf and Black Rock Buoy in about $3\frac{1}{2}$ fathoms water. Strangers should not go above this without a pilot.

Strangers should not attempt to enter this harbor at night.

High Water.

It is high water in Sippican Harbor 3h. 15m. before it is at Boston; common tides rise about 4 feet.

WAREHAM RIVER.

The entrance to this River is Northeasterly about 21 miles from Light-ship off Hen and Chickens; $12\frac{1}{4}$ miles Northeasterly from Woods Hole; 3 miles Northeasterly from Bird Island Lighthouse; Northwesterly $3\frac{1}{4}$ miles from Wing's Neck Lighthouse.

Remarks.

From Cromeset Point, Western side of entrance to this River, the distance to Wareham Village is about $2\frac{1}{4}$ miles. The Ledges and Flats, which obstruct it at this date (1881), are well buoyed, and by the following directions vessels, at high water, of not more than 8 feet draught, with a favorable and commanding breeze, may safely run up to Wareham without a pilot.

Appropriations by the United States Government have been made from time to time, for the purpose of improving the Channel in this River, and we learn that at this date (1881), about 7 feet water, at low tide, can be carried up to Wareham Village.

**Sailing Directions for Wareham River in Daytime,
with favorable winds and fair weather.**

From the Westward, bring the Light-ship off Hen and Chickens to bear **W.** by **S.** $\frac{1}{4}$ **S.**, on which bearing keep it and steer **E.** by **N.** $\frac{1}{4}$ **N.**, until Dumpling Rock Light bears **NW.**, then make good the course **NE.** $\frac{1}{2}$ **E.** for Wing's Neck Lighthouse, distant $13\frac{3}{4}$ miles, on these two last courses, the Ledges off the Northwestern shore of Buzzard's Bay will be left well on the Port hand; continue the course **NE.** $\frac{1}{2}$ **E.**, for Wing's Neck Light, and, as you sail in, Bird Island Lighthouse will be seen on the Port, and nearly ahead, the Lighthouse on Wing's Neck; give the former a berth of about a mile, leaving it to the Northward, when you will see to the Northward a large Hotel which is built on the Eastern part of Great Hill; when this Hotel bears **N.** $\frac{1}{2}$ **W.**, then haul in about North, and leave it about $\frac{1}{3}$ mile on the Port hand; when past it, you will see the Red Buoy off Western part of Great Flats, which is left on the Starboard hand; this last-mentioned Buoy bears about North from the Hotel, distance $\frac{1}{2}$ mile; when past this last-named Buoy, the course is about **N.** by **W.** to Black Buoy, off Eastern part of Wewant's Flats, which is left on the Port hand; from this last Buoy steer about **N.** by **E.** $\frac{1}{2}$ **E.**, passing between four Buoys, two Black and two Red; continue the course, leaving the two next Black Buoys on the Port, and Beach Point on the Starboard hand; after passing this Point, the course is more Easterly, leaving 4 Black Buoys on the Port, and one Red Buoy on the Starboard hand; after passing these, keep about in the middle of the River to the Village, leaving the Black Buoys on the Port, and Red on the Starboard hand.

When the Hotel, on the Eastern part of Great Hill bears **NW.**, distance about $\frac{1}{2}$ mile, it is advisable for strangers in vessels of more than 8 feet draught, to anchor in from $2\frac{1}{2}$ to 3 fathoms water, and take pilots to Wareham.

**Sailing Directions for Vessels bound up Buzzard's
Bay at Night-time, with favorable winds and fair
weather.**

Providing there is no error in the compass, vessels may, by the following directions, safely run up Buzzard's Bay in Night-time.

Bring the Light-ship off the Hen and Chickens to bear **W.** by

S. $\frac{1}{4}$ S., on which bearing keep it, and steer **E.** by **N. $\frac{1}{4}$ N.**, until Dumpling Rock Light bears **NW.**, then make good the course **NE $\frac{1}{2}$ E.**, until Bird Island Light (Flashing) bears **N.NE.**, then run for this last-named Light on this course, until Wing's Neck Light bears **NE.** by **E. $\frac{1}{2}$ E.**, then steer for it on this bearing, until Bird Island Light bears **NW.**, then haul in **N. $\frac{1}{2}$ E.**, and anchor when Wing's Neck Light bears **E.SE.**, in from $3\frac{1}{2}$ to 4 fathoms water.

The above courses made good from Light-ship off Hen and Chickens, pass $1\frac{1}{8}$ miles to the Southward of Mishaum Ledge, $1\frac{1}{8}$ miles to the Southward of Wilkes' Ledge, $1\frac{1}{4}$ miles to the Southward of Nye's Ledge, $1\frac{1}{8}$ miles to the Southward of Bird Island Light, and about one mile to the Northward of the buoy off Southern part of SW. Ledge; this last-named buoy bears from Bird Island **SE.** by **E. $\frac{1}{4}$ E.**, distance $2\frac{1}{4}$ miles.

High Water.

It is high water in Wareham River 3h. 11m. before it is at Boston; common tides rise about $4\frac{1}{4}$ feet.

BACK RIVER HARBOR.

This harbor lies Northeasterly about $24\frac{1}{4}$ miles from Light-ship off Hen and Chickens; East-Northerly $14\frac{1}{2}$ miles from the City of New Bedford; 12 miles Northeasterly from the entrance to Wood's Hole; and 3 miles Northeasterly from Wing's Neck Lighthouse.

Wing's Neck Lighthouse.

Upon the extreme Western part of Wing's Neck, East side of entrance to Back River Harbor, near the head of Buzzard's Bay, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels up the Bay, and also into Back River Harbor. This Lighthouse bears from Red Buoy off Southern part of SW. Ledge **NE.** by **N. $\frac{1}{2}$ N.**, distance $1\frac{1}{2}$ miles; from Black Buoy off Southern part of Abial's Ledge, **SE.** by **S. $\frac{1}{4}$ S.**, $\frac{3}{4}$ mile; from Bird Island Lighthouse **E. $\frac{1}{4}$ N.**, distance $2\frac{3}{8}$ miles.

Remarks.

At this date (1881), at low tide, about 9 feet water can be carried up to Back River Harbor, the shoalest water being a short distance South from the Southern point of Mashnee Island.

Sailing Directions for Back River Harbor in Day-time, with favorable winds and fair weather.

Follow the directions before given for Wareham River, until Bird Island Lighthouse bears **NW.**, about one mile distant, then steer about **NE. $\frac{1}{2}$ E.**, with Wing's Neck Lighthouse well on the Starboard bow; on this course the buoys off the Northern and Southern part of SW. Ledge will be left well on the Starboard hand; as you sail in, the Black Buoy off the Southern part of Abial's Ledge will be seen; this last-named buoy bears **NW.** by **N. $\frac{1}{4}$ N.** from Wing's Neck Lighthouse, distance $\frac{3}{4}$ mile. Pass about midway between the last-named buoy and Wing's Neck Light, and follow the shore to the Eastward, keeping but a short distance from it (in not less than 4 fathoms water), when you will soon see the Black Buoy off the Southern part of Wing's Flats; leave this buoy close to on the Port hand, and make good the course **NE. $\frac{3}{4}$ N.**, crossing the Flats between Tobey's and Mashnee Islands,* in about 9 feet water, at low tide; then leave the Red Buoys on the Starboard, and Black Buoys on the Port hand, until past the Red Buoy off the Northern part of a bare Rock called the Old Cow; then anchor at the mouth of Back River in from $2\frac{1}{2}$ to 3 fathoms water.

High Water.

It is high water in Back River Harbor 3h. 12m. before it is at Boston; common tides rise about $4\frac{1}{2}$ feet.

COHASSET NARROWS.

These Narrows lie about $1\frac{3}{4}$ miles Northeasterly from Back River Harbor, and the Channel which leads up is narrow, and has

* A Rock having about 7 feet water upon it at low tide, lies midway between Mashnee and Tobey's Islands; vessels of 7 feet draught or upwards passing between these Islands will, therefore, proceed at low tide with caution.

at low tide a depth of about 5 feet water; at this date (1881), the Flats are well buoyed; it is advisable for vessels of more than 6 or 7 feet draught, bound to Cohasset Narrows, to take pilots at Back River Harbor.

ONSET BAY.

This small, shallow Bay lies Northeasterly about $3\frac{1}{2}$ miles from Wing's Neck Lighthouse. Vessels bound to Back River Harbor and Cohasset Narrows, leave Mashpee Island on the Port, while those bound to Onset Bay leave it on the Starboard hand. About 6 feet water, at low tide, can be carried up the Bay to the Wharf.

Sailing Directions for Onset Bay in Daytime, with favorable winds and fair weather.

Vessels of not more than 7 feet draught, bound to Onset Bay, may, at about $\frac{1}{2}$ flood, follow the directions before given for Back River Harbor, until past the Black Buoy off the Southern part of Wing's Neck Flats, then steer **N.NE.**, until the Black Buoy, which lies a short distance to the Westward of Mashpee Island, bears **N.** by **W.**, then run for this last-named Buoy, leaving it close to on the Port hand, and carrying about 9 feet water through the narrow Channel; when past this Buoy, haul gradually to the Eastward, passing in mid-channel through the Narrows, and leaving the Red Buoy off the Western part of Hog Island, close to on the Starboard hand, and the next Black Buoy close to on the Port. When past the last Buoy, the course is about **NW.** $\frac{1}{2}$ **N.**, leaving a Red Buoy, which lies a short distance to the Westward of a small, high Island (called Wicket's Island), close to on the Starboard hand, and run for the Wharf, bearing about **N.** by **W.**, and carrying 8 feet water to its outer end.

High Water.

It is high water in Onset Bay 3h. 12m. before it is at Boston; common tides rise about $4\frac{1}{2}$ feet.

POCASSET HARBOR.

The entrance to this harbor (which is on the Southern side of Wing's Neck) bears **E.** by **S.** from Wing's Neck Lighthouse, distance $\frac{3}{4}$ mile. At low tide about 10 feet water can be taken into it, but only 2 or 3 feet can be carried up to the wharf; at this date (1881), the channel is well buoyed.

Sailing Directions for Pocasset Harbor in Daytime, with favorable winds and fair weather.

Follow the directions before given for Wareham River in daytime, leaving Bird Island Lighthouse a mile on the Port hand; when abreast this Light steer for Wing's Neck Lighthouse, bearing **NE.** by **E.** $\frac{1}{2}$ **E.**, leaving the Buoys off the SW. Ledge well on the Starboard hand. When about $\frac{1}{2}$ mile from the last-named Lighthouse, steer **E.** by **S.** until the Red Buoy at the entrance of the harbor bears **E.** by **N.** The passage will then be fairly open, and you may run in, leaving the Buoy on the Starboard hand and keeping nearly in the middle of the narrow Channel, and anchor in about $2\frac{1}{2}$ fathoms water a short distance to the Southwest of the first Black Buoy. If bound to the Wharf, wait at this anchorage until nearly high water; then leave the Black Buoys on the Port and Red Buoys on the Starboard hand, as they are set to mark the narrow Channel up to the Wharf. At this date (1881), about $6\frac{1}{2}$ feet water at high tide can be carried to this Wharf.

High Water.

It is high water in Pocasset Harbor 3h. 12m. before it is at Boston; common tides rise about 4 feet.

RED BROOK HARBOR.

The entrance to this Harbor lies Southwesterly about $\frac{1}{4}$ mile from the Wharf in Pocasset Harbor. About 6 feet water can be taken through this passage, but only 3 or 4 feet can be carried into the harbor at low tide. There is another very narrow passage leading into Red Brook Harbor between the Southern Point of Bassett's

Island and Scraggy Neck, through which about 4 feet water can be carried at low tide.

Sailing Directions for Red Brook Harbor

Vessels of not more than 5 or 6 feet draught may, at high water, follow the directions before given for Pocasset Harbor until the narrow passage between the Northern Point of Bassett's Island and the Mainland opens, then run in, leaving the Buoy with Horizontal Stripes off the Northern side of Channel Rock a short distance on either hand. After passing this Buoy the harbor will be open, when you may run in and anchor in about 5 feet water at low tide.

CATAUMET HARBOR.

The entrance to this Harbor, which is on the Eastern side of Buzzard's Bay, lies Northeasterly about 20 miles from Light-ship off Hen and Chickens; 14 miles East-Northerly from Dumpling Rock Lighthouse, about 8 miles Northeasterly from entrance to Wood's Hole, and about 3 miles Southeasterly from Bird Island Lighthouse.

Remarks.

Cataumet Harbor is a large cove lying between Scraggy Neck on the North and Nye's Neck on the South, and affords anchorage in from 2 to 3 fathoms water. A bar extends across the entrance to this harbor, having about 2 feet water upon it at low tide. At high water this harbor is somewhat exposed to Westerly winds.

Sailing Directions for Cataumet Harbor in Daytime, with favorable winds and fair weather.

From the Westward, follow the directions before given for Wareham River in daytime until Wing's Neck Lighthouse is made; then bring this Lighthouse to bear **NE.**, and run for it on this course until Bird Island Lighthouse bears **NW.** by **N.**; the entrance to the harbor will then be fairly open, bearing **E. ½ N.**, when you may run in on this last course. As you sail in, on the Port will be seen the Red Buoy off the Southern part of SW. Ledge, and farther in, the Black Buoy off the Southern side of Swile Ledge, both of which are left on the Port hand. On the Starboard, near

the Southern side of the harbor, will be seen the Red Buoy, which lies off the Northern side of Cataumet Ledge; leave this last-named Buoy about 200 yards on the Starboard hand, and steer **E.** by **N.**, leaving the Black Buoy off the Southern point of Scraggy Neck well on the Port hand. On this last course you will cross the bar in about 8 feet water at low tide. Continue the course **E.** by **N.** until the water deepens to $2\frac{1}{2}$ or 3 fathoms, then anchor.

If bound up to the Wharf wait at this anchorage until about high water; then run in, leaving the Black Buoy off South side of Channel Rock (which is awash at half tide) on the Port, and Red Buoy off Nye's Flats close to on the Starboard hand, and run for the end of the Wharf, bearing about **SE.**

High Water.

It is high water in Cataumet Harbor 3h. 14m. before it is at Boston; common tides rise about 4 feet.

WILD HARBOR.

This Harbor, which is on the Eastern side of Buzzard's Bay, lies about 1 mile to the Southward of Cataumet Harbor.

Remarks.

Wild Harbor is a small (nearly) circular Cove, a little more than $\frac{1}{4}$ mile in diameter, and there are no dangers in entering it. This Cove also affords good anchorage in from $2\frac{1}{2}$ to 3 fathoms water, with winds from **N.NW.** to **S.** by **E.** by way of East, but is open to Southwesterly winds.

Sailing Directions for Wild Harbor in Daytime.

Vessels bound to Wild Harbor may follow the directions before given for Wareham River in daytime, until Bird Island Lighthouse bears **NW.**, on which bearing keep it and steer **SE.** for Nye's Point; give this Point a berth of about $\frac{1}{4}$ mile, leaving it on the Port hand. When the harbor is fairly open, bearing about **E.NE.**, then run in, keeping about midway between the two points, and anchor in from $2\frac{1}{2}$ to 3 fathoms water.

HOG ISLAND HARBOR.

The entrance to this shallow Cove, which is on the Eastern side of Buzzard's Bay, lies East-Northerly about 19 miles from Light-ship off Hen and Chickens, $5\frac{1}{4}$ miles Northeasterly from entrance to Woods Hole, and **SE.** by **S.** $\frac{1}{2}$ **S.** about 5 miles from Bird Island Lighthouse.

Remarks.

Hog Island Harbor, which is only navigable for boats at low tide, is well sheltered from all winds. About 6 feet can be taken into it at high water.

Sailing Directions for Hog Island Harbor in Daytime.

Vessels of not more than 4 or 5 feet draught bound to Hog Island Harbor, may follow the directions before given for Wareham River in daytime, until Ned's Point Lighthouse (on Northeast side of Mattapoiset Harbor) is on a range with Angelica Point, bearing **NW.** by **W.**; then run **SE.** by **E.** for this harbor; when it is fairly open (a little before high water), run in about midway, leaving the Red Buoys* off Hog Island Ledge and Hog Island Point, both on the Starboard hand. When past the Eastern part of Hog Island, anchor anywhere in the harbor, where you will lie aground at low tide.

High Water.

It is high water in Hog Island Harbor 3h. 13m. before it is at Boston; common tides rise about 4 feet.

QUISSET HARBOR.

The entrance to this small harbor, which is on the Eastern side of Buzzard's Bay, lies East-Northerly about 17 miles from Light-ship, off Hen and Chickens; about 2 miles Northeasterly from entrance to Wood's Hole, and about 4 miles Southwesterly from entrance to Hog Island Harbor.

* Since the above was written we learn that the Buoys at the entrance of the harbor have been discontinued.

Remarks.

In entering this harbor the Channel is very narrow and crooked, and there are several dangerous Rocks and Ledges lying in it. About 6 feet water can be carried into it at low tide. It is advisable for strangers bound to this place to take pilots.

HADLEY'S HARBOR.

This small Harbor lies on the Western side of entrance from Buzzard's Bay to Wood's Hole.

Remarks.

In entering this harbor, a Ledge, which is covered at high water, lies nearly in mid-channel, forming two passages into it, both of which are very narrow.

Sailing Directions for Hadley's Harbor in Daytime.

Small vessels from Buzzard's Bay may leave the Black Buoy off the Western entrance to Wood's Hole on the Starboard hand, and steer Southeasterly, keeping the Red Buoy off Long Neck Rock well on the Port bow; leave the last-mentioned Buoy about 200 yards on the Port hand, and when it bears **NE.** make good the course **SW.** for the Northern part of Nonamesset Island, leaving the Buoy with Horizontal Stripes off Hadley's Rock well on the Port hand. Continue the course **SW.**, keeping a sharp lookout for the Ledge, until about 100 yards from shore; then haul to the Westward, leaving this Ledge on the Starboard hand; when past it, anchor in about mid-channel, off the Wharf, in from $2\frac{1}{2}$ to 3 fathoms water.

Vessels entering Buzzard's Bay in Thick Weather—Whistling Buoy.

At the entrance of Buzzard's Bay, about one mile Southwest from Light-ship off Hen and Chickens, at this date (1881), is a Whistling Buoy.

Bearings and Distances from this Buoy.

	Distance.
Sow and Pigs Light Ship, S.S.E.	3 $\frac{1}{4}$ miles.
Buoy off Northwestern side of Ribbon Reef, E. by S.	2 $\frac{1}{4}$ "
Buoy off South side Mishaum Ledge, N.E. $\frac{1}{4}$ E.	4 $\frac{1}{2}$ "
Buoy off South side Wilkes' Ledge, N.E. by E. $\frac{1}{4}$ E.	7 $\frac{1}{4}$ "
Dumpling Rock Lighthouse, N.E. $\frac{1}{4}$ E.	8 "
Black Buoy off South side West Island S.E. Ledge, N.E. by E. $\frac{1}{4}$ E.	12 $\frac{1}{4}$ "
Wing's Neck Lighthouse, N.E. by E. $\frac{1}{4}$ E.	22 $\frac{1}{2}$ "

In thick weather, vessels bound up Buzzard's Bay making, or hearing, this Whistling Buoy at the entrance, may leave it close to on either hand, and make good the course **E.** by **N.** $\frac{3}{4}$ **N.**, about 9 miles; the course is then **N.E.** $\frac{1}{2}$ **E.** about 14 miles to Wing's Neck Lighthouse.

By inspecting Eldridge's Chart of Buzzard's Bay on a large scale a better idea can be obtained of the numerous Rocks and Ledges in it, and also of the depth of water upon them, than by any written description.

Channel between Hen and Chickens and Gooseberry Neck.

Small vessels of not more than 8 feet draught, with favorable winds, may, at low tide, by the following directions, safely pass through this channel.

Sailing Directions for Gooseberry Neck Channel in Daytime.

From the Eastward, leave Mishaum Point (which is the first to the Southwestward of Dumpling Rock Lighthouse) about $\frac{1}{2}$ mile to the Northward, and make good the course **W.** by **S.** for the outer point of Gooseberry Neck, distant about 4 $\frac{1}{4}$ miles. On this course, the Buoys off the Southern side of Wilkes' and Mishaum Ledges will be left well on the Port hand. As you draw near the Neck, you will see about $\frac{1}{2}$ mile Southeasterly from it the Red Buoy which marks the Northern part of Hen and Chickens; leave this Buoy a short distance on the Port and steer about **SW.**, carrying not less than 12 feet through this channel at low tide.

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From the Westward, bring the outer part of Gooseberry Neck to bear **NE.** and run for it on this course. As you draw near this Neck, you will see the Red Buoy off Southwest part of Lumber Rocks, and also the Red Buoy off the Northern part of Hen and Chickens; the former lies about $\frac{5}{8}$ mile Southwest from the outer part of Gooseberry Neck, the latter Southeasterly from this Neck about $\frac{1}{2}$ mile. Leave the Red Buoy off Lumber Rocks about $\frac{1}{4}$ mile on the Port hand, and steer East until the Red Buoy off the Northern part of Hen and Chickens bears **NE.**; then run for it on this course, leaving it on the Starboard hand, carrying not less than 12 feet water at low tide through this channel.

WESTPORT HARBOR.

The entrance to this harbor, which is narrow, lies between Horse Neck Beach on the East, and a remarkable high Rocky Knubble (or Point of Rocks) on the West; this entrance is **N.NW.**, $8\frac{1}{2}$ miles from Light-ship off Sow and Pigs; 5 miles **NW.** by **N.** $\frac{1}{2}$ **N.** from Light-ship off Hen and Chickens; and East Northerly 6 miles from Dry Rocks off Sakonnet Point.

Remarks.

In approaching and entering Westport Harbor, there are several dangers, some of which at this date (1881), are marked with spindles and buoys.

At low tide, about 8 feet water can be taken in as far as the Middle Ground, and from this about 7 feet through a narrow Channel to Westport Point. From the Southern end of this Middle Ground, which lies about $\frac{1}{4}$ mile Northwesterly from Point of Rocks (Western side of entrance), the Channel is generally staked out to Westport Point; in some places both sides are marked, so that vessels may, with a favorable and commanding breeze, follow the Channel up to this point. At the entrance of this Harbor the Current sets out and in very strong; strangers should not, therefore, attempt to enter it, unless they have a favorable and commanding breeze.

Sailing Directions for Westport Harbor in Day-time, with favorable winds and fair weather.

Vessels of not more than 7 feet draught, from the Eastward, with a favorable and commanding breeze may, at about $\frac{3}{4}$ flood, leave the Light-ship off Hen and Chickens Reef, about $\frac{1}{4}$ mile to the Eastward, and make good the course **NW.** by **N.** $\frac{1}{2}$ **N.**, leaving the Red Buoy off the Southern part of Lumber Rocks, about $\frac{1}{4}$ mile on the Starboard hand; this buoy bears about **NW.** by **N.** from the spindle on Old Cock, distance 1 mile; when past the last-named buoy, the course is more Northerly; as you sail in you will see the Black Spindle on Two Mile Rock, and farther in the Black Buoy off Dog Fish Ledge; leave the Black Spindle about 250 yards on the Port hand, and steer **N.** $\frac{1}{2}$ **W.**, when the Red Buoy off West part of Half Mile Shoal will be seen, and about 300 yards to the Westward of it, two bare Rocks, which are quite bold on their Eastern part (these are called Half Mile Rocks). When these Rocks bear **NW.** by **W.**, then haul up about **NW.**, passing about midway between them and the Red Buoy off Half Mile Shoal; when well past Half Mile Rocks, the entrance to the harbor will be fairly open, bearing about **W.NW.**, when you may run in, keeping the Western side of Point of Rocks best aboard, and anchor in the narrow Channel, on the Western side, above the Wharf, in about 12 feet water at low tide.

If bound up to Westport Point, in order to avoid the Middle Ground (after passing the Point of Rocks on the Western side of entrance) keep the Eastern shore best aboard, and pass the stakes as they are set to mark the narrow channel up to town.

From the Westward when the Light-ship off the Hen and Chickens is made, bring it to bear about East, and run for it on this course until about 3 miles from it, then haul in about **NE.**, and when the Red Buoy off Lumber Rocks is made follow the directions before given.

High Water.

It is high water in Westport Harbor 3h. 31m. before it is at Boston; common tides rise about $3\frac{1}{4}$ feet.

The Coast from Sakonnet Point to entrance of Westport Harbor.

From Sakonnet Point to entrance of Westport Harbor there are many dangerous Rocks and Shoals, some of which extend off

nearly a mile from shore; heavy draught vessels should therefore, especially at night, give this part of the coast a wide berth.

SAKONNET RIVER.

The entrance to this River, which is between Sakonnet Point (the mainland) on the East and Sachuest Point (Rhode Island) on the West, lies Northwesterly about $11\frac{1}{2}$ miles from Light-ship off Sow and Pigs, about 9 miles West-Northerly from Light-ship off Hen and Chickens, $13\frac{1}{2}$ miles East-Northerly from Point Judith Lighthouse, and $7\frac{1}{2}$ miles East-Northerly from Light-ship off Brenton's Reef.

Remarks.

The course of this River from Sakonnet Point to Mount Hope Bay is about **N. $\frac{1}{2}$ E.**, distance $12\frac{1}{2}$ miles. Its width at the entrance is about $2\frac{1}{2}$ miles, gradually diminishing to Fogland Point, $6\frac{1}{2}$ miles above Sakonnet Point, where it is only $\frac{3}{4}$ mile wide, then expanding to the width of more than a mile, and again contracting to $\frac{1}{4}$ mile at the Stone Bridge, through which narrow passage it leads into Mount Hope Bay. About 3 fathoms water at low tide can be taken through it to Mount Hope Bay; and the principal obstructions in navigating it are the Cormorant Reef, which lies on the Western side of entrance, and the Flats which extend off from both shores, no dangers being found in the channel-way; the greatest difficulty experienced is in passing the draws through which the current runs very strong. In this River vessels can find good shelter from all winds above Fogland Point, which is on the East side about 6 miles from the entrance, and good anchorage may be found in the Coves near the entrance in both Easterly and Westerly winds.

Sailing Directions for Sakonnet River in Daytime, with favorable winds and fair weather.

From the Eastward, by way of Vineyard Sound, leave the Light-ship off the Sow and Pigs a short distance on either hand, and make good the course **NW.** by **W.** $\frac{1}{2}$ **W.** 10 miles to Red Buoy off Southern part of Schuyler's Ledge; this Ledge lies about $\frac{1}{2}$ mile to the Southward of Sakonnet Rocks and has about 7 feet water upon it at low tide. When this buoy is made, leave it a

short distance on the Starboard hand, and steer **NW.** by **N.** $\frac{1}{2}$ **N.** about 1 mile, when the River will be fairly open; then run up about **N.** $\frac{1}{2}$ **E.**, passing about midway between the Black Buoy off Flint's Point and Red Buoy off Church's Flats; after passing these buoys keep the middle of the River as you sail up; when nearly abreast Sandy Point, which lies on the West side and is bold, you will see nearly in the middle of the River a Red Buoy, which is left on the Starboard hand; when past this buoy keep in the middle of the River and anchor above the next Point, on the Eastern side, in about 5 fathoms water. Vessels of not more than 8 or 9 feet draught may leave this last point about $\frac{1}{4}$ mile on the Starboard hand, and haul in and anchor above it, near the Eastern shore, in from 10 to 12 feet water at low tide. If bound to Mount Hope Bay, when past the Red Buoy off Sandy Point, keep the Eastern shore best aboard, when you will see a small Island lying nearly in the middle of the River; pass about midway between this Island and the Eastern shore, and in order to safely pass through the Bridges anchor and wait for slack water.

From Buzzard's Bay leave the Light-ship off Hen and Chickens close to on the Starboard hand, and make good the course **W.** $\frac{3}{4}$ **N.** for Red Buoy off Schuyler's Ledge, distance 8 miles; when this is made, follow the directions before given.

From the Westward, bound to Sakonnet River, when past Point Judith, bring the Lighthouse to bear **W.** by **S.**, on which bearing keep it and steer **E.** by **N.**; when the River is fairly open run in about midway, leaving the Black Buoy off the South side of Cormorant Reef well on the Port hand; this last-named Reef, which is bare in some places, lies **S.** by **W.** about $\frac{3}{4}$ mile from Sachuest Point, West side of entrance to this River; when past this last-named Buoy follow the directions before given.

From Newport, or Narraganset Bay, leave the Light-ship off Brenton's Reef a short distance on either hand and make good the course East, keeping a sharp look-out for the Black Buoy off the Southern side of Cormorant Reef, and proceed as before directed.

Anchorage near the Mouth of Sakonnet River.

In Easterly or Northeasterly winds vessels may find good shelter in Church's Cove, which lies on the Eastern side of entrance to this River, and is free from dangers. The best anchorage is in from 6 to 7 fathoms water about $1\frac{1}{2}$ miles above Sakonnet Point; the Red Buoy off Church's Point bears from this anchorage **N.** by **W.** $\frac{3}{4}$ mile.

In Westerly or Northwesterly winds, by leaving the Black Buoy on the Port hand, vessels may find shelter in the first Cove on the Western side of entrance. In this Cove the Flats extend some distance from shore, it is therefore advisable in entering to use the Lead before anchoring.

High Water.

It is high water at the entrance of Sakonnet River 3h. 44m. before it is in Boston; common tides rise about $3\frac{1}{2}$ feet.

NEWPORT HARBOR.

The entrance to this Harbor, which is between Beaver Tail Point on the West and Brenton's Point on the East, lies West-Northerly 18 miles from Light-ship off Sow and Pigs; 16 miles West-Northerly from Light-ship off Hen and Chickens, and about 7 miles Northeasterly from Point Judith Lighthouse.

Brenton's Reef.

In approaching this Harbor, the principal danger is Brenton's Reef, which extends off about $\frac{1}{2}$ mile from the Southwestern part of Rhode Island; some parts of this Reef are bare at low tide and breaks with a little motion of the sea. In thick weather or night-time the Lead gives no warning in approaching it from the Westward.

Brenton's Reef Light-ship.

In the middle of the entrance to Newport Harbor, about a mile from the Southwest end of this Reef, is placed a Light-ship, which at this date (1881), shows two fixed White Lights, and has a bell which is rung in thick weather.

Bearings and Distances from Brenton's Reef Light-Ship.

	Distance.
Light-ship off Sow and Pigs, E. by S. $\frac{3}{4}$ S. . . .	$17\frac{3}{4}$ miles.
Light-ship off Hen and Chickens, E. $\frac{1}{2}$ S. . . .	$16\frac{1}{8}$ "
Red Buoy off Schnyler's Ledge, E. $\frac{1}{2}$ S. . . .	8 "
Black Buoy off Southern part Cormorant Reef, E. $\frac{1}{2}$ N. . . .	6 "
Beaver-Tail Lighthouse, NW. by N. $\frac{1}{2}$ N. . . .	$1\frac{1}{2}$ "
Point Judith Lighthouse, SW. by W. $\frac{1}{4}$ W. . . .	$6\frac{1}{8}$ "
Block Island Northern Lighthouse, SW. $\frac{1}{8}$ W. . . .	$15\frac{1}{16}$ "
Block Island Southeast Lighthouse, SW. $\frac{3}{8}$ S. . . .	$17\frac{3}{4}$ "

Beaver-Tail Lighthouse.

Upon Beaver-Tail, South Point of Conanicut Island, between the two entrances to Narraganset Bay, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels into Newport and Dutch Island harbors. A Steam Whistle, giving Blasts of 6 seconds each at intervals of 10 and 50 seconds, is placed near this Lighthouse.

Bearings and Distances from Beaver-Tail Lighthouse.

	Distance.
Goat Island Lighthouse, NE. by E. $\frac{1}{2}$ E.	4 $\frac{1}{8}$ miles.
Red Buoy off outer part Brenton's Reef, E. SE.	1 $\frac{3}{4}$ "
Brenton's Reef Light-ship, SE. by S. $\frac{1}{2}$ S.	1 $\frac{1}{2}$ "
Buoy off Newton's Rock, SW. by S.	$\frac{1}{3}$ mile.
Dutch Island Lighthouse, N. $\frac{1}{2}$ E.	2 $\frac{7}{8}$ miles.
Jones' Ledge, NW. $\frac{1}{2}$ N.	1 $\frac{1}{8}$ "
Whale Rock Lighthouse, W. $\frac{1}{2}$ S.	1 $\frac{1}{8}$ "
Point Judith Lighthouse, SW. nearly	6 $\frac{1}{2}$ "
Block Island North Lighthouse, SW. $\frac{1}{4}$ S.	15 $\frac{5}{8}$ "
Block Island Southeast Lighthouse, SW. by S. $\frac{1}{4}$ S.	18 $\frac{1}{2}$ "

Dangers.

In entering Newport Harbor, after passing Brenton's Reef, there are several dangers lying near the shores.

Wash Ball.

The first met with is a small bare Rock off Castle Hill Point called the Wash Ball, about 150 yards from shore. This danger may be avoided by keeping at least $\frac{1}{8}$ mile from the Eastern shore.

Kettle Bottom Rock.

On the Northern side of the Channel, $1\frac{1}{4}$ miles above Beaver-Tail Light, about $\frac{1}{8}$ mile from shore, is a small Bare Rock called Kettle Bottom Rock. It is bold on its Southern and Southeastern parts. Vessels should not attempt to pass to the Northward of this Rock. At night-time, in order to avoid Kettle Bottom Rock, vessels should not shut in Goat Island Light behind Fort Dumpling, or, in other words, this last-named Light should be visible on either tack.

Light-Ship.

	Distance.
.	17 $\frac{3}{4}$ miles.
.	16 $\frac{1}{8}$ "
.	8 "
N. 6 "	
.	1 $\frac{1}{2}$ "
.	6 $\frac{1}{8}$ "
.	15 $\frac{1}{8}$ "
.	17 $\frac{3}{4}$ "

The Dumplings.

These are a cluster of Rocky Islets always above water; they are very bold on their Eastern part, and lie on the Western side of the passage nearly opposite Fort Adams. In beating in at night, in order to avoid these Rocks, when nearly abreast Fort Adams the the Red Light on Rose Island should not bear to the Eastward of **NE. by N.**

Lime Rock Lighthouse.

On a small Rocky Islet, South side of entrance to Newport Inner Harbor, is a Lighthouse, which at this date shows a Red Fixed Light, which is intended to guide vessels at night by the South channel into Newport Inner Harbor. Vessels at night-time, of about 10 feet draught, may safely at low tide approach this Light on its Northern side within 75 yards, but there is no passage on its Southern side.

Goat Island Lighthouse.

From the Northern part of Goat Island there extends off about 400 yards in a Northerly direction a stone Breakwater; on the extreme outer end of this Breakwater is a Lighthouse, which at this date (1881), shows a fixed White Light. This Light is intended to guide vessels at night into Newport Inner Harbor by the Northern channel. A Fog Bell is placed near this Lighthouse.

Rose Island Lighthouse.

On the Southwestern part of Rose Island is a Lighthouse, which at this date (1881), shows a Red Fixed Light, which is intended to guide vessels up the Narraganset Bay (Eastern passage) and also into Coasters' Island Harbor. Goat Island Light bears from Rose Island Light **E. by S. $\frac{3}{4}$ S.** about $\frac{3}{4}$ mile. Lime Rock Lighthouse, **SE. by S. $\frac{7}{8}$ S.**, distance $1\frac{3}{8}$ miles.

NEWPORT OUTER HARBOR.

The depth of water in entering Newport Outer Harbor is sufficient to admit vessels of the heaviest draught, even at the lowest tides. With an ebb tide and light winds, or winds ahead, the harbor is difficult of access, on account of the current which sets out strong.

The shores in entering are very bold, and the lead gives but little warning in approaching them.

Newport Inner Harbor.

This harbor has two entrances: the Southern entrance, the one most frequently used by coasters, lies between the Southern point of Goat Island and Lime Rock Lighthouse. About 14 feet water at low tide can be taken into the harbor through this channel, which is narrow. The Northern entrance lies between the Lighthouse on the outer end of the Breakwater and the City of Newport, and has a width of about $\frac{1}{4}$ mile. At low tide about 19 feet water can be carried through this last-named passage, until past Long Wharf, when the depth diminishes to about 15 feet. In Newport Inner Harbor the holding ground is said to be bad, especially near the wharves.

Sailing Directions for Newport Outer Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, by way of Vineyard Sound, you may bring the Light-ship off Sow and Pigs to bear **E.** by **S.** $\frac{1}{2}$ **S.**, on which bearing keep it and steer **W.** by **N.** $\frac{1}{2}$ **N.**; when the Light-ship off Brenton's Reef is made, run for it bearing about **W.NW.**; leave this last-named Light-ship a short distance on either hand, and steer about **N.** by **E.**; as you sail in you will see the Red Buoy off the outer end of Brenton's Reef, which on this course will be left well on the Starboard hand; continue the course **N.** by **E.** until the entrance to the harbor is fairly open, then keep about midway the channel. When Goat Island Lighthouse bears **NE.** by **E.** steer for it on this course until the Lighthouse on Rose Island bears about **N.NW.**, then run **N.NE.** about $\frac{1}{4}$ mile and anchor to the Westward of Goat Island in from 8 to 10 fathoms water.

From the Westward leave Point Judith Lighthouse about one mile to the Northward, and steer about **NE.** $\frac{1}{2}$ **E.** for Brenton's Reef Light-ship, and follow the directions before given.

Sailing Directions for Newport Inner Harbor in Daytime, with favorable winds and fair weather.

From the Eastward or Westward follow the direction before given for Newport Outer Harbor, until past Fort Adams (which is on the Southern side of the entrance); if the wind is favorable to go to the

Southward of Goat Island, bring Lime Rock Lighthouse to bear **SE.** $\frac{1}{2}$ **S.**, and run for it on this course until the Black Buoy off the South part of Goat Island bears about East, then run for it and leave it about 50 yards on the Port hand; after passing this last-named Buoy, steer about **NE.** by **N.** $\frac{1}{3}$ mile, and anchor to the Eastward of the Steamboats' track in about $2\frac{1}{4}$ fathoms water at low tide.

If you intend to go to the Northward of Goat Island, you may continue the course **NE.** by **E.** for Goat Island Lighthouse until about $\frac{1}{4}$ mile from it, then steer more Northerly and haul round the last-named Lighthouse at a distance of 300 yards, leaving it to the Southward; when past this Lighthouse keep in mid-channel course about South until about $\frac{1}{8}$ mile past the Long Wharf, when you may anchor to the Eastward of the Steamboats' track in about $2\frac{1}{2}$ fathoms water at low tide.

Coasters' Island Anchorage.

This anchorage, in which there are from 3 to 5 fathoms water, lies **N.** by **E.** about $\frac{1}{4}$ mile from Goat Island Lighthouse; this anchorage is somewhat exposed to Southwest and Northwest winds.

Sailing Directions for Coasters' Island Anchorage in Daytime, with favorable winds and fair weather.

Follow the directions before given for Newport Outer Harbor until about $\frac{1}{3}$ mile from Goat Island Lighthouse, then steer about **NE.** by **N.**, and anchor in from 4 to 6 fathoms water, the last-named Lighthouse bearing about **S.** $\frac{1}{2}$ **W.** distance $\frac{1}{3}$ mile.

Sailing Directions for Newport Outer Harbor at Night-time, with favorable winds and fair weather.

From the Eastward, by way of Vineyard Sound, bring Sow and Pigs Light-ship to bear **E.** by **S.** $\frac{1}{2}$ **S.**, on which bearing keep it, and steer **W.** by **N.** $\frac{1}{2}$ **N.**; when the Light-ship off Brenton's Reef is made, bring it to bear **W.NW.** and run for it on this course; leave this Light-ship close to on either hand, and make good the course **N.** by **E.** $\frac{1}{4}$ **E.** until Goat Island Light is well open, bearing about **NE.** by **E.**, then run for it on this course, keeping about midway the passage, until the Red Fixed Light on the Southwest

part of Rose Island bears **N.NW.**, then anchor in the Outer Harbor in about 10 fathoms water.

From the Westward, as soon as the Light-ship off Brenton's Reef is made, bring it to bear **NE.** and run for it on this course; when abreast this Light-ship follow the directions before given.

Sailing Directions for Newport Inner Harbor at Night-time, with favorable winds and fair weather.

Follow the directions before given for Newport Outer Harbor until Lime Rock Light opens, then, if you intend to enter the Inner Harbor by the passage to the Southward of Goat Island, bring Lime Rock Light to bear **SE.** $\frac{1}{2}$ **S.** and run for it under short sail until about 200 yards from it, or the water shoals to 3 fathoms at low tide, then steer **E.** $\frac{1}{2}$ **S.** until this light bears **SW.** by **S.** $\frac{1}{4}$ **S.**, on which bearing keep it, and steer **NE.** by **N.** $\frac{1}{4}$ **N.** about $\frac{1}{3}$ mile and anchor in about $2\frac{1}{4}$ fathoms water, Goat Island Light bearing **N.** by **W.** $\frac{1}{2}$ **W.**

If you intend to enter the Inner Harbor by the passage North of Goat Island, run for Goat Island Light, bearing **NE.** by **E.**, until the Red Light on Rose Island bears **N.** by **W.**, then steer **NE.** $\frac{1}{2}$ **N.** and under short sail haul round Goat Island Light at a distance of 200 yards, leaving it to the Southward; when past this Light keep in mid-channel (course about South) until past the Long Wharf, then steer more Easterly and anchor in about $2\frac{1}{4}$ fathoms water at low tide. Lime Rock Light bears **SW.** by **S.** $\frac{1}{4}$ **S.** from this anchorage.

Beating into Newport Harbor at Night.*

When past the Wash Ball Rock, which lies about 150 yards Southwest from Castle Hill Point, the Southeastern shore is very bold; it is therefore advisable, after passing this danger, to keep this side best aboard, and when past Fort Adams, which is left on the Starboard hand, anchorage may be found to the Westward of Goat Island in from 6 to 10 fathoms water. In order to avoid Kettle Bottom Rock and other dangers which lie near the Western

* Vessels of more than 13 feet draught beating into Newport or Coasters' Island Anchorage should be careful to avoid a sunken Rock which bears **SE.** by **E.** $\frac{1}{2}$ **E.** about $\frac{1}{2}$ mile from Rose Island Lighthouse.

shore, it is advisable to not shut Goat Island Light in behind Fort Dumping.

In entering Newport Harbor the shores are very bold, the lead therefore gives but little warning in approaching them.

Thick Weather.

At this date (1881), there is a Steam Whistle at Beaver-Tail Lighthouse, and a Fog Bell at Goat Island Lighthouse. Vessels making Brenton's Reef Light-ship in thick weather may leave it close to on either hand and make good the course **N.** by **E.** $\frac{1}{4}$ **E.** about $1\frac{3}{4}$ miles, or until the Fog Signal at Beaver-Tail Lighthouse bears **W.** by **S.** $\frac{1}{2}$ **S.**, the course is then **NE.** by **E.** into the Outer Harbor. It is advisable, however, after passing the Wash Ball Rock (before described) to keep the Eastern shore best aboard.

High Water.

It is high water in Newport Outer Harbor 3h. 44m. before it is at Boston; common tides rise about 4 feet.

FALL RIVER HARBOR.

This Harbor, which is situated near the mouth of Taunton River, is $19\frac{1}{2}$ miles Northeasterly from Brenton's Reef Light-ship, and 16 miles Northeasterly from West Island, by way of Sakonnet River.

Remarks.

At this date (1881), about 16 feet water, at low tide, can be carried through Mount Hope Bay, up to the City of Fall River; good anchorage may be found off the City in from 3 to 5 fathoms water, good holding ground.

Prudence Island Lighthouse.

On Sandy Point, East side of Prudence Island, is a Lighthouse, which at this date (1881), shows a fixed White Light. Bristol Ferry Lighthouse bears from this Lighthouse **NE.** $\frac{1}{2}$ **E.**, 3 miles.

Bristol Ferry Lighthouse.

On Bristol Ferry Point, North side of entrance to Mount Hope Bay, is a Lighthouse, which at this date (1881), shows a fixed White Light; the Lighthouse on Muscle Bed Shoals bears **S. $\frac{1}{4}$ W.**, $\frac{1}{2}$ mile from this Lighthouse.

Muscle Bed Shoals Lighthouse.

On Southeast side of Channel, opposite to Bristol Ferry, is a Lighthouse, which at this date (1881), shows a fixed Red Light. Prudence Island Lighthouse bears from this Lighthouse **SW.** by **W.**, distance $2\frac{3}{4}$ mile. A Fog Bell at this date (1881), is placed near Muscle Bed Lighthouse.

Sailing Directions from Brenton's Reef Light-ship to Fall River Harbor in Daytime, with favorable winds and fair weather.

Leave the Light-ship off Brenton's Reef close to on either hand, and make good the course **N.** by **E. $\frac{1}{2}$ E.**, leaving the Red Buoy off the outer end of Brenton's Reef well on the Starboard hand; continue the course until the entrance to Newport Harbor is fairly open, then keep about mid-channel, until the Lighthouse on the Southwest part of Rose Island* bears **N.** by **E. $\frac{1}{2}$ E.**, then run for it on this course, leaving the Dimpling Rocks well on the Port hand; when about $\frac{1}{2}$ mile from Rose Island Lighthouse, haul gradually to the Westward, and leave it about $\frac{1}{4}$ mile on the Starboard hand. When this Lighthouse bears East, make good the course **NE.** by **N. $\frac{1}{2}$ N.**, 7 miles to Prudence Island Lighthouse; as you enter the Narraganset Bay on this course, you will see on the Starboard, the Red Buoy off the Northern part of Rose Island, the Red Buoy off Bishop Rock, the Red Buoy off the Sisters, and also Dyer's Island (off the Southwest part of which is a Red Buoy); all these are left on the Starboard hand. On the Port will be seen Gould's Island, which is bold, and farther in the Black Spindle on Halfway Rock, and lastly Prudence Island Lighthouse; these last-named are left on the Port hand. From the Southern Point of Prudence Island to the Lighthouse, the shore is very bold; it is, therefore, only necessary to keep but a short distance from it.

* Rose Island Lighthouse bears from the Northern part of Fort Adams **N. $\frac{1}{2}$ W.**, distance about $\frac{1}{2}$ mile.

From Prudence Island Lighthouse to Fall River.

After passing Prudence Island Lighthouse, bring it to bear **SW.** $\frac{3}{4}$ **W.**, on which bearing keep it, and steer **NE.** $\frac{3}{4}$ **E.** for Bristol Ferry; as you approach this Ferry, you will see on the Starboard, the Red Buoy off Coal Mine Flats, and also the Lighthouse off Muscle Bed Shoals; on the Port will be seen the Black Buoy off Hog Island Flats, and also the Lighthouse near Bristol Ferry; give the Black Buoy off the Southern part of Hog Island Shoals (which bears **W.** by **S.**, $\frac{1}{2}$ mile from the Lighthouse on the Muscle Bed Shoals) a small berth, leaving it on the Port hand, and pass Bristol Ferry about midway between the two Lighthouses. When past the Ferry, steer **NE.** by **E.**, $5\frac{1}{2}$ miles, which course will take you in about 15 feet water across the Flats in Mount Hope Bay to the City of Fall River, where you may anchor between the Wharves and Lighthouse* on Borden's Flats, in about 5 fathoms water, good holding ground.

High Water.

It is high water in Fall River Harbor 3h. 19m. before it is at Boston; common tides rise about $4\frac{3}{4}$ feet.

TAUNTON RIVER.

There are many dangers in Taunton River; strangers, therefore, must not attempt to pass beyond the City of Fall River without a pilot.

BRISTOL HARBOR.

This Harbor lies 15 miles Northeasterly from Breunton's Reef Light-ship; 11 miles from Goat Island Lighthouse (North entrance to Newport Inner Harbor); and 11 miles Southeasterly from the City of Providence.

Remarks.

In entering this harbor, there are two Channels; the Western Channel, which is the widest, leads in between Hog Island on the

* Upon Borden's Flats, opposite the city of Fall River, is a Lighthouse, which at this date (1881), shows a fixed Red Light. Attached to this Lighthouse is a Bell, which, in thick weather, is struck at intervals of 15 seconds.

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East, and Popasquash Neck on the West; about 3 fathoms water, at low tide, can be carried through this passage up to the lower part of the town.

The Eastern Channel, which leads in between Bristol Neck on the East, and Hog Island on the West, is narrow, and has a depth at low tide of from 12 feet to 4 fathoms water.

**Sailing Directions for Bristol Harbor in Daytime,
 with favorable winds and fair weather.**

Follow the directions before given from Brenton's Reef Lightship, to Fall River Harbor, until abreast Prudence Island Lighthouse (which may be left about $\frac{1}{4}$ mile on the Port); then steer **N. by E. $\frac{1}{2}$ E.**, keeping a sharp lookout for the Red Buoy off the Southwest part of Hog Island; leave this buoy (which bears **NE.** by **N. $\frac{1}{2}$ N.** from Prudence Island Lighthouse, distance $1\frac{3}{4}$ miles) about 200 yards on the Starboard hand, and continue the course **N. by E. $\frac{1}{2}$ E.**, leaving the Black Buoy off Popasquash Point well on the Port, and the Beacon on Castle Island Shoal on the Starboard hand. When abreast this last-named Beacon, you will see two buoys. The one painted in Red and Black Horizontal Stripes lies off the North end of Middle Ground; the other Black Buoy lies off the Eastern part of Usher's Rocks; pass midway between these last-named buoys, and run up about **N. by E. $\frac{1}{2}$ E.**, and anchor off the Wharves in about $2\frac{1}{2}$ fathoms water. Heavy draught vessels, when past the Buoy on the Middle Ground, should anchor a short distance from it in about $3\frac{1}{4}$ fathoms water, at low tide.

Coming from Fall River, or through Sakonnet River (see directions for that River), bound to Bristol, give the Red Buoy off Pearce's Rock (which lies about 400 yards West from Bristol Ferry Lighthouse) a berth of about $\frac{1}{2}$ mile, leaving it on the Starboard hand, and steer **N. by W.**, leaving the Black Buoy on the Western side of the channel, and Buoy painted in Red and Black Horizontal Stripes off Northern part of Middle Ground, both on the Port hand. When past this last-named Buoy, run up and anchor off the Wharves in sticky bottom with good holding ground.

High Water.

It is high water in Bristol Harbor 3h. 24m. before it is at Boston; common tides rise about $4\frac{3}{4}$ feet.

WARREN RIVER.

The entrance to this River is 17 miles Northeasterly from Brenton's Reef Light-ship; 6 miles Northeasterly from Prudence Island Lighthouse, and $8\frac{1}{2}$ miles Southeasterly from the City of Providence.

Remarks.

From the mouth of this River to the Town of Warren, which is situated upon its Eastern bank, the course is Northeasterly about $1\frac{1}{2}$ miles. There are many obstructions in this River, but the channel at this date (1881), is well marked with Buoys. With a good pilot, about 11 feet water at low tide can be taken up to the Wharves; it is advisable, however, for vessels of much size bound up this River to take pilots, especially with unfavorable winds.

Sailing Directions for Warren River in Daytime, with favorable winds and fair weather.

Follow the directions before given from Brenton's Reef Light-ship to Fall River Harbor, until abreast Prudence Island Lighthouse, which may be left about $\frac{1}{4}$ mile on the Port hand; then steer about **N. $\frac{3}{4}$ E.**, leaving the Red Buoy off Southwest part of Hog Island (which bears **NE.** by **N. $\frac{1}{2}$ N.** from Prudence Island Lighthouse, distance $1\frac{3}{4}$ miles) well on the Starboard hand; when past this last-named Buoy, run about **N.** by **W.**, leaving the Black Buoy off Popasquash Point well on the Starboard hand; when past this last Buoy, follow the Eastern shore (which is bold and free from dangers), keeping about $\frac{1}{3}$ mile from it, until you make the Buoy painted in Red and Black Horizontal Stripes, which is the first at the entrance of the River. Leave the last-named Buoy about 250 yards on the Port, and steer about **N.NE.**, leaving the Black Buoys and Beacon on the Port, and Red Buoys on the Starboard hand, and anchor off the Wharves in from 10 to 15 feet water, hard bottom.

From Providence River, when past Conimicut Point Lighthouse, bring it to bear **NW. $\frac{1}{2}$ N.**, and make good the course **SE. $\frac{1}{2}$ S.**, until Warren River is fairly open; then run in, leaving the Buoy painted in Red and Black Horizontal Stripes, which is the first at the entrance of the River, on the Port hand, and follow the directions before given.

High Water.

It is high water in Warren River 3h. 24m. before it is at Boston ; common tides rise about $4\frac{3}{4}$ feet.

PROVIDENCE RIVER.

The entrance to this River, which is between Conimicut Point on the West and Nayat Point on the East, lies $16\frac{1}{2}$ miles Northeasterly from Beaver-Tail Lighthouse ; 14 miles Northeasterly from the City of Newport ; Northwesterly, 7 miles from Prudence Island Lighthouse ; Northeasterly, $3\frac{1}{2}$ miles from Warwick Point Lighthouse, and Southeasterly, $6\frac{1}{2}$ miles from the City of Providence.

Conimicut Point Lighthouse.

This Lighthouse, which is erected on the outer end of Conimicut Shoal, West side of entrance to Providence River, is painted Gray, and shows a fixed White Light. At this date (1881), a Fog Bell is struck at this Lighthouse at intervals of 12 seconds. Vessels may approach this Lighthouse on its Eastern side, within 50 yards, without danger.

Bearings and Distances from Conimicut Point Lighthouse.

Buoy painted in Red and Black Horizontal Stripes off Southern part Ohio Ledge,* **S. by E. $\frac{1}{4}$ E.**, distance $2\frac{1}{3}$ miles ; Buoy painted in Red and Black Horizontal Stripes off Northern part Prudence Island, **S. by W. $\frac{1}{4}$ W.**, distance $2\frac{1}{2}$ miles.

Bullock's Point Lighthouse.

About **N.NW.**, $1\frac{1}{2}$ miles from Conimicut Point Lighthouse, on the Eastern side of the channel and a little more than $\frac{1}{3}$ mile Southwesterly from Bullock's Point, is a Lighthouse painted Drab color, which at this date (1881), shows a fixed Red Light.

Sabine's Point Lighthouse.

About **N. $\frac{3}{4}$ W.**, $1\frac{1}{2}$ miles from Bullock's Point Lighthouse, on the Eastern side of the channel and a little less than $\frac{1}{3}$ mile South-

* Ohio Ledge has about 8 feet water upon it at low tide.

westerly from Sabine's Point, is a Lighthouse painted White, which at this date (1881), shows a fixed White Light.

Pomham Rocks Lighthouse.

About **NE.** by **N.** $\frac{3}{4}$ **N.**, $\frac{1}{10}$ mile from Sabine's Point Lighthouse, on the Eastern side of the channel, on a high Rock and near the Eastern Shore, is a Lighthouse painted White, which at this date (1881), shows a fixed Red Light.

Fuller's Rock Lighthouse.

About **N.** by **W.** $\frac{1}{4}$ **W.**, a little more than a mile from Pomham Rocks Lighthouse, on the Eastern side of the channel, near the shore, is a Lighthouse painted White, which at this date (1881), shows a fixed White Light.

Sassafras Point Lighthouse.

About **NW.**, $\frac{5}{8}$ mile from Fuller's Rock Lighthouse, on the West side of the channel, on Sassafras Point, is a Lighthouse painted White, which at this date (1881), shows a fixed Red Light. This last-mentioned Lighthouse is located about $\frac{7}{8}$ mile below the City of Providence.

Remarks.

From Conimicut Point Lighthouse at the entrance of the River to Providence City the distance is $6\frac{1}{2}$ miles. The channel, which in some places is narrow, is well marked with Buoys. Strangers, in small vessels in daytime, with favorable winds, may safely pass up this River without danger. It is, however, advisable for heavy-draught vessels to take pilots. At this date about 14 feet water at low tide can be taken up to Providence.

Sailing Directions from Brenton's Reef Light-ship to Providence City by Ship Channel (or Eastern Passage) in Daytime, with favorable winds and fair weather.

Leave the Light-ship off Brenton's Reef close to on either hand, and make good the course **N.** by **E.** $\frac{1}{2}$ **E.**, leaving the Red Buoy off the outer end of Brenton's Reef well on the Starboard hand; when the entrance to Newport Harbor is fairly open, then run in about mid-channel until the Lighthouse on Southwest part of Rose Island

bears **N.** by **E.** $\frac{1}{2}$ **E.**, then run for it on this course, leaving the Dumpling Rocks well on the Port hand; when about $\frac{1}{3}$ mile from Rose Island Lighthouse, haul gradually to the Westward, and leave it about $\frac{1}{4}$ mile on the Starboard hand; when this last-mentioned Lighthouse bears East, make good the course **NE.** by **N.** $\frac{1}{2}$ **N.** 7 miles, which will bring you up with Prudence Island Lighthouse; on this last course, when past Rose Island, you will see on the Starboard the Red Buoy off its Northern part, the Red Buoy off Bishop Rock, the Red Buoy off the Sisters, and lastly, Dyer's Island off the Southwest part of which is a Red Buoy, — all these are left on the Starboard hand. On the Port will be seen Gould's Island, which is bold, and farther in, the Black Spindle on Halfway Rock, and lastly, Prudence Island Lighthouse, — these last-named are left on the Port hand. From the Southern Point of Prudence Island to the Lighthouse the shore is very bold; it is, therefore, only necessary to keep but a short distance from it. Leave Prudence Island Lighthouse about $\frac{1}{4}$ mile on the Port hand and make good the course **N.** $\frac{1}{2}$ **E.** about $1\frac{1}{2}$ miles, or until abreast the Red Buoy* off Southwest part of Hog Island (which is left on the Starboard hand), then steer **N.** $\frac{3}{4}$ **W.** 3 miles, which will bring you up with the Buoy painted in Red and Black Horizontal Stripes, off Southern part of Ohio Ledge; Conimicut Point Lighthouse, which stands on West side of entrance to Providence River, bears from the Buoy off this Ledge (which has 8 feet water upon it at low tide), **N.** by **W.** $\frac{1}{4}$ **W.**, distance $2\frac{1}{3}$ miles. When the last-named Buoy is made, leave it about $\frac{1}{4}$ mile on the Port hand, and steer about **N.** $\frac{1}{2}$ **W.** until Conimicut Point Lighthouse bears **NW.** $\frac{1}{2}$ **N.**, then run for it on this course.

**Sailing Directions for Providence River in Daytime,
with favorable winds and fair weather.**

Leave Conimicut Point Lighthouse, which stands on the West side of entrance to the River, about 200 yards on the Port hand, and make good the course **NW.** by **N.** with Bullock's Point Lighthouse on the Starboard bow; when abreast this last-mentioned Lighthouse (which may be left 200 yards on the Starboard hand), the course is then **N.** $\frac{3}{4}$ **W.** to Sabine's Point Lighthouse; on this last course

The Red Buoy off Southwest part of Hog Island bears from Prudence Island Lighthouse **NE.** by **N.** $\frac{1}{2}$ **N.**, distance $1\frac{1}{2}$ miles.

Pawtuxent Beacon will be left well on the Port hand; give Sabine's Point Lighthouse a berth of about 200 yards, leaving it on the Starboard hand, and continue the course about $\frac{1}{8}$ mile past it, or until the Red Buoy off the Oyster Beds bears **NE.** by **E.**, the course is then about **NE.**, leaving the last-named Buoy on the Starboard and a Black Buoy on the Port hand; continue the course **NE.** until Pomham Rock Lighthouse bears **N. NE.**, then steer for this Lighthouse on this course, leaving it about 100 yards on the Starboard, and Pomham Beacon on the Port hand; when abreast this last-named Lighthouse the course is **N. $\frac{3}{4}$ W.**, leaving a Black Buoy on the Port, and the Buoy painted in Red and Black Horizontal Stripes on Bulkhead Rock on the Starboard hand; continue the course, passing between two Buoys, one Black, the other Red; when past these Buoys the course is more Westerly, leaving Fuller's Rock Lighthouse about 100 yards on the Starboard hand; when past this last-named Lighthouse, steer about **NW. $\frac{1}{2}$ N.**, passing between the Red Buoy off Sassafras Shoal and the Lighthouse; when past Sassafras Point Lighthouse, the course is about **N. by W.**, leaving the Buoys as they are set to mark the channel to the city.

In navigating Providence River, particular attention should be paid to the color of the Buoys, as there is but little water in many places on each side of the channel.

NARRAGANSETT BAY (Western Passage).

Beaver-Tail Lighthouse.

Upon Beaver-Tail, South Point of Conanicut Island, between the two entrances to Narragansett Bay, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels into Newport and Dutch Island Harbors, and also up the Western passage of Narragansett Bay. A Steam Whistle is placed near this Lighthouse, which gives blasts of 6 seconds at intervals of 10 and 50 seconds.

Dangers in Entering Narragansett Bay by the Western Passage.

Newton's Rock.

This Rock, on which it breaks if there be any sea, lies about $\frac{1}{8}$ mile **SW.** by **S.** from Beaver-Tail Lighthouse. This Rock is marked off its Southwest part with a Buoy having Red and Black Horizontal Stripes.

Whale Rock.

This Rock, which is above water, is bold on all sides, and lies on the Western side of the passage; it is easily recognized in the daytime on account of its being whitewashed. Beaver Tail Lighthouse bears from Whale Rock **E. $\frac{1}{2}$ N.**, distance $1\frac{1}{8}$ miles.

Jones' Ledge.

This Ledge, which lies on the Western side of the passage, has about 8 feet water upon it at low tide; it is now marked on its Eastern side with a Buoy painted in Red and Black Horizontal Stripes, which bears from Beaver-Tail Lighthouse **NW. $\frac{1}{2}$ N.** $1\frac{1}{8}$ miles.

Dutch Island Lighthouse.

This Lighthouse, which shows a fixed White Light, stands upon the Southern part of Dutch Island, and is intended as a guide for vessels bound up Narragansett Bay by the Western passage, and also into Dutch Island Harbor. A Fog Bell at this date (1881), is placed near this Lighthouse.

Dutch Island is bold on all sides, and may be approached within $\frac{1}{8}$ mile without danger. Beaver-Tail Lighthouse bears from Dutch Island Lighthouse **S $\frac{1}{2}$ W.**, distance $2\frac{7}{8}$ miles.

* Since the above was written a Lighthouse has been erected on Whale Rock, which at this date (1882), shows a Fixed Red Light. A Bell at this time is attached to this Lighthouse which, in thick weather, is struck two blows in quick succession, at intervals of 20 seconds.

Warwick Lighthouse.

This Lighthouse, which shows a fixed White Light, is situated on the Southern extremity of Warwick Neck, and is intended as a guide to East Greenwich Harbor and Western passage of Narragansett Bay.

Dutch Island Lighthouse bears from Warwick Lighthouse **S.** by **W.** $\frac{1}{2}$ **W.** $10\frac{1}{4}$ miles.

Remarks.

Vessels from the Southwestward, bound to Providence, usually use the Western passage of Narragansett Bay, which is well buoyed; about 15 feet water at low tide on a direct course, at this date, can be carried up through it to the entrance of Providence River.

Sailing Directions for the Western Passage of Narragansett Bay from Beaver-Tail Lighthouse to Conanicut Lighthouse, entrance to Providence River, in Daytime, with favorable winds and fair weather.

Vessels from the Southeastward, Southward or Southwestward, may bring Beaver-Tail Lighthouse to bear from **NW.** to **NE.** by **N.**, and run for it without danger; leave this Lighthouse about $\frac{1}{2}$ mile on the Starboard hand and steer about **N.** by **E.** $\frac{1}{4}$ **E.** $2\frac{3}{4}$ miles, which will bring you up with Dutch Island, which is bold, and may be left about $\frac{1}{4}$ mile to the Eastward; when past this Island run about **NE.** by **N.** $\frac{1}{2}$ **N.**, keeping a sharp lookout for the Buoy off Plum Beach Shoal; this last-named Shoal, which extends a long distance from the Western shore, is marked on its outer part with a Black Buoy, which bears from Dutch Island Lighthouse **N.** by **E.**, 2 miles; when the Black Buoy off Plum Beach Shoal is made, leave it close to on the Port hand, and make good the course **N.** by **E.** $\frac{1}{2}$ **E.** $8\frac{1}{2}$ miles to Warwick Lighthouse. As you sail up on this course, when abreast the Northern part of Conanicut Island, you will see on the Starboard and nearly in the middle of the passage, Hope Island, which is small, and farther in, Prudence Island, and lastly, Patience Island, the Northwestern point of which lies Southeast a little more than $\frac{1}{2}$ mile from Warwick Lighthouse, — all these last-named islands are left on the Starboard hand. On the Port will be seen old Gay Rock Lighthouse, entrance to Wickford Harbor, the

Beacon and buoys on the Ledges to the Eastward of this Lighthouse, and farther in, the Black Buoy off Quonset Point, and lastly the Spindle on Crack Rock; Warwick Point Lighthouse bears from this Spindle **NE.** by **E.** $\frac{1}{4}$ **E.**, $\frac{7}{8}$ mile.

After passing Quonset Point and Hope Island, bring Warwick Lighthouse to bear **N** by **E.** $\frac{1}{2}$ **E.**, and run for it on this course; when about one mile from it, you will cross the Shoal Ground in about 15 feet water at low tide; continue the course **N.** by **E.** $\frac{1}{2}$ **E.** for Warwick Lighthouse, until about $\frac{1}{3}$ mile from it; then in about $6\frac{1}{2}$ fathoms water, steer about **E.NE.**, passing about midway between Warwick Lighthouse and Northwestern part of Patience Island; when past Warwick Lighthouse, keep a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes,* which lies about $\frac{1}{2}$ mile from the Northern part of Prudence Island; when this Buoy is made, leave it close to on the Starboard, and run about **NE.** by **N.**, crossing the Shoal Ground in about 16 feet water low tide, and leaving the Buoy painted in Red and Black Horizontal Stripes on Ohio Ledge well on the Starboard, and the Black Buoy off Eastern part of Conimicut Middle Ground on the Port hand, when Conimicut Point Lighthouse at the entrance of the River bears **NW.** $\frac{1}{2}$ **N.**; then follow the directions before given for Providence River.

High Water.

It is high water in Providence River about 3h. 20m. before it is at Boston; common tides rise about $4\frac{1}{2}$ feet.

EAST GREENWICH HARBOR.

This Harbor is North about 13 miles in a direct line from Beaver-Tail Lighthouse; Southwesterly about $9\frac{1}{2}$ miles from the City of Providence, and West-Southerly about 3 miles from Warwick Lighthouse.

Warwick Lighthouse.

This Lighthouse, which shows a fixed White Light, is situated on the Southern extremity of Warwick Neck, Northern side of entrance to Greenwich Bay.

* Warwick Lighthouse bears from this Buoy off Northern part of Prudence Island W. by S., distance $1\frac{1}{4}$ miles.

Remarks.

At low tide about 9 feet of water can be carried to the anchorage off East Greenwich; but the channel in some parts of the Bay is narrow, it is therefore necessary at low tide for vessels of much size to proceed with caution.

Sailing Directions for East Greenwich Harbor in Daytime with favorable winds and fair weather.

Bound to East Greenwich by the Western passage, follow the directions before given from Beaver-Tail Lighthouse to Conimicut Lighthouse (entrance to Providence River), until Warwick Lighthouse bears **N.** by **E.** $\frac{1}{2}$ **E.**, distance $\frac{1}{3}$ mile; then in about $6\frac{1}{2}$ fathoms water, with the Spindle on Crack Rock bearing **W.** by **S.** $\frac{3}{4}$ mile, make good the course **NW.**; as you sail in you will see on the Port the Black Buoy off Sandy Point Shoal, leave this Buoy close to on the Port hand, and make good the course about **NW.** by **W.** $\frac{1}{2}$ mile, when the Black Buoy on Sally Rock will be seen on the Port; haul round this last-named Buoy, leaving it a short distance on the Port hand, and run in about **W.SW.** for the town, leaving the Red Buoys on the Starboard and Black Buoys on the Port, and anchor in from 8 to 10 feet water off the town. It is advisable for strangers in vessels of much size bound to East Greenwich to take pilots.

From Newport, bound to East Greenwich Harbor, leave Rose Island Lighthouse about $\frac{1}{4}$ mile on the Starboard hand, and steer **N.** $\frac{3}{4}$ **E.**; as you sail in you will see on the Starboard Gould Island, which is bold, and farther in the Spindle on Halfway Rock, and lastly the Southern end of Prudence Island, which are all left on the Starboard hand. On the Port will be seen the Eastern part of Conanicut Island, and farther in Hope Island, with a small Islet lying near its Northern part; this last is Despair Island; all the last-mentioned Islands are left on the Port hand. When past Despair Island (which bears about South, $3\frac{3}{4}$ miles from Warwick Lighthouse), steer about **NW.** by **N.** until this last-named Lighthouse bears **N.** by **E.** $\frac{1}{2}$ **E.**; then run for it on this course and follow the directions given.

High Water.

It is high water in East Greenwich Harbor 3h. 27m. before it is at Boston; common tides rise about $4\frac{1}{2}$ feet.

APPONAUG RIVER.

In the extreme Northwest part of Greenwich Bay, about $3\frac{1}{4}$ miles Northwest from Warwick Lighthouse, lies the entrance to Apponaug River, which has but little water in it at low tide. About $\frac{3}{4}$ mile from its mouth is the village of Apponaug.

PAWTUXET HARBOR.

This Harbor, which is a long shallow Cove, lies on the Western side of Providence River about $3\frac{1}{4}$ miles above Conimicut Lighthouse.

Light draught vessels bound to Pawtuxet may follow the directions before given for Providence River until up with Sabine's Point Lighthouse; it is then advisable to anchor near Pawtuxet Beacon and take pilots.

WICKFORD HARBOR.

The entrance to this Harbor, which lies on the Western side of Narragansett Bay, is Northwesterly about $7\frac{3}{4}$ miles from Beaver-Tail Lighthouse; Northwesterly about 5 miles from Dutch Island Lighthouse, and Southwesterly $6\frac{1}{4}$ miles from Warwick Lighthouse.

Old Gay Rock Lighthouse.

Upon Old Gay Rock (which lies upon the Southern side of the channel in entering Wickford Harbor), at this date (1882), a Lighthouse is in course of construction.

Remarks.

In entering Wickford Harbor, there are many Shoals, Rocks and Ledges, most of which at this date (1882), are marked with Beacons and Buoys. At low tide, about 13 feet water can be carried up abreast the Lighthouse, and from this not more than 9 or 10 feet

can be taken through a narrow channel to the Long Wharf at the Eastern end of the village.

Sailing Directions for Wickford Harbor in Day-time, with favorable winds and fair weather.

Vessels bound to Wickford may follow the directions before given for the Western passage of Narragansett Bay, from Beaver-Tail Lighthouse to Conanicut Lighthouse, entrance to Providence River, until the Lighthouse on Old Gay Rock, entrance to Wickford Harbor, bears **NW.** by **W.**; then run for it on this course, leaving it about 75 yards on the Port hand; when abreast the Lighthouse you will see the Red Buoy which lies off to the Southward of Charles' Rock; leave this Buoy close to on the Starboard hand, and steer about **NW.** by **W.** until the harbor is well open; then under short sail run for the end of Long Wharf, bearing about **SW.** by **S.**, carrying about 9 feet water at low tide. From the Lighthouse on Old Gay Rock to Long Wharf the channel is very narrow; it is therefore necessary, after passing this Lighthouse, to proceed with caution.

Vessels from Newport, bound to Wickford Harbor, may leave Rose Island Lighthouse about $\frac{1}{4}$ mile on the Starboard hand and make good the course **N.** $\frac{3}{4}$ **E.**; leaving Gould Island, which is bold, a short distance on the Starboard hand, haul round the Northern part of Conanicut Island at a distance of $\frac{1}{3}$ mile, and run about **WSW.**, leaving all the Buoys on the Ledges, and also White Rock Beacon well on the Starboard hand; continue the course **WSW.** until Old Gay Rock Lighthouse bears **WNW.**; then run for it on this course, and follow the directions before given.

Vessels may anchor in Wickford Outer Harbor, from three to six hundred yards **E.** by **S.** from the Lighthouse on Old Gay Rock, in about 13 feet water at low tide.

It is advisable for strangers in vessels of much size, bound into the Inner harbor, to take pilots.

High Water.

It is high water in Wickford Harbor 3h. 29m. before it is at Boston; common tides rise about $4\frac{1}{4}$ feet.

DUTCH ISLAND HARBOR.

This Harbor, which lies on the Eastern side of the Western passage of Narragansett Bay, is Northeasterly 3 miles from Beaver-Tail Lighthouse and 10 miles Southwesterly from Warwick Lighthouse.

Dutch Island Lighthouse.

On the Southern point of Dutch Island is a Lighthouse, which at this date (1882), shows a fixed White Light. A Fog Bell is placed near this Lighthouse. Dutch Island is bold, and vessels of 17 feet draught may approach any part of it, as near as 250 yards, without danger.

Remarks.

This Harbor, which has two entrances, affords excellent anchorage in from 2 to 8 fathoms water, with good holding ground. About 6 fathoms water at low tide can be carried in by the Southern passage, and about $3\frac{1}{2}$ by the Northern one. The only danger in entering it are the Flats, which extend from Beaver Head. These Flats are marked on their Northern part with a Red Buoy, which bears from Dutch Island Lighthouse **E.** by **S.** $\frac{1}{2}$ **S.**, distance $\frac{1}{4}$ mile. Dutch Island Harbor, at many times, is of great importance, as vessels can make it with strong Northeast winds and an Ebb Tide, when at such times it would be impossible to get into Newport.

Sailing Directions for Dutch Island Harbor in Day-time, with favorable winds and fair weather.

Vessels from the Southeastward, Southward or Southwestward may bring Beaver-Tail Lighthouse to bear from **NW.** to **NE.** by **N.** and run for it without danger; leave this Lighthouse about $\frac{1}{2}$ mile on the Starboard hand and steer about **N.** by **E.** $\frac{1}{4}$ **E.**, keeping about midway the passage and leaving the Buoy off Jones' Ledge well on the Port hand. When you are about $\frac{1}{4}$ mile from Dutch Island Lighthouse, steer more Easterly, leaving the Lighthouse about 250 yards on the Port, and the Red Buoy off Beaver Head Shoal on the Starboard hand; when past this Buoy, anchor in from 4 to 6 fathoms, good holding ground, or haul up for the head of the harbor, and anchor in from $2\frac{1}{2}$ to 3 fathoms water.

Beating into Dutch Island Harbor.

The Eastern part of Dutch Island is very bold, and vessels in beating into the harbor may approach this side of the Island, within 50 yards, without danger. The Northern entrance to this harbor has a width of more than $\frac{1}{2}$ mile; in beating in, it is therefore advisable for large vessels, with Northeast winds, to pass to the Westward of Dutch Island, and stand in close-hauled until they can fetch in. Heavy draught vessels, in entering the Northern passage, should keep near the Northeast part of this Island, which is bold.

Sailing Directions for Dutch Island Harbor at Night-time, with favorable winds and fair weather.

At night, vessels from the Southward or Southeastward may bring Beaver-Tail Light to bear from **NW.** by **N.** to **N.NE.** and run for it; as you draw near this Light, haul gradually to the Westward, and, in order to avoid Whale Rock (on which there is a Lighthouse building), and Jones' Ledge before described, do not leave Beaver-Tail Light more than $\frac{3}{4}$ mile to the Eastward; when the last-named Light bears **E.** by **S.** about $\frac{1}{2}$ mile, steer **N.** by **E.** until Dutch Island Lighthouse bears **N.** by **E.** $\frac{1}{2}$ **E.**; then run for it on this course, which will take you nearly in the middle of the passage; continue the course for this Light until about 300 yards from it; then haul to the Eastward, leaving it close to, or not more than 100 yards on the Port hand; when this Light bears **W.** by **S.**, make good the course **E.** by **N.** about $\frac{1}{3}$ mile, or until the water shoals to 6 fathoms; then anchor in sticky bottom with good holding ground. There is good anchorage during Easterly gales for large vessels in the Western passage of Narragansett Bay, between Beaver-Tail Light and Dutch Island Light. Care should be used in entering to avoid Whale Rock and Jones' Ledge before mentioned.

Sailing Directions for Thick Weather.

At this date (1882), there is a Steam Whistle at Beaver-Tail Lighthouse, a Lighthouse at Whale Rock, and a Bell at Dutch Island Lighthouse; vessels, therefore, in thick weather, bound to Dutch Island Harbor, will, as soon as the Fog Signal at Beaver-

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Tail is heard, bring it to bear **N.NE** and under short sail run for it on this course; in order to avoid Newton Rock (which lies **SW.** by **S.** 250 yards from the Lighthouse) use the Lead, and when the water shoals to 9 fathoms steer **NW.** by **N.** until the signal bears **E.** by **S.**, the course is then **N.** by **E.** $\frac{1}{4}$ **E.** and distance 3 miles to Dutch Island Lighthouse; when the Fog Bell at the last-named Lighthouse is heard, bring it to bear **N.** by **E.** $\frac{1}{4}$ **E.**, and run for it, leaving it not more than 100 yards on the Port hand; when abreast this Light steer **E.** by **N.** about $\frac{1}{3}$ mile, and anchor in from 4 to 6 fathoms water; good holding ground.

After passing Newton Rock (before described) the Eastern shore of the Western passage of Narragansett Bay, from Beaver-Tail Lighthouse to Beaver Head, Eastern side of entrance to Dutch Island Harbor, is bold, and there are no dangers excepting those lying near the shore; when past Whale Rock and Jones' Ledge, the latter of which bears **NW.** $\frac{1}{2}$ **N.** $1\frac{1}{2}$ miles from Beaver-Tail Lighthouse, the Western shore of this passage to Dutch Island is quite bold, and may be safely approached by vessels of 15 feet draught as near as 300 yards without danger.

High Water.

It is high water in Dutch Island Harbor 3h. 42m. before it is at Boston; common tides rise about 4 feet.

Narragansett Pier.

This settlement which is built on a bend of the Eastern shore of Point Judith Neck, and noted as a watering place and summer resort, bears about **W.** by **S.** $\frac{1}{2}$ **S.** from Beaver-Tail Lighthouse, distance $2\frac{3}{4}$ miles.

Anchorage opposite the upper Pier, in from 4 to 7 fathoms water, may be found during heavy Westerly gales, but the holding ground is said to be bad.

Coast from Narragansett Pier to Point Judith Lighthouse.

There are many dangers lying off the coast from Narragansett Pier to Point Judith Lighthouse; it is therefore advisable for strangers, in thick weather or night-time, to not approach this part of the coast nearer than $\frac{1}{2}$ mile or in less than 10 fathoms water.

Point Judith Lighthouse.

On the Southeast extremity of Point Judith is a Lighthouse which, at this date (1882), shows a flashing White Light. A Fog Signal is placed near this Lighthouse which, at this date (1882), sounds blasts of 6 seconds at intervals of 40 seconds.

Bearings and Distances from Point Judith Lighthouse.

	Distance.
Gay Head Lighthouse, E. by S.	29 miles.
Sow and Pigs Light-ship, E. $\frac{5}{8}$ S.	22 $\frac{1}{4}$ "
Hen and Chickens Light-ship, E. $\frac{1}{4}$ N.	21 $\frac{1}{2}$ "
Brenton's Reef Light-ship, NE. by E. $\frac{1}{4}$ E.	6 $\frac{1}{8}$ "
Beaver-Tail Lighthouse, NE.	6 $\frac{1}{2}$ "
Watch Hill Lighthouse, entrance to Fisher's Island Sound, W. $\frac{1}{4}$ S.	17 $\frac{1}{2}$ "
Little Gull Island Lighthouse, Eastern entrance to Long Island Sound, W. $\frac{3}{4}$ S.	30 "
Gardiner's Island Lighthouse, W. by S. $\frac{1}{4}$ S.	33 "
Montauk Point Lighthouse, SW. $\frac{3}{4}$ W.	24 $\frac{1}{4}$ "
Block Island Northern Lighthouse, SW. $\frac{3}{4}$ S.	9 $\frac{1}{8}$ "
Block Island Southeast Lighthouse, S.SW.	13 "

BLOCK ISLAND.

This Island, which lies in a **S.SW.** and **N.NE.** direction, is about 5 miles long, and 3 miles wide at its Southern end, from which point the width gradually diminishes to its Northern end, which is a low point, known as Sandy Point.

Block Island Northern Lighthouse.

About 500 yards to the Southward of the Northern extremity of Sandy Point (Block Island) is a Lighthouse, which at this date (1882), shows a fixed White Light.

Bearings and Distances from Block Island Northern Lighthouse.

	Distance.
Black Buoy off Northern part Block Island, N. $\frac{1}{2}$ E.	1 $\frac{1}{2}$ miles.
Gay Head Lighthouse, E. $\frac{1}{8}$ N.	34 "
Sow and Pigs Light-ship, E. $\frac{3}{4}$ N.	28 "

	Distance.
Hen and Chickens Light-ship, E. by N. $\frac{1}{2}$ N.	28 $\frac{1}{4}$ miles.
Brenton's Reef Light-ship, NE. $\frac{3}{8}$ E.	15 $\frac{1}{8}$ "
Beaver-Tail Lighthouse, NE. $\frac{1}{4}$ N.	15 $\frac{5}{8}$ "
Point Judith Lighthouse, NE. $\frac{3}{4}$ N.	9 $\frac{1}{8}$ "
Watch Hill Lighthouse (entrance to Fisher's Island Sound), NW. by W. $\frac{1}{4}$ W.	13 $\frac{1}{2}$ "
Little Gull Island Lighthouse (Eastern entrance to Long Island Sound), W. $\frac{1}{2}$ N.	24 $\frac{1}{4}$ "
Montauk Point Lighthouse, SW. by W. $\frac{3}{4}$ W.	15 $\frac{3}{4}$ "

Block Island Southeast Lighthouse.

On Crawford's Head, Southeast extremity of Block Island, is a Lighthouse, which at this date (1881), shows a fixed White Light.

At this date (1881), a Fog Signal, giving blasts of 4 seconds at intervals of 30 seconds, is placed near this Lighthouse.

Bearings and Distances from Block Island Southeast Lighthouse.

	Distance.
New South Shoal Light-ship, E.S.E.	78 miles.
Gay Head Lighthouse, E. $\frac{7}{8}$ N.	34 $\frac{1}{4}$ "
Sow and Pigs Light-ship, E. by N. $\frac{1}{2}$ N.	28 $\frac{3}{4}$ "
Hen and Chickens Light-ship, NE. by E. $\frac{1}{2}$ E.	29 $\frac{1}{4}$ "
Brenton's Reef Light-ship, NE. $\frac{7}{8}$ N.	17 $\frac{3}{8}$ "
Beaver-Tail Lighthouse, NE. by N. $\frac{1}{4}$ N.	18 $\frac{1}{2}$ "
Point Judith Lighthouse, N.NE.	13 $\frac{1}{4}$ "
Montauk Point Lighthouse, W. by S.	14 $\frac{3}{4}$ "

Remarks.

A Rocky Shoal extends off about a mile from Sandy Point, the Northern extremity of this Island. A Black Buoy is placed close to the Northern end of this Shoal; Block Island Northern Lighthouse bears from this Buoy **S.** $\frac{3}{4}$ **W.**, distance 13 $\frac{1}{8}$ miles. There are no other dangers, excepting those lying near the shores. In order to avoid Block Island in thick weather, do not approach it nearer than 8 fathoms water.

Block Island Basin.

On the Eastern part of Block Island, about 1 $\frac{1}{3}$ miles from the Southeast Lighthouse, is an artificial Harbor, constructed by the United States Government, called Block Island Basin; this Basin

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is 125 yards square, and has in it a depth of about 7 feet water at low tide; the entrance, which is on the Northern side, is about 75 feet wide. In this Basin, vessels moor head and stern, where it is said they may lie secure from all winds.

Range Lights.

The entrance to this Basin is marked at night by two Red fixed Lights. In entering, bring these Lights in range, and run for them, which will take you to the outer end of the Pier.

Block Island Roads.

These Roads, which lie outside the Basin, have from $2\frac{1}{2}$ to 10 fathoms water in them; vessels may find good shelter here in Westerly winds, and it is said that when the Breakwater is completed, these Roads will afford good shelter in nearly all winds, for vessels which draw too much water to enter the Basin.

High Water.

It is high water in Block Island Basin 4h. 05m. before it is at Boston; common tides rise about 3 feet.

Squid's Ledge.

This Ledge, upon which there are as little as 12 feet water at low tide, extends nearly North and South about $\frac{3}{4}$ mile. The Southern part of this danger (which at this date is not buoyed) bears from Point Judith Lighthouse **W.** $\frac{1}{2}$ **S.**, distance $1\frac{1}{2}$ miles. Between this Ledge and Shore there is a channel about $\frac{1}{4}$ mile in width, having 19 feet water in it at low tide.

Coast from Point Judith to Watch Hill Lighthouse.

When past Squid's Ledge, there are no dangers, excepting those lying near the Shore; heavy draught vessels should not, however, approach nearer than $\frac{1}{2}$ mile to this part of the coast, or in less than 5 or 6 fathoms water.

FISHER'S ISLAND SOUND.

The Eastern entrance to this Sound, which lies between Napatree Point on the North, and the Eastern Point of Fisher's Island on

the South, is about 2 miles to the Westward of Watch Hill Light-house.

Remarks.

There are many Rocks, Ledges, and Shoals in this Sound, which in the channel-way are all marked with Buoys, Beacons, and Spindles, a better knowledge of which may be obtained by inspecting Eldridge's Chart of Long Island Sound than by any written directions. On a direct line, about 19 feet water can be taken through this Sound at low tide.

Watch Hill Lighthouse.

Upon Watch Hill, North side of entrance to Fisher's Island Sound, is a Lighthouse, which shows a fixed White Light, which is intended to guide vessels through the Sound, and also into Stonington Harbor.

Bearings and Distances from Watch Hill Lighthouse.

	Distance.
Point Judith Lighthouse, E. ¼ N.	17½ miles.
Block Island Northern Lighthouse, SE. by E. ¼ E.	13½ "
Montauk Point Lighthouse, S. by W.	14 "
Gardiner's Island Lighthouse, SW. by W. ½ W.	16¼ "
Little Gull Island Lighthouse, W. by S. ¾ S.	12¾ "
Whistling Buoy off Middle Ground or Cerberus Shoal, SW. ½ S.	9 "

Eel-Grass Ground Light-ship.

Off the Southern end of Eel-Grass Shoal, in the middle of Fisher's Island Sound, is placed a Light-ship, which at this date (1881), shows one fixed White Light, which is intended to guide vessels through this Sound.

Bearings and Distances from Eel-Grass Ground Light-ship.

	Distance.
Watch Hill Lighthouse, E. by S. ¼ S.	4 miles.
Stonington Lighthouse, E. NE.	2¼ "
Spindle on Latimer's Reef, SE. by E. ½ E.	5½ "
Red Buoy off South part Ram Island Reef, W. ½ S.	1¼ "
Dunapling Lighthouse, W. by S.	3½ "
Beacon on Potter's or Sea Flower Ledge, West	4 "
Bartlett's Reef Light-ship, W. ½ S.	8½ "

Sailing Directions for Fisher's Island Sound in Day-time, with favorable winds and fair weather.

From the Eastward, bring Watch Hill Lighthouse to bear **W.** by **N.**, and run for it on this course; as you draw near this Lighthouse keep a sharp lookout for the Red Buoy off the Southern part of Gangway Rock*; leave this Buoy close to on the Starboard hand, and make good the course **W. $\frac{7}{8}$ N.**, leaving the next Red Buoy off Napatree Point a short distance on the Starboard hand; when past this last-named Buoy continue the course **W. $\frac{7}{8}$ N.**, leaving the Black Buoys and Spindles on the Rocks and Ledges which lie to the Northward and Eastward of Fisher's Island, well on the Port hand; as you enter the Sound you will see on the Starboard the Red and Black Spindle on Latimer's Reef, the Light-ship off the Southern part of Eel-Grass Ground, and, farther in, the Spindle and Red Buoy off South part of Ram Island Reef; the last-named Buoy bears **W. $\frac{1}{2}$ S.** from the Light-ship, distance $1\frac{1}{4}$ miles; all these last-mentioned are left on the Starboard hand. When about $\frac{3}{4}$ mile past the Buoy off Ram Island Reef, make good the course **W. $\frac{3}{4}$ S.** for Bartlett's Reef Light-ship, leaving the Lighthouse on the North Dumpling about $\frac{1}{4}$ mile on the Port, and the Beacon on Potter's or Sea Flower Ledge on the Starboard hand.

From the Westward, bound through Fisher's Island Sound, leave the Light-ship off Bartlett's Reef close to on the Port hand, and make good the course **E. by N.**, leaving Sea Flower Reef Beacon well on the Port and the Dumpling Lighthouse about 300 yards on the Starboard hand; when abreast this Lighthouse, steer for the Light-ship off Eel-Grass Ground, bearing **E. by N.** As you enter the Sound you will see on the Port bow the Red Buoy off the South part of Ram Island Ledge; the last-named Light-ship bears from this Buoy **E. $\frac{1}{2}$ N.** $1\frac{1}{4}$ miles; leave this Buoy close to on the Port hand and make good the course **E. by S.**, with Watch Hill Light a little on the Port bow, and leaving the Red Spindle on Latimer's Reef well on the Port hand, and the Clumps of Rocks and Black Buoys on the Starboard hand; when past the Spindle on Latimer's Reef, keep a sharp lookout for the Red Buoy off Napatree Point

* Gangway Rock, on which there is but little water at low tide, bears about **S. $\frac{1}{2}$ W.** from Watch Hill Lighthouse, distance $\frac{1}{2}$ mile.

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(Watch Hill Light bears from this last-named buoy **E. 1/2 S.** about 1 1/4 miles); when this is made leave it close to on the Port hand, and steer about **E. by S.**, leaving the Red Buoy off Gangway Rock about 100 yards on the Port hand; when past this last Buoy the course is about East to Point Judith Lighthouse.

Vessels of more than 10 feet draught, bound in or out of the Eastern part of Fisher's Island Sound, should beware of a Ledge which lies nearly in mid-channel, between the Red Buoy off Gangway Rock and Black Spindle on Watch Hill Reef.

There is a rapid current in Fisher's Island Sound, and also many dangers; it is, therefore, not advisable for strangers to attempt this Sound at night-time, or when the Buoys and Spindles cannot be seen.

STONINGTON HARBOR.

This Harbor lies about 2 3/4 miles Northwesterly from Watch Hill Lighthouse, and East-Northerly 5 3/4 miles from Lighthouse on North Dumpling.

Stonington Harbor Lighthouse.

This Lighthouse is located on the East side of entrance to Stonington Harbor, and shows a fixed White Light.

Bearings and Distances from Stonington Lighthouse.

	Distance.
Spindle on Latimer's Reef, SW. 1/2 W.	1 7/8 miles.
Light-ship off Eel-Grass Ground, W.SW.	2 1/4 "

Remarks.

Stonington Harbor, at the best, is a narrow and contracted place, open to Southerly and Southwesterly winds, and is only fitted for small vessels; by keeping close to the outer end of the Breakwater, about 12 feet water can be carried into it through a narrow channel. When the new Breakwater (which extends off from both sides) is completed, Stonington Harbor will then be enlarged to a considerable extent, and good shelter may be found opposite the town for vessels of 12 feet draught and upwards.

Sailing Directions for Stonington Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, bring Watch Hill Lighthouse to bear **W.** by **N.**, and run for it on this course; as you draw near this Lighthouse keep a sharp lookout for the Red Buoy off the Southern part of Gangway Rock; leave this buoy (which bears about South from the Lighthouse, distance $\frac{1}{4}$ mile) close to on the Starboard, and steer **W. $\frac{3}{4}$ N.** for the Red Buoy off Napatree Point, distance $1\frac{1}{2}$ miles; on this last course the Black Buoy and Spindles on the Ledges will be left well on the Port hand; when past the Red Buoy off Napatree Point, steer about **NW.** by **W.**, leaving the next buoy, No. 6, Red, close to on the Starboard hand; when past the last-named buoy, for the deepest water, make good the course **N.NW.**, until Stonington Lighthouse bears **NE.**, then run for the outer end of the Breakwater, bearing about **NE.** by **N. $\frac{1}{2}$ N.**, double close round it, and anchor just far enough to swing clear of it, in about 12 feet water at low tide. When past the Breakwater, small vessels may haul over towards the Western shore out of the way of steamboats, and anchor under Wamphassuck Point Breakwater, about $\frac{1}{2}$ mile from shore, and nearly opposite the steamboat wharf.

Vessels of not more than 10 feet draught, from the Westward, may leave the Lighthouse on the North Dumpling about $\frac{1}{2}$ mile to the Southward, and make good the course **E. $\frac{1}{2}$ N.**, leaving the Red Buoy off the Southern part of Ram Island Reef, on the Port, and the West Clump, Middle Clump, and East Clump well on the Starboard hand; continue the course about **E. $\frac{1}{2}$ N.**, leaving the Light-ship off the Southern part of Eel-Grass Ground about 200 yards on the Port, and, when a short distance past it, steer for Stonington Lighthouse, bearing **NE.** by **E. $\frac{1}{2}$ E.**, leaving the Red Buoy with Cage on top, off Noyes' Rock, well on the Port hand; when the outer end of the Breakwater bears about **NE.** by **N. $\frac{1}{2}$ N.**, follow the directions before given.

Sailing Directions for Stonington Harbor at Night-time,* with favorable winds and fair weather.

Vessels of not more than 9 or 10 feet draught, from the Eastward, may leave Watch Hill Light about $\frac{1}{4}$ mile to the Northward.

* In entering Stonington Harbor at night, a sharp lookout should be kept for the New Breakwater which is now in course of construction on the Eastern side of the channel.

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by so doing, they will pass about midway between the Lighthouse and Spindle on Watch Hill Reef. When Watch Hill Light bears **NNE.**, make good the course **W. $\frac{3}{4}$ N.**, until Stonington Light bears North, then haul up **NW.** by **N.**, until this last-named Light bears **NE.**, when you may then steer **NE.** by **N. $\frac{1}{2}$ N.**, keeping a sharp lookout for the outer end of the Breakwater, and anchor as before directed. If the night is so dark that it is difficult to make the Breakwater, it is advisable to anchor when Stonington Light bears East in about 15 feet water, at low tide, and wait for daylight.

At night, vessels of not more than 10 feet draught, from the Westward, may run for the Red fixed Light on the North Dump-ling, bearing **E.** by **N.** Leave this Light about 300 yards to the Southward, and make good the course East, until the Light-ship off the Southern part of Eel-Grass Ground bears **E.** by **N. $\frac{1}{2}$ N.**, then steer for it on this course; leave this Light-ship about 100 yards on the Port, and make good the course East about $\frac{1}{4}$ mile, or until Stonington Light bears **NE.** by **E. $\frac{1}{2}$ E.**, then run for this last-named Light on this course, until $\frac{1}{3}$ mile from it; the outer end of the Breakwater will then bear **N.NE.**, distance $\frac{1}{3}$ mile. If the night is so dark that it is difficult to make the Breakwater, it is advisable to anchor here in about 15 feet water, and wait for daylight.

The current sets strong through Fisher's Island Sound, therefore with light winds, the courses cannot be relied upon. Masters of vessels, bound to Stonington, should not, therefore, attempt to pass through this Sound at night, unless they have a favorable and commanding breeze.

Between Watch Hill Reef and the Eastern end of Fisher's Island there are several passages between the Rocks and Ledges which lead into Fisher's Island Sound. Strangers, bound through this Sound, or into Stonington Harbor, should not attempt these Channels, as they can only be safely navigated by those acquainted with the ranges.

High Water.

It is high water in Stonington Harbor 2h. 20m. before it is at Boston; common tides rise about $2\frac{3}{4}$ feet.

WESTERLY.

The entrance to Pawcatuck River bears **E. SE.** from Stonington Lighthouse, distance about 2 miles. From the entrance of this River to Westerly, the course is Northeasterly, and distance about $3\frac{3}{4}$ miles. Small vessels, of light draught, at high water, can pass up to Westley; it is, however, advisable for strangers, in all cases, to take pilots, as the water in both Little Narragansett Bay and Pawcatuck River in many places is shallow.

NOANK AND MYSTIC HARBORS.

The entrance to these harbors lies Northeasterly from the Lighthouse on the North Dumpling, distance about 2 miles; and West-Northerly about 2 miles from Light-ship off South part of Eel-Grass Ground.

Mystic Lighthouse.

Upon Morgan's Point, West side of entrance to Noank and Mystic Harbors, is a Lighthouse, which at this date (1881), shows a fixed White Light. North Dumpling Lighthouse bears from this Light **SW. $\frac{1}{4}$ W.**, distance $2\frac{1}{4}$ miles; Light-ship off Southern part of Eel-Grass Ground **SE. by E. $\frac{3}{4}$ E.**, 2 miles.

Dumpling Lighthouse.

At the Western entrance of Fisher's Island Sound, upon an Island called North Dumpling, is a Lighthouse, which at this date (1881), shows a fixed Red Light. A Fog Bell is placed near this Lighthouse, which is struck at intervals of 15 seconds.

Bearings and Distances from Dumpling Lighthouse.

	Distance.
Eel-Grass Ground Light-ship, E. by N.	$3\frac{1}{2}$ miles.
Red Buoy off South part of Ram Island Reef, E. by N. $\frac{1}{4}$ N.	$2\frac{1}{4}$ "
Spindle on Latimer's Reef, E. $\frac{3}{4}$ N.	4 "
Mystic Lighthouse, NE. $\frac{1}{4}$ E.	$2\frac{1}{4}$ "
Beacon on Potter's or Sea Flower Ledge, NW. $\frac{1}{4}$ N.	$\frac{3}{4}$ "
Buoy painted in Red and Black Horizontal Stripes, on SW. Ledge, entrance to New London, NW. by W. $\frac{1}{4}$ W.	$2\frac{3}{4}$ "
Bartlett's Light-ship, W. $\frac{1}{2}$ S.	$5\frac{1}{2}$ "

Remarks.

The Channel leading into Noank and Mystic Harbors is both crooked and narrow, but the dangers on each side of it, as far as Mystic Lighthouse, at this date (1881), are well marked with Buoys and Spindles; with a good pilot, about 11 feet water, at low tide, can be carried through a narrow Channel as far up as Mystic Bridge. Large vessels should take pilots outside, but small vessels of not more than 8 feet draught may, by the following directions, enter as far as the village of Noank; above this it is not prudent to go without a pilot.

**Sailing Directions for Noank and Mystic Harbors
in Daytime, with favorable winds and fair
weather.**

Vessels from the Eastward, with a favorable and commanding breeze, may follow the directions before given for Fisher's Island Sound, until the Red Buoy off South part of Ram Island Ledge is made; this Buoy bears from the Light-ship off Eel-Grass Ground **W. $\frac{1}{2}$ S.**, $1\frac{1}{4}$ miles; leave this buoy close to on the Starboard hand, and steer about **W.NW.**, keeping a sharp lookout for the outer buoy (Red) which bears about **S.SW.**, $\frac{5}{8}$ mile from Mystic Lighthouse; when this last-named buoy is made, haul round it at a distance of about 100 yards, leaving it on the Starboard hand, and steer about **NE. by N.**; as you sail in, you will see nearly ahead, a Channel Buoy, painted with Perpendicular Stripes, and farther in, the Red Spindle on Whale Rock; the former may be left close to on either hand; the Spindle must be left on the Starboard hand; when past the Red Spindle on Whale Rock, a Black Spindle and Red Buoy will be seen a short distance to the Eastward of the Lighthouse; the Channel, which is but 100 yards wide, leads in between them. When past the last Spindle and Buoy, steer more Northerly, and follow the Western Shore, keeping not more than 85 yards from it, until abreast the village of Noank. If bound farther up, a pilot is necessary.

Vessels from the Westward, with a favorable and commanding breeze, may leave the Light-ship off Bartlett's Reef close to on the Port hand, and make good the course **E. by N.**, passing about midway, between Dumpling Lighthouse and the Beacon on Potter's Reef; the latter bears from Dumpling Lighthouse **NW. $\frac{1}{4}$ N.**,

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distance $\frac{3}{4}$ mile; continue the course **E.** by **N.**, until Mystic Lighthouse bears **NE.** by **N.**, then run for it on this course, keeping a sharp lookout for the outer Red Buoy off Ram Island Flats; when this is made, leave it about 100 yards on the Starboard hand, and follow the directions before given.

About $\frac{3}{4}$ mile to the Northward of the Light-ship in Fisher's Island Sound, there is another channel leading into Mystic Harbor, having about 8 feet water in it at low tide. This channel, which is narrow and crooked, is considered too intricate for strangers.

High Water.

It is high water at Noank Harbor 2h. 09m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

EAST HARBOR.

This is a small Cove of very irregular shape, lying on the Northern side of Fisher's Island, and a little more than a mile from its Eastern end.

Remarks.

About 12 feet water can be carried into this harbor at low tide, and there is good anchorage in it in from 8 to 12 feet. In entering there is a dangerous Rock lying nearly midway the channel, which is awash at low tide.

Sailing Directions for East Harbor in Daytime.

Small vessels, from the Eastward, may follow the directions before given for Fisher's Island Sound, until the Light-ship off the Southern part of Eel-Grass Ground bears **N.** $\frac{3}{4}$ **E.**, on which bearing keep it, and steer **S.** $\frac{3}{4}$ **W.**, which will lead to the entrance of the Harbor; continue the course **S.** $\frac{3}{4}$ **W.**, until the water shoals to 3 fathoms, then anchor, and if possible, ascertain the position of the Rock, which lies nearly midway the entrance; when this is done you may run in, and anchor in from 8 to 12 feet water, at low tide.

From the Westward, leave the Lighthouse on the North Dumping about $\frac{1}{2}$ mile to the Southward, and make good the course **E.** $\frac{1}{4}$ **N.**, leaving the West Clump, Middle Clump and East Clump on the Starboard, and the Red Buoy off Ram Island well on

the Port hand ; when the Light-ship in Fisher's Island Sound bears **N. $\frac{3}{4}$ E.**, then make good the course **S. $\frac{3}{4}$ W.**, and follow the directions before given.

High Water.

It is high water in East Harbor 2h. 10m. before it is at Boston ; common tides rise about $2\frac{3}{4}$ feet.

WEST HARBOR.

This large Cove, which makes in on the Northern side of Fisher's Island, lies about 2 miles Northeasterly from the SW. point of said Island, and Southeasterly about $1\frac{1}{2}$ miles from Dumpling Light-house.

Remarks.

Small vessels may find good anchorage in this Harbor in from 8 to 9 feet water, at low tide.

Sailing Directions for West Harbor in Daytime.

Small vessels of not more than 8 or 9 feet draught, from the Eastward, may follow the directions before given for Fisher's Island Sound, until the Light-ship off the Eel-Grass Ground bears **N.NE.**, then make good the course **S.SW.** ; on this last course you will pass between the Black Buoy off Young's Rock and the East Clump of Rocks ; continue the course **S.SW.** until a conspicuous hill near the Northwestern part of Fisher's Island is on a range with Clay Point, * then run **W. $\frac{3}{4}$ S.**, doubling round this last-named Point within 300 yards ; continue the course until the harbor is fairly open, bearing about **SW.** by **S. $\frac{1}{2}$ S.**, then run in, keeping the Western side best aboard, and anchor in from 7 to 9 feet water, at low tide.

From the Westward, bring the Light-ship off Bartlett's Reef to bear West, on which bearing keep it, and steer East ; as you draw near the Northwestern part of Fisher's Island keep a sharp lookout for the Black Buoy, which lies off the outer part of a Ledge which

* Clay Point, which is bold and free from dangers, lies on the Eastern side of entrance to West Harbor ; Dumpling Lighthouse bears from this Point about W.NW., distance $1\frac{1}{2}$ miles.

extends off from the Northwest part of Fisher's Island ; when this Buoy is made, leave it close to on the Starboard hand, and make good the course **SE.** by **E.**, until the Harbor is fairly open, then run in as before directed

Vessels of 10 or 11 feet draught may anchor near the mouth of the Harbor in about $2\frac{1}{2}$ fathoms water at low tide.

High Water.

It is high water in West Harbor 2h. 05m. before it is at Boston ; common tides rise about $2\frac{3}{4}$ feet.

Montauk Point Lighthouse.

On the extreme Eastern end of Long Island, called Montauk Point, is a lofty tower painted White, which at this date (1881), shows a fixed White Light, which flashes every 2 minutes ; the flashes are visible from 3 to 5 miles farther than the fixed Light, so that when first made it will appear as a Revolving Light.

Fog Signal.

Near this Lighthouse is a Fog Trumpet, which at this date (1881), gives Blasts of 12 seconds, at intervals of 50 seconds.

Setting of the Current between Montauk Point and Block Island.

Mid-channel, between Montauk Point and the Southwest part of Block Island, the current turns Northwesterly (or in) about 5 hours and 30 minutes after the time for high water in Boston. In order to avoid Block Island, vessels in thick weather (especially with light winds) should make allowance for this current, which runs in very strong, near the full and change of the Moon.

The current runs in to the Northwestward between Block Island and Montauk Point, about 3 hours and 6 minutes after it is high water on the shore of Block Island, and about 2 hours after it is high water at Montauk Point.

Whistling or Warning Buoy.

In order to warn vessels sailing between Montauk Point and Block Island, a Whistling Buoy has been placed off Southwest Ledge. Block Island Northern Lighthouse bears from this Buoy **NE.** $\frac{1}{2}$ **N.** 8 miles ; Block Island Southeast Lighthouse, **NE.** by **E.** $\frac{1}{2}$ **E.** $5\frac{1}{2}$ miles, and Montauk Point Lighthouse, **W.** $\frac{3}{4}$ **S.** $9\frac{1}{8}$ miles.

Bearings and Distances from Montauk Point Lighthouse.

	Distance.
South Shoal Light-ship, E. by S. $\frac{1}{2}$ S.	91 $\frac{1}{2}$ miles.
Gay Head Lighthouse, E. by N. nearly	49 "
Block Island Southeast Lighthouse, E. by N.	14 $\frac{3}{4}$ "
Block Island Northern Lighthouse, NE. by E. $\frac{3}{4}$ E.	15 $\frac{3}{4}$ "
Point Judith Lighthouse, NE. $\frac{3}{4}$ E.	24 $\frac{1}{4}$ "
Watch Hill Lighthouse, N. by E.	14 "
Race Rock Lighthouse, NW. by N. $\frac{1}{4}$ N.	13 $\frac{1}{2}$ "
Little Gull Island Lighthouse, NW.	13 $\frac{3}{4}$ "
Gardiner's Island Lighthouse, NW. by W. $\frac{1}{2}$ W.	13 $\frac{3}{4}$ "
Barnegat Lighthouse, SW. by W. $\frac{1}{2}$ W.	131 "
Five Fathom Bank Light-ship off Cape May, SW. $\frac{1}{2}$ W.	189 "
Winter Quarter Light-ship off Chincoteague Shoals, SW. nearly	244 "
Cape Henry Lighthouse, SW. nearly	320 "

Dangers off Montauk Point.**Montauk Shoal.**

This Rocky Shoal, upon which not less than 22 feet water has been found, bears from Montauk Point Lighthouse **S.** by **E.** about 2 $\frac{1}{2}$ miles. In strong winds from seaward, the sea breaks on this danger. Heavy draught vessels should give this Shoal a good berth, especially in rough weather.

Phelps' Ledge.

This is a Rocky Shoal extending nearly a mile North and South. It is marked off its Southern part with a Black Buoy, which bears from Montauk Point Lighthouse East, distance about 1 $\frac{3}{4}$ miles; not less than 16 feet water at this date (1881), has been found on this danger. There is a good channel for small, or light draught vessels between this Ledge and Montauk Point, but heavy draught vessels should give it a wide berth in rough weather.

Washington Shoal.

This Sandy Shoal, upon which there are about 12 feet water at low tide, extends **NW.** by **W.** $\frac{1}{2}$ **W.** and **SE.** by **E.** $\frac{1}{2}$ **E.** about 1 $\frac{1}{2}$ miles; its shoalest part bears from Montauk Point Lighthouse

NW. $2\frac{1}{2}$ miles. There is a narrow channel of 4 fathoms water between this shoal and the shore, but large vessels should not attempt to pass through it.

Shagwong Reef.

This Reef, on which there are about 4 feet water, extends **N.NW.** and **S.SE.** $\frac{1}{3}$ mile; it is marked off its Eastern part with a Black Buoy, which bears from Montauk Point Lighthouse **NW.** by **N.**, distance $3\frac{3}{4}$ miles. Between this Reef and Washington Shoal there is a channel about $\frac{1}{2}$ mile in width, having from $3\frac{1}{2}$ to 5 fathoms water in it.

Middle Ground, or Cerberus Shoal.

This dangerous Rocky Shoal, which is small in extent, has about 12 feet water upon it at low tide; at this date (1881), it is marked off its Southeast part, in 7 fathoms water, with a Whistling Buoy. The current sets strong across this danger, and heavy draught vessels passing near it in light winds should proceed with caution.

Bearings and Distances from Whistling Buoy off Cerberus Shoal.

	Distance.
Montauk Point Lighthouse, SE. by S. $\frac{3}{4}$ S. . . .	$7\frac{1}{2}$ miles.
Gardiner's Island Lighthouse, W. $\frac{1}{8}$ S. . . .	9 "
Little Gull Island Lighthouse, NW. by W. $\frac{3}{4}$ W. .	$7\frac{1}{4}$ "
Race Rock Lighthouse, NW. by N. nearly . . .	6 "
Watch Hill Lighthouse, NE. $\frac{5}{8}$ N. . . .	9 "

FORT POND BAY.

This Bay, which is about $1\frac{1}{3}$ miles in width, lies on the Northern side of Long Island, about 5 miles to the Westward of Montauk Point Lighthouse. This Bay has a depth of from 5 to 8 fathoms, and affords good shelter in Southerly or Easterly winds. The holding ground is excellent, and there are no dangers in entering, it being only necessary to keep about $\frac{1}{4}$ mile from either shore. It is advisable for vessels anchoring here (except in summer) to keep a strict watch, and leave this Bay on the first indication of Northwesterly winds.

Sailing Directions for Fort Pond Bay in Daytime.

Vessels of not more than 11 feet draught, from the Southward or Eastward, may leave Shagwong Point (which lies Northwesterly about $2\frac{1}{4}$ miles from Montauk Point Lighthouse), about 1 mile to the Southward, and follow the shore to the Westward, keeping about $\frac{1}{2}$ mile from it, until Fort Pond Bay is well open; then haul in about midway, and anchor near the head in from 6 to 8 fathoms water. It is advisable for heavy draught vessels bound into this Bay to keep without Phelps' Ledge and Shagwong Reef (before described) until well past the Black Buoy off the Eastern part of this last-named Reef; then haul in and anchor as before directed. Fort Pond Bay is exposed to winds from **W.** by **N.** to **N.NE.**

NAPEAGUE HARBOR.

The entrance to this Harbor lies on the Northern shore of Long Island, about 4 miles to the Westward of Fort Pond Bay and South $4\frac{1}{2}$ miles from Plain Point, the Eastern part of Gardiner's Island. Napeague Harbor is a shallow Cove, of irregular shape, nearly a mile in diameter; near its entrance is a sandy Islet about $\frac{3}{8}$ mile in length, called Goff's Island; the channel, in which there are about 7 feet water at low tide, leads into the Eastward of this Island. When into this Harbor, vessels may lie in from 8 to 12 feet water, secure from all winds.

Sailing Directions for Napeague Harbor in Daytime, with favorable winds and fair weather.

Vessels of not more than 7 feet draught from the Eastward may leave Shagwong point (which lies Northwesterly about $2\frac{1}{4}$ miles from Montauk Point Lighthouse) to the Southward, and follow the shore to the Westward, keeping about $\frac{1}{2}$ mile from it, until the narrow passage leading into Napeague Harbor is fairly open; then run in, leaving the Red Buoy off Northeast part of Goff's Island close to on the Starboard hand; when past this Buoy, steer for the Eastern part of Goff's Island and enter about midway the passage; when past the narrows, keep not more than 200 yards from the Eastern side, and anchor near the head of the Harbor in from 8 to 12 feet of water.

From Long Island Sound, when past Little Gull Island, bring the Lighthouse on said Island to bear **N.** by **W.**, on which bearing keep it, and steer **S.** by **E.**, leaving Plain Point, the Eastern part of Gardiner's Island, about one mile to the Westward; when abreast this Point, steer about **S. ½ W.** until you make the narrow passage which leads into the Harbor, then follow the directions before given.

High Water.

It is high water in Napeague Harbor 2h. 50m. before it is at Boston; common tides rise about 2½ feet.

Passage between Gardiner's Island and Long Island.

Strangers in vessels of more than 4 feet draught should not attempt to pass into Gardiner's Bay to the Southward of Ram Island without a pilot, as the channel is narrow, crooked and shallow.

GARDINER'S BAY.

This Bay, which lies between Gardiner's Island on the East and Shelter Island on the West, has an average diameter of about 6 miles, the depth of water throughout its length and breadth is from 3 to 8 fathoms; there are but few dangers in this Bay, and in entering there is ample beating room for the largest vessels.

Gardiner's Island Lighthouse.

On the extreme Northern point of Gardiner's Island, South side of entrance to Gardiner's Bay, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels into Gardiner's Bay.

Bearings and Distances from Gardiner's Island Lighthouse.

	Distance.
Montauk Point Lighthouse, SE. by E. ½ E. . . .	13½ miles.
Block Island Northern Lighthouse, E. ¼ N. . . .	26¼ "
Watch Hill Lighthouse, NE. by E. ½ E. . . .	16¼ "
Race Rock Lighthouse, NE. ½ E. . . .	7½ "

	Distance.
Little Gull Island Lighthouse, NE. by N.	4 $\frac{1}{8}$ miles.
Plum Island Lighthouse, NW. $\frac{1}{4}$ W.	3 $\frac{1}{2}$ "
Long Beach Lighthouse (entrance to Greenport), W.	
$\frac{3}{4}$ S.	7 $\frac{1}{4}$ "
Cedar Island Lighthouse (entrance to Sag Harbor),	
SW. $\frac{1}{4}$ W.	7 $\frac{3}{4}$ "

Dangers in Entering Gardiner's Bay.

Constellation and Breeze Rocks.

In entering Gardiner's Bay, in the channel-way, there are no dangers for small vessels; but heavy draught vessels should take care to avoid Constellation and Breeze Rocks; the former has about 20 feet water upon it at low tide, the latter, which lies nearly $\frac{1}{2}$ mile South from the former, has about 22 feet water upon it, and at this date (1881), is marked off its Southern part with a Buoy painted in Red and Black Horizontal Stripes. Gardiner's Island Lighthouse bears from this Buoy **SW.** $\frac{3}{4}$ **W.**, distance 2 $\frac{3}{4}$ miles; heavy draught vessels entering Gardiner's Bay should leave this Buoy to the Northward.

Bedford Reef.

This Reef, which lies on the Northern side of the channel, has 12 feet water upon it at low tide, Gardiner's Island Lighthouse bears from its centre **S.** by **W.**, 2 $\frac{1}{2}$ miles; the current sets strong across this Reef, and heavy draught vessels with light winds, beating in or out of Gardiner's Bay, should beware of this danger.

Crow Shoal.

This dangerous Shoal, upon which there are but 5 or 6 feet water at low tide, extends from Crow Head, the Western part of Gardiner's Island; a Buoy painted in Red and Black Horizontal Stripes marks the outer or Southwestern part of this Shoal. Gardiner's Island Lighthouse bears from this Buoy **NE.** by **N.** $\frac{1}{2}$ **N.**, distance 4 miles; Crow Head, the Western part of Gardiner's Island, **NE.** by **E.** $\frac{3}{4}$ **E.**, 1 $\frac{3}{4}$ miles; Long Beach Bar Lighthouse, entrance to Greenport, **NW.** by **W.** $\frac{1}{2}$ **W.**, 6 $\frac{1}{4}$ miles; Cedar Island Lighthouse, entrance to Sag Harbor, **W.** by **S.** $\frac{3}{4}$ **S.**, 4 $\frac{1}{2}$ miles. Vessels of not more than 10 or 12 feet draught, by keeping about $\frac{1}{2}$ mile from Crow Point, can pass across the Shoal.

Sailing Directions for Gardiner's Bay, with favorable winds and fair weather.

There is good anchorage under Gardiner's Island in Easterly winds. In order to avoid Constellation and Breeze Rocks (before described), heavy draught vessels from the Eastward must bring Gardiner's Island Light to bear **W.SW.**, and run for it on this course; haul round the Northern Point of Gardiner's Island at a distance of $\frac{3}{4}$ mile, leaving it to the Southward; when the Light bears **E.NE.**; haul up about **S.SE.** until it bears **NE.**; then anchor in from 4 to 5 fathoms water, good holding ground. Vessels of not more than 19 feet draught may go farther in and anchor with the light bearing from **N.** by **E.** to **N.NE.** This anchorage is called Bostwick's Bay.

SAG HARBOR.

The entrance to this Harbor is Southwest about 8 miles from Gardiner's Island Lighthouse.

Cedar Island Lighthouse.

On Cedar Island, Southeast side of entrance to Sag Harbor, is a Lighthouse, which at this date (1881), shows a fixed White Light. This Lighthouse bears from Gardiner's Island Lighthouse **SW.** $\frac{1}{2}$ **W.**, distance about $7\frac{3}{4}$ mile; from Plum Island Lighthouse **SW.** by **S.** $\frac{3}{4}$ **S.**, $8\frac{1}{4}$ miles.

Remarks.

A sand Bar extends across the entrance to this Harbor; on this Bar there are usually at low tide about fourteen feet water; this depth can be carried in past the Beacon on the sand spit, and from this about 10 feet at low tide, to the end of the Long Wharf. At this date the channel leading into Sag Harbor is well marked with Buoys and Beacons; it is, however, advisable for large vessels to take pilots off the Bar.

Sailing Directions for Sag Harbor in Daytime, with favorable winds and fair weather.

Vessels from the Eastward may leave Gardiner's Island Lighthouse about $\frac{3}{4}$ mile to the Southward, and when past it, steer

about **SW. $\frac{1}{2}$ S.** for Cedar Island Lighthouse, leaving the Buoy off Crow Shoal well on the Port hand; when this last-named Lighthouse is made, bring it to bear **SW. by W. $\frac{1}{2}$ W.**, and steer for it on this course, keeping a sharp lookout for the outer Bar Buoy (Red); Cedar Island Lighthouse bears from this Buoy **SW. by W. $\frac{1}{2}$ W.**, distance $1\frac{1}{2}$ miles; leave this last-named Buoy close to on the Starboard hand, and make good the course **W. by S. $\frac{1}{2}$ S.**, leaving two Black Buoys on the Port hand; haul round the Lighthouse at a distance of $\frac{1}{4}$ mile, leaving it to the Eastward; when this Lighthouse bears East, steer about **S. by W.**; when abreast Mashomuck Point, which is on the West side, and bears about **S. W. by S.**, one mile from the Lighthouse, you will see on the Northern side of the channel the Beacon and Red Buoys, the latter marks the Southern part of sand spit; on the Southern side will be seen the Black Buoys, which mark the Northern side of the Barcelona Bank; pass about midway between these Buoys, and in order to avoid the Rocks which lie off about 150 yards to the Northward of a small Islet on the Port side, steer **W. by N.**, when you will see to the Southwestward a Red Buoy; continue the course **W. by N.** until this Buoy bears **SW. $\frac{1}{2}$ S.**, then run for it, and leave it close to on the Starboard hand; when past this last Buoy, continue the course **SW. $\frac{1}{2}$ S.** until the outer end of the Long Wharf bears **S. by W.**, then run for it on this course, which will take you in the deepest water.

**Sailing Directions for Sag Harbor in Night-time,
with favorable winds and fair weather.**

Vessels at night bound to Sag Harbor may leave Gardiner's Island Light about $\frac{3}{4}$ mile to the Southward, and when past it, steer about **SW. $\frac{1}{2}$ S.**; when Cedar Island Light is made, bring it to bear **SW. by W. $\frac{1}{2}$ W.**, and run for it on this course; as you approach this Light, use the lead, and as soon as the water shoals to 3 fathoms on the Bar, then run in **W. by S.** until the Light bears **SW. by S.**; then run for this Light* on this course under short sail; haul round it a distance of 200 yards, leaving it to the Eastward; when abreast this Light or it bears East, steer **S. by W.** until it bears **N.NE.**; then make good the course **S.SW.**.

* Cedar Island Light may be approached on its Northern and Western sides by vessels of 12 feet draught within 150 yards without danger.

and with Northerly winds haul to the Westward, and anchor close in under Mashomuck Point in from $3\frac{1}{2}$ to 4 fathoms water, and wait for daylight; in Easterly winds anchor when past the Light in from 4 to 6 fathoms water.

Mashomuck Point bears about **SW.** by **S.** from Cedar Island Light, distance about one mile, or it is the first Point on the West side after passing the Light. This Point is bold on its Southeastern side, and may be approached within 250 yards without danger.

Beating into Sag Harbor.

In beating into this Harbor, a better idea of the channel can be obtained by inspecting Eldridge's Chart of Long Island Sound than by any written directions.

High Water.

It is high water in Sag Harbor 1h. 24m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

JAMES PORT HARBOR.

This Harbor, which is at the head of Great Peconic Bay, lies West-Southerly about 16 miles in a direct line from Cedar Island Lighthouse.

Remarks.

There are two Passages leading into Great and Little Peconic Bays, one by the way of Sag Harbor entrance (South of Shelter Island), the other by way of Greenport entrance (North of this last-named Island). It is advisable for vessels bound to James Port or any other place in these Bays, with Northerly winds, to go by way of Greenport; but with Southerly winds by way of Sag Harbor entrance. About 10 feet water can be carried up abreast the Village of James Port at low tide.

Sailing Directions for James Port Harbor in Day-time, with favorable winds and fair weather.

Vessels of not more than 10 feet draught, with Southerly winds, bound to James Port, may follow the directions before given for Sag Harbor until abreast Mashomuck Point before described; haul round this Point at a distance of not more than 300 yards, leaving

it to the Northward, and the Beacon on Sand Spit Shoal well to the Southward; when past this Point, haul up about **NW.** by **N.** keeping about midway of Shelter Island Sound, until the narrow part of the Sound between Hog Neck and Shelter Island is well open, bearing about **W.** by **S.**; then run through this passage in about mid-channel, keeping a sharp lookout for the Red Buoy on Southern end of West Neck Shoal; leave this last-named Buoy close to on the Starboard, and make good the course **W.** by **S.**, leaving the Black Buoy off Jessup's Neck close to on the Port hand; when past this Buoy, steer about **SW.** $4\frac{3}{4}$ miles across Little Peconic Bay, which will bring you up with the Black Buoy off the Southeast part of Robbins' Island; leave this last-named Buoy close to on the Port hand, and steer **SW.** by **W.** $\frac{1}{2}$ **W.**, keeping a sharp lookout for the channel Buoy painted in Black and White perpendicular Stripes, which lies off the Southwest part of Robbins' Island; leave this Buoy close to on either hand, and make good the course **W.** $\frac{1}{4}$ **S.** $3\frac{3}{4}$ miles across Great Peconic Bay to Red Buoy, which lies about $1\frac{1}{4}$ miles to the Eastward of James Port; leave this last-named Buoy on the Starboard hand, and when past it, you will see a short distance from James Port two Buoys, one Black, the other Red, pass between these Buoys and anchor off the village.

CUTCHOGUE HARBOR.

This Harbor, which lies to the Northward of Robbins' Island, is a large shallow cove of irregular shape; anchorage may be found in it in from 12 to 14 feet water, sheltered from all winds. It is, however, not advisable for vessels of more than 8 or 9 feet draught to attempt to enter it without a pilot, as the Harbor at this date (1881), is not buoyed.

Sailing Directions for Cutchogue Harbor in Day-time, with favorable winds and fair weather.

Vessels of not more than 8 or 9 feet draught bound to New Suffolk or Cutchogue Harbor, may follow the directions before given for James Port Harbor, until up with the Black Buoy off the Northern part of Jessup's Neck (before mentioned); leave this Buoy close to on the Port, and make good the course **SW.** $\frac{1}{2}$ **W.**

3¼ miles, which will bring you up with the Red Buoy off South Point of Little Hog Neck; leave this last-mentioned Buoy close to on the Starboard, and run up about **NW.** by **N.**, until the Village of New Suffolk bears **W.** by **N.**, then run for it on this course and anchor near it.

High Water.

It is high water in James Port and Cutchogue Harbors about 15 minutes before it is at Boston; common tides rise about 2½ feet.

GREENPORT HARBOR.

The entrance to this Harbor, which is between Long Beach Point on the North and Shelter Island on the South, lies **W.** ¾ **S.** about 7½ miles from Gardiner's Island Lighthouse.

Long Beach Bar Lighthouse.

On Long Beach Bar, Northern side of entrance to Greenport Harbor, in about 5 feet water, a Lighthouse has been erected, which at this date (1881), shows a fixed Red Light, and has a Fog Bell attached to it. Gardiner's Island Lighthouse bears from Long Beach Bar Lighthouse **E.** ½ **N.**, distance 7¼ miles.

Remarks.

About 24 feet water can be taken into Greenport Harbor at low tide, but the channel to the Southward of the Lighthouse is narrow; heavy draught vessels, in entering, should therefore proceed with caution.

Sailing Directions for Greenport Harbor in Day-time, with favorable winds and fair weather.

Ship Channel.

Heavy draught vessels from the Eastward, bound to Greenport, must bring Gardiner's Island Lighthouse to bear **W.SW.**, and run for it on this course, leaving Breeze and Constellation Rocks (before described) well on the Starboard hand; give Gardiner's Island Lighthouse a berth of about ¾ mile, leaving it on the Port, and when it bears **S.SE.** make good the course **SW.** by **W.**, until Long Beach Bar Lighthouse bears **W.NW.**, then run for it on this

course; as you approach the Lighthouse, keep a sharp lookout for the Channel Buoy, painted in Black and White Perpendicular Stripes; leave this last Buoy close to on either hand, and make good the course **W.** by **N.** until the Lighthouse bears **N.** by **W.**, then in about 10 fathoms water haul up **NW.** by **N.**, passing about midway between the Black Buoy and the Lighthouse, in not less than 7 fathoms water; when past this last-named Buoy, you will see the Black Buoy off Hay Beach Point, which may be left a short distance on the Port hand; from this last Buoy steer about **SW.** by **W.**, leaving the Red Buoy off Sheep Head Rocks well on the Starboard hand; when past Sheep Head Rocks, haul in, and anchor off the town of Greenport in from 5 to 12 fathoms water. Heavy draught vessels should not attempt to enter this Harbor at night without a pilot.

Sailing Directions for Greenport Harbor at Night-time, with favorable winds and fair weather.

At night, vessels of not more than 10 feet draught may make a harbor inside Long Beach Bar Light, by the following directions: Run for Gardiner's Island Light on any bearing from **SW.** to **W.** by **S.**, leaving it about $\frac{3}{4}$ mile to the Southward; when this last-named Light bears **S.SE.**, make good the course **SW.** by **W.**, until the Red Fixed Light at the entrance of Greenport Harbor bears **NW.** $\frac{1}{2}$ **W.**, then, under short sail, run for it on this course; as you approach the Light use the lead, and when you are about a mile from it, the water will deepen to $7\frac{1}{2}$ fathoms; you are then in the channel-way, and may steer about **W.** by **N.** $\frac{1}{2}$ **N.**, carrying not less than 10 fathoms water, until the Light bears **N.** by **W.**, then haul up **NW.** by **N.**, carrying not less than 9 fathoms, until the Light bears **N.** by **E.**, then gradually haul to the Eastward, leaving this Light not more than 200 yards on the Starboard; when past it, or it bears **E.** by **S.**, steer up North, and anchor when the water shoals to 3 fathoms at low tide, and wait until daylight.

In leaving this anchorage, bound to Greenport, in order to avoid a Shoal, which extends off from the Western shore, do not go to the Westward of the Light bearing **S.SE.**, until about $\frac{1}{2}$ mile from it, then follow the directions before given.

Beating into Greenport Harbor.

In beating into Greenport Harbor, a better idea can be obtained (of the extensive Flats which make off from both sides) by inspect-

ing Eldridge's Chart of Long Island Sound, than by any written description.

Sailing Directions for James Port Harbor by way of Greenport in Daytime, with favorable winds and fair weather.

With Northerly winds, follow the directions before given for Greenport Harbor until abreast this town, then run to the Southwestward, keeping midway the passage; as you sail in, you will see on the Starboard the Red Buoy off Fanning's Point, which is the first after passing Greenport, and farther in Conkling's Point; on the Port will be seen Rocky Point, which is about $2\frac{1}{4}$ miles from the town of Greenport; haul round this last-named point at a distance of 400 yards, leaving it on the Port, and steer about **S. by E.**, $1\frac{1}{4}$ miles across Southold Bay, which will bring you up with the Red Buoy off Hallock's Point; leave this last Buoy about 200 yards on the Starboard hand, and steer about **S. by E.**, keeping a sharp lookout on the Starboard for the Black Buoy off the Northern part of Jessup's Neck; when this last Buoy is made, leave it on the Port hand, and if bound to James Port or Cutchogue Harbors, follow the directions before given for James Port Harbor by way of Sag Harbor.

SOUTHOLD LANDING.

This Landing is on the Northwestern side of Southold Bay, about $3\frac{1}{4}$ miles Southwesterly from Greenport. Vessels bound to this Landing may follow the directions before given for James Port Harbor by way of Greenport until abreast Rocky Point, then run about **SW. by S.** about a mile, and anchor off the Landing in from 3 to 4 fathoms water, and wait for high water.

High Water.

It is high water in Greenport Harbor about 2h. 06m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

ORIENT HARBOR.

This Harbor lies North about $1\frac{1}{2}$ miles from Long Beach Bar Lighthouse, entrance to Greenport Harbor.

Remarks.

About 15 feet water can be carried, at low tide, up abreast the village. At the entrance of this Harbor an extensive Shoal makes off a long distance from the Western shore; shoal water also extends from the Eastern shore, making the channel in entering not more than $\frac{1}{4}$ mile in width.

Sailing Directions for Orient Harbor in Daytime, with favorable winds and fair weather.

Vessels bound into Orient Harbor may follow the directions for Greenport Harbor until abreast the Lighthouse on Long Beach Bar; give this Lighthouse a berth of about 200 yards, leaving it on the Starboard, and make good the course **N. $\frac{1}{4}$ E.**, and anchor off the village in about $2\frac{1}{2}$ fathoms water at low tide.

At Night-time.

Vessels may enter this Harbor at night-time, by following the directions before given for Greenport Harbor.

High Water.

It is high water in Orient Harbor 2h. 10m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

PLUM GUT PASSAGE.

This Passage, which lies between Plum Island on the East and Oyster Pond Point (the Northern extremity of Long Island) on the West, is about $1\frac{1}{2}$ miles in width.

Plum Island Lighthouse.

On the Western part of Plum Island is a Lighthouse, which at this date (1881), shows a Flashing White Light, which is intended to guide vessels through Plum Gut Passage, and also through Long Island Sound.

A Fog Bell at this date is placed near this Lighthouse, which, in thick weather, is struck at intervals of 15 seconds.

Bearings and Distances from Plum Island Lighthouse.

	Distance.
Gardiner's Island Lighthouse, SE. $\frac{1}{4}$ E.	3 $\frac{1}{2}$ miles.
Bartlett's Reef Light-ship, NE. $\frac{1}{2}$ N.	6 $\frac{3}{4}$ "
Saybrook Lighthouse, NW. $\frac{3}{4}$ N.	8 $\frac{1}{4}$ "
Cornfield Point Light-ship, NW. by W. $\frac{1}{4}$ W.	8 $\frac{1}{2}$ "
Falkner's Island Lighthouse, W. by N. $\frac{1}{2}$ N.	20 "

Remarks.

Although Plum Gut Passage from shore to shore is about 1 $\frac{1}{4}$ miles wide, yet the channel is but little over $\frac{1}{2}$ mile in width; this is on account of a dangerous Reef which extends off from Oyster Pond Point, the Western side of the passage; the outer part of this Reef is marked at this date with a Beacon; Plum Island Lighthouse bears from this Beacon **NE. $\frac{1}{2}$ E.**, distance $\frac{7}{8}$ mile; there are also several shoal spots in the channel-way, having from 16 to 20 feet water upon them, which, at this time, are not marked with Buoys; heavy draught vessels should not, therefore, attempt this passage; vessels of not more than 12 or 14 feet draught may, with a favorable and commanding breeze, pass through this channel, but should not attempt it with light winds, as the current sets with great strength and velocity across the Reef.

Sailing Directions for Plum Gut Passage in Day-time, with favorable winds and fair weather.

Vessels from the Southward or Eastward, with a favorable and commanding breeze, intending to pass through this Gut, must bring Plum Island Lighthouse to bear North, and run for it on this course, leaving the Beacon on the outer part of the Reef well to the Westward; when about $\frac{1}{2}$ mile from the Lighthouse, haul gradually to the Westward, leaving it about $\frac{1}{3}$ mile on the Starboard, and pass into Long Island Sound; vessels from Long Island Sound, with commanding and favorable winds, bound through this passage, may bring Plum Island Lighthouse to bear **SE.**, and run for it on this course, until about $\frac{1}{2}$ mile from it, then gradually haul to the Southward, leaving the Lighthouse and also a dangerous Rock, which lies about 200 yards Northwest from it, well on the Port hand, and the Beacon off the Eastern part of the Reef well on the Starboard hand.

Little Gull Island Lighthouse.

Upon Little Gull Island, South side of main entrance to Long Island Sound, is a Lighthouse, which at this date (1881), shows a fixed White Light. A Fog Signal is placed near this Lighthouse, which at this time gives blasts of 5 seconds at intervals of 40 seconds.

Bearings and Distances from Gull Island Lighthouse.

	Distance.
Block Island Northern Lighthouse, E. $\frac{1}{2}$ S.	24 $\frac{1}{4}$ miles.
Point Judith Lighthouse, E. $\frac{3}{4}$ N.	30 "
Montauk Point Lighthouse, SE.	13 $\frac{7}{8}$ "
Watch Hill Lighthouse, E. by N. $\frac{3}{4}$ N.	12 $\frac{5}{8}$ "
Gardiner's Island Lighthouse, SW. by S.	4 $\frac{1}{8}$ "
Race Rock Lighthouse, NE. by E. $\frac{1}{4}$ E.	3 $\frac{1}{2}$ "
New London Lighthouse, N. by E. $\frac{1}{2}$ E.	6 $\frac{1}{4}$ "
Bartlett's Reef Light-ship, N. $\frac{1}{2}$ W.	3 $\frac{3}{4}$ "
Cornfield Light-ship, W. by N. $\frac{1}{4}$ N.	12 $\frac{3}{4}$ "
Falkner's Island Lighthouse, W. by N. nearly	24 $\frac{1}{4}$ "
Stradford Point Lighthouse, W. $\frac{1}{2}$ N. nearly	44 $\frac{3}{4}$ "
Middle Ground Lighthouse, W. $\frac{1}{4}$ S.	45 $\frac{3}{4}$ "

Bearings and Distances of Dangers from Little Gull Island Lighthouse.

	Distance.
Whistling Buoy off Southern part of Middle Ground or Cerberus Shoal, SE. by E. $\frac{3}{4}$ E.	7 $\frac{1}{4}$ miles.
Buoy off Southern part of Constellation and Breeze Rocks, S. by W. $\frac{1}{2}$ W.	2 $\frac{1}{4}$ "
Buoy off Western part of Valiant Rock, E.NE.	2 $\frac{1}{8}$ "
Centre of Bedford Reef, SW. by W.	2 $\frac{1}{8}$ "
Old Silas Rock, W. by S. $\frac{1}{2}$ S.	2 "
One Foot Rock, E. $\frac{1}{4}$ N.	$\frac{1}{4}$ "

Strangers should not attempt to pass between Plum and Great Gull Islands.

Race Rock Lighthouse.

Upon Race Rock, Northern side of entrance to Long Island Sound, is a Lighthouse, which at this date (1881), shows a Flashing Red and White Light. At this date a Fog Bell is attached to this Lighthouse, which is struck two blows in quick succession every 20 seconds.

Bearings and Distances from Race Rock Lighthouse.

	Distance.
Point Judith Lighthouse, E. $\frac{1}{2}$ N.	26 $\frac{1}{2}$ miles.
Block Island Northern Lighthouse, E. by S. $\frac{1}{8}$ S.	21 $\frac{1}{2}$ "
Montauk Point Lighthouse, SE. by S. $\frac{1}{4}$ S.	13 $\frac{1}{2}$ "
Watch Hill Lighthouse, E. by N. $\frac{1}{4}$ N.	9 $\frac{1}{4}$ "
Gardiner's Island Lighthouse, SW. $\frac{1}{8}$ W.	7 $\frac{1}{2}$ "
Little Gull Island Lighthouse, SW. by W. $\frac{1}{4}$ W.	3 $\frac{1}{2}$ "
New London Lighthouse, N. by W. $\frac{1}{4}$ W.	4 $\frac{3}{4}$ "
Bartlett's Reef Light-ship, NW. by W. $\frac{1}{4}$ W.	4 "
Cornfield Point Light-ship, W. $\frac{1}{2}$ N.	15 $\frac{1}{2}$ "
Falkner's Island Lighthouse, W. $\frac{1}{2}$ N.	26 $\frac{3}{4}$ "
Stradford Point Lighthouse, W. $\frac{1}{4}$ N.	47 $\frac{1}{2}$ "
Middle Ground Lighthouse, W. $\frac{3}{8}$ S.	48 $\frac{3}{4}$ "

Remarks.

Race Rock is very bold, and the Lighthouse may be approached close to on all sides; there is a good channel of 5 fathoms about $\frac{1}{3}$ mile in width, between this Lighthouse and the Buoy off the Southwest part of Fisher's Island.

Cornfield Point Light-ship.

This Light-ship, which is placed off the Southern side of an extensive and dangerous Shoal, called Long Sand Shoal, shows at this date (1881), one fixed Red Light, and has a Bell and Horn.

Remarks.

This Shoal, which is marked with Horizontal Striped Buoys on both ends, is quite narrow in some places, and extends East and West about 5 miles, and has as little as 6 feet water upon it in some places; *in thick weather and light winds, vessels bound to the Westward with flood tide shoal, after passing Cornfield Point Light-ship, beware of the current which sets strong to the Northwestward between this Shoal and Falkner's Island.*

Bearings and Distances from Cornfield Point Light-ship.

	Distance.
Race Rock Lighthouse, E. $\frac{1}{2}$ S.	15 $\frac{1}{2}$ miles.
Little Gull Island Lighthouse, E. by S. $\frac{1}{4}$ S.	12 $\frac{3}{4}$ "
Bartlett's Reef Light-ship, E. $\frac{1}{4}$ N.	12 "
Saybrook Lighthouse, NE. $\frac{1}{4}$ E.	3 $\frac{1}{2}$ "

	Distance.
Horton's Point Lighthouse, SW. by S. $\frac{5}{8}$ S.	$8\frac{3}{4}$ miles.
Falkner's Island Lighthouse, W. $\frac{1}{2}$ N.	12 "
Lighthouse on Middle Ground, W. $\frac{3}{4}$ S.	34 "
Horizontal Striped Buoy off Western part of Long Sand Shoal, W. by N.	$2\frac{1}{8}$ "
Horizontal Striped Buoy off Eastern part of Long Sand Shoal, E. by N.	$3\frac{1}{4}$ "
Black Buoy off the Northern part of Orient Shoal, S.SE.	$5\frac{1}{4}$ "

Horton's Point Lighthouse.

Upon Horton's Point, South side of Long Island Sound, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels through this Sound. Between Horton's Point and Old Field Point Lighthouse, shoal water extends off in some places from the Southern shore nearly 2 miles.

Bearings and Distances from Horton's Point Lighthouse.

	Distance.
Cornfield Point Light-ship, NE. by N. $\frac{5}{8}$ N.	$8\frac{3}{4}$ miles.
Falkner's Island Lighthouse, NW. $\frac{1}{4}$ N.	12 "
Lighthouse on Southwest Ledge, entrance to New Haven Harbor, NW. by W. $\frac{1}{8}$ W.	23 "
Stradford Point Lighthouse, W. by N. $\frac{5}{8}$ N.	30 "
Middle Ground Lighthouse, W. $\frac{5}{8}$ N.	29 "
Old Field Point Lighthouse, W. $\frac{1}{4}$ S. nearly	$30\frac{1}{2}$ "

Falkner's Island Lighthouse.

Upon Falkner's Island, Northern side of Long Island Sound, is a Lighthouse, which at this date (1881), shows a fixed White Light varied by White Flashes. A Fog Whistle is placed near this Lighthouse, giving blasts of 8 seconds duration, at intervals of 52 seconds; Falkner's Island Light is intended to guide vessels through Long Island Sound.

Remarks.

Falkner's Island is nearly surrounded by shoal water. A Reef of Rocks, dry at low tide, extends off to the Northward of the Lighthouse about $\frac{1}{2}$ mile, and is marked on its Northern part with a Black Buoy; shoal water also extends off to the Eastward about

the same distance, and to the Westward nearly a mile, uniting with another small Island called Goose Island; this last-named Island, which lies about a mile **W. ½ S.** from the Lighthouse, is also surrounded by a Reef of bare Rocks. There is a passage for small vessels between Falkner's and Goose Islands; in going through keep nearer the former.

Falkner's Island Lighthouse may be approached within $\frac{1}{4}$ mile on any bearing from **NW.** to **NE.** without danger.

Bearings and Distances from Falkner's Island Lighthouse.

	Distance.
Race Rock Lighthouse, E. ½ S.	26 $\frac{3}{4}$ miles.
Little Gull Island Lighthouse, E. by S. nearly	24 $\frac{1}{4}$ "
Cornfield Point Light-ship, E. ½ S.	12 "
Horton's Point Lighthouse, SE. ¼ S.	12 "
Lighthouse on Southwest Ledge, entrance to New Haven Harbor, W. by N. ½ N.	11 $\frac{3}{4}$ "
Old Field Point Lighthouse, SW. by W. ¾ W.	25 "
Middle Ground Lighthouse, W. by S. ¾ S.	21 $\frac{1}{2}$ "
Stradford Point Lighthouse, West nearly	20 "

Falkner's Island Lighthouse bears from

Branford Reef Beacon, E. by S. ½ S.	6 $\frac{7}{8}$ "
Horizontal Striped Buoy of Northern part of Kinberley's Reef, W. ½ S.	1 $\frac{3}{8}$ "

Stradford Point Lighthouse.

Upon Stradford Point, Northern side of Long Island Sound, is a Lighthouse, which at this date (1881), shows a Revolving White Light. A Fog Bell is placed near this Lighthouse, which in thick weather, is struck at intervals of 15 seconds. Stradford Point Light is intended to guide vessels through the Northern channel of Long Island Sound.

Remarks.

Shoal water extends off Southwesterly from Stradford Point more than $1\frac{1}{2}$ miles; the Southwestern part of this Shoal is marked with a Red Buoy; large or heavy draught vessels should give this Point a wide berth; with this Light bearing West, vessels of 15 feet draught may approach it within $\frac{1}{4}$ mile without danger.

Bearings and Distances from Stratford Point Lighthouse.

	Distance.
Race Rock Lighthouse, E. $\frac{1}{4}$ S.	47 $\frac{1}{2}$ miles.
Little Gull Island Lighthouse, E. $\frac{1}{2}$ S.	44 $\frac{3}{4}$ "
Falkner's Island Lighthouse, East nearly	20 "
Southwest Ledge Lighthouse, entrance to New Haven	
Harbor, E. by N. $\frac{3}{4}$ N.	9 $\frac{3}{4}$ "
Horton's Point Lighthouse, E. by S. $\frac{5}{8}$ S.	30 "
Middle Ground Lighthouse, S. $\frac{3}{4}$ W.	5 $\frac{3}{8}$ "
Old Field Point Lighthouse, S. by W. nearly	10 $\frac{1}{2}$ "
Penfield Reef Lighthouse, W. by S. $\frac{1}{8}$ S.	5 $\frac{3}{4}$ "
Norwalk Lighthouse W. by S. $\frac{3}{8}$ S.	15 $\frac{1}{2}$ "
Eaton's Neck Lighthouse, SW. by W. $\frac{1}{8}$ W.	18 "
Lighthouse on Execution Rocks, W. by S. $\frac{7}{8}$ S. nearly	33 "
Red Buoy on outer part of Shoal, off Stratford Point,	
SW.	1 $\frac{3}{8}$ "

Middle Ground Lighthouse.

Upon a Shoal (midway Long Island Sound), called the Middle Ground, is a Lighthouse, which at this date (1881), shows a Flashing White Light. A Fog Trumpet is attached to this Lighthouse, giving blasts of 6 seconds duration at intervals of 21 seconds.

Remarks.

Large or heavy draught vessels should not approach this Lighthouse nearer than $\frac{1}{2}$ mile, except on its Western side, where it is quite bold. Vessels of more than 5 feet draught passing South of this Light should give it a berth of at least $\frac{1}{3}$ mile.

Bearings and Distances from Middle Ground Lighthouse.

	Distance.
Race Rock Lighthouse, E. $\frac{3}{8}$ N.	48 $\frac{3}{4}$ miles.
Little Gull Island Lighthouse, E. $\frac{1}{4}$ N.	45 $\frac{3}{4}$ "
Cornfield Point Light-ship, E. $\frac{3}{4}$ N.	34 "
Falkner's Island Lighthouse, E. by N. $\frac{3}{8}$ N.	21 $\frac{1}{2}$ "
Southwest Ledge Lighthouse, entrance to New Haven	
Harbor, NE. $\frac{3}{8}$ E.	13 $\frac{1}{4}$ "
Stratford Point Lighthouse, N. $\frac{3}{4}$ E.	5 $\frac{3}{8}$ "
Bridgeport Harbor Lighthouse, N.NW.	6 $\frac{5}{8}$ "
Black Rock Lighthouse, NW. $\frac{1}{2}$ N.	7 $\frac{1}{8}$ "
Penfield Reef Lighthouse, NW. $\frac{3}{8}$ W.	6 $\frac{3}{8}$ "

	Distance.
Norwalk Lighthouse, W. $\frac{1}{2}$ N.	14 $\frac{1}{4}$ miles.
Great Captain's Island Lighthouse, W. $\frac{1}{4}$ S.	24 "
Horton's Point Lighthouse, E. $\frac{3}{8}$ S.	29 "
Old Field Point Lighthouse, S. by W. $\frac{1}{2}$ W.	5 "
Eaton's Neck Lighthouse, W. by S. $\frac{1}{2}$ S.	14 $\frac{1}{2}$ "

Penfield Reef Lighthouse.

On the Eastern extremity of this Reef a Lighthouse has been erected, which at this date (1881), shows a Flashing Red Light. A Fog Bell is attached to this Lighthouse, which in thick weather is struck two blows in quick succession at intervals of 20 seconds.

Remarks.

Penfield Reef Lighthouse is intended to guide vessels to the Harbors of Bridgeport and Black Rock, and also through the Northern channel of Long Island Sound; shoal water extends to the Southwest more than $\frac{1}{2}$ mile from this Lighthouse; about $\frac{1}{3}$ mile Northeast from it lies the dangerous Reef called the Cows, which are marked on their Eastern part with a Beacon, which is left on the Port Hand by vessels bound to Black Rock or Bridgeport Harbors.

Bearings and Distances from Penfield Reef Lighthouse.

	Distance.
Stradford Point Lighthouse, E. by N. $\frac{1}{8}$ N.	5 $\frac{3}{4}$ miles.
Middle Ground Lighthouse, SE. $\frac{3}{8}$ E.	6 $\frac{3}{8}$ "
Bridgeport Harbor Lighthouse, NE. $\frac{1}{4}$ E.	3 "
Black Rock Lighthouse, N. by E. $\frac{1}{2}$ E.	1 $\frac{1}{2}$ "
Old Field Point Lighthouse, S. by E. $\frac{3}{4}$ E.	9 $\frac{1}{2}$ "
Eaton's Neck Lighthouse, SW. $\frac{1}{4}$ W.	12 $\frac{1}{2}$ "
Norwalk Lighthouse, W. by S. $\frac{1}{2}$ S.	10 "
Lighthouse on Execution Rocks, W.SW.	27 $\frac{1}{2}$ "
Red Buoy off Stradford Point, East	4 $\frac{1}{3}$ "
Beacon off Eastern part of Cows Reef, NE. by E. $\frac{1}{2}$ E.	$\frac{1}{4}$ "
Red Buoy off Southeast part of Norwalk Islands Shoal, W. by S. $\frac{1}{2}$ S.	5 $\frac{3}{8}$ "

Norwalk Lighthouse.

Upon the Southwest part of Sheffield Island, one of the Norwalk Group, is a Lighthouse, which at this date (1881), shows a fixed

White Light, varied at intervals of one minute by Red Flashes; this Light is intended to guide vessels into Norwalk River, and also through Long Island Sound.

Remarks.

In approaching Norwalk River the channel is very narrow, crooked and full of Rocks and Shoals, few of which at this time are buoyed; there is, however, excellent anchorage under Sheffield Island in all winds and weathers for vessels of from 10 to 12 feet draught. The principal danger in entering is Green's Ledge, which extends off West-Southerly from the Lighthouse about $1\frac{1}{4}$ miles, and is bare in some places at low tide; this Ledge is marked off its Western part with a Red Buoy; Norwalk Lighthouse bears from this Buoy **E. by N. $\frac{1}{2}$ N.**, distance $1\frac{3}{4}$ miles. Vessels of more than 7 feet draught should in no case attempt to pass between this Buoy and the Lighthouse.

Bearings and Distances from Norwalk Lighthouse.

	Distance.
Middle Ground Lighthouse, E. $\frac{1}{2}$ S.	$14\frac{1}{4}$ miles.
Stradford Point Lighthouse, E. by N. $\frac{3}{4}$ N.	$15\frac{1}{2}$ "
Penfield Reef Lighthouse, E. by N. $\frac{1}{2}$ N.	10 "
Eaton's Neck Lighthouse, S. $\frac{1}{4}$ E.	$5\frac{3}{4}$ "
Execution Rocks Lighthouse, SW. by W $\frac{3}{4}$ W.	18 "
Red Buoy off Western part of Green's Ledge, W. by S. $\frac{1}{2}$ S.	$1\frac{3}{4}$ "
Red Buoy, off South part of Bare Ledge, called the Cows, W. by S. $\frac{3}{4}$ S.	$5\frac{1}{4}$ "

To avoid this last-named Ledge in beating through the Sound, vessels should not stand to the Northward of Norwalk Lighthouse bearing **NE. by E. $\frac{1}{2}$ E.** or Captain's Island Lighthouse **W.**

Budd's Reef, on which there is 24 feet water, bears from Norwalk Light **SW. $\frac{3}{4}$ S. $1\frac{3}{4}$ miles.**

Great Captain's Island Lighthouse.

Upon the Eastern end of Great Captain's Island (North side of Long Island Sound), is a Lighthouse, which at this date (1881), shows a fixed White Light; this Light is intended to guide vessels into Great Captain's Island Harbor, and also through Long Island Sound.

Remarks.

Great Captain's Island is nearly surrounded by Shoals, and can only be approached on its Southern side within $\frac{1}{4}$ mile without danger.

Bearings and Distances from Great Captain's Island Lighthouse.

	Distance.
Middle Ground Lighthouse, E. $\frac{1}{4}$ N.	24 miles.
Old Field Point Lighthouse, E. $\frac{7}{8}$ S.	22 $\frac{3}{4}$ "
Eaton's Neck Lighthouse, E. by S. $\frac{5}{8}$ S.	10 $\frac{1}{2}$ "
Execution Rocks Lighthouse, SW. $\frac{1}{4}$ W.	8 $\frac{1}{2}$ "
Red Buoy off Southern part of Bare Ledge, called the Cows, E. $\frac{3}{4}$ N.	4 $\frac{3}{4}$ "

Old Field Point Lighthouse

Upon Old Field Point, South side of Long Island Sound, is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels through the South Channel of this Sound.

Remarks.

Between Old Field, and Horton's Point Lighthouses, a distance of more than 30 miles, shoal water in several places extends off a long distance; large or heavy draught vessels, sailing through the Sound, should give the Southern shore a wide berth.

Bearings and Distances from Old Field Point Lighthouse.

	Distance.
Horton's Point Lighthouse, E. $\frac{1}{4}$ N.	30 $\frac{1}{2}$ miles.
Middle Ground Lighthouse, N. by E. $\frac{1}{2}$ E.	5 "
Norwalk Lighthouse, NW. by W. $\frac{3}{4}$ W.	14 $\frac{1}{4}$ "
Eaton's Neck Lighthouse, W. $\frac{1}{4}$ N.	12 $\frac{3}{4}$ "
Great Captain's Island Lighthouse, W. $\frac{7}{8}$ N.	22 $\frac{3}{4}$ "
Black Buoy off Northern part Mt. Misery Shoal, E. $\frac{5}{8}$ N.	1 $\frac{3}{4}$ "

Eaton's Neck Lighthouse.

Upon Eaton's Neck, South side of Long Island Sound (and East side of entrance to Huntington Bay), is a Lighthouse, which at this date (1881), shows a fixed White Light, which is intended to guide vessels into Huntington Bay, and also through the Sound. A Fog Signal is placed near this Lighthouse, giving blasts of 9 seconds duration, at intervals of 35 seconds.

Remarks.

A Shoal extends off to the Northward, nearly a mile from the Lighthouse, and is marked on its Northern part with a Black Buoy; heavy draught vessels should not go the Southward of this Buoy; without this Buoy there are several Rocky Shoals, having in some places not more than 19 feet water upon them; Eaton's Neck Lighthouse bears from the outer Shoal **S.** by **W.**, distance $2\frac{1}{2}$ miles; in order to avoid this danger, large or heavy draught vessels should keep nearer Norwalk Lighthouse.

Bearings and Distances from Eaton's Neck Lighthouse.

	Distance.
Stradford Point Lighthouse, NE. by E. $\frac{1}{8}$ E. . . .	18 miles.
Middle Ground Lighthouse, E. by N. $\frac{1}{2}$ N. . . .	14 $\frac{5}{8}$ "
Penfield Reef Lighthouse, NE. $\frac{1}{4}$ E.	12 $\frac{1}{2}$ "
Old Field Point Lighthouse, E. $\frac{1}{4}$ S.	12 $\frac{3}{4}$ "
Norwalk Lighthouse, N. $\frac{1}{4}$ W.	5 $\frac{3}{4}$ "
Great Captain's Island Lighthouse, W. by N. $\frac{5}{8}$ N. . . .	10 $\frac{1}{2}$ "
Black Buoy off Northern part of Eaton's Pt. Shoal,	
N. $\frac{3}{4}$ E.	$\frac{7}{8}$ "
Black Buoy off Lloyd's Neck Shoal, W. $\frac{3}{4}$ N. . . .	4 $\frac{1}{8}$ "

Sands' Point Lighthouse.

Upon Sands' Point, South side of the channel, is a Lighthouse, which at this date (1881), shows a Flashing White Light.

Remarks.

A Reef extends off Northwesterly from this Lighthouse nearly $\frac{1}{2}$ mile, and is marked on its Northern side with a Black Buoy; Shoal water also extends off Northeasterly about $\frac{3}{4}$ mile. Vessels bound to the Westward should keep nearest the Lighthouse on the Execution Rocks.

Bearings and Distances from Sands' Point Lighthouse.

	Distance.
Great Captain's Island Lighthouse, NE. $\frac{1}{8}$ N. . . .	8 $\frac{1}{4}$ miles.
Norwalk Lighthouse, NE. by E. $\frac{3}{8}$ E.	17 $\frac{3}{4}$ "
Execution Rocks Lighthouse, N. by W. $\frac{3}{4}$ W. . . .	$\frac{7}{8}$ "
Stepping Stones Lighthouse, SW. $\frac{1}{2}$ W.	3 $\frac{1}{4}$ "
Black Buoy off Northern part Sands' Pt. Reef, NW. by	
N. $\frac{1}{2}$ N.	$\frac{1}{4}$ "
Black Buoy off Northern part Gangway Rock, W. SW. . . .	$\frac{7}{8}$ "

Execution Rocks Lighthouse.

Upon one of these bare rocks, which lie on the Northern side of the channel, a Lighthouse has been erected, which at this date (1881), shows a fixed White Light. A Fog Trumpet is attached to this Light, giving blasts of 7 seconds, at intervals of 43 seconds.

Remarks.

The Execution Rocks are partly bare and partly sunken; they extend **N.NE.** and **S.SW.** about $\frac{3}{4}$ mile, and are marked on their Northern end with a Black Buoy,* and upon their Southern part with a Red Buoy; the Lighthouse stands about $\frac{1}{4}$ mile from the Southwestern end; large or heavy draught vessels may approach these Rocks within $\frac{1}{4}$ mile on their Southern and Southeastern parts without danger. There is a good channel on the Northwestern side of these Rocks, with not less than 7 fathoms in it. but it is rarely used.

Bearings and Distances from Execution Rocks Lighthouse.

	Distance.
Norwalk Lighthouse, NE. by E. $\frac{3}{4}$ E.	18 miles.
Great Captain's Island Lighthouse, NE. $\frac{1}{4}$ E.	8 $\frac{1}{8}$ "
Sands' Point Lighthouse, S. by E. $\frac{3}{4}$ E.	7 $\frac{1}{8}$ "
Stepping Stones Lighthouse, SW. $\frac{3}{4}$ S.	3 $\frac{1}{2}$ "
Throg's Neck Lighthouse, SW. $\frac{3}{4}$ S.	5 "
Buoy off the Northeast part of Execution Rocks, N.NE.	$\frac{1}{2}$ "
Red Buoy off Southwest part of Execution Rocks, SW. $\frac{1}{2}$ W.	$\frac{1}{4}$ "
Black Buoy off Northern part of Sands' Point Reef, S. by E. $\frac{1}{2}$ E.	5 $\frac{1}{8}$ "
Black Buoy off Northern part Gangway Rock, S.SW.	1 $\frac{1}{4}$ "
Southern part Hart Island, SW. $\frac{1}{2}$ S.	2 $\frac{3}{8}$ "

Stepping Stones Lighthouse.

Upon the Northwestern extremity of a dangerous Reef called the Stepping Stones, is a Lighthouse, which at this date (1881), shows a fixed Red Light. A Fog Bell is attached to this Lighthouse, which is struck in thick weather at intervals of 20 seconds.

* This Buoy has been changed to Red and Black Horizontal Stripes.

Remarks.

This Reef, which extends from the Long Island shore, has many rocks upon it, some of which are awash at low tide. Vessels should in no case, therefore, attempt to pass to the Southward of this Lighthouse; it may, however, be approached on its Western and Northwestern parts within 75 yards without danger. In order to avoid the Gangway Rock, vessels from the Eastward, when past the Lighthouse on Execution Rocks, should tack when the Stepping Stones and Throg's Point Lights are in range.

Bearings and Distances from Lighthouse on Stepping Stones.

	Distance.
Execution Rocks Lighthouse, N.E. $\frac{3}{4}$ E.	3 $\frac{1}{2}$ miles.
Throg's Neck Lighthouse, SW $\frac{1}{2}$ S	1 $\frac{1}{4}$ "
South Point Hart Island, N.N.E.	1 $\frac{1}{4}$ "
Black Buoy off Gangway Rocks, N.N.W. $\frac{1}{8}$ N.	2 $\frac{3}{8}$ "

Throg's Neck Lighthouse.

Upon Northeast side of Fort Schuyler and Southeast end of Throg's Neck, is a Lighthouse, which at this date (1881), shows a fixed White Light. A Fog Bell is placed near this Lighthouse, which is struck in thick weather at intervals of 15 seconds. This Lighthouse marks the Northwest side of entrance to East River.

Remarks.

Shoal water extends off about 200 yards from the Southeast extremity of Throg's Neck, and is marked on its outer part with a Red Buoy; shoal water also extends off from the opposite shore, and vessels bound East or West should keep nearer Throg's Neck; shoal water extends nearly on a line from the South part of City Island to Throg's Neck Lighthouse. Vessels beating up or down should not stand to the Westward of Throg's Neck Lighthouse, bearing **SW.** by **S** $\frac{1}{2}$ **S.**

Bearings and Distances from Throg's Neck Lighthouse.

	Distance.
Stepping Stones Lighthouse, NE. $\frac{1}{2}$ N.	1 $\frac{1}{4}$ miles.
Red Buoy of Southeast part of Throg's Neck Shoal, S. $\frac{3}{4}$ E.	$\frac{1}{8}$ "
Black Buoy off College Point, West	2 $\frac{3}{4}$ "

North Brother Lighthouse.

Upon the Southwest end of the North Brother is a Lighthouse, which at this date (1881), shows a fixed White Light.

Remarks.

The channel between the Brothers is about 100 yards wide, with a depth of about 4 fathoms water. Vessels bound through this passage should keep nearer the Lighthouse. The channel to the Northward of the North Brother is in no place less than 200 yards wide, and from 10 to 12 fathoms water in it. Throg's Neck Lighthouse bears from North Brother Lighthouse **E. $\frac{1}{2}$ S.**, distance 5 miles. Entrance to Hell Gate **SW.** by **W.**, distance $1\frac{3}{4}$ miles.

Blackwell's Island Lighthouse.

Upon the Northeastern end of Blackwell's Island is a Lighthouse, which at this date (1881), shows a fixed Red Light, which is maintained by the City of New York.

Turning of Currents between Block Island and Point Judith.

Mid-channel between Block Island and Point Judith the current turns Easterly and Westerly about 55 minutes before it does in the Race.

Turning of Currents in the Race.

In the middle of the Race the current turns to the Eastward about 20 minutes after the time of high water in Boston; and turns to the Westward about 6 hours and 30 minutes after the time of high water at this last-mentioned place.

Turning of the Current between the Race and Middle Ground Lighthouse.

Between the Race and Middle Ground Lighthouse in mid-channel the current turns Easterly and Westerly about the same time that it does in the Race.

Turning of the Current in Fisher's Island Sound.

The current commences running Easterly and Westerly through Fisher's Island Sound a short time before it begins to set in and out of the Race.

Remarks on Currents or Tides.

If a vessel take her departure from Gull Island (the Light bearing South) on the first of the Western tide, and move through the water in ship channel at the rate of ten and one-half miles an hour, she would have the current setting with her to Sands' Point a distance of 77 nautical miles, or she would hold the tide with her about 6 hours and 20 minutes.

On the other hand, if a vessel bound through Long Island Sound take her departure from Sands' Point on the first of the Eastern tide, it would be necessary for her to move through the water at the rate of about $12\frac{1}{4}$ miles an hour in order to have the current running with her to the Race, or she would hold the tide with her about 5 hours and 40 minutes.

Advice to Coasters.

Vessels with the current running against them, bound (Easterly or Westerly) in the Eastern part of Long Island Sound, by keeping in shore, will have the current running with them from one to two hours before it turns in mid-channel; the greatest advantage will be found on the Northern shore of the Sound (especially) between New London and New Haven.

The current commences, near the Western part of Fisher's Island, to run in and out of the Race about one hour before it does near Gull Island; vessels therefore bound out or into Long Island Sound, with the current running against them, should keep nearest Race Rock Lighthouse.

For a better knowledge of the current in Long Island Sound, see Eldridge's Tide Tables.

Sailing Directions from Point Judith Lighthouse to Execution Rocks (by the South Channel), in Daytime, with favorable winds and fair weather.

Leave Point Judith Lighthouse about $1\frac{1}{4}$ miles to the Northward, and make good the course **W. $\frac{3}{4}$ S.**; as soon as Race Rock Lighthouse is made bring it to bear **W. by N. $\frac{1}{2}$ N.**, and run for it on this course; leave the last-named Lighthouse a short distance on the Starboard hand, and make good the course **W. $\frac{3}{4}$ S. $48\frac{3}{4}$** miles, which will bring you up with the Lighthouse on the Middle Ground; leave this last-named Lighthouse not less than $\frac{1}{2}$ mile on

the Starboard hand, and make good the course **W. $\frac{1}{2}$ S.** until Great Captain's Island Lighthouse bears **W.NW.**; the course is then **W.SW.** and distance $10\frac{3}{4}$ miles to the Lighthouse on the Execution Rocks; as soon as this Lighthouse is made bring it to bear **W.SW.**, and steer for it on this course; if it should be thick weather so that the Lighthouse on these Rocks cannot be seen but a short distance, be careful and not approach Matinicoek Point in less than 6 or 7 fathoms water.

In running these courses from the Middle Ground Lighthouse to the Execution Rocks, large or heavy draught vessels should be careful to avoid the Rocky bottom off Eaton's Neck; for information relative to this see description of Eaton's Neck Lighthouse.

These directions from Point Judith to Execution Rocks will answer for night or day.

Sailing Directions from Race Rock Lighthouse to Execution Rocks (by the North Channel), in Day-time, with favorable winds and fair weather.

Leave Race Rock Lighthouse a short distance on the Starboard hand and make good the course **W. $\frac{1}{2}$ N.** $15\frac{1}{2}$ miles, which will bring you up with Cornfield Point Light-ship; leave this Light-ship a short distance on the Starboard, and make good the course **W. $\frac{1}{4}$ N.** 12 miles to Falkner's Island Lighthouse. In thick weather, especially with light winds, after passing Cornfield Point Light-ship, allowance should be made for the current of flood which sets in to the Northwest very strong; when abreast Falkner's Island Lighthouse, which may be left about 1 mile to the Northward, the course is about **W. $\frac{1}{4}$ S.** and distance 20 miles to Stradford Point Lighthouse; shoal water extends off Southwesterly more than $1\frac{1}{2}$ miles from this Point. The Southwest part of this shoal is marked with a Red Buoy; large or heavy draught vessels should therefore give this Point a wide berth. Leave the Red Buoy off Stradford Point on the Starboard hand and make good the course **W. by S. $\frac{3}{4}$ S.** $31\frac{1}{2}$ miles to Lighthouse on Execution Rocks. In running from Stradford Point on this last course **W. by S. $\frac{3}{4}$ S.** (in thick weather), a slight deviation from it may bring you near Lloyd's and Matinicoek Points; it is therefore advisable to use the lead and not approach either of these Points in less than 7 fathoms water. When the Light on the Execution Rocks is made bring it to bear from **W. by S. $\frac{3}{4}$ S.** to **W.SW.** and run for

it without danger. These directions from Race Rock Lighthouse to Execution Rocks will answer for day or night.

During a Northeast gale, if a vessel should enter the Race, and then be compelled to run up the Sound, it is advisable to leave Race Rock Lighthouse a short distance on the Starboard hand and steer West for Stradford Point, distance $47\frac{1}{2}$ miles; if there be no deviation from this course you will leave Cornfield Point Light-ship about $1\frac{1}{2}$ miles to the Northward, Falkner's Island Light $2\frac{1}{2}$ miles to the Northward, and Stradford Point Light about 2 miles on the same hand; in passing this last-named Point use the lead and do not approach it nearer than $1\frac{1}{2}$ miles, or in less than 3 fathoms water; when past this Point there is good anchorage in Northeast gales in from $3\frac{1}{2}$ to 4 fathoms water. See directions for Bridgeport Harbor.

Sailing Directions from Lighthouse on Execution Rocks to Riker's Island, in Daytime, with favorable winds and fair weather.

Run for the Lighthouse on Execution Rocks, as before directed, passing about midway between it and the Black Buoy off Sands' Point; when the former bears N. by W. steer about SW., leaving the Black Buoy off Gangway Rock well on the Port hand, and the Lighthouse on the Northwestern part of the Stepping Stones a short distance on the Port; when past this last-mentioned Lighthouse steer more Southerly, and haul round Throg's Neck Lighthouse at a distance of 400 yards, leaving the Red Buoy off the Fort on the Starboard hand; when past this Buoy keep about in the middle of the River, course about W. $\frac{1}{2}$ N., $4\frac{1}{2}$ miles to Riker's Island; on this course the Black Buoy off College Point is left on the Port hand.

Sailing Directions from the Lighthouse on Execution Rocks to the East River, at Night-time, with favorable winds and fair weather.

Vessels at night-time may run for the Light on the Execution Rocks, bearing W.SW., leaving it about 400 yards on the Starboard; when past this Light, or it bears N. by W., bring the Red fixed Light on the Northwestern part of the Stepping Stones on a range with Throg's Neck Light, bearing about SW. $\frac{1}{2}$ S., then run for them in range, leaving the Red Light on the Stepping Stones

close to on the Port hand; when past this last Light steer more Southerly, and haul round Throg's Neck Light at a distance of 500 yards and run up **W.NW.** about $\frac{3}{4}$ mile, and anchor close in under Throg's Neck in from 5 to 8 fathoms water.

Anchorage Between Throg's Neck and Riker's Island, in Daytime.

If you wish to anchor between Throg's Neck and Riker's Island, follow the directions before given until past Throg's Neck Lighthouse, then keep about in the middle of the River (course about **W. $\frac{1}{2}$ N.**); as you sail in keep a sharp lookout for the Black Buoy off College Point, which is about $2\frac{3}{4}$ miles from Throg's Neck Lighthouse; when this buoy is made, leave it close to on the Port, and run in **SW. $\frac{1}{2}$ W.**, $\frac{1}{2}$ mile, and anchor in Flushing Bay in from 3 to 8 fathoms water, soft bottom. In entering this Bay the channel is very narrow; it is, therefore, advisable when past the Buoy to use the lead. On the Northern side of the River, about 1 mile above Throg's Neck Lighthouse, good anchorage may be found in from $3\frac{1}{2}$ to 8 fathoms water; there is also anchorage for a few small vessels in from 6 to 12 feet water, between Riker's Island and the South Brother. The north end of this last-named Island bears about East from this anchorage.

Hell Gate.

No suitable directions can be given for navigating this dangerous place; it is therefore advisable for masters of vessels unacquainted with it to employ a steam-tug or pilot.

Turning of the Current in Hell Gate.

The current turns to the Westward through Hell Gate about 1 hour and 23 minutes before the time for high water in Boston, and commences running to the Eastward through this dangerous place about 4 hours and 19 minutes after the time given for high water at this last-named place.

Sailing Directions from the Lighthouse on Execution Rocks (by the South Channel) to Point Judith Lighthouse in Daytime, with favorable winds and fair weather.

Leave the Lighthouse on the Execution Rocks about $\frac{1}{4}$ mile on the Port hand, and make good the course **E.NE.**, leaving the

Black Buoy off Matinicoek Point well on the Starboard hand. When Great Captain's Island Lighthouse bears **W.NW.**, and the Black Buoy off the Northern part of Lloyd's Neck **SE.** by **E.** $\frac{1}{2}$ **E.** about $1\frac{1}{2}$ miles, the course is then **E.** $\frac{5}{8}$ **N.**, 20 miles to the Lighthouse on Middle Ground; in running this last course, large or heavy draught vessels should be careful to avoid the Rocky bottom off Eaton's Neck Lighthouse; for information relative to this, see description of Eaton's Neck Lighthouse. Leave the Lighthouse on the Middle Ground about $\frac{3}{4}$ mile on the Port hand, and make good the course **E.** $\frac{3}{8}$ **N.**, 46 miles; then, with Gull Island Lighthouse bearing South about $\frac{3}{4}$ mile, steer **E.** by **S.** $\frac{1}{2}$ **S.**, passing between the Black Buoy which lies off a short distance from it, and the Buoy on Valiant Rock*; continue the course **E.** by **S.** $\frac{1}{2}$ **S.**, until the last-named Lighthouse bears **W.** $\frac{3}{4}$ **S.**, the course is then **E.** $\frac{3}{4}$ **N.**, to Point Judith Lighthouse.

Sailing Directions from the Lighthouse on Execution Rocks (by the North Channel) to Little Gull Island Lighthouse in Daytime, with favorable winds and fair weather.

Leave the Lighthouse on the Execution Rocks about $\frac{1}{4}$ mile on the Port hand, and make good the course **E.** by **N.** $\frac{3}{4}$ **N.** 33 miles; on this course the dangers on the Northern side of the Sound will all be left well on the Port hand; when Stradford Point Lighthouse bears North about $1\frac{1}{2}$ miles, the course is **E.** $\frac{3}{8}$ **N.**, 21 miles to Falkner's Island Lighthouse. Leave this last-named Lighthouse about one mile to the Northward, and steer **E.** $\frac{1}{4}$ **S.** $11\frac{1}{2}$ miles, which will bring you up with Cornfield Light-ship; from about $\frac{1}{2}$ mile South of it make good the course **E.** by **S.** 13 miles to Gull Island Lighthouse, and if bound East follow the directions before given.

NEW LONDON HARBOR.

This Harbor lies West-Northerly $27\frac{1}{2}$ miles from Point Judith Lighthouse; 8 miles Northeasterly from Little Gull Island Lighthouse; and East-Northerly about 95 miles in a direct line from the City of New York.

* The Buoy on Valiant Rock, which has 17 feet water upon it, bears **E.NE.** from Gull Island Lighthouse, distance 2 miles.

New London Lighthouse.

On the West side of entrance to New London Harbor is a Lighthouse, which at this date (1881), shows a fixed White Light. A Fog Signal, giving blasts of 6 seconds, at intervals of 14 seconds, is placed near this Lighthouse.

Bearings and Distances from New London Lighthouse.

	Distance.
Dumpling Lighthouse, SE. $\frac{3}{4}$ E.	3 $\frac{5}{8}$ miles.
Race Rock Lighthouse, S. by E. $\frac{1}{4}$ E.	4 $\frac{3}{4}$ "
Little Gull Island Lighthouse, S. by W. $\frac{1}{2}$ W.	6 $\frac{1}{2}$ "
Bartlett's Reef Light-ship, SW. $\frac{1}{2}$ S.	3 $\frac{1}{4}$ "

In approaching and entering New London Harbor there are many dangers, all of which, lying in the channel-way, at this time are marked with Light-ships, Beacons and Buoys.

Sea Flower or Potter's Reef.

This Reef, which lies nearly in the middle of the Western entrance to Fisher's Island Sound, is about 200 yards in diameter, and in some places is nearly bare at low tide; on its shoalest part, which is near its Western end, is a square Beacon, which at this date is painted in Red and Black Horizontal Stripes, and surmounted by a Spindle with a barrel-shaped Cage on top; vessels should not approach this Beacon nearer than 300 yards, especially on its Eastern side. New London Lighthouse bears from this Beacon **NW. $\frac{7}{8}$ W.** distance 2 $\frac{3}{4}$ miles. Beacon on Black Ledge **NW. by W. $\frac{1}{4}$ W.**, 1 $\frac{3}{4}$ miles.

Black Ledge.

This Ledge, which has but little water upon it in some places, is about 600 yards in length, and 350 yards wide; at this time it is marked on its Northwestern part with a Beacon, surmounted by a Spindle and Cage, both of which are painted Black; off its Eastern part with a Black Buoy, and off its Southwest part with a Red Buoy. New London Lighthouse bears from this last-mentioned Buoy, **NW. $\frac{1}{2}$ N.**, distance 1 $\frac{1}{4}$ miles; Buoy painted in Red and Black Horizontal Stripes off Southwest Ledge **NW. by W. $\frac{1}{4}$ W.**, about $\frac{1}{4}$ mile

Southwest Ledge.

This Ledge, which is small, lies nearly midway the entrance to New London Harbor, and has about 6 feet water on it at low tide; it is very bold on all sides, and in thick weather or night-time the lead gives no warning in approaching it. In order to avoid this Ledge, in beating in, vessels should not stand to the Eastward of New London Lighthouse bearing **N.NW.** At this date Southwest Ledge is marked off its Western part with a Buoy painted in Red and Black Horizontal Stripes; New London Lighthouse bears from this Buoy **NW.** by **N.** $\frac{1}{4}$ **N.**, 1 mile nearly.

Goshen Reef and Rapid Rock.

This Reef, on which there is but little water, is marked off its Southeast part with a Black Buoy; a short distance Southeast from this Buoy is Rapid Rock, which has about 10 feet water upon it at low tide; this Rock is marked off its Southeast part with a Buoy painted in Red and Black Horizontal Stripes; New London Lighthouse bears from this last-named buoy **NE.** by **N.** $\frac{3}{4}$ **N.**, distance $1\frac{3}{4}$ miles; Bartlett's Reef Light-ship **SW.** $\frac{3}{4}$ **W.**, $1\frac{5}{8}$ miles; Buoy painted in Red and Black Horizontal Stripes off Sarah's Ledge **NE.** $\frac{3}{4}$ **E.**, $\frac{5}{8}$ mile; heavy draught vessels, bound into New London, should leave the Buoy off Rapid Rock well on the Port hand.

Sarah's Ledge, or Mercer's Rock.

This Ledge, which has about 13 feet water upon it at low tide, lies on the West side of the ship channel, and at this date (1881) is marked on its Western side with a Buoy, painted in Red and Black Horizontal stripes. New London Lighthouse bears from this Buoy **N.** by **E.**, $1\frac{1}{4}$ miles. Buoy off Southwest Ledge (before described) **NE.** by **E** $\frac{1}{8}$ **E.**, $\frac{7}{8}$ mile. To avoid this Ledge, in beating in, do not stand to the Westward farther than to bring New London Lighthouse to bear North.

Cormorant Rock.

This Rock, which has about 7 feet water upon it at low tide, lies on the Western side of the channel about $\frac{1}{3}$ mile from shore, and is marked on its Eastern part with a Black Buoy; Rocks extend from this Buoy to the shore, and vessels should in no case pass within it; New London Lighthouse bears from this Buoy off Cormorant Rock **NE.** by **N.** $\frac{3}{4}$ **N.**, distance nearly a mile.

Frank's Ledge.

This Ledge, which is small, lies on the Eastern side of the ship channel and has about 12 feet water upon it at low tide; it is marked with a Buoy painted in Red and Black Horizontal Stripes, which is placed on the Ledge; New London Lighthouse bears from this Buoy **NW.** by **W.**, distance $\frac{3}{4}$ mile.

Black Rock.

This is a small Rocky Islet lying about 400 yards from the Eastern shore; New London Lighthouse bears from this Rock **W.** $\frac{3}{4}$ **N.**, distance $\frac{3}{4}$ mile.

Quinnipeag Rocks.

These Rocks, which are above water, lie about $\frac{1}{2}$ mile above the Lighthouse near the Western shore.

Hog's Back.

This Ledge, which is about $1\frac{1}{4}$ miles above the Lighthouse, lies on the Western side of the channel, and is awash at low tide.

Melton's Ledge.

Melton's Ledge, which is awash at low tide, lies near Powder Island on the Western side of the channel; this Ledge is marked off its Eastern part with a Black Buoy; New London Lighthouse bears from this Buoy **S.** by **W.** $1\frac{3}{8}$ miles.

Bartlett's Reef.

Upon the Western side of entrance to New London Harbor is a very dangerous Rocky Shoal, which is bare in some parts at low tide; this is called Bartlett's Reef; this danger extends **S.** by **E.** and **N.** by **W.** about $1\frac{1}{4}$ miles, and is marked off its Southern part with a Red Buoy, and also a Light-ship, which is called Bartlett's Reef Light-ship.

Bearings and Distances from Bartlett's Reef Light-ship.

	Distance.
Dumpling Lighthouse, E $\frac{1}{2}$ N.	$5\frac{1}{8}$ miles.
Race Rock Lighthouse, SE. by E. $\frac{1}{4}$ E.	4 "
Little Gull Island Lighthouse, S. $\frac{1}{2}$ E.	$3\frac{3}{4}$ "
Plum Island Lighthouse, SW. $\frac{1}{2}$ S.	$6\frac{3}{4}$ "
Cornfield Point Light-ship, W. $\frac{1}{4}$ S.	12 "
Buoy painted in Red and Black Horizontal Stripes off Southeast part Rapid Rock, NE. $\frac{1}{2}$ E.	$1\frac{1}{2}$ "

Remarks.

New London Harbor is the best on the Northern shore of Long Island Sound; about 24 feet water can be carried up to the anchorage abreast the city, at low tide; large or heavy draught vessels with Northerly or Westerly gales can find good shelter off the Lighthouse in about 5 fathoms water.

Sailing Directions for New London Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, as soon as Race Rock Lighthouse is made, run for it, bearing about **W. by N. $\frac{1}{2}$ N.**, give it a berth of about $\frac{1}{4}$ mile, leaving it on the Starboard hand, and steer for New London Lighthouse, bearing **N. by W.**, distance $4\frac{3}{4}$ miles; as you approach it you will see on the Starboard, the Beacon and Buoys on Black Ledge, and also the Buoy off Southwest Ledge (before described), and farther in the Buoy off Frank's Ledge; on the Port will be seen the Buoys off Goshen Reef, Sarah's Ledge and Cormorant Reef; continue the course for New London Lighthouse, bearing **N. by W.** until about $\frac{3}{4}$ mile from it, or the Beacon on Black Ledge bears East; the course is then about **N. $\frac{1}{2}$ E.**, keeping the Eastern shore best aboard, leaving the Buoys on the Southwest and Frank's Ledges well on the Starboard, and the Black Buoy off Melton's Ledge well on the Port hand, and anchor off the city, according to draught, in from 2 to 5 fathoms water.

By Way of Fisher's Island Sound.

Vessels bound to New London Harbor by way of Fisher's Island Sound may follow the directions before given for that Sound, until abreast the Dumpling Lighthouse; then steer about **W. by N.** leaving the Beacon on Sea Flower or Potter's Reef well on the Starboard hand; when New London Lighthouse bears **N. by W.** follow the directions before given.

Pine Island Channel.

This channel, which lies between the Beacon on Black Ledge and Pine Island, is frequented by vessels from Fisher's Island Sound bound to New London Harbor; it is, however, advisable for strangers not to attempt this channel.

From the Westward leave Cornfield Light-ship about $\frac{1}{2}$ mile on

the Port, and make good the course **E. $\frac{1}{2}$ N.**, until Bartlett's Reef Light-ship is made; then leave this last mentioned Light-ship close to on the Port, and steer about **NE. by E. $\frac{1}{2}$ E.**; on this last course the Buoys off Rapid Rock and Sarah's Ledge will be left well on the Port hand; continue the course **NE. by E. $\frac{1}{2}$ E.** until New London Lighthouse bears North, then run for it on this course until the Beacon on Black Ledge bears East; the course is then about **N. by E.**, keeping the Eastern shore best aboard, and anchor off the city according to directions before given.

Sailing Directions for New London Harbor at Night-time, with favorable winds and fair weather.

From the Eastward, when past Point Judith, bring the Light to bear **E. $\frac{3}{8}$ N.**, on which bearing keep it and steer **W. $\frac{3}{8}$ S.** until Race Rock Light bears **W. by N. $\frac{1}{2}$ N.**; then run for this last named Light on this course, leaving it about $\frac{1}{4}$ mile on the Starboard, and run for New London Light, bearing **N. by W.** until you judge that you are about $\frac{1}{2}$ mile from it; then, in about $4\frac{1}{2}$ fathoms water, gradually haul to the Northeastward, leaving it not more than $\frac{1}{3}$ mile to the Westward; when this Light bears West you are then past all the Ledges on the Eastern side of the channel, and may steer about **N. $\frac{1}{2}$ E.** keeping the Eastern shore best aboard; if the night is very dark, when past the Light shorten sail and use the lead, and do not go into less than $3\frac{1}{2}$ fathoms water until you reach the anchorage off the city.

From the Westward leave Cornfield Point Light-ship about $\frac{1}{2}$ mile to the Northward, and make good the course **E. $\frac{1}{2}$ N.**; as soon as Bartlett's Reef Light-ship is made, bring it to bear **E. $\frac{3}{4}$ N.** and run for it on this course; leave the last named Light-ship close to on the Port and make good the course **NE. by E. $\frac{1}{2}$ E.** until New London Light bears **N. by W.**; then follow the directions before given.

Beating in at Night.

In beating into New London Harbor at night, in order to avoid the Ledges on both sides of the channel, bring the light to bear from **N. $\frac{1}{2}$ E.** to **N. by W. $\frac{1}{2}$ W.**; when this light bears **W. by N.** you are then past the Ledges on the Eastern side of the channel and may stand farther to the Eastward; when past the Light keep the Eastern shore best aboard, and tack when the water shoals to

3½ fathoms; in beating in, it is advisable for large or heavy draught vessels to anchor abreast the Light in from 4½ to 5½ fathoms water, and wait for daylight. The above directions will answer for day or night.

Thick Weather.

At this date (1881), there is a Fog Bell at Race Rock Lighthouse, which is struck two blows in quick succession every 20 seconds; a Fog Signal at Little Gull Island Lighthouse, giving blasts of 5 seconds, at intervals of 40 seconds, and a Fog Trumpet at New London Lighthouse, giving blasts of 6 seconds, at intervals of 14 seconds.

Vessels therefore from the Eastward making or hearing the Fog Bell at Race Rock Lighthouse must bring it to bear **S.** by **E.** ¼ **E.** and make good the course **N.** by **W.** ¼ **W.**; as soon as the Fog Trumpet at New London Lighthouse is heard, bring it to bear **N.** by **W.**, and run for it until you judge you are about ½ mile from it; then gradually haul to the Northeastward and follow the directions before given.

Vessels from the Southward or Eastward, making or hearing the Fog Signal at Little Gull Island Lighthouse, may bring it to bear **S.S.W.** and make good the course **N.N.E.**; as soon as the Fog Trumpet at New London Lighthouse is made or heard, bring it to bear **N.** by **W.**, and run for it on this course, and proceed as before directed.

Vessels from the Westward, making or hearing the Bell at Bartlett's Reef Light-ship, must leave it close to on the Port and make good the course **N.E.** by **E.** ½ **E.** until the Fog Trumpet at New London Lighthouse bears **N.** by **W.**; then run for it on this course and follow the directions before given. Vessels bound to Norwich should take a pilot at New London.

High Water.

It is high water in New London Harbor 2h. 5m. before it is at Boston; common tides rise about 2½ feet.

NIANTIC BAY AND HARBOR.

This Bay lies about 5 miles to the Westward of the entrance to New London Harbor, and Northwest about 4 miles from Bartlett's Reef Light-ship.

Remarks.

Niantic Bay, which is easy of access, is one of the best Harbors of refuge on the Northern shore of Long Island Sound, with winds from West to East, by way of North; about 20 feet water can be carried in past White Rock, and vessels may anchor according to draught near the head of the Bay in from 12 to 15 feet water. This Bay is sometimes of great importance, as vessels can make it in daytime with heavy Northeasterly gales, when it would be impossible to get into New London Harbor.

**Sailing Directions for Niantic Bay in Daytime,
with favorable winds and fair weather.**

From the Eastward, leave Race Rock Lighthouse about $\frac{1}{4}$ mile on the Starboard hand, and steer **NW.** by **W.** for Bartlett's Reef Light-ship; leave this Light-ship about $\frac{1}{4}$ mile on the Starboard, and make good the course **NW.** by **N.**, leaving the first Buoy (Red) off Bartlett's Reef well on the Starboard hand; as you sail in, you will see on the Starboard bow a Red Buoy, and a little farther in a small Rocky Islet; the former lies off Little Rock, which is bare; the latter is White Rock, which is bold on its Western side; leave both these rocks about 150 yards on the Starboard hand, and when past White Rock, run in about $\frac{1}{2}$ mile **NW.** by **N.** $\frac{1}{2}$ **N.**, and anchor in about $3\frac{1}{2}$ fathoms water, good holding ground; small or light draught vessels may go farther up and anchor in about $2\frac{1}{2}$ fathoms.

By way of Fisher's Island Sound.

Vessels coming through Fisher's Island Sound may follow the directions before given for that passage until up with Bartlett's Reef Light Ship, then proceed as before directed.

Vessels from the Westward may leave Cornfield Point Light-ship about $\frac{1}{4}$ mile to the Northward, and steer about **E.** $\frac{1}{2}$ **N.** until past Cornfield Shoal, or Saybrook Lighthouse bears **NW.**, then haul in **E.** by **N.** $\frac{1}{2}$ **N.**, leaving Black Point (which is on the West side) about $\frac{1}{2}$ mile to the Northward, when Niantic Bay is well open run up about **N.** by **E.** and anchor to the Northwestward of White Rock as before directed.

Beating into Niantic Bay.

In beating into this Bay, the only danger on the Western side, excepting near the head, is 3-Foot Rock; this rock lies about $\frac{1}{4}$ mile

from the Western shore, and at this date (1881), is marked on its Eastern side with a Black Buoy, which bears from White Rock **W.** by **N. $\frac{1}{2}$ N.**, distance one mile; vessels can, therefore, when abreast Black Point, stand into 3 fathoms on the Western side without danger.

TWO TREE ISLAND CHANNEL.

This passage, which leads into Niantic Bay, is to the Northward of Bartlett's Reef, Two Tree Island and White Rock; this channel is not recommended for strangers, especially with light winds, as the current sets strong in some parts on the Ledges.

ANCHORAGE UNDER BLACK POINT.

In heavy Easterly gales when you cannot fetch into Niantic Bay, you may find shelter under Black Point.

Sailing Directions.

When you make Black Point, which bears **W.NW.** $3\frac{1}{2}$ miles from Bartlett's Reef Light-ship, leave it about $\frac{1}{4}$ mile to the Eastward, as you sail in you will see (on the Port) the Red Buoy on the Southern part of Black Buoy Ledge; anchor (to the Eastward of this Buoy) close in under the Point in about 4 fathoms water; Niantic Bay is a much better Harbor, this anchorage should therefore only be used in case of emergency.

SAYBROOK HARBOR, or CONNECTICUT RIVER.

The entrance to this Harbor and River is about $11\frac{1}{2}$ miles to the Westward of New London entrance, 11 miles Northwesterly from Little Gull Island Lighthouse and 26 miles to the Eastward of New Haven entrance.

Saybrook Lighthouse.

On Lynde Point, West side of entrance to Saybrook Harbor and Connecticut River, is a Lighthouse, which at this date (1881), shows

a fixed White Light; a Fog Signal is placed near the Lighthouse which is struck in thick weather at intervals of 12 seconds.

Bearings and Distances from Saybrook Lighthouse.

	Distance.
Bartlett's Reef Light-ship, E. $\frac{7}{8}$ S.	9 $\frac{1}{2}$ miles.
Race Rock Lighthouse, E. by S. $\frac{1}{2}$ S.	13 $\frac{1}{4}$ "
Little Gull Island Lighthouse, SE. by E. $\frac{1}{2}$ E.	11 $\frac{1}{4}$ "
Cornfield Point Light-ship, SW. $\frac{1}{4}$ W.	3 $\frac{1}{2}$ "
Red Buoy off Southeast part of Hatchet's Reef, E. by S. $\frac{1}{4}$ S.	3 $\frac{1}{2}$ "
Horizontal Striped Buoy off Eastern part of Long Sand Shoal, S. by E. $\frac{1}{2}$ E.	2 "

Remarks.

A very dangerous Bar of Shifting Sand extends across the entrance to Saybrook Harbor and Connecticut River; this Bar, which shifts with every gale and freshet, extends off Southeasterly from the Lighthouse about 2 miles. In entering, there are two channels, the Southeast channel and the Western or main channel; the former usually has at low tide from 4 to 6 feet water in it; the latter, which has recently been improved by artificial Piers or Jetties, has, it is said, at this date (1881), about 7 feet water in it at low tide; this last-named or Western channel is the best for strangers.

Sailing Directions for Saybrook Harbor and Connecticut River in Daytime, with favorable winds and fair weather.

A little before high water, vessels from the Eastward, of not more than 7 feet draught, bound into Saybrook Harbor or up Connecticut River, must bring Saybrook Lighthouse to bear **NW. $\frac{1}{4}$ W.** and run for it on this course; as you approach this Lighthouse keep a sharp lookout for the Channel Buoy which lies on the outer edge of the Bar and is painted in Black and White Perpendicular Stripes; Saybrook Lighthouse bears from this Buoy, at this date, **NW. $\frac{1}{4}$ W.**, distance 2 miles; leave this buoy close to on either hand and run for the Lighthouse, bearing **NW. $\frac{1}{4}$ W.**; as you sail in you will see nearly ahead (and a short distance Southeast from the Lighthouse), a Stone Beacon, which may be left about 100 yards on the Port hand; when past this Beacon, run up about **N.NW.**, keeping the Western shore best aboard, and anchor $\frac{1}{4}$ mile

above the Steamboat Docks in about 2 fathoms water. If bound up the River it is advisable to take a pilot here.

Vessels from the Westward, bound to Saybrook Harbor or Connecticut River, may leave Falkner's Island Lighthouse about 1 mile to the Northward, and make good the course **E. $\frac{1}{2}$ N.**, leaving the Horizontal Striped Buoy, off the West part of Long Sand Shoal, and Cornfield Point Light-ship well to the Southward, and the Beacon on Hen and Chickens Reef well to the Northward; continue the course **E. $\frac{1}{2}$ N.** until Saybrook Lighthouse bears North, then at about half flood run for it on this course, and pass in between the Jetties, and gradually haul to the Eastward, entering the River midway between the Lighthouse and Beacon; when past the former follow the directions before given. It is advisable for vessels of more than 7 feet draught to wait outside the Jetties until nearly high water.

It is also advisable for vessels of more than 7 feet draught, from the Eastward, to bring Saybrook Lighthouse to bear **NW. $\frac{1}{2}$ N.** and run for it on this course, keeping a sharp lookout for the Red Buoy off the Southern part of the Bar; when up with this Buoy or you strike 3 fathoms, haul to the Westward until Saybrook Lighthouse bears North, then a little before high water run in between the Jetties as before directed.

Strangers should not attempt to enter Connecticut River at night.

High Water.

It is high water on Saybrook Bar 1 h. 10 m. before it is at Boston; common tides rise about 4 feet.

WESTBROOK HARBOR.

This Harbor, which lies about 5 miles to the Westward of Saybrook Lighthouse, affords good anchorage in Westerly and Northerly winds, but it is somewhat exposed to Southerly and Southeasterly winds.

Sailing Directions for Westbrook Harbor in Daytime, with favorable winds and fair weather.

Vessels from the Eastward may run for Saybrook Lighthouse, bearing **NW. $\frac{1}{2}$ N.** until up with the Red Buoy off the Bar or

the water shoals to 3 fathoms, then make good the course **W.** by **N.**, leaving the Red Buoy off Cornfield Point, the Beacon on Hen and Chickens and Red Buoy off Southern part of Crane Reef, all on the Starboard hand; when past the Red Buoy off Crane Reef (which bears from Cornfield Light-ship **NW.** by **N.**, distance 2 miles), haul in about **NW. $\frac{3}{4}$ N.** and anchor to the Eastward of the Lobster Rocks, according to draught, in from $2\frac{1}{2}$ fathoms to 8 feet water. The Beacon on Hen and Chickens Reef bears about **SE.** by **E.**, distance 2 miles, from this anchorage.

From the Westward, after passing Kimberley's Reef, bring Falkner's Island Lighthouse to bear **W. $\frac{1}{4}$ S.**, on which bearing keep it and steer **E. $\frac{1}{4}$ N.**; when the Buoy off Crane Reef is made, follow the directions before given.

KILLINGWORTH HARBOR.

This Harbor, which is open to Southerly winds, is a shallow Cove about $\frac{3}{4}$ mile wide, and lies $8\frac{1}{2}$ miles to the Westward of Saybrook Lighthouse and about $6\frac{1}{4}$ miles Northeastly from Falkner's Island Lighthouse; not more than 2 feet water at low tide can be taken up to Sandy Point, the entrance to Indian River, on the banks of which is situated the village of Clinton.

Sailing Directions for Killingworth Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave the Light-ship off South side of Long Sand Shoal close to on the Starboard hand, and steer about West, keeping a sharp lookout for the Horizontal Striped Buoy off Western part of the above-mentioned Shoal; when this Buoy is made, run for it, bearing about **NW.**, and leave it close to on the Starboard hand; when past this Buoy make good the course **W.NW.** $3\frac{1}{2}$ miles for the Red Buoy off the Southern part of Stone's Reef; leave this last-named Buoy on the Starboard, and run in about **NW.** by **N. $\frac{1}{2}$ N.**, and anchor outside the Red Buoy off Western part of Wheeler's Rock, in about 2 fathoms water at low tide; if bound to Clinton, a pilot is necessary.

Vessels from the Eastward, bound to Killingworth Harbor, may pass to the Northward of Long Sand Shoal by the following directions: Run for Saybrook Lighthouse, bearing **NW. $\frac{1}{2}$ N.** until up

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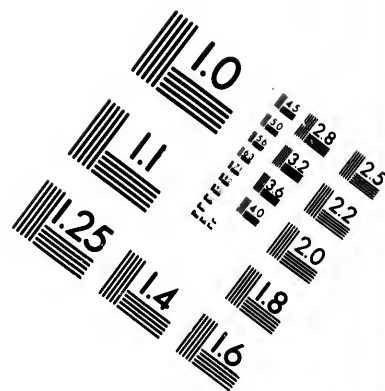
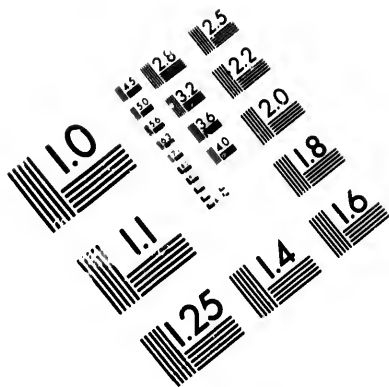
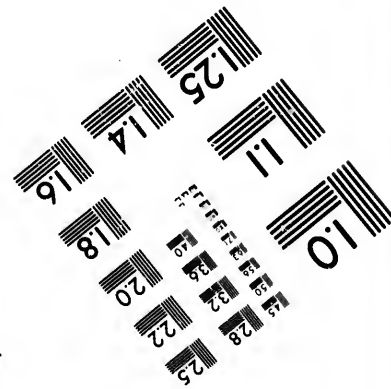
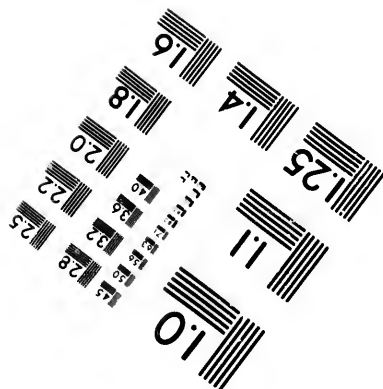
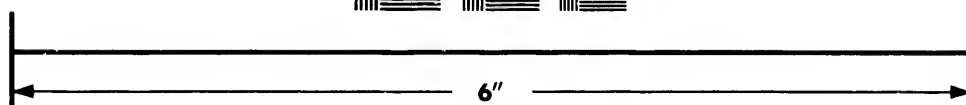
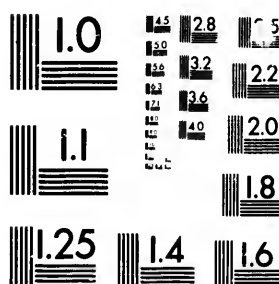


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with the Red Buoy off the Bar or the water shoals to 3 fathoms, then make good the course **W. $\frac{1}{2}$ N.** 9 miles, to Red Buoy off Stone's Reef; on this last course, the Red Buoy, off Cornfield Point, the Beacon on Hen and Chickens, the Red Buoy off the Southern part of Crane Reef, will all be left to the Northward; the Horizontal Striped Buoy on the Eastern part of Long Sand Shoal, the Light-ship and the Horizontal Striped Buoy on the Western part of the last-mentioned shoal, will be left well to the Southward; when the Red Buoy off Stone's Reef is made, run in as before directed.

From the Westward, when past Kimberley's Reef, which bears **E. $\frac{1}{4}$ N.**, $1\frac{3}{4}$ miles from Falkner's Island Lighthouse, bring the said Lighthouse to bear **W. $\frac{1}{2}$ S.**, on which bearing keep it and steer **E. $\frac{1}{2}$ N.**, leaving the Buoy off Hammonasset Point well to the Northward; when Killingworth Harbor is well open, run in as before directed.

High Water.

It is high water in Killingworth Harbor 47 minutes before it is at Boston; common tides rise about 5 feet.

GUILFORD HARBOR.

This Harbor, which is a shallow Cove, lies about $14\frac{1}{2}$ miles to the Westward of Saybrook Lighthouse, 3 miles North from Falkner's Island Lighthouse and $11\frac{1}{2}$ miles to the Eastward of the entrance to New Haven Harbor

Remarks.

On account of the numerous Shoals which obstruct the approach to it, this Harbor is only fit for very light draught vessels, and strangers seeking shelter from Easterly gales, will find good anchorage under Hammonasset Point.

Sailing Directions for Guilford Harbor in Daytime, with favorable winds and fair weather.

Vessels from the Eastward may leave the Light-ship, off Cornfield Point, a short distance to the Northward, and steer about West, leaving the Horizontal Striped Buoy, off Western part of

Long Sand Shoal, well to the Northward; when past this Buoy, make good the course **W.** by **N.** $\frac{1}{2}$ **N.**; as you approach Falkner's Island Lighthouse, keep a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes, on the Northern part of Kimberley's Reef, and the Black Buoy off the Northern part of Falkner's Island, both these last-mentioned Buoys are left well to the Southward; continue the course **W.** by **N.** $\frac{1}{2}$ **N.**, until Falkner's Island Lighthouse bears South, then make good the course North, keeping a sharp lookout for the Black Buoy off the Eastern part of the Lobster Rock; leave this last-mentioned Buoy about 100 yards on the Port, and steer about North, leaving another Black Buoy, off the Southeast part of Shoal Ground, on the Port hand and anchor about 400 yards past it, in from 7 to 9 feet at low tide. If bound into East River or Guilford Landing, a pilot is necessary here.

Vessels from the Eastward may pass to the Northward of Long Sand Shoal, by observing the directions for Killingworth Harbor until abreast the Red Buoy off Stone's Reef, then make good the course **W.** $\frac{1}{2}$ **N.**, leaving the Red Buoy off Hammonasset Point and the Red Buoys off Madison Ledges, well to the Northward; when Falkner's Island Lighthouse bears South, steer North, and follow the directions before given.

From the Westward, as soon as Falkner's Island Lighthouse is made, bring it to bear about **E.** $\frac{1}{2}$ **S.**, and run for it on this course, leaving the Beacon on Branford Reef well to the Northward; when from 2 to 3 miles from this Lighthouse, haul gradually to the Northward, leaving the Black Buoy off the Northern part of Falkner's Island well to the Southward; when the last-named Lighthouse bears South, then make good the course North, and follow the directions before given.

High Water.

It is high water in Guilford Harbor 29 minutes before it is at Boston; common tides rise about $5\frac{1}{2}$ feet.

Anchorage under Hammonasset Point.

This Point, under which there is good anchorage in from $3\frac{1}{2}$ to 4 fathoms with Northerly or Northeasterly gales, bears from Cornfield Light-ship **W.NW.**, distance about 7 miles, and from Falkner's Island Lighthouse **E.** by **N.** $\frac{1}{4}$ **N.** $5\frac{1}{2}$ miles.

Sailing Directions.

Vessels from the Eastward may leave Cornfield Point Light-ship a short distance on the Starboard hand, and run about West until the Horizontal Striped Buoy off the Western part of Long Sand Shoal bears **NW.**; then run for this Buoy, leaving it close to on the Starboard hand, and make good the course **W. by N. $\frac{1}{2}$ N.**, leaving the Red Buoy off Southwest from Hammonasset Point a short distance on the Starboard; when past this Buoy, steer more Northerly, and anchor about a mile above the Point in from $3\frac{1}{2}$ to 4 fathoms water.

SACHEM'S HEAD HARBOR.

The entrance to this Harbor bears from Falkner's Island Lighthouse about **NW.**, distance 3 miles, and **E. $\frac{1}{4}$ N. $4\frac{1}{2}$ miles** from the Beacon on Branford Reef.

Remarks.

This Harbor is a small Cove about $\frac{1}{4}$ mile long and about 200 yards wide, lying between Sachem's Head on the East, and Joshua's Point on the West; anchorage may be found in this Harbor in from 6 to 9 feet at low tide; it is somewhat exposed at high water to Southerly and Southwesterly winds.

Sailing Directions for Sachem's Head Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, leave Cornfield Light-ship close to on the Starboard hand, and make good the course **W. by N.**, until Falkner's Island Lighthouse bears **SE. $\frac{3}{4}$ E.**; then make good the course **NW. $\frac{3}{4}$ W.** until Sachem's Head, the Rocky Point forming the Southern side of the Harbor, bears **N.NE.**; then run for it on this course, leaving Chimney Corner Ledge, which has 12 feet water on it at low tide, well on the Starboard hand; when about $\frac{1}{4}$ mile from Sachem's Head, haul to the Westward, leaving it about $\frac{1}{4}$ mile on the Starboard; when past this Point, you will open the Harbor bearing about **E.NE.**, then run in about midway, and anchor according to draught in from 6 to 9 feet at low tide.

From the Westward, leave the Beacon on Branford Reef about $\frac{1}{2}$ mile to the Northward, and make good the course **E. $\frac{1}{2}$ N.**, leaving the Red Buoy off Brown's Reef and the Red Buoy off Southwest part of Goose Rocks, both well on the Port hand; when Sachem's Head bears **N.NE.**, follow the directions before given.

With Northerly or Northwesterly winds, vessels from the Westward may enter this Harbor to the Northward of Goose Rock Shoals by the following directions: Leave the Beacon on Branford Reef about $\frac{1}{2}$ mile to the Northward, and steer about **E. by N. $\frac{1}{2}$ N.**, leaving the Red Buoy off the Southern part of Brown's Reef (which bears from the Beacon on Branford Reef **E. $\frac{1}{4}$ N.**, distance $1\frac{3}{4}$ miles) close to on the Port hand, and steer about **E.NE.**, keeping a sharp lookout for the Red Buoy off Southwest part of Goose Rocks, which are bare at low tide; leave this last-named Buoy not less than $\frac{1}{3}$ mile on the Starboard, and run about **E.NE.** until Sachem's Head bears **SE. by E.**, you are then past Goose Rock Shoals, and may steer for the Head on this last bearing until the Harbor is fairly open, bearing about **E.NE.**, then anchor as before directed.

High Water.

It is high water in Sachem's Head Harbor 20 minutes before it is at Boston; common tides rise about $5\frac{1}{2}$ feet.

THIMBLE ISLANDS HARBOR.

The entrance to this small Harbor bears **NW. by W. $\frac{1}{2}$ W.** from Falkner's Island Lighthouse, distance $5\frac{1}{4}$ miles; and about **E.NE.** from the Beacon on Branford Reef, distance $2\frac{1}{3}$ miles.

Remarks.

This Harbor, which has a width of not more than 200 yards in some places, lies among the Thimble Islands, and is easy of access for small or light draught vessels with favorable winds. About 15 feet water can be carried up to the anchorage at low tide. This is said to be the most charming spot for sportsmen that can be found on the shores of Long Island Sound.

Sailing Directions for Thimble Islands Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, when about 2 miles past Falkner's Island, bring the Lighthouse to bear **SE.** by **E.** $\frac{1}{2}$ **E.** and make good the course **NW.** by **W.** $\frac{1}{2}$ **W.** for the outer Thimble Island; as you approach this Island, you will first see on the Port the Red Buoy off the Southern part of Brown's Reef, and about $\frac{1}{2}$ mile to the Northward of this the Black Buoy off the Northern part of Wheaton's Reef, and further in the Red Buoy off the Southern part of the Inner Reef; leave the first two Buoys on the Port, and the Red Buoy off Inner Reef about 250 yards on the same hand; when this last-named Buoy bears **W.SW.**, the entrance will be fairly open, bearing **E.NE.**, when you may run in, keeping nearer the Islands on the Starboard; after you have passed three Islands on the Starboard, anchor in about 15 feet water, North from the Northern end of the last three.

Branford Reef.

This Reef, which is bare in some parts at low tide, is marked on its Northern part with a Gray Stone Beacon of circular form, surmounted by an Iron Shaft and Ball; heavy draught vessels should not approach this Beacon from the Southward nearer than $\frac{1}{2}$ mile; Falkner's Island Lighthouse bears from Branford Reef Beacon **E.** by **S.** $\frac{1}{4}$ **S.**, distance $6\frac{7}{8}$ miles; Lighthouse on Southwest Ledge, entrance to New Haven Harbor, **W.** by **N.** $\frac{1}{2}$ **N.**, $4\frac{7}{8}$ miles.

Vessels from the Westward, bound to Thimble Islands Harbor, may leave Branford Reef Beacon about $\frac{1}{4}$ mile on the Starboard, and make good the course **E.** by **N.** $\frac{3}{4}$ **N.** for the Red Buoy off the Southern part of Inner Reef; on this last course, the Red and Black Buoys off Brown's and Wheaton's Reefs will be left well to the Southward, and the Red Buoy off the Negro Heads well to the Northward; leave the Red Buoy off Inner Reef close to on the Port, and run in as before directed.

High Water.

It is high water in Thimble Islands Harbor 15 minutes before it is at Boston; common tides rise about $5\frac{3}{4}$ feet.

BRANFORD HARBOR.

This Harbor, which is a large shallow Cove, lies about **W.N.W.** from Falkner's Island Lighthouse, distance $8\frac{1}{4}$ miles; **N.** by **W.** $\frac{1}{2}$ **W.**, 2 miles from the Beacon on Branford Reef, and East-Northerly 4 miles from the Lighthouse on Southwest Ledge, entrance to New Haven Harbor.

Remarks.

In this Harbor there is good anchorage for small vessels in from 6 to 12 feet water at low tide, in Northerly and Northwesterly winds. It is, however, much obstructed by Sunken Rocks and Ledges, and is, therefore, not a suitable refuge for strangers.

Sailing Directions for Branford Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave Falkner's Island about a mile on either hand, and when about 2 miles past it, bring the Lighthouse to bear **E.** by **S.** $\frac{1}{4}$ **S.**, and make good the course **W.** by **N.** $\frac{1}{4}$ **N.** for Branford Reef Beacon; when this is made, leave it about $\frac{1}{4}$ mile on the Port, and steer **N.W.**, leaving the Red Buoy off Negro Heads well on the Starboard hand; as you sail in, you will see nearly ahead the Red Buoy off the Southeast part of Five Feet Rock, and farther in, nearly in the middle of the entrance, two bare Rocks; the first is Taunton Rock, the next Blyn Rock; these Rocks, which lie nearly $\frac{1}{4}$ mile apart, are quite bold on all sides, and have a channel of about $2\frac{1}{2}$ fathoms water between them; leave the Buoy on Five Feet Rock a short distance on the Port hand, and run in about midway between the above-mentioned Rocks; when past these Rocks, you will see the Red Buoy on Bird Reef; leave this last-named Buoy about 100 yards on the Port, and anchor a short distance above it in from 9 to 10 feet water at low tide. If bound into Branford Creek, it is not safe to go beyond this anchorage without a pilot.

From the Westward, leave the Lighthouse on Southwest Ledge, entrance to New Haven Harbor, about $\frac{1}{2}$ mile to the Northward, and steer about East, leaving the Red Buoy off Round Rock Shoal (which bears from the Lighthouse on Southwest Ledge, **E.** by **S.** $\frac{1}{4}$ **S.** $1\frac{1}{4}$ miles) about $\frac{1}{4}$ mile on the Port hand. As you sail to

the Eastward, you will see on the Port two small bare Rocks, which are called the Cow and Calf, and farther to the Eastward, the Red Buoy off Five Feet Rock; leave this last-named Buoy about 200 yards to the Eastward, and run in, leaving Blyn Rock (before described) about 200 yards on either hand, and proceed as before directed.

High Water.

It is high water in Branford Harbor 16m. before it is at Boston; common tides rise about $5\frac{3}{4}$ feet.

NEW HAVEN HARBOR.

The entrance to this Harbor is West-Northerly 40 miles from Race Rock Lighthouse, West-Northerly 12 miles from Falkner's Island Lighthouse, Northeasterly 14 miles from Stradford Shoal Lighthouse, and Northeasterly 43 miles from Sands' Point Lighthouse.

Southwest Ledge Lighthouse.

This Lighthouse is nearly in the middle of the entrance to New Haven Harbor, and at this date (1881), shows a fixed White Light.

A Fog Bell is attached to the Lighthouse, which is struck at intervals of 15 seconds.

Bearings and Distances from Southwest Ledge Lighthouse.

	Distance,
Horton's Point Lighthouse, SE. by E. $\frac{1}{2}$ E. . . .	23 miles.
Falkner's Island Lighthouse, E. by S. $\frac{1}{2}$ S. . . .	11 $\frac{3}{4}$ "
Middle Ground Lighthouse, SW. $\frac{3}{4}$ W. . . .	13 $\frac{1}{4}$ "
Old Field Point Lighthouse, SW. $\frac{3}{4}$ S. . . .	18 "
Eaton's Neck Lighthouse, SW. by W. $\frac{1}{2}$ W. . . .	27 $\frac{1}{4}$ "
Stradford Point Lighthouse, W. by S. $\frac{3}{4}$ S. . . .	9 $\frac{3}{4}$ "
New Haven Long Wharf Lighthouse, N. $\frac{5}{8}$ E. . . .	3 $\frac{1}{2}$ "

Bearings and Distances of Dangers from Southwest Ledge Lighthouse.

Townsend's Ledge.

This Ledge, which has about 17 feet water upon it at low tide, is marked off its Southern part with a Buoy painted in Red and Black Horizontal Stripes. Southwest Ledge Lighthouse bears from this

Buoy **NW. $\frac{1}{4}$ W.**, distance $2\frac{1}{2}$ miles. Heavy draught vessels should not pass to the Northward of this Buoy.

Luddington's Rock.

This Rock, on which there are about 12 feet water at low tide, is marked off its Southeastern part with a Buoy painted in Red and Black Horizontal Stripes. Southwest Ledge Lighthouse bears from this Buoy **E. by N.**, distance $\frac{5}{8}$ mile. In entering New Haven Harbor the deepest water is between this Buoy and Lighthouse.

Adam's Fall.

This Ledge, which has about 5 feet water upon it at low tide, is marked off its Western side with a Red Buoy. Southwest Ledge Lighthouse bears from this Buoy about **S. $\frac{3}{4}$ W.**, distance $\frac{5}{8}$ mile.

Remarks.

In entering New Haven Harbor there are extensive Flats, which extend off from both sides. At this date, however, the Channel leading in is well marked with Buoys. About 19 feet water, at low tide, can be taken in as far as the Red Buoy off the Western part of Adam's Fall, and from this, at this date (1881), 12 feet at low tide can be taken up to the end of Long Wharf. Strangers in vessels of much size should in no case attempt to pass between the Lighthouse on Southwest Ledge and the Eastern Shore, as there are numerous Rocks and Ledges lying in this passage, and there is also a Breakwater building there.

Sailing Directions for New Haven Harbor in Day-time, with favorable winds and fair weather.

Large vessels from the Eastward may leave Falkner's Island Lighthouse about $1\frac{1}{4}$ miles to the Northward, and make good the course **W. by N.**, leaving the Beacon on Branford Reef and the Buoy off Townsend's Ledge both well on the Starboard hand; when the Lighthouse on Southwest Ledge (entrance to New Haven Harbor) bears **N.NW.**, run for it on this course, and leave it about 100 yards on the Starboard hand; when abreast this Light, run about **N. $\frac{3}{4}$ E.**, leaving the Red Buoy off the Western part of Adam's Fall close to on the Starboard hand; when past this Buoy the course is about **N. $\frac{3}{4}$ E.**, leaving the Black Buoy off Sandy Point on the Port, and the Red Buoy off Fort Hale on the

Starboard hand; when past the latter, haul more Northerly, leaving the next Black Buoy on the Port; when past the last-named Buoy, run for the Lighthouse on Long Wharf, and anchor a short distance Southwest from the end of the Wharf. About 18 feet water, at high tide, can be taken up to this Wharf. It is advisable for vessels of more than 11 feet draught, bound up to New Haven, to wait outside until nearly high water.

Small or light draught vessels from the Eastward may leave the Beacon on Branford Reef about $\frac{1}{2}$ mile to the Northward, and run for the Lighthouse on Southwest Ledge, bearing **W.NW.**; leave this Lighthouse about 100 yards on the Starboard, and proceed as before directed.

Large vessels from the Westward should bring the Lighthouse on Southwest Ledge to bear **NE.**, and run for it on this course until about 100 yards from it; then follow the directions before given. With Northwesterly winds, vessels of not more than 13 feet draught, at low tide, may, when from 2 to 3 miles from the Lighthouse on Southwest Ledge, haul in and leave the Black Buoy (which bears from said Lighthouse **NW.** by **W.**, distance nearly a mile) a short distance on the Port hand; when past this Buoy, proceed as before directed.

Beating into New Haven Harbor.

In beating into this Harbor, at night or day, a better knowledge of the dangers can be obtained by inspecting Eldridge's Chart of Long Island Sound, than by any written directions.

Sailing Directions for New Haven Harbor at Night-time, with favorable winds and fair weather.

At night-time, vessels of not more than 14 feet draught, bound to New Haven Harbor, may leave Falkner's Island Lighthouse about 2 miles to the Northward and steer **W.** by **N.**, leaving the Beacon on Branford Reef well to the Northward. When the Light on Southwest Ledge entrance to New Haven Harbor bears **NW.** by **W.**, then run for it on this course and leave it about 100 yards on the Starboard hand; when abreast this Light, or it bears East, make good the course North about one mile, or the water shoals to $2\frac{1}{2}$ fathoms at low tide; you are then past the Ledge called Adam's Fall. It is then advisable for vessels of more than 10 feet draught

to haul up about **NE.** by **N.** and anchor at the mouth of Morris' Cove in about 14 feet water and wait until daylight.

Vessels of not more than 10 feet draught may (at half tide) leave the Light on Southwest Ledge about 100 yards on the Starboard hand and make good the course North about one mile, or until the water shoals to $2\frac{1}{2}$ fathoms at low tide; then haul to the Northeastward until the Red Fixed Light on New Haven Long Wharf bears **N. $\frac{1}{4}$ E.**; then steer for it on this course, which, if there be no error in the compass, will lead safely up the channel to the Wharf. The best anchorage is a short distance Southwest from the end of this Wharf. At night, vessels of more than 13 feet draught, from the Westward, must bring the Light on Southwest Ledge to bear **NE.**, and run for it on this course; when about 100 yards from it, follow the directions before given.

MORRIS' COVE.

This Cove, which lies on the East side of entrance to New Haven Harbor, is about $1\frac{1}{2}$ miles above the Lighthouse on Southwest Ledge, and affords good anchorage for wind-bound vessels in from 8 to 11 feet water at low tide. Vessels of 14 feet draught may anchor near the mouth of this Cove.

Sailing Directions.

Vessels bound into this Cove may follow the directions before given for New Haven Harbor, night or day, until the Cove is well open; then run in and anchor, according to draught, in from 8 to 11 feet water at low tide.

Thick Weather.

At this date (1881), there is attached to the Lighthouse on Southwest Ledge, entrance to New Haven Harbor, a Fog Bell, which is struck at intervals of 15 seconds. Large vessels, hearing this bell, may bring it to bear from **NE.** to **N. NW.** and run for it on this course; leave the Lighthouse about 100 yards on the Starboard, and, in order to clear Adam's Fall, steer North about $\frac{3}{4}$ mile, or until the water shoals to $2\frac{3}{4}$ fathoms, then anchor, especially at low tide.

Small vessels, in thick weather, may run for the Lighthouse on Southwest Ledge on any course from **E.N.E.** to **W.N.W.**; leave this Lighthouse about 100 yards on the Starboard, and make good the course North about $\frac{3}{4}$ mile, or until past Adam's Fall; then haul to the Northeastward, and anchor in Morris' Cove, according to draught.

High Water.

It is high water in New Haven Harbor 21m. before it is at Boston; common tides rise about 6 feet.

MILFORD HARBOR.

This Harbor, which is a Cove lying between Charles' Island on the West and Welch's Point on the East, is a little more than six miles to the Westward of Southwest Ledge Lighthouse, and about $3\frac{1}{2}$ miles Northeast from Stratford Point Lighthouse.

Remarks.

This Cove is well sheltered from all but Southeast and Southerly winds, and vessels may anchor in from 3 fathoms to 10 feet water.

Sailing Directions for Milford Harbor in Daytime.

Vessels from the Eastward may leave the Lighthouse on Southwest Ledge about a mile to the Northward, and steer about **W.** $\frac{1}{2}$ **S.** for the Red Buoy off Pond Point, which bears **W.** by **S.** $\frac{1}{4}$ **S.** from the above-mentioned Lighthouse, distance $5\frac{1}{4}$ miles; when this Buoy is made, leave it a short distance on the Starboard hand, and run about West, leaving the next Red Buoy, off Welch's Point, on the Starboard hand, and run into the Cove and anchor in about $2\frac{1}{2}$ fathoms water at low tide; the outer part of Charles' Island bears **SW.** by **S.** from this anchorage.

From the Westward, leave Stratford Point Lighthouse about $\frac{1}{2}$ mile to the Northward, and steer about **NE.** $\frac{1}{2}$ **E.**, leaving Charles' Island about $\frac{1}{2}$ mile on the Port; when past this Island, haul in and anchor as before directed.

STRATFORD HARBOR, OR HOUSATONIC RIVER.

The entrance to this Harbor or River is about $\frac{1}{2}$ mile North-easterly from Stratford Point Lighthouse.

Remarks.

A Sand Bar extends across the mouth of this River, upon which there are usually not more than 2 or 3 feet water at low tide. The town of Stratford is situated upon the Western bank of this River, about 2 miles from Stratford Point Lighthouse. It is navigable for very light draught vessels about 10 miles above this town. It is advisable for vessels bound into this River to take pilots off the bar.

High Water.

It is high water on Stratford Harbor Bar 12 minutes before it is at Boston; common tides rise about 6 feet.

BRIDGEPORT HARBOR.

The entrance to this Harbor is $3\frac{1}{2}$ miles West-Northerly from Stratford Point Lighthouse, and 3 miles Northeasterly from Penfield Reef Lighthouse.

Bridgeport Harbor Lighthouse.

Upon the West side of entrance to Bridgeport Harbor (on the flats) is a Lighthouse, which at this date (1881) shows a fixed Red Light. A Fog Bell is attached to this Lighthouse.

Bearings and Distances from Bridgeport Harbor Lighthouse.

	Distance.
Middle Ground Lighthouse, S. SE.	$6\frac{5}{8}$ miles.
Old Field Point Lighthouse, S. $\frac{1}{2}$ E.	11 "
Penfield Reef Lighthouse, SW. $\frac{1}{4}$ W.	3 "
Black Rock Lighthouse, W. by S. $\frac{3}{4}$ S.	2 "

Bridgeport Harbor Lighthouse bears from the Red Buoy off Stratford Point **NW. $\frac{1}{2}$ W.**, distance $2\frac{3}{4}$ miles.

Remarks.

The channel leading into Bridgeport Harbor is narrow; but at this date (1881) it is well marked with Beacons and Buoys.

Appropriations have been made by the United States Government for the purpose of improving this Harbor, and when completed it is said that 12 feet at mean low water may be taken up to the city through a dredged channel 100 feet wide.

Sailing Directions for Bridgeport Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave Falkner's Island Lighthouse about 1 mile to the Northward, and steer **W. $\frac{3}{4}$ S.**, leaving the Red Buoy (which lies about $1\frac{1}{2}$ miles Southwest from Stradford Point Lighthouse) a short distance on the Starboard hand; when past this Buoy haul in from **W.** by **N.** to **W.NW.** into Bridgeport Bay; then a little before high water bring the Lighthouse which stands on the flats at the West side of the entrance to the Harbor, to bear **N. $\frac{1}{2}$ E.**, and run for it on this course. As you sail in you will see three Red Buoys and two Black Beacons. Leave the Lighthouse and two Beacons on the Port hand and the Red Buoys on the Starboard hand; when past the third Red Buoy, which must be left close to on the Starboard hand, haul up about **NW.** by **N.**, leaving the next Buoy (Black) on the Port hand; when past this Buoy run in about **NW.** for the wharves.

From the Westward, leave Penfield Reef Lighthouse about $\frac{1}{2}$ mile on the Port, and steer about **NE.** by **E.** until the Lighthouse at the entrance of Bridgeport Harbor bears **N. $\frac{1}{2}$ E.**, then follow the directions before given.

Formerly about 12 feet at high water could be taken up to Bridgeport.

High Water.

It is high water in Bridgeport Harbor 18 minutes before it is at Boston; common tides rise about $6\frac{1}{2}$ feet.

Anchorage between Stradford Point and Penfield Reef Lighthouse.

Between Stradford Point and Penfield Reef Lighthouse is one of the best Bays for anchorage on the Northern shore of Long Island Sound, with winds from **W.SW.** to **NE.**, by way of North.

Large vessels may anchor with Bridgeport Lighthouse bearing about **N. by E.**, in from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water, good holding ground.

Sailing Directions.

Large vessels from the Eastward should leave the Red Buoy, which lies Southwest about $1\frac{1}{2}$ miles from Stradford Point Lighthouse, about $\frac{1}{2}$ mile on the Starboard hand, and steer about **W.NW.** until Bridgeport Lighthouse bears **N.NW.**, then haul in and anchor in about 4 fathoms water, the last-named Lighthouse bearing **N. by E.** Small vessels may go farther in, and anchor in from $2\frac{1}{4}$ to 3 fathoms water.

From the Westward, leave Penfield Reef Lighthouse about $\frac{1}{3}$ mile on the Port hand, and steer about **NE. by E.**; when Bridgeport Lighthouse bears **N. by E.**, anchor as before directed.

BLACK ROCK HARBOR.

The entrance to this small, shallow harbor bears West about $5\frac{1}{4}$ miles from Stradford Point Lighthouse, and **N. by E.** $1\frac{1}{2}$ miles from Penfield Reef Lighthouse.

Black Rock Harbor Lighthouse.

On the Southwest point of Fairweather Island, East side of entrance to Black Rock Harbor, is a Lighthouse, which at this date (1881), shows a fixed White Light. Penfield Reef Lighthouse bears from Black Rock Harbor Lighthouse **S. by W.** $\frac{1}{2}$ **W.** $1\frac{1}{2}$ miles; Stradford Point Lighthouse **E.** $\frac{1}{4}$ **S.** $5\frac{1}{4}$ miles.

Remarks.

In entering this Harbor the principal danger to be avoided is Point Rock Shoal, which extends off from the Southern point of Fairweather Island, and is marked on its outer part with a Red Buoy. Black Rock Harbor Lighthouse bears from this Buoy **N. $\frac{3}{4}$ E.** about $\frac{1}{2}$ mile. About 8 feet water at low tide can be carried into this Harbor.

Sailing Directions for Black Rock Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave the Red Buoy (which lies off South-west about $1\frac{1}{2}$ miles from Stradford Point Lighthouse) a short distance on the Starboard hand, and steer about **W.** by **N.**, keeping a sharp lookout for the Red Buoy off Point Rock Shoal (before described); when this Buoy is made, leave it close to on the Starboard hand, and run about **NW.** by **N.** until this Harbor is well open, then run in about midway, and anchor in from 8 to 10 feet water at low tide, the Lighthouse bearing from **SE.** to **S.SE.**

From the Westward, leave Penfield Reef Lighthouse, and also the Beacon on the Eastern part of the Cows, about $\frac{1}{4}$ mile on the Port hand, and when Black Rock Lighthouse bears **N.** $\frac{1}{2}$ **W.**, run for it, leaving the Red Buoy off Point Rock Shoal close to on the Starboard, and follow the directions before given. At low tide vessels of 10 feet draught should anchor when the Lighthouse bears East

At Night.

Bound into this Harbor at night, vessels may bring Black Rock Harbor Light to bear from **N.** by **W.** to **N.NW.**, and run for it on this course until $\frac{1}{2}$ or $\frac{3}{4}$ mile from it; you are then past the dangerous Ledge called the Cows, and in order to clear Round Rock Shoal must haul to the Westward until this Light bears **NE.** by **N.**, then run into the Harbor, leaving the Light about 200 yards on the Starboard hand, and anchor with it bearing **S.SE.** to **SE.** in from 8 to 10 feet water at low tide.

High Water.

It is high water in Black Rock Harbor 21 minutes before it is at Boston; common tides rise about $6\frac{1}{2}$ feet.

SOUTHPORT HARBOR.

The entrance to this Harbor lies about 3 miles West-Northerly from Penfield Reef Lighthouse, and $7\frac{1}{2}$ miles Northeasterly from Norwalk or Sheffield Island Lighthouse.

Remarks.

This Harbor is only fit at high water for small vessels of very light draught; it is intended, however, to improve it by dredging, so as to obtain a depth of 4 feet at low tide. Strangers cannot, therefore, under any circumstances enter it without a pilot.

Sailing Directions for Southport Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave Penfield Reef Lighthouse about $\frac{1}{2}$ mile on the Starboard hand, and steer about West, leaving the Red Buoy off Pine Creek Point (which bears **W.** $\frac{3}{4}$ **S.** from Penfield Reef Lighthouse, distance $1\frac{3}{4}$ miles) a short distance on the Starboard hand; when past this Buoy, steer **W.** by **N.** until the outer Beacon at the entrance to Southport Harbor bears **N.** $\frac{1}{2}$ **E.**, then run for it on this course, and anchor in about 12 feet water. A pilot is necessary here.

From the Westward, leave the Lighthouse on Norwalk Island about 1 mile to the Northward, and steer **E.NE.** leaving the Red Buoy off Southeast from Cockenoe's Island on the Port hand (this last-named Buoy bears from Norwalk Island Lighthouse **E.** by **N.** $\frac{1}{4}$ **N.**, distance $4\frac{1}{2}$ miles); when past the last-named Buoy steer **NE.** by **E.** until the enter Beacon at the entrance of Southport Harbor bears **N.** $\frac{1}{2}$ **E.**, then follow the directions before given.

High Water.

It is high water in Southport Harbor 25 minutes before it is at Boston; common tides rise about $7\frac{1}{4}$ feet.

WESTPORT HARBOR.

The entrance to this Harbor, which is the mouth of the Saugatuck River, is West from Penfield Reef Lighthouse, distance $6\frac{1}{4}$ miles, and about 4 miles Northeasterly from Norwalk Island Lighthouse.

Remarks.

There are usually about 6 feet water across the bar at low tide, but at this date (1881), there are no Buoys to mark the narrow

and crooked channel up the River to Westport, a distance of $3\frac{3}{4}$ miles; strangers bound into this River should, therefore, take Pilots off the bar.

Sailing Directions for Westport Harbor or Saugatuck River in Daytime, with favorable winds and fair weather.

From the Eastward, leave Penfield Reef Lighthouse about $\frac{1}{2}$ mile to the Northward, and steer about West, leaving the Red Buoy off Pine Creek Point close to on the Starboard hand; this Buoy bears from Penfield Reef Lighthouse **W. $\frac{3}{4}$ S.**, distance $1\frac{3}{4}$ miles; when past this Buoy, steer about West $4\frac{1}{4}$ miles, and anchor in about 2 fathoms off the bar, and at high water take a pilot up the River.

From the Westward, leave Norwalk Island Lighthouse about 1 mile to the Northward, and when it bears North steer **E.NE. $4\frac{1}{2}$** miles, which will bring you up with the Red Buoy off Southeast from Cockenoe's Island; leave this Buoy about $\frac{1}{4}$ mile on the Port hand, and in order to avoid a sunken Rock (which lies about $\frac{1}{3}$ mile to the Northward of this Buoy) steer **N.** by **E.** about $\frac{3}{4}$ mile, then haul in about **NW.** by **W.** $\frac{1}{2}$ **W.** and anchor off the bar to the Eastward of a bare Rock, in about 2 fathoms water, and proceed as before directed.

High Water.

It is high water on Westport Bar 38 minutes before it is at Boston; common tides rise about $7\frac{1}{4}$ feet.

COCKENOE'S ISLAND HARBOR.

The entrance to this Harbor is 3 miles Northeasterly from Norwalk Island Lighthouse, and 7 miles West-Southerly from Penfield Reef Lighthouse.

Remarks.

Cockenoe's Island Harbor is the name given to the anchorage for small vessels between Cockenoe's Island on the East, and Goose Island on the West, these two being the Eastermost of the Norwalk Islands. About 11 feet water can be carried into this Harbor

at low tide. On account of the numerous Shoals that lie off the entrance, strangers should not, therefore, attempt to enter it, unless they can make the Black Buoy which lies on the Western side of the passage.

Sailing Directions for Cockenoe's Island Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, leave Penfield Reef Lighthouse about $\frac{1}{4}$ mile on the Starboard, and when it bears North make good the course **W.** by **S.** $5\frac{1}{4}$ miles, which will bring you up with the Red Buoy off the Southeast part of Cockenoe's Island Shoals; leave this Buoy close to on the Starboard hand, and steer **W.S.W.** until the Eastern part of Cockenoe's Island * bears **N.** by **E.**, then run in about **NW.** by **N.**, keeping a sharp lookout for the Black Buoy off the Eastern part of Peck's Ledge; when this Buoy is made, run for it bearing **NW.** by **N.** and haul round it at a distance of 50 yards, leaving it on the Port hand; when past this Buoy run up about **W.** $\frac{1}{4}$ mile, and anchor in about 2 fathoms water at low tide.

From the Westward, leave Norwalk Island Lighthouse about 1 mile on the Port hand, and when it bears North make good the course **E.NE.** until the Eastern part of Cockenoe's Island before mentioned bears **N.** by **E.**, then run about **N.** by **W.** $\frac{1}{2}$ **W.**, keeping a sharp lookout for the Black Buoy off the Eastern part of Peck's Ledge; when this is made, follow the directions before given.

High Water.

It is high water in Cockenoe's Island Harbor 38m. before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

SHEFFIELD ISLAND HARBOR.

This Harbor lies a short distance to the Northward of Norwalk Lighthouse.

* Cockenoe's Island is the Easternmost of the Norwalk Group

Norwalk Lighthouse.

Upon the Southwest part of Sheffield Island, one of the Norwalk Group, is a Lighthouse which, at this date (1881), shows a fixed White Light, varied by Red Flashes. This Light is intended to guide vessels into Sheffield Harbor, and also through Long Island Sound. For bearings and distances from this Lighthouse, see directions before given.

Remarks.

There is excellent anchorage in Sheffield Island Harbor, in all winds and weathers, for vessels of from 10 to 12 feet draught. The principal danger in entering is Green's Ledge, which extends off West-Southerly from the Lighthouse about $1\frac{1}{4}$ miles, and is bare in some places at low tide. This Ledge is marked off its Western part with a Red Buoy; Norwalk Lighthouse bears from this Buoy **E.** by **N.** $\frac{1}{2}$ **N.**, distance $1\frac{3}{4}$ miles. Vessels of more than 7 feet draught should in no case attempt to pass between this Buoy and the Lighthouse.

Sailing Directions for Sheffield Island Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, leave the Red Buoy off Stradford Point on the Starboard hand, and make good the course **W.** by **S.** $\frac{1}{2}$ **S.**, leaving Penfield Reef Lighthouse and the Red Buoy off the Southeast part of Norwalk Shoals well on the Starboard hand. As you approach Norwalk Lighthouse, keep a sharp lookout for the Spindle on Great Ledge, and also the Red Buoy off the Southwest part of Green's Ledge; the Spindle bears **SW.** by **S.** $\frac{1}{4}$ **S.** $\frac{1}{3}$ mile from the Lighthouse, the Red Buoy **W.** by **S.** $\frac{1}{2}$ **S.** $1\frac{3}{4}$ miles; haul round this last-named Buoy, leaving it about $\frac{1}{8}$ mile on the Starboard, and run in about **NE.** by **E.** $\frac{1}{2}$ **E.**, leaving the Black Buoy off the Southwest part of Tavern Island well on the Port hand; when Norwalk Lighthouse bears from **S.** by **W.** to **SSW.**, then anchor in about 12 feet water at low tide. Small or light draught vessels can go farther in, and anchor with the Lighthouse bearing about **SW.** by **S.**, in from 8 to 10 feet water.

From the Westward, as soon as Norwalk Lighthouse is made, bring it to bear **NE.** by **E.** $\frac{1}{2}$ **E.**, and run for it on this course.

As you approach this Lighthouse, keep a sharp lookout for the Red Buoy off the Southwest part of Green's Ledge (before described); when this Buoy is made, leave it about $\frac{1}{8}$ mile on the Starboard hand, and follow the directions before given.

Beating into Sheffield Island Harbor.

In beating into this Harbor, when past the Red Buoy off the Southwest part of Green's Ledge, use the Lead and stand from shore to shore until the water shoals to $2\frac{1}{2}$ fathoms. It is advisable for vessels of 12 feet draught to anchor when the Lighthouse bears **SE.** by **E.** to **E.SE.**; small or light draught vessels may go farther in.

High Water.

It is high water in Sheffield Island Harbor about 38 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

NORWALK RIVER.

The entrance to this River lies **NE.** by **N.** $2\frac{1}{4}$ miles from Norwalk Lighthouse.

Remarks.

The approach to Norwalk River is through a very narrow and crooked channel, full of Rocks and Shoals, very few of which at this time are buoyed; it is therefore advisable for strangers bound into Norwalk River to follow the directions before given for Sheffield Island Harbor, and from this place take a pilot into this River.

DARIEN RIVER.

The entrance to this River is about 3 miles to the Westward of Norwalk Light.

Remarks.

This River is very narrow, and at very low tides is bare; strangers cannot, therefore, enter it without a pilot. There is anchorage for small vessels to the Westward of Long Neck Point, with winds from **NW.** to **NE.** by way of North.

**Sailing Directions for Darien River in Daytime,
with favorable winds and fair weather.**

From the Eastward, leave Norwalk Lighthouse about $\frac{3}{4}$ mile to the Northward, and when it bears **N.** by **W.** steer about West for Long Neck Point, leaving the Red Buoy off the Southwest part of Green's Ledge well on the Starboard hand; this last-named Point bears **W.** $\frac{3}{4}$ **S.** from Norwalk Lighthouse, distance $2\frac{3}{4}$ miles. Give Long Neck Point a berth of about $\frac{1}{4}$ mile, leaving it to the Northward; when abreast this Point, you will see, a short distance to the Northward, the Red Buoy on the Middle; it is advisable to anchor a short distance without this Buoy, and wait for high water and a pilot.

From the Westward, as soon as Norwalk Lighthouse is made, bring it to bear **E.NE.**, and run for it on this course. As you approach this Lighthouse, keep a sharp lookout for the Red Buoy off the Southern side of the dangerous Ledge called the Cows. As soon as this Buoy is made, leave it a short distance on the Port hand, and steer **NE.** by **E.** $\frac{1}{2}$ **E.**, leaving the next Red Buoy, off the Southern part of Smith's Rock, a short distance on the Port; when past this last Buoy, run about **NE.** by **N.** $\frac{1}{2}$ **N.** and anchor a short distance without the Red Buoy on the Middle.

High Water.

It is high water at the mouth of Darien River about 35 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

STAMFORD HARBOR.

This Harbor lies on the Northern side of Long Island Sound, nearly midway between Norwalk Lighthouse and Great Captain's Island Lighthouse.

Remarks.

Stamford Harbor is a little more than $\frac{1}{2}$ mile in diameter, but so full of Rocks and Shoals as to be dangerous to enter without a pilot. With winds from **NW.** to **NE.** vessels may find good shelter in this Harbor in from 7 to 12 feet water at low tide. But

few of the dangers, at this time, are buoyed, and, in the absence of such marks, it is not advisable for strangers to attempt to enter it, except in cases of emergency.

A narrow, shallow stream, called Mill River, empties into this Harbor, and only about 2 feet water, at low tide, can be taken up as far as the Railway Bridge, which is the head of navigation.

Stamford Lighthouse.

Upon the Southwest extremity of Harbor Ledge, West side of entrance to Stamford Harbor, at this date (1881), a Lighthouse is in course of construction. Norwalk Lighthouse bears from Stamford Lighthouse **E.** by **N.** $5\frac{3}{4}$ miles, Great Captain's Island Lighthouse **W.** by **S.** $\frac{3}{4}$ **S.** $4\frac{1}{4}$ miles, Red Buoy off Southern part of Cows Reef, **SE.** a little more than a mile.

Sailing Directions for Stamford Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave Norwalk Lighthouse about $\frac{3}{4}$ mile to the Northward, and steer **W.** by **S.** $\frac{1}{2}$ **S.**, leaving the Red Buoy off the Cows well on the Starboard hand; continue the course **W.** by **S.** $\frac{1}{2}$ **S.** until Stamford Lighthouse bears **N.NW.**, then run for it on this course, leaving it about 300 yards on the Port hand; when abreast this Lighthouse, steer about **N.** $\frac{1}{2}$ **E.** and anchor with it bearing **SW.** $\frac{1}{2}$ **S.**, in from 9 to 12 feet water at low tide.

From the Westward, leave Great Captain's Island Lighthouse about $\frac{1}{2}$ mile to the Northward, and steer **E.** by **N.** until Stamford Lighthouse bears **N.NE.**, then run in with it a little on the Port bow, leaving it about 300 yards on the Port hand, and follow the directions before given.

High Water.

It is high water in Stamford Harbor about 31 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

LITTLE CAPTAIN'S ISLAND HARBOR.

This convenient Harbor lies Northeast about $1\frac{1}{4}$ miles from Great Captain's Island Lighthouse. For bearings and distances from this Lighthouse, see directions before given.

Remarks.

This Harbor, which affords good shelter in all winds, has from 10 feet to 5 fathoms water in it at low tide, and in daytime strangers may safely enter it by the following directions.

Sailing Directions for Little Captain's Island Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, bring Great Captain's Island Lighthouse to bear **W. ½ S.** and run for it on this course, leaving the Red Buoy off the Southern part of the dangerous Ledge called the Cows well on the Starboard hand; when about 2 miles from this Lighthouse, keep a sharp lookout for the Black and Red Buoys at the entrance of the Harbor. The first Buoy bears **E.NE.** from the Lighthouse, distance $1\frac{1}{4}$ miles; the second (Red) bears **NE.** by **E. ½ E.**, distance $1\frac{3}{4}$ miles. When these Buoys are made, and the passage is fairly open, bearing about **NW.**, then run in midway between them until the Red Buoy on the Starboard hand bears **E.** by **S.**; then steer **W.** by **N.**, and gradually haul to the Westward until Great Captain's Island Lighthouse bears **SW. ½ S.**, then steer for it until the water shoals to 3 fathoms at low tide, then anchor; you may lie here secure from all winds.

From the Westward, leave Great Captain's Island Lighthouse about $\frac{1}{3}$ mile to the Northward, and when abreast it, or it bears North, steer about **E.NE.** about $1\frac{3}{4}$ miles; the Harbor will then be open, bearing **NW.**, then run in and anchor as before directed.

Beating into Little Captain's Island Harbor.

In beating into this Harbor, when past the Black Buoy which lies on the Western side of the channel, you may stand to the Eastward until the water shoals to 3 fathoms; but the Western side is very bold and you will have 5 fathoms at one east of the Lead and be ashore at the next before you can tack. When the Red Buoy on the Eastern side bears **E.** by **S.**, you are then past the Shoal on the Western side of the channel, and may steer **W.** by **N.** and anchor as before directed.

High Water.

It is high water in Little Captain's Island Harbor about 28 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

GREENWICH COVE.

The entrance to this large, shallow Cove is about **NE.** by **E.** about $2\frac{1}{4}$ miles from Great Captain's Island Lighthouse.

Remarks.

Greenwich Cove lies **NE.** by **E.** and **SW.** by **W.** about 1 mile, with an average width of a little more than $\frac{1}{2}$ mile; the most of it is very shallow, and several marshy Rocky Islets lie nearly in the middle of it, which leaves a very narrow channel between them and the North shore. Most of the Southern part of this Harbor is bare at very low tides. About 8 feet water can be taken into this Cove at low tide, where small vessels may lie secure from all winds.

Sailing Directions for Greenwich Cove in Day-time, with favorable winds and fair weather.

Follow the directions before given for Little Captain's Island Harbor until abreast the Red Buoy on the Eastern side of the entrance; leave this Buoy close to on the Starboard hand, and steer **N.** by **E.** $\frac{1}{2}$ **E.** leaving the sunken Rock (called Cove Rock) well on the Port hand. When Great Captain's Island Lighthouse bears **SW.** $\frac{3}{4}$ **W.** and the entrance to Greenwich Cove is well open, bearing **NE.** $\frac{3}{4}$ **E.**, run in about midway, and anchor to the Northwest of two Marshy Islets in about 8 feet water at low tide.

High Water.

It is high water in Greenwich Cove a short time after it is at Little Captain's Island; common tides rise about $7\frac{1}{2}$ feet.

COS COB, OR GREENWICH HARBOR.

The entrance to this Harbor bears **NE.** $\frac{1}{2}$ **N.** from Great Captain's Island Lighthouse, distance about $2\frac{1}{4}$ miles.

Remarks.

From the entrance of this Harbor to the Bridge the distance is a little more than $\frac{3}{4}$ mile; there is anchorage in some parts for

small vessels, but little water, however, can be taken up to the village at low tide.

Sailing Directions for Cos Cob Harbor in Daytime, with favorable winds and fair weather.

Follow the directions before given for Little Captain's Island Harbor, until abreast the Black Buoy on the Western side of entrance; leave this Buoy a short distance on the Port hand and steer about **N. $\frac{1}{2}$ W.**, leaving the sunken Rock (called 'Cove Rock') well on the Starboard hand. When the entrance to the Harbor is fairly open, steer about **NE. by N. $\frac{1}{2}$ N.** As you sail in, you will see at the entrance, nearly in the middle, several small Islets; the channel is about midway between these Islets and the Western shore. When abreast these Islets it is advisable to anchor in about 8 feet water at low tide, and if bound farther up take a pilot.

High Water.

It is high water at the entrance of Cos Cob Harbor 25 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

GREAT CAPTAIN'S ISLAND HARBOR.

Remarks.

Reefs extend both Northeast and Southwest from Great Captain's Island Lighthouse; that which extends to the Northeast is called Great Captain's Island Eastern Reef, and that which extends off to the Southwest is called Great Captain's Island Western Reef; this last-mentioned danger is marked off its Western part with a Red Buoy, which bears about **W. by S. $\frac{1}{4}$ S.** from the Lighthouse, distance $\frac{1}{2}$ mile; about 10 feet water can be carried into this place at low tide. Great Captain's Island Harbor is somewhat exposed to Southerly winds.

Sailing Directions for Great Captain's Island Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, bring Great Captain's Island Lighthouse to bear about West and run for it on this course, leaving the Red

Buoy off the Southern part of the dangerous Ledge called the Cows well on the Starboard hand; leave this last-named Lighthouse about $\frac{1}{3}$ mile to the Northward, and keep a sharp lookout for the Red Buoy which lies about $\frac{1}{2}$ mile to the Westward of it; when this last Buoy is made, leave it a short distance on the Starboard hand and make good the course about **NW.** by **N.** $\frac{1}{2}$ **N.**, leaving the Buoy painted in Red and Black Horizontal Stripes off the Southern part of Four Feet Rock well on the Port hand, and anchor in about 10 feet water at low tide (soft bottom). The South point of Great Calves Island bears **E.** $\frac{1}{2}$ **S.** from this anchorage, distance about $\frac{1}{4}$ mile; or, when past the Red Buoy off the West Reef, steer about **NE.** by **N.** $\frac{1}{2}$ **N.**, carrying about 11 feet water, and when the Lighthouse bears **SE.** by **E.**, anchor in from 12 feet to 3 fathoms water.

From the Westward, bring Great Captain's Island Lighthouse to bear **NE.** and run for it on this course. As you approach this Lighthouse, keep a sharp lookout for the Red Buoy off the Western part of the Reef (before described); when this Buoy is made, follow the directions before given.

High Water.

It is high water in Great Captain's Island Harbor about 27 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

BYRAM RIVER.

The entrance to this River bears **W.** by **N.** from Great Captain's Island Lighthouse, distance $1\frac{1}{2}$ miles

Remarks.

Byram River is a narrow stream, the most of which is bare at low tide; about $\frac{3}{4}$ mile from its mouth, on its Western bank, is Port Chester. This River has many dangerous Rocks in it, none of which, at this time, are buoyed; it is therefore advisable for strangers bound up, to anchor in Great Captain's Island Harbor and take pilots.

MAMARONECK RIVER.

The entrance to this River is Southwesterly about 5 miles from Great Captain's Island Lighthouse, and **NE.** by **N.** about $3\frac{1}{2}$ miles from the Lighthouse on Execution Rocks.

Remarks.

This River, which is very shallow, is about 400 yards wide at its mouth, but gradually contracts to the village of Mamaroneck, a distance of about $\frac{3}{4}$ mile.

Sailing Directions for Mamaroneck River in Day-time, with favorable winds and fair weather.

From the Eastward, leave Norwalk Lighthouse about $\frac{3}{4}$ mile to the Northward, and when abreast it make good the course **W. by S. $\frac{1}{4}$ S.**, leaving the Red Buoy off the Southern part of the dangerous Ledge called the Cows on the Starboard hand; when past this Buoy, make good the course **W.SW.**, leaving Great Captain's Island Lighthouse well to the Northward; when the Lighthouse on Execution Rocks bears **SW.** you will see the Red Buoy off the Southwest part of the Ledge called the Scotch Caps; leave this last-named Buoy and the next, which is painted in Red and Black Horizontal Stripes, off Ship Reck, both a short distance on the Starboard hand; when past the latter Buoy, steer about **N.NW.** and anchor at the mouth of the River in about 8 feet water at low tide. If bound farther up, a pilot is necessary.

From the Westward, when about 1 mile past the Lighthouse on the Execution Rocks, bring it to bear **SW.** by **S. $\frac{1}{2}$ S.**, on which bearing keep it and steer **NE.** by **N. $\frac{1}{2}$ N.** until the Buoys at the mouth of the Harbor are made; then follow the directions before given.

High Water.

It is high water at the mouth of Mamaroneck River 24 minutes before it is at Boston; common tides rise about $7\frac{3}{4}$ feet.

DELANCEY'S COVE.

The entrance to this Cove, which is on the Northern shore of Long Island Sound, bears **N. $\frac{1}{2}$ E.** from the Lighthouse on the Execution Rocks, distance about $2\frac{1}{2}$ miles.

Remarks.

Delancey's Cove is of irregular shape, about $\frac{1}{4}$ mile in diameter, and has but little water in it at low tide (especially near the head); it is also much obstructed by Ledges, some of which lie almost in the middle of it. Off its entrance lies a dangerous Reef called Long Beach Point Reef; these dangerous Rocks, some of which are bare at half tide, lie nearly North and South about $\frac{1}{2}$ mile and have a width of about $\frac{1}{4}$ mile. At this date (1881), it is not marked with either Buoys or Beacons. In entering Delancey's Cove there is a good channel of about $3\frac{1}{2}$ fathoms water on either side of this Reef.

**Sailing Directions for Delancey's Cove in Daytime,
with favorable winds and fair weather.**

From the Eastward, leave the Striped Buoy which lies to the Northeastward of the Lighthouse on the Execution Rocks on the Port hand, and when this Lighthouse bears **S.SW.** run **N.NE.** for the Black Buoy off Delancey's Point, leaving Long Beach Point Reef well on the Port hand; when this last-named Buoy is made you will see about $\frac{1}{2}$ mile to the Westward of it a low Point, this is Long Beach Point; when this last Point bears **W.NW.** run for it on this course, leaving it about 300 yards on the Starboard hand. When past this Point the Cove will then be open, when you may run in and anchor near the mouth, according to draught, and wait for high water.

From the Westward, leave the Buoy to the Southwest of the Lighthouse on the Execution Rocks a short distance on the Starboard hand, and make good the course **N. $\frac{1}{2}$ E.**, leaving Whortleberry Island on the Port and Long Beach Point Reef well on the Starboard hand; after passing this Reef steer more Easterly, and anchor near the mouth of the Cove as before directed.

High Water.

It is high water in Delancey's Cove about the same time it is at the entrance to Mamaroneck River.

PORT JEFFERSON HARBOR.

The entrance to this Harbor, which is on the Southern side of Long Island Sound, bears about **S. $\frac{1}{2}$ W.** from the Lighthouse on the Middle Ground, distance $5\frac{1}{2}$ miles, and about **E. SE.** from Old Field Point Lighthouse, distance about $1\frac{1}{4}$ miles.

Remarks.

After leaving Plum Gut, this is the first Harbor on the Southern side of the Sound. It is difficult of access on account of a Sand Bar which extends across its entrance, and it is said that there are usually not more than 2 or 3 feet water upon this Bar at low tide; when once in, however, there is excellent anchorage in from 3 to 6 fathoms water, secure from all winds.

Sailing Directions for Port Jefferson Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, bound to Port Jefferson Harbor, follow the sailing directions before given for Long Island Sound until the Lighthouse on the Middle Ground bears **N. $\frac{1}{2}$ E.**, then make good the course **S. $\frac{1}{2}$ W.**, leaving the Black Buoy off the Northern part of Mount Misery Shoal (upon which there are about 5 feet water) well on the Port hand; after passing this last-named Buoy (which bears **E. $\frac{3}{4}$ N.** from Old Field Point Lighthouse, distance $1\frac{3}{4}$ miles), it is advisable to anchor off the Bar in about 4 fathoms water, or lay off and on and wait for high water and a pilot.

From the Westward, leave Old Field Point Lighthouse about $\frac{1}{2}$ mile to the Southward, and when past it, haul in and anchor off the Bar, or lay off and on as before directed.

High Water.

It is high water on Port Jefferson Bar about 30 minutes before it is at Boston; common tides rise about $7\frac{1}{4}$ feet.

SMITHTOWN BAY.

This Bay is formed by the great curve in the North shore of Long Island, which extends from Crane Neck Point (the first to the Westward of Old Field Point Lighthouse) to Eaton's Neck.

Remarks.

There is good anchorage in this Bay under Crane Neck Point * in about 8 fathoms water, with winds from **E.NE.** to **SW.** by way of South. A strict watch, however, should be kept, except in summer, and the Bay should be left on the first indications of Westerly or Northerly winds. The Western shore of Crane Neck is quite bold, but flats extend off to the Westward of this from the shore of Smithtown Bay from $\frac{1}{2}$ to $\frac{3}{4}$ mile.

Sailing Directions for Smithtown Bay in Daytime, with favorable winds and fair weather.

Large vessels from the Eastward may follow the sailing directions before given for Long Island Sound until up with the Lighthouse on the Middle Ground; then bring this Lighthouse to bear **NE.** $\frac{1}{2}$ **N.**, and make good the course **SW.** $\frac{1}{2}$ **S.**, and haul round Crane Neck Point, leaving it about $\frac{1}{2}$ mile on the Port hand, and anchor in from 8 to 10 fathoms water, with the end of the Point bearing **NE.** by **N.**, distance about $\frac{3}{4}$ mile; small vessels may go farther in and anchor with Crane Neck Point bearing from **N.** by **E.** to **N.NE.**

Care should, however, be taken to avoid the shoal water which extends about $\frac{1}{2}$ mile from the Southern shore.

From the Westward, after passing Eaton's Neck Lighthouse, haul into Smithtown Bay, taking care to avoid the shoal water that makes off from the shore, and anchor under Crane Neck as before directed.

STONY BROOK HARBOR.

The entrance to this shallow Harbor bears about South from Crane Neck Point, distance $2\frac{1}{4}$ miles.

* Crane Neck Point is the first to the Westward of Old Field Point Lighthouse.

Remarks.

The entrance to Stony Brook Harbor is very shoal, but 2 or 3 feet water at low tide being found in a narrow channel. The village of Stony Brook is situated on the Eastern bank of this stream, about $\frac{1}{2}$ mile from its entrance. This Harbor, on account of its shallowness, is frequented by only small vessels. It is advisable for vessels bound to this Harbor to take a pilot off the bar.

High Water.

It is high water on Stony Brook Bar about 33 minutes before it is at Boston; common tides rise about $7\frac{1}{4}$ feet.

NISSEQUAGE RIVER.

The entrance to this shallow River is on the Southern shore of Long Island Sound, nearly midway between Eaton's Neck and Old Field Point Lighthouse.

Remarks.

Nissequage River is a narrow, shallow stream, full of Marsh Islands which separate it into numerous small channels; not more than 7 or 8 feet water can be taken across the bar at high water. The village of Nissequage is built on the Eastern bank of the River, about a mile from its entrance, and about $\frac{3}{4}$ mile above this on the Western side is the small settlement of Darlington; shoal water extends off more than a mile from Nissequage entrance.

High Water.

It is high water on Nissequage Bar about the same time that it is at Stony Brook entrance.

HUNTINGTON BAY.

The entrance to this Bay, which is between Eaton's Neck on the East and Lloyd's Neck on the West, is on the Southern side of

the Sound, about 15 miles from the Lighthouse on the Execution Rocks, and about 16 miles from the Lighthouse on the Middle Ground.

Remarks.

Huntington Bay lies nearly North and South about $2\frac{3}{4}$ miles, with an average width of more than a mile. It affords good anchorage in from $2\frac{1}{2}$ to 6 fathoms water, and good shelter in all except Northerly winds.

**Sailing Directions for Huntington Bay in Daytime,
with favorable winds and fair weather.**

From the Eastward, follow the sailing directions before given for Long Island Sound, until up with the Lighthouse on the Middle Ground; leave this Lighthouse about $\frac{1}{2}$ mile to the Northward, and make good the course **W.** by **S.** for Eaton's Neck. As you approach the Lighthouse on this Neck keep a sharp lookout for the Black Buoy which bears about **N. $\frac{3}{4}$ E.** from this Lighthouse; when this Buoy is made, leave it close to on the Port, and steer about **SW.** by **W.** until the Bay is fairly open, then run in, keeping about midway of it. Large vessels may anchor with Eaton's Neck Lighthouse bearing **NE.** by **E.**, and with Northeast winds may go farther up and anchor with the Lighthouse at Lloyd's Harbor bearing **W.** by **S.**, in about 4 fathoms water at low tide. Should the wind change suddenly to the Northward, vessels of not more than 10 feet draught may at low tide run into Lloyd's Harbor, and vessels of 12 feet draught may run in at half tide, where they will lie at low water aground in soft mud. See directions for Lloyd's Harbor.

From the Westward, leave the Black Buoy off Lloyd's Neck on the Starboard hand, and run for Eaton's Neck Lighthouse; when Huntington Bay is fairly open, then run in as before directed.

Beating into Huntington Bay.

Shoal water makes off from both shores of this Bay. Large vessels in beating in should therefore keep in the middle of it.

Sailing Directions for Night-time.

From the Eastward, leave the Lighthouse on the Middle Ground as before directed, and make good the course **W. $\frac{1}{2}$ S.** until the Light at Lloyd's Harbor bears **SW.** by **S. $\frac{1}{2}$ S.**; you are then past

the Black Buoy off Eaton's Neck Light, and may run for Lloyd's Harbor Light, bearing **S.W.** by **S.** $\frac{1}{2}$ **S.**, until Eaton's Neck Light bears **E.** by **N.** $\frac{1}{2}$ **N.**, then run up about **S.** $\frac{1}{2}$ **W.**, keeping in the middle of the Bay, and anchor in from 3 to 4 fathoms water, Lloyd's Harbor Light bearing from West to **W.** by **S.**

At night, from the Westward, when past Great Captain's Island Light, bring Eaton's Neck Light to bear **E.** by **S.** $\frac{1}{2}$ **S.**, and run for it on this course until Lloyd's Harbor Light bears **SW.** by **S.** $\frac{1}{2}$ **S.**, then follow the directions before given.

NORTHPORT HARBOR.

The entrance to this Harbor, which is on the Southeast side of Huntington Bay, bears **E.SE.** from Lloyd's Harbor Lighthouse, distance $1\frac{1}{2}$ miles.

Remarks.

This Harbor lies nearly East and West, is more than 2 miles in length, and has an average width of more than a mile. The channel which leads in from Huntington Bay is narrow, and has a depth of about 3 fathoms at low tide; at this date (1881), it is well buoyed. This harbor affords excellent anchorage in from 10 feet to 9 fathoms water, sheltered from all winds.

The village of Northport is situated near the Southeast arm of the Harbor; good anchorage may be found off this village in from 6 to 7 feet water at low tide.

Sailing Directions for Northport Harbor in Day-time, with favorable winds and fair weather.

From the Eastward or Westward, follow the directions before given for Huntington Bay, until the Lighthouse at Lloyd's Harbor bears **NW.** by **W.** $\frac{3}{4}$ **W.**, then run **SE.** by **E.** $\frac{3}{4}$ **E.**, keeping a sharp lookout for the Black Buoy off the Southern end of West Beach Flats; when this is made, leave it close to on the Port hand, and steer about East, carrying about 3 fathoms water, and leaving the Red Buoy off the Northwest part of Great Flats on the Starboard hand, and the Black Buoy off the Southeast part of West Beach Flats on the Port hand; when past this last-named Buoy you may anchor anywhere in the Harbor, secure from all winds.

If bound to the village of Northport, when past the Black Buoy off the Southeast part of West Beach Flats, steer about **NE.** by **E. ½ E.**, leaving Little Neck Point well on the Starboard hand. When the village of Northport is well open, run up to the Southeastward, keeping about midway the Harbor. At low tide, vessels of more than 7 feet draught must anchor about a mile Northwest from the village and wait for flood tide.

Beating into Northport Harbor.

In beating into this Harbor, after passing the first Black Buoy at the entrance, the channel is very narrow until past the Black Buoy off the Southeast part of West Beach Flats.

High Water.

It is high water at the entrance of Northport Harbor 38 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

HUNTINGTON HARBOR.

The entrance to this Harbor, which is at the head of Huntington Bay, bears about **S.SE.** from the Lighthouse at Lloyd's Harbor, distance about $\frac{1}{3}$ mile.

Remarks.

From the entrance of this Harbor (which is between two Buoys, one Black, the other Red) the distance is about $1\frac{1}{4}$ miles through a narrow, crooked channel to the village of Huntington; not more than 7 or 8 feet water can be carried into this Harbor at low tide and but little up to the village; there are also Rocks lying in the channel, none of which at this date are buoyed; it is therefore advisable for strangers bound to this Harbor to anchor in Lloyd's Harbor and take pilots.

High Water.

It is high water at the entrance of Huntington Harbor 38 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

LLOYD'S HARBOR.

The entrance to this convenient Harbor for light draught vessels bears from Eaton's Neck Lighthouse **SW.** nearly 3 miles.

Lloyd's Harbor Lighthouse.

This Lighthouse, which shows a fixed Red Light, is on the South end of Long Beach, North side of entrance to Lloyd's Harbor. Eaton's Neck Lighthouse bears from Lloyd's Harbor Lighthouse about **NE.**, distance about 3 miles.

Remarks.

The entrance to Lloyd's Harbor is nearly $\frac{1}{2}$ mile wide, but the real channel, which is on the Northern side, is only about 350 yards wide, with a depth of from 7 to 10 feet water at low tide; vessels of 15 feet draught may, however, run into this Harbor at high water, where they will at low tide lie aground in very soft mud, secure from all winds.

Sailing Directions for Lloyd's Harbor in Daytime, with favorable winds and fair weather.

From the Eastward or Westward, bound to Lloyd's Harbor, follow the directions before given for Huntington Bay, until the Lighthouse at Lloyd's Harbor bears about West, then run in, leaving this Lighthouse not more than 250 yards to the Northward; when it bears **NE.** by **N.** anchor in about 10 fathoms of water, where you will lie secure from all winds. Above this, the water is shallow at low tide. These directions will answer for night or day.

High Water.

It is high water in Lloyd's Harbor 30 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

OYSTER BAY.

The entrance to this Bay, which is the first to the Westward of Huntington Bay, is $5\frac{1}{2}$ miles to the Westward of Eaton's Neck Lighthouse, and East-Northerly 11 miles from the Lighthouse on the Execution Rocks.

Remarks.

Oyster Bay is very irregular in shape, being divided into two parts by Cove Neck. The Eastern arm, which is called Cold Spring Harbor, extends up Southeasterly about 2 miles to the village of Cold Spring; the Western arm extends about $1\frac{1}{2}$ miles to the village of Oyster Bay. There is excellent anchorage, and also good shelter, in both Cold Spring and Oyster Bay harbors. About 15 feet water can be taken into the former at low tide, and 5 fathoms into the latter. The entrance to Oyster Bay is somewhat obstructed; a long Spit called Centre Island Shoal makes off from the Western side of the entrance, which makes the channel (which is between the Eastern shore and Red Buoy) not more than $\frac{1}{4}$ mile wide.

Sailing Directions for Cold Spring Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave the Black Buoy off to the Northward of Eaton's Neck Lighthouse on the Port hand, and steer about West, keeping a sharp lookout for the Black Buoy off Lloyd's Neck; when this is made, leave it a short distance on the Port and steer about **SW.** $1\frac{1}{2}$ miles. Oyster Bay will then be fairly open, bearing about **S.SE.**; you may then run in, keeping nearer the Eastern side; as you sail in you will see the Red Buoy on the Eastern end of the Spit; this Buoy lies not more than $\frac{1}{4}$ mile from the Eastern side of the entrance; when this Buoy is made, leave it close to on the Starboard hand, and steer up about **S. $\frac{1}{2}$ E.** 2 miles, and anchor midway the Harbor in about $2\frac{1}{2}$ fathoms water at low tide. If bound to the village of Cold Spring it is necessary to wait here for high water and a pilot.

From the Westward, when past the Lighthouse on the Execution Rocks, steer **E. NE.** leaving the Black Buoy off Matinicock Point well to the Southward; continue the course **E.NE.** until Great Captain's Island Lighthouse bears **NW. $\frac{1}{2}$ W.**, then steer **SE. $\frac{1}{2}$ E.** leaving the Black Buoy off Centre Island Reef well on the Starboard hand; when Oyster Bay is fairly open, then run in as before directed.

Sailing Directions for Oyster Bay Harbor in Day-time, with favorable winds and fair weather.

From the Eastward or Westward, follow the directions before given for Cold Spring Harbor, until past the Red Buoy off the

Eastern part of the Spit, then steer **SW.** about a mile, when Oyster Bay will be fairly open; then run in, keeping the Western shore best aboard, and anchor in from 4 to 8 fathoms water, secure from all winds.

Beating into Oyster Bay Harbor.

In beating into this Harbor, in order to avoid a Rocky Shoal which makes off about 350 yards from Cove Neck,* it is necessary to keep the Western shore best aboard.

Beating into Oyster Bay.

Vessels beating into this Bay should, after passing the Black Buoy off the Northern part of Centre Island Reef, keep the Eastern shore best aboard.

High Water.

It is high water in Oyster Bay 22 minutes before it is at Boston; common tides rise about $7\frac{1}{3}$ feet.

HEMPSTEAD HARBOR.

The entrance to this large Cove, which is on the South side of the Sound, is East-Southerly about 3 miles from the Lighthouse on the Execution Rocks.

Remarks.

Hempstead Harbor lies nearly North and South about $4\frac{1}{2}$ miles in length, and between Red Spring Point and Prospect Point it is nearly 3 miles in width, but gradually contracts to the village of Hempstead or Roslyn; about 3 miles above the entrance a narrow Beach makes from the Western side by which the width of the Harbor is diminished to 200 yards; from $2\frac{1}{2}$ to 3 fathoms water can be carried up as far as this Beach, there being no navigation beyond this point. Good shelter is found in this Harbor in all except Northerly winds.

Sailing Directions for Hempstead Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, leave the Black Buoy off Matinicoek Point a short distance to the Southward (the Lighthouse on the Execu-

* Cove Neck lies on the Eastern side of entrance to Oyster Bay Harbor.

tion Rocks bears **W.** by **S.** from this Buoy, distance 5 miles), and when past this Buoy, run about **SW. ½ W.** until the Harbor is fairly open; then run in about midway until past Mott's Point, which is the first on the Western side; when past this last-named Point, anchor in from 3 to 4 fathoms water.

From the Westward, when past the Lighthouse on the Execution Rocks, steer **E. ½ N.** until the entrance to Hempstead Harbor is fairly open, then run in as before directed.

Beating into Hempstead Harbor.

In beating into this Harbor be careful to avoid Picket's Rock, which lies off to the Northward of Mott's Point about $\frac{1}{4}$ mile from the Western shore and is awash at low tide; when past this last-named Point, which is the first on the Western side, keep the Western shore best aboard.

High Water.

It is high water in Hempstead Outer Harbor 17 minutes before it is at Boston; common tides rise about $7\frac{3}{4}$ feet.

MANHASSET BAY.

The entrance to this Bay, which is on the South side of the Sound, is about $1\frac{1}{2}$ miles Southwest from the Lighthouse at Sands' Point, and about $1\frac{1}{2}$ miles Northeast from the Lighthouse on the Stepping Stones.

Remarks.

This Bay, which is of irregular shape, makes in **SE.** nearly 4 miles; at its entrance it is about $\frac{7}{8}$ mile wide; excellent anchorage may be found in it in from 12 feet to 7 fathoms water, secure from all winds; but 14 feet, however, at low tide can be taken across the bar at its entrance.

Sailing Directions for Manhasset Bay in Daytime, with favorable winds and fair weather

From the Eastward, leave the Lighthouse on the Execution Rocks about $\frac{1}{4}$ mile on the Starboard hand, and steer about **SW. ½ S.** leaving the Black Buoy off the Northwestern part of Gangway Rock on the Port hand; this Buoy bears from the Lighthouse on the Execution Rocks about **SW. by S. $\frac{3}{4}$ S.,** distance $1\frac{1}{4}$ miles;

when about $\frac{1}{3}$ mile past this Buoy, Hempstead Bay will be open, when you may run in, keeping the Eastern shore best aboard, and when past the bar, anchor off Plum Beach Point, which is on the Eastern side, in from 5 to 7 fathoms water; near the head of this Bay there is but little water at low tide.

From the Westward, leave the Lighthouse on the Stepping Stones a short distance on the Starboard hand, and steer about **NE. $\frac{1}{4}$ N.** about 2 miles; Hempstead Bay will then be well open, when you may run in and anchor according to directions before given.

High Water.

It is high water in Hempstead Bay 16 minutes before it is at Boston; common tides rise about $7\frac{1}{4}$ feet.

LITTLE NECK BAY.

This shallow Bay is on the South side of Long Island Sound nearly opposite Throg's Neck Lighthouse.

Remarks.

Little Neck Bay is of little importance, as it only affords anchorage for small or light draught vessels; from 8 to 3 feet water can be taken into it at low tide; vessels of 8 or 9 feet draught may, however, anchor near its entrance.

HART AND CITY ISLAND HARBOR.

The entrance to this Harbor, which is between Hart and City Islands, is Southwesterly $2\frac{1}{2}$ miles from the Lighthouse on Execution Rocks, and Northeasterly $2\frac{1}{2}$ miles from the Lighthouse at Throg's Neck.

Remarks.

Hart and City Island Harbor is much frequented by coasters in both Easterly and Westerly winds; about 18 feet water can be taken into it at low tide. The channel, which is narrow, lies about 250 yards from the Southern point of Hart Island.

Sailing Directions for Hart and City Island Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, follow the sailing directions before given for Long Island Sound, until up with the Lighthouse on the Execution Rocks; when past this Lighthouse, which may be left $\frac{1}{4}$ mile on the Starboard hand, steer **SW. $\frac{1}{2}$ S.**, leaving the South point of Hart Island, which is bold, about 350 yards on the Starboard hand; when the Harbor is fairly open, run in, and anchor in from 6 fathoms to 11 feet water; in entering this Harbor, vessels of more than 11 feet draught, should at low tide keep not more than 250 yards from Hart Island.

From the Westward, leave the Lighthouse on the Stepping Stones a short distance on the Starboard hand, and steer **N. NE.**, until the Harbor is fairly open, then run in and anchor as before directed.

Sailing Directions for Hart and City Island Harbor at Night-time, with favorable winds and fair weather.

From the Eastward, follow the sailing directions before given for Long Island Sound, until the Light upon the Execution Rocks is made, then run for it, bearing **W. SW.**, and leave it not more than 400 yards on the Starboard hand; when past this Light, or it bears North, bring the fixed Red Light on the Stepping Stones in range with Throg's Neck Light (fixed White), and run for them in range, bearing about **SW. $\frac{1}{2}$ S.**, keeping a sharp lookout for the Southern point of Hart Island; when this point is made, leave it about 200 yards on the Starboard and haul in to the Northward, and anchor in from 6 fathoms to 12 feet water. If the night is so dark that the Southern point of Hart Island cannot be seen but a short distance, it is advisable when past the Light on the Execution Rocks to shorten sail, and run with the Lights in range until you judge you are abreast the Southern point of Hart Island, then haul to the Northwestward, until the fixed Red Light on the Stepping Stones bears **S. by W.**, then steer **N. by E.**, which will take you into the Harbor in about 12 feet water at low tide. Large vessels should anchor in about $3\frac{1}{4}$ fathoms water, with the Revolving Light on Sands' Point just on, with the South point of Hart Island bearing **NE. by E. $\frac{1}{2}$ E.**

The Southern point of Hart Island is low, and difficult to make in very dark nights; in such times, especially with Northeasterly gales, it is advisable, when past the Light on the Execution Rocks, to run in with Throg's Neck and Stepping Stones Lights in range, leaving the latter a short distance on the Port hand; haul round Throg's Neck Light, leaving it about $\frac{1}{4}$ mile on the Starboard hand, and run up to the Northwestward and anchor close in under Throg's Neck, from $\frac{1}{2}$ to $\frac{3}{4}$ mile above the Lighthouse, in from 6 to 9 fathoms water, secure from all winds.

High Water.

It is high water in Hart and City Island Harbor about 9 minutes before it is at Boston; common tides rise $7\frac{1}{2}$ feet.

NEW ROCHELLE HARBOR.

The entrance to this Harbor, which is on the Northern side of the Sound, bears **NW.** by **W.** $\frac{1}{2}$ **W.** from the Lighthouse on the Execution Rocks, distance $1\frac{3}{4}$ miles.

Remarks.

On account of the obstructions at the entrance, and also the narrow channel leading in, this Harbor cannot be entered by strangers in sailing vessels, except with favorable winds; it is mostly used by steamers and barges; good anchorage, however, is found off its mouth, in from 2 to 5 fathoms water.

Sailing Directions for New Rochelle Harbor in Day-time, with favorable winds and fair weather.

From the Eastward, follow the sailing directions before given for Long Island Sound, until you make the Lighthouse on the Execution Rocks, then bring this Lighthouse to bear **W.SW.**, and run for it on this course; as you approach it, keep a sharp lookout for the Striped Buoy which lies about $\frac{1}{2}$ mile Northeasterly from it; when this Buoy is made, leave it a short distance on the Port hand, and make good the course **NW.** by **W.** $\frac{1}{2}$ **W.**; as you sail in you will see the Buoy painted in Red and Black Horizontal Stripes, which lies on Middle Rock; leave this last-named Buoy a short distance

on the Port hand, and make good the course **W. $\frac{1}{2}$ N.**, leaving the Middle Shoal and Bird Rocks (both of which are bare at half tide) well on the Starboard hand; after passing the latter, in order to avoid a Sunken Rock lying in the middle of the passage, it is best to anchor in from 4 to 5 fathoms water, close under the North Shore, and take a pilot.

From the Westward, leave the Buoy which lies about $\frac{1}{2}$ mile Southwest from the Lighthouse on the Execution Rocks, close to on the Starboard hand, and steer **N. $\frac{1}{2}$ W.**, leaving Whortleberry Island well to the Westward; when the Buoy painted in Red and Black Horizontal Stripes on Middle Rock bears **NW.** by **W. $\frac{1}{2}$ W.**, then follow the directions before given.

There is a channel to the Westward of Davenport's Island having from 7 to 8 feet water in it at low tide, but it is considered too intricate for strangers.

High Water.

It is high water at New Rochelle Harbor 7 minutes before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

PELHAM BAY AND HUTCHINSON'S RIVER.

The entrance to this Bay and River is on the North side of the Sound, between Throg's Neck on the South and City Island on the North.

Remarks.

The entrance to Pelham Bay is nearly 2 miles in width, but gradually contracts to the mouth of Hutchinson's River; only about 5 feet water at low tide can be taken up to the mouth of this River; it is therefore advisable for strangers bound to this place to employ pilots.

Shinnecock Lighthouse.

Upon Pondquogue Point, South side of Long Island and North side of Shinnecock Bay, about 1 mile from the seashore, is a Lighthouse, which at this date (1881), shows a fixed White Light. This Lighthouse is West-Southerly $32\frac{1}{2}$ miles from Montauk Point Lighthouse

and East-Northerly 26 miles from Fire Island Lighthouse. The Tower of this Lighthouse at this date (1881), is Red and is not often visible in daytime, but at night, with a well-defined horizon, this Light may be seen from the deck of a common vessel about 19 miles.

SHINNECOCK INLET.

This Inlet is 33 miles to the Westward of Montauk Point Lighthouse, and about $\frac{3}{4}$ mile Southwesterly from Shinnecock Lighthouse.

Remarks.

Shinnecock Inlet is about $\frac{1}{2}$ mile in width and has a Sand Bar at its entrance which has but little water upon it at low tide; the channel across this Bar varies in depth and location with almost every heavy gale from seaward. Shinnecock Bay, though broad, is shallow, and no description, with sailing directions for it, would be of use to mariners.

Fire Island Lighthouse.

Upon Fire Island Beach, South side of Long Island, about $1\frac{1}{2}$ miles to the Eastward of Fire Island Inlet, is a lofty Tower painted Yellow, and at this date (1881), shows a White Revolving Light; this Light revolves once a minute.

Bearings and Distances from Fire Island Lighthouse.

	Distance.
Montauk Point Lighthouse, East-Northerly . . .	68 miles.
Shinnecock Lighthouse, East-Northerly . . .	36 "
Sandy Hook Light-ship, W. by S. . . .	32 "
Barnegat Lighthouse, SW. . . .	67 "
Five Fathom Bank Light-ship, SW. $\frac{3}{4}$ S. . . .	129 "

FIRE ISLAND INLET.

This Inlet, which is about $1\frac{1}{2}$ miles to the Westward of Fire Island Lighthouse, is the only harbor of refuge on the South side of Long Island. At this date (1882), about 11 feet water can be

carried across the Bar at low tide, and about 10 feet up to the anchorage off the Hotel Wharf; the depth and location of the channel across this Bar changes with almost every gale from seaward, but the Buoys are changed so as to show the best water. At this time a Bell Buoy is placed off the entrance to this Inlet in 7 fathoms water. Fire Island Lighthouse bears from it **NE.** by **E.** $\frac{1}{8}$ **E.**, distance $1\frac{3}{4}$ miles.

**Sailing Directions for Fire Island Inlet in Daytime,
with favorable winds and fair weather.**

Vessels from the Eastward or Westward, having made the Bell Buoy off the Bar, will, if possible, wait until about half flood, then run in, leaving the Buoys painted in Black and White Perpendicular Stripes close to on either hand; leave the first Red Buoy close to on the Starboard hand and haul up about **E.** by **S.**, leaving a Black Buoy on the Port; when past this last Buoy, anchor off the Lighthouse in from 3 to 4 fathoms water. If bound to any of the places on the North side of the Bay, it is advisable to take a pilot at this anchorage; it is also advisable for vessels, unacquainted, of more than 7 feet draught, bound into Fire Island Inlet, to take pilots off the Bar. The above directions were good for 1882.

A Whistling Buoy has been placed in 14 fathoms water off this Inlet. The Bell Buoy off the Bar bears from this Whistling Buoy **N.** by **W.** $\frac{3}{4}$ **W.**, distance $5\frac{1}{4}$ miles; Fire Island Lighthouse North 6 miles; Sandy Hook Light-ship West 31 miles: this last-named Buoy is also 70 miles to the Westward of Montauk Point Lighthouse.

High Water.

It is high water at Fire Island Inlet 4h. 11m. before it is at Boston; common tides rise about 2 feet.

ROCKAWAY INLET.

The entrance to this Inlet lies nearly West, 30 miles from Fire Island Lighthouse and $6\frac{1}{2}$ miles (Northeasterly) from Sandy Hook Lighthouse.

Remarks.

A Sand Bar makes across the entrance to this Inlet, which usually has from 12 to 15 feet water upon it; the channel over this Bar is liable to change with every heavy gale from seaward; when over the Bar there is at this date (1881), not less than 16 feet water until the Inlet is fairly entered, after this the depth varies from 4 to 8 fathoms. It is, however, advisable for vessels of more than 7 or 8 feet draught (except in cases of emergency) to take pilots.

**Sailing Directions for Rockaway Inlet in Daytime,
with favorable winds and fair weather.**

At this date (1881), a Bell Buoy painted in Black and White Perpendicular Stripes is placed off the Bar. Sandy Hook Lightship bears from this Buoy **S. by E.**, distance 6 miles. Vessels from the Eastward or Westward, having made the Bell Buoy, will, if possible, wait until about one-half flood, then run in, leaving the Buoys painted in Black and White Perpendicular Stripes close to on either hand, haul round Beach Point (which is the first on the Eastern side), leaving it about 250 yards on the Starboard and the Stakes on the Port hand; when the end of Beach Point bears **SE.**, haul up about **E.NE.**, and anchor off the Southern shore of Barren Island near the first Wharves, in from 3 to 5 fathoms water; if bound up Jamaica Bay, it is advisable to take a pilot here.

High Water.

It is high water in Rockaway Inlet 3h. 50m. before it is at Boston; common tides rise about 4 feet.

**South Coast of Long Island from Montauk Point
to Rockaway Inlet.**

The South Coast of Long Island has a general course about **W.** by **S.** $\frac{1}{2}$ **S.** 68 miles, from Montauk Point to Fire Island Inlet, and thence about **W.** $\frac{1}{4}$ **N.**, about 30 miles to Rockaway Inlet. This shore may be approached within $\frac{3}{4}$ mile, with 5 fathoms water, anywhere between Montauk Point and Rockaway Inlet.

Inlets on the South Shore of Long Island.

Between Fire Island and Rockaway Inlets there are several shallow Inlets: Gilgo Inlet, 8 miles to the Westward of Fire

Island Inlet; New Inlet, 6 miles to the Westward of Gilgo, and Hog Island Inlet, $5\frac{3}{4}$ miles to the Westward of New Inlet. These Inlets are all very shallow and cannot be entered even by the smallest vessels without a pilot.

NEW YORK BAYS AND HARBOR.

In entering New York Harbor, by way of Sandy Hook, there are two Bays, called the Upper and Lower Bay; the great commercial city of New York lies at the head of the former. From Sandy Hook Main Lighthouse to this city, the course is nearly North and distance about $14\frac{1}{2}$ miles. In entering the Lower Bay the passage is much obstructed by dangerous Shoals or Sand Bars, which extend from Coney Island to Sandy Hook; there are several channels across these Bars, which at this date (1882), are well marked with Buoys. At night, Range Lights are employed to such an extent, that it is frequently remarked by mariners, that with favorable winds and fair weather, the port of New York is more accessible at night than in daytime.

Dangers in Approaching and Entering New York Bay and Harbor.

East Bank.

This extensive Sand Shoal, which is about $2\frac{1}{2}$ miles wide, extends off to the Southward about 3 miles from Coney Island and has from 3 to 18 feet water upon it, the shoal spots being scattered all over it; there are several channels across this Bank which lead from sea into the Main Ship Channel, but they are only used by those well acquainted.

Romer Shoal.

This is also an extensive Sand Shoal about 5 miles long, with an average width of $\frac{3}{4}$ mile; this Shoal, which lies between and separates the East and Swash Channels, is nearly bare in some places; a Stone Beacon has been built upon its Southwestern part; Sandy Hook Main Lighthouse bears from this Beacon **S. $\frac{1}{4}$ E.**, distance a little over 3 miles. The Southwest part of the Romer Shoal is very hold, and it is not advisable for strangers to attempt to beat in the Swash Channel, especially at night.

False Hook Shoal.

This Shoal, which runs nearly parallel with Sandy Hook Beach, is about 2 miles in length and has from 12 to 18 feet water upon it. Between this Shoal and Sandy Hook Beach is False Hook Channel, which is from 250 to 500 yards in width, and has a depth of from $3\frac{1}{4}$ to 6 fathoms water at low tide; a Buoy painted in Red and Black Horizontal Stripes marks the Northwestern part of this Shoal; Sandy Hook Main Lighthouse bears from this Buoy **SW.** $\frac{1}{4}$ **W.**, distance $\frac{3}{8}$ mile.

Outer Middle Ground.

This small spot, which lies to the Eastward of Sandy Hook, has about 16 feet water upon it at low tide; it is marked on its Southern part with a Red Buoy; Sandy Hook Main Lighthouse bears from this Buoy **NW.** by **N.**, distance $2\frac{5}{8}$ miles; Scotland Lightship **E.NE.** $1\frac{3}{4}$ miles.

Flynn's Knoll.

Flynn's Knoll is a Sand Shoal extending about East and West about 1 mile, and has, at very low tides, from 8 to 16 feet water upon it. The Western part of Flynn's Knoll is called the Southwest Spit; this danger is marked off its Southwestern and Western part with two Red Buoys, which lie nearly on a line with Sandy Hook Main Lighthouse and the West Beacon; the first has a Ball and Perch on it, the next lies in about 4 fathoms water off the West end of the Spit; these two Buoys are both left on the Starboard hand by vessels bound up the Main Channel.

East Knoll.

This is an extensive Shoal, separating the Main and Swash Channels, and having from 11 to 16 feet water upon it; it extends about $1\frac{1}{2}$ miles **N.NW.** and **S.SE.**, and is $\frac{3}{4}$ mile wide. It is marked off its Western part with two Red Buoys, which in going up are both left on the Starboard hand; the Northern end of the East Knoll is the junction of the Swash and Main Channels.

West Knoll.

This Shoal, which lies on the West side of the channel, extends about 1 mile **N.NE.** and **S.SW.**, and has at very low tides about 15 feet water upon it. It is marked on its Eastern part with a Black Buoy, which in going up is left on the Port hand.

West Bank.

This great Shoal, which lies on the West side of the channel, is really the Northeast extremity of Staten Island Flats; it is bare in some places at low water, and in others has from 1 to 12 feet water upon it; this Bank is very bold on its Eastern side, and would be dangerous if it were not for the two small Islands known as Dix and Hoffmann * Islands, together with the Black Buoys which serve as guides to avoid it.

Craven's Shoal.

This Shoal, which lies on the Western side of the channel a little below the Narrows, has about 17 feet water upon it at low tide; it is marked on its Eastern side with a Buoy painted in Red and Black Horizontal Stripes; Fort Tompkins Lighthouse bears from this Buoy **NW.** by **N.** $\frac{3}{4}$ **N.** nearly, distance about a mile.

Gowanus Flats.

These extensive Flats, which have from 8 to 15 feet water upon them, lie on the Eastern side of the channel above the Narrows; they are marked on their Western side with two Red Buoys; Robbins' Reef Lighthouse bears from the Southernmost Buoy **NW.** by **N.**, distance $1\frac{1}{4}$ miles.

Jersey Flats.

These extensive Flats lie on the Western side of the Upper Bay, and extend from 1 to 2 miles from shore; they are well marked on their Eastern side by Robbins' Reef Lighthouse, Oyster Island, Bedloe's Island, and Ellis' Island, together with the Black Buoys. Vessels can clear these Flats by leaving the Lighthouse and Islands about $\frac{1}{4}$ mile to the Westward. Jersey Flats have but little water upon them at low tide, and vessels should not attempt to pass inside the Islands.

Governor's Island Flats.

Shoal water extends off to the Southwest about $\frac{1}{2}$ mile from Governor's Island, and is marked on its outer part with a Black Buoy; this Buoy marks the Northern entrance to the Buttermilk Channel; in order to avoid the shoal water which extends off from Governor's Island it is necessary at night-time to use the Lead.

* Dix and Hoffmann Islands are known as Upper and Lower Quarantine.

Sandy Hook Light-ship.

This Light-ship, which is the principal guide to the entrance to New York Bay and Harbor, is moored in about 14 fathoms water; this Light-ship, at this date (1882), is painted Red, has 2 masts, and shows 2 Red fixed Lights, and also at this time has a Bell and a Horn; the bell is rung in thick weather, and the horn, which is self-acting, is also sounded at such times.

Boarings and Distances from Sandy Hook Light-ship.

	Distance.
New South Shoal, East nearly	186 miles.
Fire Island Lighthouse, E. by N.	32 "
Whistling Buoy off Fire Island Inlet, East nearly	31 "
Scotland Light-ship, W. $\frac{1}{4}$ N.	2 $\frac{3}{8}$ "
Whistling Buoy near the entrance of Gedney's Channel, NW. $\frac{1}{2}$ N.	3 $\frac{1}{4}$ "
Sandy Hook Main Lighthouse, W. by N. $\frac{1}{4}$ N.	6 $\frac{1}{4}$ "
Highlands of Navesink Lighthouses, WSW.	6 $\frac{3}{8}$ "
Barnegat Lighthouse, SSW.	43 "
Channel Buoy painted in Black and White Perpendicular Stripes, with Perch and Ball, at the entrance of Gedney's Channel, NW.	3 $\frac{3}{8}$ "
Buoy with Black and White Perpendicular Stripes at the entrance of South Channel, W. by N. $\frac{1}{4}$ N.	3 $\frac{1}{2}$ "
East Beacon (on Sandy Hook), W. by N. $\frac{3}{4}$ N.	6 $\frac{5}{8}$ "

Highland (Navesink) Lighthouses

Upon the Highland of Navesink are two Towers, 228 feet apart, and range **NW.** and **SE.** At this date (1882), these Towers are painted Brown, and show fixed White Lights, which, with a well defined horizon, may be seen from the deck of a common vessel about 22 nautical miles.

Bearings and Distances from Highland of Navesink Lighthouses.

	Distance.
New South Shoal Light-ship, East nearly	191 miles.
Fire Island Lighthouse, E. by N. $\frac{3}{4}$ N.	38 "
Whistling Buoy off Fire Island Inlet, E. $\frac{1}{4}$ N.	37 "
Sandy Hook Light-ship, E.NE.	6 $\frac{3}{8}$ "
Scotland Light-ship, NE. $\frac{1}{2}$ E.	3 $\frac{3}{4}$ "

Scotland Light-ship.

This Light-ship, which is placed in about 7 fathoms water, lies a short distance without the wreck of the Steamship Scotland. At this date (1882), this Light-ship shows 2 fixed White Lights, and has a Fog Bell which is struck in thick weather.

Bearings and Distances from Scotland Light-ship.

	Distance.
Highland (Navesink) Lighthouses, SW. ½ W. . . .	3 ⁷ / ₈ miles.
Sandy Hook Light-ship, E. ¼ S.	2 ⁷ / ₈ "
Sandy Hook Main Lighthouse, NW. by W. ¼ W. . .	3 ¹ / ₂ "
East Beacon Lighthouse (Sandy Hook), NW. by W. .	4 "
Black Buoy off Southeast part False Hook Shoal, W.	
by N. ½ N.	1 ¹ / ₈ "

Sandy Hook Lighthouse.

About ³/₄ mile from the Northern Point of Sandy Hook, on a hillock about 15 feet high, and surrounded by low trees, is Sandy Hook Main Lighthouse, the Tower of which is at this date (1882), painted White, and shows a fixed White Light.

Bearings and Distances from Sandy Hook Main Lighthouse.

	Distance.
Sandy Hook Light-ship, E. by S. ¼ S.	6 ¹ / ₄ miles.
Scotland Light-ship, SE. by E. ½ E.	3 ¹ / ₂ "
Buoy Painted in Red and Black Horizontal Stripes off	
Northern part False Hook Shoal, NE. ¼ E. . . .	7 ¹ / ₈ "

East Beacon Lighthouse (Sandy Hook).

This Beacon, the Tower of which at this date (1882), is painted Red, is near the North Point of Sandy Hook, and shows a fixed White Light. A Fog Signal is placed near this Lighthouse, which in thick weather gives blasts of 6 seconds at intervals of 40 seconds.

Bearings and Distances from East Beacon Lighthouse.

	Distance.
Sandy Hook Light-ship, E. by S. ¾ S.	6 ⁵ / ₈ miles.
Scotland Light-ship, SE. by E.	4 "
Beacon on the Dry Romer, North	2 ¹ / ₂ "
Buoy painted in Red and Black Horizontal Stripes off	
Northern End of False Hook Shoal, E. ½ S. . . .	¾ "

West Beacon (Sandy Hook).

This Beacon, which is situated on the Western shore of Sandy Hook about $\frac{1}{4}$ mile from the Main Lighthouse, is used as a Range with Sandy Hook Lighthouse to clear the Southwest Spit. The Tower is painted White, and at this date (1882), shows a fixed White Light.

Conover and Chapel Hill Beacons.

When past Sandy Hook you will see to the Southwest, close to the shore, a Tower painted in Horizontal Stripes of White, Red and White, with Black Frame on each side of it; this is Conover Beacon, and a little more than a mile South from it on the highland will be seen another Tower painted in White, with Black Frame on each side; this is Chapel Hill Beacon. These two Beacons show fixed White Lights, and when in range bear **S.** by **W.** $\frac{1}{4}$ **W.** and lead up the Main Channel as far as the Narrows.

Bayside and Wilson's Beacons.

When past the North Point of Sandy Hook you will see about $3\frac{1}{2}$ miles to the Westward of Conover Beacon, close to the Southwest shore, another Tower painted White, and surmounted by a Lantern with Red Top; this is called Bayside Beacon, and shows a fixed White Light; about $\frac{3}{4}$ mile to the Westward of Bayside Beacon, on somewhat higher ground, there will be seen another Tower painted White, and surmounted by a Lantern with Black Top; this is called Wilson's Beacon, and this also shows a fixed White Light. These last-named Beacons, when on a line bearing about **W.** by **S.**, form the Main Channel Range between the North Point of Sandy Hook and Southwest Spit.

Elm Tree and New Dorp Beacons.

When past the North Point of Sandy Hook you will see on the Northwest shore a Tower painted White with a Red Band around it; this is called Elm Tree Beacon, and shows a fixed White Light; about $1\frac{1}{2}$ miles **NW.** $\frac{1}{4}$ **N.** from this last Beacon, on a rising ground, another Tower will be seen; this is called New Dorp Beacon, and shows a fixed White Light. This last Beacon being White, the background of trees which lie to the Northwest of it makes the Tower readily discernible in the daytime. These two last-named Beacons in range, bearing about **NW.** $\frac{1}{4}$ **N.**, lead

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through the Swash Channel in about 13 feet water at low tide. New Dorp Beacon just open to the Northward of Elm Tree Beacon leads through the Swash Channel in about 4 fathoms water at low tide.

Fort Tompkins Lighthouse.

This Lighthouse (which is on the West side of the Narrows), at this date (1882), shows a fixed White Light. Vessels may approach this Lighthouse within 300 yards without danger.

Fort La Fayette Fog Bell.

Upon this Fort (which is on the Eastern side of the Narrows about $\frac{1}{6}$ mile from shore) is a Fog Bell which is struck by machinery, one and two blows alternately, at intervals of 20 seconds. Vessels may approach within 100 yards of this Fort without danger.

Robbins' Reef Lighthouse.

This Lighthouse, which is just above the Narrows, is built on the Eastern part of Jersey Flats, and is intended to guide vessels into New York Harbor, and also into Newark Bay; at this date (1882), it shows a fixed White Light, and has a Fog Bell attached to it, which is struck by machinery at intervals of 15 seconds. Vessels bound up the Bay may leave this Lighthouse $\frac{1}{6}$ mile to the Westward, and those bound to Elizabethport, or into Newark Bay, may leave it $\frac{1}{4}$ mile to the Northward without danger.

Fort Columbus Fog Bell.

On Fort Columbus, Northwest end of Governor's Island, New York Harbor, is a Fog Bell, which is struck by machinery, twice in succession, at intervals of 20 seconds; vessels from the Westward may approach this Fog Bell within 200 yards without danger.

Channels across Sandy Hook Bar.

South Channel.

This Channel leads across Sandy Hook Bar in a direct line **NW.** $\frac{1}{4}$ **N.**, in about 21 feet water at low tide, into the Main and Swash Channels; at this date (1882), a Buoy painted in Black and White Perpendicular Stripes marks the entrance to the South Channel; this Buoy lies on a line and nearly midway between Sandy Hook Main Lighthouse and Sandy Hook Light-ship

Godney's Channel.

This Channel, which leads across Sandy Hook Bar into the Main Channel, has about 23 feet water in it at low tide, and is used by heavy draught vessels. Its entrance is about $1\frac{3}{4}$ miles to the Northward of the South Channel. At this date (1882), a Whistling Buoy has been placed off Godney's Channel in 8 fathoms water. Sandy Hook Light-ship bears from this Buoy **SE.** $\frac{1}{2}$ **S.**, distance $3\frac{1}{4}$ miles; Sandy Hook Main Lighthouse, **W.** by **S.** $\frac{1}{4}$ **S.** $4\frac{1}{2}$ miles; Buoy with Perch and Ball, **W.** by **N.** $\frac{5}{8}$ mile.

Main Channel.

This Channel, which leads in between the Northern Point of Sandy Hook, Flynn's Knoll and Southwest Spit, has a depth of not less than 4 fathoms in it at low tide. Both the South and Godney's Channels lead across Sandy Hook Bar into the Main Channel.

Swash Channel.

This Channel, which is narrow, leads in between the Romer Shoal on the East and East Knoll on the West, and has about 4 fathoms water in it at low tide. The Swash Channel is the most direct way across Sandy Hook Bar into New York Lower Bay; it is not advisable for strangers to attempt to beat through this Channel, especially at night. The current of Ebb sets strong to the Eastward across the Romer Shoal; strangers should not, therefore, attempt this Channel with light winds.

False Hook Channel.

This Channel, which has a depth of about 3 fathoms water, leads along the Eastern shore of Sandy Hook, and is safe for coasters from the Westward, with Westerly or Southerly winds. There are comparatively no obstructions throughout its entire length, and it is in no place less than 450 yards wide; strangers, however, in vessels of more than 12 feet draught, should not attempt the False Hook Channel at night, or when the Buoys cannot be seen.

By the South and Main Channels.**Sailing Directions for New York Bay and Harbor in Daytime, with favorable winds and fair weather.**

From the Southwestward, or Seaward, leave the Scotland Light-ship about $\frac{1}{4}$ mile on the Port hand, and steer **NW.** $\frac{1}{4}$ **N.**, keep-

ing a sharp lookout for the Buoy painted in Black and White Perpendicular Stripes, which lies off the entrance of the South Channel, nearly on a line with Sandy Hook Main Lighthouse and Sandy Hook Light-ship; when this Buoy is made, leave it close to on the Port and steer about **NW. $\frac{1}{4}$ N.**, carrying about $3\frac{1}{2}$ fathoms across the Bar; continue the course **NW. $\frac{1}{4}$ N.** until Sandy Hook Main Lighthouse bears **W.SW.**, then in about 5 fathoms water haul in about **W. by N. $\frac{1}{4}$ N.**, keeping a sharp lookout for the Black Buoys off the Northern Point of the Hook; when these are made, leave them all a short distance on the Port, and when the Beacon on the Northern Point of the Hook bears **S. by E.**, then run **W. by S.** until the West Beacon and Sandy Hook Main Lighthouse are in range, bearing **SE. $\frac{1}{4}$ E.**; then run **NW. $\frac{1}{4}$ W.** with them in range, leaving the Red Buoy with Perch and Ball and Red Buoy off the Western part of Southwest Spit both on the Starboard hand. When Conover Beacon and Chapel Hill Beacon (both of which have been described) are in range, bearing **S. by W. $\frac{1}{4}$ W.**, run up on this range, leaving the Red Buoys on the Eastern Knoll and East Bank on the Starboard, and the Black Buoys off the West Bank on the Port hand. As you sail up, two small Islands will be seen on the Port,—these are Dix and Hoffmann Islands, or Upper and Lower Quarantine. About $\frac{3}{4}$ mile North-east from the Upper Quarantine, and nearly in mid-channel, will be seen a Buoy painted in Red and Black Horizontal Stripes; this is on Craven's Shoal; leave this last-named Buoy about $\frac{1}{4}$ mile to the Westward, and haul up about **N. by W.**, passing in about mid-channel through the Narrows. As you sail up you will see nearly ahead the Lighthouse on Robbins' Reef; you may run for this Lighthouse, bearing about **N. by W.** until about $\frac{1}{2}$ mile from it; the course is then about **NE. $\frac{3}{4}$ N.**, leaving the Black Buoys, together with Bedloe's Island and Ellis' Island, all on the Port hand, and the Red Buoys off Gowanus Flats, and also the Black Buoy off Governor's Island, all on the Starboard hand. When past the Battery, if intending to anchor on the Jersey side, you must haul over towards that shore and anchor in from 3 to $4\frac{1}{2}$ fathoms water, muddy bottom.

It is advisable for sailing vessels, when past the Narrows, to take steam to New York, as the frequently crowded state of the Upper Bay renders the navigation extremely difficult for other than steamers. Collisions are frequent.

*By Gedney's and the Main Channel.***Sailing Directions for New York Bay and Harbor in Daytime, with favorable winds and fair weather.**

From the Eastward, or Seaward, intending to cross Sandy Hook Bar by Gedney's Channel, bring Sandy Hook Light-ship to bear **SE. $\frac{1}{2}$ S.** and steer **NW. $\frac{1}{2}$ N.**, keeping a sharp lookout for the Whistling Buoy before described; when this is made, leave it close to on either hand and run for the Buoy painted in White and Black Perpendicular Stripes with Pencil and Ball; leave this last-named Buoy close to on the Starboard hand, and make good the course **W. by N. $\frac{1}{4}$ N.**, carrying about 23 feet water across Sandy Hook Bar at low tide, and leaving the Red Buoys on the Starboard and the Black Buoys on the Port hand; when up with the Turning Buoy painted in Black and White Perpendicular Stripes (Sandy Hook Main Lighthouse bears from this last-mentioned Buoy **SW. $\frac{1}{2}$ W.**), make good the course **W. by S.**, leaving the Black Buoys off the Northern Point of the Hook on the Port hand; continue the course **W. by S.** until the West Beacon and Sandy Hook Main Lighthouse are in range, bearing **SE. $\frac{1}{4}$ E.**, then follow the directions before given.

*By the South and Swash Channels.***Sailing Directions for New York Bay and Harbor in Daytime, with favorable winds and fair weather.**

Leave the Scotland Light-ship about $\frac{1}{4}$ mile on the Port hand and steer **NW. $\frac{1}{4}$ N.**, keeping a sharp lookout for the Buoy painted in Black and White Perpendicular Stripes, which lies at the entrance of the South Channel; when this is made, leave it close to on either hand and make good the course **NW. $\frac{1}{4}$ N.**, keeping a sharp lookout for the Elm Tree and New Dorp Beacons on the Western side of the Bay; when they are made, bring them in range, bearing about **NW. $\frac{1}{2}$ N.**, leaving the Black Buoys on the Port and the Beacon on the Romer and Red Buoys on the Starboard hand, and carrying not less than 15 feet at low tide; continue to run on this range until Dix Island or Lower Quarantine

bears **N. $\frac{1}{4}$ W.**; you are then in the Main Channel and may run up about **N. by E. $\frac{1}{4}$ E.**, and proceed as before directed.

The current of Ebb sets strong across the Romer Shoal; it is therefore advisable for vessels with light winds to not attempt the Swash Channel.

By Gedney's and the Swash Channel.

Sailing Directions for New York Bay and Harbor in Daytime, with favorable winds and fair weather.

From the Eastward, or Seaward, when the Whistling Buoy before described is made, off Gedney's Channel, leave it close to on either hand and run for the Buoy painted in Black and White Perpendicular Stripes with Perch and Ball; leave this last-mentioned Buoy close to on either hand and make good the course **W. by N. $\frac{1}{4}$ N.**, carrying about 23 feet water across Sandy Hook Bar at low tide, and leaving the Red Buoys on the Starboard and the Black Buoys on the Port hand; continue the course **W. by N. $\frac{1}{4}$ N.**, leaving another Red Buoy with Perch and Ball on the Starboard hand; when the Beacon on the Romer bears **NW. by N. $\frac{1}{2}$ N.**, then run for it, and follow the directions before given.

By False Hook and Main Channels.

Sailing Directions for New York Bay and Harbor in Daytime, with favorable winds and fair weather.

From the Southwestward, when past the Highland Lighthouses, keep a sharp lookout for the Black Buoy, which lies off the shoal water which extends from the shore. The Highland Lighthouses bear from this Buoy **SW. $\frac{1}{2}$ S.** about $1\frac{1}{2}$ miles; when this Buoy is made, leave it close to on the Port hand and follow the shore to the Northward, keeping not more than $\frac{1}{3}$ mile from it and carrying not less than 4 fathoms at low tide, and leaving the Buoy on the Outer Middle Ground well on the Starboard and the Red Buoy farther in off the Oil Spot close to on the Starboard hand; when past this last Buoy, continue the course along the shore, leaving the Buoy painted in Red and Black Horizontal Stripes, which lies off the Northern part of the False Hook Shoal, on the Starboard hand; when past the last-named Buoy, which bears from the

Beacon on the Northern Point of Sandy Hook **E.** $\frac{1}{2}$ **S.** about $\frac{3}{4}$ mile, you will see the Black Buoys off the Hook; haul gradually to the Westward around them, leaving them on the Port, and make good the course **W.** by **S.** until the West Beacon and Sandy Hook Main Lighthouse are in range, bearing about **SE.** $\frac{1}{4}$ **E.**, then run up on this range, and follow the directions before given.

Beating into New York Bay and Harbor in Day-time.

Vessels of not more than 15 feet draught from the Eastward may, when past the Whistling Buoy, stand to the Southward until the Beacon on the Northern Point of Sandy Hook bears **W.** $\frac{1}{2}$ **N.**, and to the Northward until this Beacon bears **W.** by **S.** The Channel between Flynn's Knoll and the Northern Point of the Hook is about $\frac{1}{2}$ mile wide; in beating in, it is necessary to keep a sharp lookout for the Buoys. When past Sandy Hook, the Charts of New York Bay and Harbor will be a better guide in beating up than any written directions.

At this date (1882), there is not less than 13 feet water on the False Hook Shoal; therefore, with Northerly winds, vessels of not more than 12 feet draught from the Southwestward may, when past the Highland Lights, beat around Sandy Hook by keeping about $\frac{1}{3}$ mile from the beach, and make long or short tacks from shore.

By the South and Main Channels.

Sailing Directions for New York Bay and Harbor at Night-time, with favorable winds and fair weather.

From the Southwestward, or Seaward, or the Eastward, leave the Scotland Light-ship about $\frac{1}{4}$ mile on the Port hand and make good the course **NW.** $\frac{1}{4}$ **N.** until the Bayside's Beacon Light and Wilson's Beacon Light (before described) are in range, bearing **W.** by **S.**; then run for them in range, passing between the North Point of Sandy Hook and Flynn's Knoll; continue the course **W.** by **S.** until the West Beacon Light and Sandy Hook Main Light are in range, bearing **SE.** $\frac{1}{4}$ **E.**, then keep them in range until Conover Beacon Light and Chapel Hill Beacon Light are in range, bearing **S.** by **W.** $\frac{1}{4}$ **W.**, then run up on this last range until Fort Tompkins Light bears **NW.** by **N.** and Robbins'

Reef Light **N.** by **W.**, then run for this last-named Light on this course, passing about midway through the Narrows. When about a mile from Robbins' Reef Light it is advisable to haul in to the Westward and anchor in from 6 to 8 fathoms water and wait for daylight, when you may follow the directions before given.

By the South and Swash Channels.

Sailing Directions for New York Bay and Harbor at Night-time, with favorable winds and fair weather.

From the Southwestward, Seaward, or Eastward, leave the Scotland Light-ship about $\frac{1}{4}$ mile on the Port hand and make good the course **NW. $\frac{1}{4}$ N.**; as soon as the Elm Tree Beacon Light and New Dorp Beacon Light are made bring them in range, bearing **NW. $\frac{1}{2}$ N.**, and run for them in range, which will take you through the Swash Channel in not less than 12 feet water at low tide; continue to run in on this range until Conover Beacon Light and New Dorp Beacon Light are in range, bearing **S. by W. $\frac{1}{4}$ W.**, then run up on this last range until Fort Tompkins Light bears **NW. by N.** and Robbins' Reef Light **N. by W.**; then run for this last-named Light on this course, passing about midway through the Narrows. When about a mile from Robbins' Reef Light, haul to the Westward and anchor in from 6 to 8 fathoms water and wait for daylight, when you may follow the directions before given.

False Hook Channel.

Sailing Directions for New York Bay and Harbor at Night-time, with favorable winds and fair weather.

At this date (1881), there is not less than 13 feet water on the False Hook Shoal; vessels, therefore, from the Southward, of not more than 12 feet draught, at night, with strong Westerly winds, may, when past the Highland Lights, follow Sandy Hook Shore, keeping about $\frac{1}{2}$ mile from the Beach; when past the Northern Point of the Hook, bring Bayside Beacon Light and Wilson's Beacon Light in range, bearing **W. by S.**, and run for them in range until the West Beacon and Sandy Hook Main Light are in range, bearing **SE. $\frac{1}{4}$ E.**, then follow the directions before given.

Depth of Water in approaching New York.

In approaching the Port of New York from Seaward, a better knowledge of the depth of water, and quality of the bottom, can be obtained by inspecting the Charts than by any written directions.

High Water.

It is high water on Sandy Hook Bar on the days of the full and change of the Moon, at 7h. and 25m., or 4h. and 4m. before it is at Boston; common tides rise about $4\frac{3}{4}$ feet.

It is high water at New York City on the days of the full and change of the Moon, at 8h. and 7m., or 3h. and 22m. before it is at Boston; common tides rise about $4\frac{1}{2}$ feet.

SANDY HOOK BAY.

This Bay, which lies between the Western Shore of Sandy Hook and Point Comfort (New Jersey), has good anchorage in Southerly or Easterly winds, but is exposed to winds from **W.** by **N.** to **N.NE.** by way of North; these latter winds soon bring in a sharp sea, making it dangerous at such times, especially for small vessels. There are no dangers in this Bay, and the deepest water is nearest Sandy Hook Shore.

Sailing Directions for Sandy Hook Bay in Day-time, with favorable winds and fair weather.

Vessels bound into Sandy Hook Bay may follow the directions before given for New York Bay and Harbor by the Main Channel until past the Northern Point of Sandy Hook; then steer boldly into the Bay, keeping about $\frac{1}{3}$ mile from the Western Shore of the Hook. Heavy draught vessels should anchor in about $4\frac{1}{2}$ fathoms water, with Sandy Hook Main Lighthouse bearing about East; vessels of not more than 17 feet draught may go farther in and anchor in about 19 feet water, a short distance to the Southward of the Railroad Wharf, in what is called Horse Shoe Cove.

Sailing Directions for Sandy Hook Bay at Night-time, with favorable winds and fair weather.

Vessels bound into Sandy Hook Bay may follow the directions before given for New York Bay and Harbor at night-time, until

Bayside Beacon Light and Wilson's Beacon Light are in range, bearing **W.** by **S.**, then run for them in range until the West Beacon Light and Sandy Hook Main Light are in range, then haul in about **S.** by **E.** until Sandy Hook Main Light bears **E.NE.**, then anchor in about 20 feet water at low tide.

Beating into Sandy Hook Bay.

The Western shore of Sandy Hook is very bold, and in beating in you will have, in several places, 6 fathoms water at one cast of the Lead and be ashore at the next before you can tack, but you may boldly stand into 3 fathoms on the Western side without danger.

Small Cove.

Small or light draught vessels may find shelter from all winds in a small shallow Cove which lies on the Western shore of Sandy Hook about $2\frac{1}{2}$ miles to the Southward of Sandy Hook Main Lighthouse; at low tide there are from 2 to 8 feet water in this Cove; about 12 feet water, however, can be taken in abreast the point at high water, and about 8 feet through a narrow channel at low tide, where vessels may lie secure from all winds.

Sailing Directions in Daytime.

Vessels bound into Small Cove may round the Northern Point of Sandy Hook, and a little before high water run up the Bay, keeping about $\frac{1}{3}$ to $\frac{1}{2}$ mile from shore; as you sail in you will see Horse Shoe Cove, and farther in Small Cove; continue the course to the Southward until the end of Long Railroad Wharf bears **E.** by **S.**, then run for it on this course, leaving it close to on the Starboard hand; when past this wharf haul up about **NE.** by **N.** and anchor about 300 yards from it, nearly opposite the point on the Western side of the harbor; vessels of not more than 7 or 8 feet draught may go farther up at high water and anchor nearly in the middle of the Cove, where they will lie aground at low tide.

High Water.

It is high water in Sandy Hook Bay 3h. 58m. before it is at Boston; common tides rise about $4\frac{3}{4}$ feet.

SOUTH AMBOY.

This village, which is on the South side of entrance to Raritan River, lies West-Northerly about $12\frac{3}{4}$ miles from Sandy Hook Main Lighthouse.

Princess Bay Lighthouse.

Upon the Southwest part of Staten Island, and North side of Raritan Bay, upon a high bluff, is a Lighthouse, which at this date (1882), shows a fixed Light varied by White Flashes; this Light is intended to guide vessels to South Amboy and also into Raritan River. Sandy Hook Main Lighthouse bears from Princess Bay Lighthouse **E.SE.**, distance 10 miles. Great Beds Lighthouse, near the entrance to Raritan River, **SW.** by **W.** $\frac{1}{2}$ **W.**, distance $2\frac{1}{4}$ miles.

Great Beds Lighthouse.

Upon the Flats, near the entrance to Raritan River, is a Light-house, which at this date (1882), shows a fixed Red Light; this Lighthouse stands at the junction of the channel and is intended to guide vessels into the Raritan River and also to Perth Amboy.

Remarks.

At low tide about 12 feet water can be taken across the bar to South Amboy.

**Sailing Directions for South Amboy in Daytime,
with favorable winds and fair weather.**

By way of New York, bound to South Amboy, pass about midway through the Narrows, and when abreast of Hoffmann Island or Upper Quarantine steer about **S.** by **W.** $\frac{1}{4}$ **W.**, leaving the Black Buoys on the Starboard and Red Buoys on the Port hand; when about $1\frac{1}{2}$ miles past Dix Island or Lower Quarantine you will see the Black Buoy, No. 9; leave this Buoy close to on the Starboard hand and make good the course **W.SW.**, carrying about 15 feet water at low tide across the Flats; as you sail in you will see on a high bluff the Lighthouse at Princess Bay; continue the course **W.SW.** until this Lighthouse bears **W.** $\frac{3}{4}$ **N.**,* then run for it on this course, leaving the Red Buoys on Old Orchard Shoal well on the Starboard hand; as you draw near this Lighthouse you will

* Improvements are being made in this vicinity, and, when completed, Buoys will be placed to show the dredged Channel.

see the Black Buoy which lies about $\frac{1}{4}$ mile to the Eastward of it; leave this last-named Buoy close to on the Port hand and steer about **SW. $\frac{3}{4}$ W.**, until Great Beds Lighthouse, which stands on the Flats, bears **W. by N. $\frac{1}{2}$ N.**; the course is then about **W. $\frac{3}{4}$ N.**, leaving the last-named Lighthouse about $\frac{1}{6}$ mile on the Starboard hand and carrying about 12 feet water at low tide; when past this Lighthouse or it bears **NE. $\frac{1}{4}$ E.**, then haul up about **NW. $\frac{1}{2}$ W.**, keeping the outer end of the wharves on the Port bow, and anchor near the Docks.

Vessels of not more than 10 feet draught, bound to South Amboy by way of New York, may, when through the Narrows, leave the Black Buoy (which lies about $\frac{1}{3}$ mile to the Southward of Fort Tompkins, close to on the Starboard hand, and make good the course **SW. by S.** until Princess Bay Lighthouse bears **W. $\frac{3}{4}$ N.**, then follow the directions before given; on the course **SW. by S.** from Buoy off Fort Tompkins, the Red Buoy off Old Orchard Shoal will be left on the Starboard hand.

Vessels bound to South Amboy by way of Sandy Hook may follow the directions before given for New York Bay and Harbor by way of the Main Channel, until Sandy Hook Main Lighthouse bears **SE. by E. $\frac{1}{2}$ E.**, then make good the course **NW. by W. $\frac{1}{2}$ W.** until Princess Bay Lighthouse bears **W. $\frac{3}{4}$ N.**, then proceed as before directed.

High Water.

It is high water at South Amboy 3h. 56m. before it is at Boston; common tides rise about $5\frac{1}{2}$ feet.

PERTH AMBOY.

This village, which lies on the Northern side of entrance to Raritan River, is directly opposite South Amboy; at this date (1881), about 16 feet water by way of Raritan Bay can be carried up to this place at low tide.

Sailing Directions for Perth Amboy in Daytime, with favorable winds and fair weather.

Vessels by way of Sandy Hook or New York City, bound to Perth Amboy, may follow the directions before given for South Amboy, until Great Beds Lighthouse bears **W. by N. $\frac{1}{2}$ N.**, then

run for it on this course; as you approach this Lighthouse you will see a short distance to the Eastward of it a Red Buoy; leave this Buoy close to the Starboard, and steer about North for Ward's Point, leaving the Lighthouse about $\frac{1}{4}$ mile on the Port hand, and carrying about 19 feet water at low tide; leave Ward's Point, which is bold, about 150 yards to the Northeastward, and run up for the town, leaving the two Buoys painted in Black and Red Horizontal Stripes on either hand, and carrying from 3 to 5 fathoms water.

High Water.

It is high water at Perth Amboy 3h. 54m. before it is at Boston; common tides rise about $5\frac{1}{2}$ feet.

RARITAN RIVER.

This River, as before mentioned, commences at the Western end of Raritan Bay, its entrance being a little more than $\frac{1}{2}$ mile in width, between Ferry Point on the North and the Camden and Amboy Railroad Docks on the South. Just above South Amboy the River is crossed by a Drawbridge which carries the Central Railroad of New Jersey. No sailing directions can be given for this River, and the navigation is almost entirely confined to steam and canal boats, which pass to and fro through the canal.

ARTHUR KILL RIVER.

This River, which separates Staten Island from the main land, commences at Perth Amboy, and extends Northerly to Elizabethport, entrance to Newark Bay, a distance of 10 miles. It is from 200 to 1,100 yards wide, and has a depth of not less than 13 feet water at low tide. This River, at this date (1882), is not buoyed, and it is advisable for none but small or very light draught vessels to attempt it without a pilot.

ELIZABETHPORT.

This town, which is about 6 miles west from Robbins' Reef Lighthouse, is situated at the Southwest part of Newark Bay, near the Northern entrance to Arthur Kill River.

Bergen Point Lighthouse.

About $\frac{1}{4}$ mile Southwesterly from Bergen Point, upon a Reef of Rocks, is a Lighthouse, which at this date (1882), shows a fixed White Light. A Fog Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 15 seconds. This Lighthouse is intended to guide vessels through Kill Van Kull River to Elizabethport, and also into Newark Bay. Corner Stake Light bears from Bergen Point Lighthouse **W.NW.** nearly, distance $\frac{3}{8}$ mile.

Corner Stake Lighthouse.

A little more than $\frac{1}{2}$ mile Northeasterly from the town of Elizabethport, upon the Port side of the channel, is a Beacon Stake, which at this date (1882), shows a Red Fixed Light, which is intended to guide vessels to Elizabethport.

Remarks.

From New York Upper Bay, by way of Kill Van Kull River, about 9 feet water can be taken to Elizabethport at low tide; from Raritan Bay, by way of Arthur Kill River, about 13 feet water can be carried to Elizabethport at low tide.

**Sailing Directions for Elizabethport in Daytime,
with favorable winds and fair weather.**

From Sandy Hook, bound to Elizabethport, follow the directions before given for New York Bay and Harbor until about $\frac{1}{3}$ mile from Robbins' Reef Lighthouse; Kill Van Kull River will then be well open, bearing about West; you may then run in, leaving the Black Buoy off the Northern part of Staten Island well on the Port hand, and the Beacon, which marks a Rocky Shoal extending off from the Northern Shore, well on the Starboard hand; when past this Beacon, keep in the middle of the River; when abreast Bergen Point Lighthouse you will see about $\frac{1}{2}$ mile to the Westward a small, marshy Island with a wharf on its Southern part,—this is Shooter's Island; haul to the Southward until this Wharf bears **W. by N.**, then run for it on this course, leaving it close to on the Starboard hand, and carrying across the Bar about 10 feet water at low tide; when past this Wharf, haul gradually to the Northwest and round the Corner Stake Light, leaving it close to on the Port hand and carrying about 9 feet water at low tide; when past this Light, in order to avoid the shoal water on the Starboard

side of the channel, it is necessary to steer about West, keeping the Southern Point opposite the town on the Port bow; when about 250 yards from this Point, haul over for the town.

From New York City, bound to Elizabethport, when past Governor's Island, bring Robbins' Reef Lighthouse to bear **SW.** and run for it on this course; leave the Black Buoy, which lies Southeast a short distance from this Lighthouse, on the Starboard hand, and the Black Buoy off the Northern part of Staten Island well on the Port hand, and follow the directions before given.

High Water.

It is high water at Elizabethport 2h. 50m. before it is at Boston; common tides rise about 5 feet.

NEWARK BAY.

This Bay, which lies to the Northeast of Elizabethport, is connected with the Upper Bay of New York by Kill Van Kull River. The direction of this Bay is about **NE.** by **N.** and **SW.** by **S.**; its length about $4\frac{3}{4}$ miles, and its average width $1\frac{1}{4}$ miles, with an average depth in the channel of from 3 to 10 feet water. The Passaic River empties into this Bay; this River, at its mouth, is about 600 yards wide, but gradually contracts until abreast the city of Newark (which is about 3 miles from the entrance), where it is about 100 yards wide. About 5 feet water, at low tide, can be taken from the Bridge up to Newark.

Passaic Lighthouse.

Upon the Western side of Newark Bay is a Lighthouse, which at this date (1882), shows a fixed White Light; a Fog Bell is attached to the Lighthouse, which, in thick weather, is struck at intervals of 20 seconds. Vessels bound to Newark should leave this Lighthouse not more than $\frac{1}{4}$ mile to the Westward; Bergen Point Lighthouse bears from Passaic Lighthouse **SW.** by **S.** $\frac{3}{4}$ **S.** about $3\frac{1}{4}$ miles.

Elbow Beacon.

This Beacon, which stands on the Flats, marks the turning point in the channel leading into the Passaic and Hackensack Rivers, and at this date (1882), shows a fixed White Light. Bergen Point

Lighthouse bears from the Elbow Beacon **SW.** by **S.** $\frac{3}{4}$ **S.** about $3\frac{3}{4}$ miles; Passaic Lighthouse **SW.** $\frac{1}{2}$ **S.** about $\frac{3}{4}$ mile.

**Sailing Directions for Newark Bay in Daytime,
with favorable winds and fair weather.**

Vessels by way of New York City, bound into Newark Bay, may, when past Governor's Island, bring Robbins' Reef Lighthouse to bear **SW.** and run for it on this course, leaving it about $\frac{1}{3}$ mile on the Starboard hand; when Kill Van Kull River is fairly open, then run in, leaving the Black Buoy, which lies Southeast a short distance from this Lighthouse, on the Starboard hand, and the Black Buoy off the Northern part of Staten Island, on the Port hand; when past this last-named Buoy, keep in the middle of the River until abreast Bergen Point Lighthouse; haul round this Lighthouse, leaving it about 250 yards on the Starboard, and steer about **N.** by **E.** $\frac{1}{2}$ **E.**, leaving a Black Buoy on the Port hand; when past this last Buoy, steer more Easterly for the draw in the Railroad Bridge; when through this bridge, it is advisable to anchor and wait for Flood tide; then, about half flood, steer **NE.** by **N.** $\frac{1}{2}$ **N.**, leaving Passaic Lighthouse and Elbow Beacon on the Port hand; when past the latter, which may be left about 100 yards on the Port, steer about **N.** $\frac{1}{2}$ **E.**, leaving two Black Buoys close to on the Port hand; when past the latter Buoy, which lies near the entrance to the River, keep close to the Western shore to the Railroad Bridge. If bound to Newark, it is advisable for vessels of more than 5 feet draught to take a pilot here.

By way of Sandy Hook, bound to Newark Bay, follow the directions before given for New York Bay and Harbor until about $\frac{1}{2}$ mile from Robbins' Reef Lighthouse, then follow the directions before given.

High Water.

It is high water at the city of Newark 2h. 37m. before it is at Boston; common tides rise about 5 feet.

BARNEGAT INLET.

The entrance to this Inlet is Southwesterly 42 miles from Sandy Hook Main Lighthouse, and Northeasterly 65 miles from Cape May Lighthouse.

Barnegat Lighthouse.

On the South side of Barnegat Inlet, on the North end of Long Beach, is a lofty Tower, the upper half of which, at this date (1882), is painted Red, the lower half White. At this date (1882), this Lighthouse shows a Flashing White Light.

Bearings and Distances from Barnegat Lighthouse.

	Distance.
Montauk Point Lighthouse, NE by E. $\frac{1}{2}$ E. . . .	131 miles.
Fire Island Lighthouse, NE.	67 "
Five Fathom Bank Light-ship, SW. by S. $\frac{1}{2}$ S. . . .	62 "
Winter Quarter Shoal Light-ship, SW. by S. $\frac{1}{4}$ S. . . .	121 "

Remarks.

The entrance to Barnegat Harbor is across a Bar, the channel of which, like all other sand bars on the coast, changes its depth and location with almost every heavy gale from seaward; the safest guides are the Breakers and Buoys. The Lighthouse Board give notice that every effort will be made to have the Buoys mark the best water across Barnegat Bar into the Harbor; strangers should, however, always exercise caution by watching the Breakers before entering. At this date (1882), in entering this Harbor there are nine Channel Buoys, painted in Black and White Perpendicular Stripes, which, in entering, are left close to on either hand. At this date about 6 feet water can be carried across the Bar, at low tide, into the Harbor.

Sailing Directions for Barnegat Harbor in Day-time, with favorable winds and fair weather.

At this date (1882), a Sea Buoy, painted in Black and White Perpendicular Stripes, is placed in 3 fathoms water off Barnegat Bar; Barnegat Lighthouse bears from this Buoy **W.NW.**, distance $1\frac{1}{4}$ miles. With a favorable and commanding breeze, small or light draught vessels intending to enter Barnegat Inlet should, a little before high water, bring Barnegat Lighthouse to bear **W.NW.**, and run for it on this course, keeping a sharp lookout for the Outer or Sea Buoy; when this Buoy is made, leave it close to on either hand, and run about **N.NW.** for the Bar Buoy, leaving it close to on either hand; from this last-named or third Buoy,

steer **N.NW.** to the fourth Buoy; from the fourth Buoy, steer **W.** by **N.** to the fifth Buoy; from the fifth Buoy, run **SW.** by **S.** to the sixth Buoy; from the sixth Buoy, steer **S.SW.** to the seventh Buoy; from the seventh Buoy, steer West to the anchorage. These directions were good for 1882. About $\frac{7}{8}$ mile above the North Point, close in with the shore, is the Winter anchorage.

High Water.

It is high water in Barnegat Inlet 3h. 20m. before it is at Boston; common tides rise about $2\frac{1}{4}$ feet.

LITTLE EGG HARBOR.

The entrance to this Harbor is Southwesterly 18 miles from Barnegat Lighthouse, and Northeasterly 47 miles from Cape May Lighthouse.

Tucker's Beach Lighthouse.

Upon Tucker's Beach, North side of entrance to Little Egg Harbor, is a Lighthouse painted Red. This Lighthouse, at this date (1882), shows a fixed Light, varied by Red Flashes.

Bearings and Distances from Little Egg Harbor Lighthouse.

	Distance.
Barnegat Lighthouse, NE. by N.	$17\frac{1}{4}$ miles.
Absecom Lighthouse, SW. $\frac{1}{4}$ S.	$10\frac{1}{8}$ "
Whistling Buoy, off Brigantine Shoals, S. $\frac{3}{4}$ W.	8 "

Remarks.

At this date (1882), there are two Channels leading across the Bars into Little Egg Harbor, both of which are buoyed. By the North Channel, which is called Tucker's Beach Channel, there are about 7 feet water, at low tide, across the Bar; by the South Channel, from 7 to 10 feet water at low tide. These Channels, like all other sand bars, are liable to great changes, and must be entered by strangers only with a fair and commanding breeze, when the Buoys can be seen.

Sailing Directions for Little Egg Harbor, by Tucker's Beach Channel, in Daytime, with favorable winds and fair weather.

Small or light draught vessels, bound into Little Egg Harbor by Tucker's Beach or the Northern Channel, should, about three-fourths flood, bring Tucker's Beach Lighthouse to bear about **NW.** by **N.**, and run for it on this course, keeping a sharp lookout for the Outer or Sea Buoy; when this is made, run in, leaving the Buoys which are painted in Black and White Perpendicular Stripes close to on either hand; when the Buoy* painted in Red and Black Horizontal Stripes, on the Eastern part of the Middle Ground, is made, leave it about 250 yards on the Port hand, and haul up about **NE.** and anchor, with Tucker's Beach Lighthouse bearing about **E.** by **S.**, in from $2\frac{1}{2}$ to 6 fathoms water. These directions were good for 1882.

Sailing Directions for Little Egg Harbor, by the South Channel, in Daytime, with favorable winds and fair weather.

Small or light draught vessels, bound into Little Egg Harbor, may, about three-fourths flood, bring Tucker's Beach Lighthouse to bear about **N. $\frac{1}{2}$ E.**, and run for it on this course, keeping a sharp lookout for the Outer or Sea Buoy; when this is made, run in to the Northward, leaving the Buoys painted in Black and White Perpendicular Stripes close to on either hand; when abreast Anchorage Island, which is the first on the Port hand, and bears from Tucker's Beach Lighthouse about **W.** by **S.**, you will see the Buoy painted in Red and Black Horizontal Stripes on the Eastern end of the Middle Ground; anchorage may be found a short distance to the Westward of this Buoy in from 3 to 5 fathoms water.

High Water.

It is high water at the entrance of Little Egg Harbor 3h. 38m. before it is at Boston; common tides rise about $3\frac{1}{2}$ feet.

* Tucker's Beach Lighthouse bears from this Buoy about East, distance $1\frac{1}{2}$ miles.

BRIGANTINE INLET.

The entrance to this Inlet is Southwesterly about $4\frac{1}{2}$ miles from Tucker's Beach Lighthouse.

Remarks.

At this date (1882), about 5 feet water can be taken across the Bar at low tide, but there are no Buoys to mark the channel leading in; strangers should not, therefore, attempt to enter it without a pilot.

ABSECOM INLET.

The entrance to this Inlet is Southwesterly $10\frac{1}{4}$ miles from Tucker's Beach Lighthouse, and 37 miles Northeasterly from Cape May Lighthouse.

Absecom Lighthouse.

On the South side of entrance to Absecom Inlet is a Tower painted in Red and White Horizontal Bands, which shows a fixed White Light.

Bearings and Distances from Absecom Lighthouse.

	Distance.
Tucker's Beach Lighthouse, NE. $\frac{1}{4}$ N.	$10\frac{1}{8}$ miles.
Five Fathom Bank Light-ship, S.S.W.	$3\frac{1}{2}$ "
Whistling Buoy off Brigantine Shoals, E. $\frac{1}{4}$ S.	$5\frac{1}{2}$ "

Remarks.

The entrance to Absecom Inlet is across a Sand Bar, the channel of which is liable to change its depth and location with every gale from seaward. At this date (1882), there are about 7 feet water upon this Bar at low tide.

Sailing Directions for Absecom Inlet in Daytime, with favorable winds and fair weather.

Small or light draught vessels, with a favorable and commanding breeze, may, at about three-fourths flood, bring Absecom Lighthouse to bear **NW.**, and run for it, keeping a sharp lookout for the Outer or Sea Buoy; when this is made, run in, leaving the second

or Bar Buoy close to on either hand; from the Bar Buoy, steer about **N.NW.** to the third Buoy; from this last Buoy, steer **N.** by **W.** to the fourth Buoy; from the fourth Buoy, steer about **N.NW.**, and anchor just within the North Point in from 2 to 3 fathoms water. These directions were good for 1882.

High Water.

It is high water in Absecom Inlet 3h. 40m. before it is at Boston; common tides rise about $3\frac{3}{4}$ feet.

GREAT EGG HARBOR.

The entrance to this Harbor lies Southwesterly about 8 miles from Absecom Lighthouse, and Northeasterly about 29 miles from Cape May.

Remarks.

At this date (1882), in entering Great Egg Harbor there are eight Channel Buoys painted in Black and White Perpendicular Stripes. These Buoys are moved with the shifting of the channel, which, like all others on sand bars, varies in depth and location with almost every gale from seaward. At this date (1882), there are about 7 feet water, at low tide, across this Bar.

Sailing Directions for Great Egg Harbor in Daytime, with favorable winds and fair weather.

Small or light draught vessels, with a favorable and commanding breeze, at about $\frac{3}{4}$ flood, may run in, keeping a sharp lookout for the Outer or Sea Buoy; when this is made, steer from it about **NW.** by **W.** to the Bar or second Buoy; from this last Buoy, steer **NW.** $\frac{1}{2}$ **W.** to the third Buoy; from the third Buoy, steer **NW.** by **N.** to the fourth Buoy; from the fourth Buoy, **W.** $\frac{1}{2}$ **S.** to the fifth Buoy; from this last Buoy, **W.NW.** to the sixth Buoy; then **NW.** to the seventh Buoy, and from this last, **N.** by **W.** to the eighth Buoy; from last Buoy, run for the anchorage. These courses were good for 1882, but in entering the Harbors on the Southern coast of New Jersey, the Buoys are placed in mid-channel, and vessels should run from one to the other regardless of course.

High Water.

It is high water at the entrance of Great Egg Harbor 3h. 45m. before it is at Boston; common tides rise about $3\frac{1}{2}$ feet.

HEREFORD INLET.

The entrance to this Inlet is Southwesterly about 28 miles from Absecom Lighthouse, and about 9 miles Northeasterly from Cape May Lighthouse.

Hereford Inlet Lighthouse.

On the South side of Hereford Inlet is a Lighthouse painted Buff color, and at this date (1882), shows a fixed Red Light.

Remarks.

The following notice was issued to mariners by the Lighthouse Board, Sept. 1, 1881:—

The depth of water on the Bar at Hereford Inlet, New Jersey, in its present condition, does not permit the approach, with safety, of vessels of more than 4 feet draught. The channel of this Inlet changes frequently. Every effort will be made to keep the Buoys in the best water. It is therefore advisable for strangers bound into it to take pilots.

The Coast from the Highlands of Navesink to Cape May.

About S.E. 4 miles from the Highland Lights, entrance to New York Harbor, and about 1 mile from shore, are several shoal spots of 14, 16 and 18 feet water. From this point to Barnegat Bar, a distance of nearly 35 miles, the shore is bold, and vessels may approach it within $\frac{1}{2}$ mile without danger.

From Barnegat Bar (which extends off about $\frac{3}{4}$ mile from shore) to Hereford Inlet, a distance of 57 miles, shoal water extends off in some places a long distance from shore. Vessels passing between Absecom and Little Egg Harbor Lighthouses should not approach the Brigantine Shoals, which lie off nearly 2 miles from shore, in less than 6 or 7 fathoms water. From Hereford

Inlet to Cape May Lighthouse, shoal water extends off from $\frac{1}{2}$ to 1 mile from shore. At this date (1882), a Whistling Buoy is placed off Brigantine Shoals in about 7 fathoms water. Little Egg Harbor Light bears from this Buoy **N.** $\frac{3}{4}$ **E.** 8 miles; Absecon Lighthouse **W.** $\frac{1}{2}$ **N.** $5\frac{3}{4}$ miles.

Soundings off the South Side of Long Island and the Coast of New Jersey.

In approaching the South side of Long Island and the coast of New Jersey, a better knowledge of the depth of water and quality of the bottom may be obtained by inspecting the Charts than by any written directions. See Eldridge's Coast Chart No. 2.

DELAWARE BAY AND RIVER.

The entrance to this Bay and River, which is between Cape May on the North and Cape Henlopen on the South, is 10 miles wide.

By the Cape May or Coaster's Channel the entrance to this Bay and River lies Southwesterly from Sandy Hook Main Lighthouse about 110 miles, and Northeasterly 132 miles from Cape Henry Lighthouse.

By Cape Henlopen or Ship Channel the entrance to this Bay and River is Southwesterly from Sandy Hook Main Lighthouse 118 miles, and Northeasterly from Cape Henry Lighthouse 122 miles.

From Delaware Breakwater to the city of Philadelphia the distance is about 84 miles.

Lighthouses and Light-ships in approaching and entering Delaware Bay and River.

Five Fathom Bank Light-ship.

At this date (1882), about $5\frac{1}{2}$ miles Southeasterly from the shoal called Five Fathom Bank, and about 2 miles **SE.** by **E.** from a shoal with $3\frac{1}{4}$ fathoms water upon it, off the entrance to Delaware Bay and River, is placed a Light-ship, which at this date shows two fixed White Lights. In thick weather a Steam Whistle is sounded, giving blasts of 4 seconds duration each minute.

Bearings and Distances from Five Fathom Bank Light-ship.

	Distance.
Montank Point Lighthouse, NE $\frac{1}{2}$ E.	189 miles.
Fire Island Lighthouse, NE. $\frac{3}{4}$ N.	128 $\frac{1}{4}$ "
Barnegat Lighthouse, NE. by N. $\frac{1}{2}$ N.	62 "
Absecom Lighthouse, N.NE.	34 "
Hereford Inlet Lighthouse, NW. by N. $\frac{1}{4}$ N.	15 "
Cape May Lighthouse, NW. by W. $\frac{1}{2}$ W.	18 $\frac{1}{2}$ "
Cape Henlopen Main Lighthouse, West.	23 "
Fenwick's Island Lighthouse, SW. $\frac{1}{2}$ W.	31 "
Winter Quarter Shoal Light-ship, SW. by S. $\frac{1}{4}$ S.	58 "
Light-ship off the Northeast end of Five Fathom Bank, N.NE.	9 $\frac{3}{4}$ "
Red Buoy off Southern end of Twenty-one Foot Shoal, NW. $\frac{1}{2}$ W.	3 "
Black Buoy off Northeast part of Five Fathom Bank, N. by W.	5 $\frac{3}{4}$ "
Red Buoy off South part McCries' Shoal, W. by N. $\frac{1}{2}$ N.	12 "
Whistling Buoy on North side of entrance to Ship Channel, Delaware Bay, W. $\frac{3}{4}$ N.	19 $\frac{1}{2}$ "

Cape May Lighthouse.

Upon Cape May, Northeast side of entrance to Delaware Bay, is a Lighthouse painted Gray, which at this date (1882), shows a Revolving Light.

Bearings and Distances from Cape May Lighthouse.

	Distance.
Five Fathom Bank Light-ship, SE. by E. $\frac{1}{2}$ E.	18 $\frac{1}{2}$ miles.
Cape Henlopen Main Lighthouse, SW. $\frac{3}{4}$ S.	11 "
Lighthouse on Brandywine Shoal, NW. by W. $\frac{1}{2}$ W.	7 $\frac{3}{4}$ "
Buoy c.f Eastern part of Eph's Shoal, SE. by E. $\frac{1}{2}$ E.	3 $\frac{1}{3}$ "
Buoy off Western end of Eph's Shoal, SE. $\frac{3}{4}$ E.	1 $\frac{3}{4}$ "
Red Buoy off Southern part of McCries' Shoal, SE. $\frac{1}{2}$ S.	7 $\frac{1}{4}$ "
Black Buoy off Southern part of Somers Shoal, S. by E.	3 $\frac{3}{4}$ "
Red Buoy off South part Crow's Shoal, W. by N.	1 $\frac{1}{2}$ "
Buoy painted in Black and White Perpendicular Stripes at the entrance of Cape May Channel, NW. by W. $\frac{1}{2}$ W.	2 $\frac{3}{4}$ "

Light-ship.

Distance.

189 miles.

28 1/4 "

62 "

34 "

15 "

18 1/2 "

23 "

31 "

58 "

9 3/4 "

3 "

5 3/4 "

12 "

10 1/2 "

Delaware Bay,

2), shows a

house.

Distance.

18 1/2 miles.

11 "

7 3/4 "

3 1/3 "

1 3/4 "

7 1/4 "

3 3/4 "

1 1/2 "

2 3/4 "

Cape Henlopen Main Lighthouse.

Upon Cape Henlopen, Southwest side of entrance to Delaware Bay and River, is a Lighthouse, which at this date (1882), is painted White, and shows a fixed White Light.

Bearings and Distances from Cape Henlopen Main Lighthouse.

	Distance.	
Five Fathom Bank Light-ship, East	23	miles.
Cape May Lighthouse, NE. 3/4 N.	11	"
Cape Henlopen Beacon, North nearly	7/8	"
Delaware Breakwater Lighthouse, NW. 3/4 N.	1 5/8	"
Lighthouse on Brandywine Shoal, North nearly	12 3/8	"
Range Light for entering Delaware Bay, W. by N.		
1/2 N.	3 3/4	"
Red Buoy off South part McCries' Shoal, E. by N.		
1/2 N.	11 3/4	"
Whistling Buoy at the entrance of Delaware Bay,		
NE. by E.	4 1/4	"
Black Buoy off Southeast part Hen and Chickens,		
SE. by S.	2 1/2	"
Black Buoy off Southeast part of Shears, N. by W.	3	"
Black Buoy off Southeast part of Brown Shoal, N.		
1/4 W.	9 1/8	"

Cape Henlopen Beacon Lighthouse.

Upon the Northern end of the Cape, 7/8 mile from the Main Lighthouse, is a Beacon painted White, which at this date (1882), shows a fixed White Light. A Fog Signal is placed near this Beacon, giving blasts of 6 seconds' duration at intervals of 39 seconds. Cape Henlopen Main and Beacon Lights, in range, clear the Shears and Brown Shoals. Delaware Breakwater Lighthouse bears from Cape Henlopen Beacon Lighthouse **W NW.** 1 mile nearly; Whistling Buoy at the entrance of Delaware Bay **E.NE.**, distance 3 3/4 miles.

Delaware Breakwater Range Light.

About 1 1/2 miles Northwest from Lewes, and **W.** 1/2 **S.** 2 1/2 miles from the Lighthouse on the Breakwater, is a Lighthouse, which at this date (1882), shows a fixed Red Light. This Light, in range of the Flashing Light on the Breakwater (bearing **W.** 1/2 **S.**), is intended to guide vessels into Delaware Bay.

Brandywine Shoal Lighthouse.

This Lighthouse, which is on the East side of the Ship Channel, is erected on Brandywine Shoal, about $\frac{7}{8}$ mile from the Southern end, and at this date (1882), shows a fixed White Light. A Fog Bell is attached to this Lighthouse, which is struck two blows, then a pause of 30 seconds. Vessels may approach this Lighthouse, on its Western side, within 450 yards, without danger.

Bearings and Distances from Brandywine Shoal Lighthouse.

	Distance.
Cape Henlopen Main Lighthouse, South nearly	12 $\frac{3}{8}$ miles.
Cape May Lighthouse, SE. by E. $\frac{1}{2}$ E.	7 $\frac{3}{4}$ "
Fourteen Foot Bank Light-ship, NW. by N.	5 "
Cross Ledge Lighthouse, N.NW.	12 "
Egg Island Lighthouse, North	11 $\frac{3}{4}$ "
Red Buoy off South end Brandywine Shoal, SE. by S.	$\frac{3}{4}$ "
Black Buoy off Southeast part of Brown Shoal, S. $\frac{1}{4}$ W.	3 $\frac{1}{4}$ "
Red Buoy off Northern end Brandywine Shoal, N. by W. $\frac{1}{2}$ W.	2 $\frac{7}{8}$ "

Fourteen Foot Bank Light-ship.

This Light-ship is placed about 700 yards to the Eastward of a Shoal called Fourteen Foot Bank, and at this date (1882), shows two fixed White Lights, and has a Bell and Horn. Vessels bound up the Bay should leave this Light-ship close to on the Port hand.

Bearings and Distances from Fourteen Foot Bank Light-ship.

	Distance.
Brandywine Lighthouse, SE. by S.	5 miles.
Cross Ledge Lighthouse, N. by W. $\frac{1}{2}$ W.	7 "
Egg Island Lighthouse, N. by E. $\frac{3}{4}$ E.	7 $\frac{3}{4}$ "
Red Buoy off North end Brandywine Shoal, SE. $\frac{1}{2}$ E.	2 $\frac{1}{2}$ "
Black Buoy off South end of Joe Flogger Shoal, NW. $\frac{1}{2}$ W.	1 $\frac{1}{2}$ "
Red Buoy off Southwest part Miah Maull Shoal, N. by W.	3 $\frac{1}{3}$ "
Buoy of the Middle, NW. by N. $\frac{3}{4}$ N.	10 $\frac{3}{4}$ "

Cross Ledge Lighthouse.

Upon the Southeast part of Cross Ledge Shoal, on the East side of the channel, is a Lighthouse, which at this date (1882), shows a Flashing White Light. A Fog Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 10 seconds. Vessels may approach this Lighthouse on its Western side, within 450 yards, without danger.

Bearings and Distances from Cross Ledge Lighthouse.

	Distance.
Brandywine Shoal Lighthouse, S.SE.	12 miles.
Fourteen Foot Bank Light-ship, S. by E. $\frac{1}{2}$ E. . . .	7 "
Egg Island Lighthouse, E. $\frac{1}{2}$ N.	4 $\frac{3}{4}$ "
Lighthouse on Ship John Shoal, NW. by N.	10 $\frac{3}{4}$ "
Red Buoy off Southwest part Miah Maul Shoal, S.SE. . . .	3 $\frac{3}{4}$ "
Buoy of the Middle, NW. $\frac{1}{2}$ N.	3 $\frac{1}{2}$ "

Ship John Shoal Lighthouse.

Upon Ship John Shoal, East side of Ship Channel, is a Lighthouse, which at this date (1882), shows a fixed Red Light. A Fog Bell is attached to this Lighthouse, which, in thick weather, is struck three blows in quick succession, at intervals of 45 seconds. Vessels may approach this Lighthouse on its Western side, within 250 yards, without danger.

Bearings and Distances from Lighthouse on Ship John Shoal.

	Distance.
Cross Ledge Lighthouse, SE. by S.	10 $\frac{3}{4}$ miles.
Cohansey Lighthouse, NE. by N. $\frac{3}{4}$ N.	2 $\frac{1}{4}$ "
Port Penn Beacon Range, NW. $\frac{3}{4}$ N.	15 $\frac{1}{4}$ "
Buoy of the Middle, SE. by S. $\frac{1}{4}$ S.	7 $\frac{1}{4}$ "
Black Buoy off Northwest part Joe Flogger Shoal, S. $\frac{3}{4}$ E.	2 $\frac{1}{8}$ "

Port Penn Beacon Range.

On the Western side of the River, nearly opposite Reedy Island, are two Lighthouses, which at this date (1882), show fixed White Lights. These Lights in range, bearing nearly **NW.** $\frac{3}{4}$ **N.**, lead up the channel past Bombay Hook to Reedy Point, where the Newcastle Range is reached.

Reedy Island Lighthouse.

Upon the Lower or Southern end of Reedy Island is a Lighthouse, which at this date (1882), shows a Flashing White Light. A Fog Bell is placed near this Lighthouse, which, in thick weather, is struck at intervals of 15 seconds.

Finn's Point Beacon Range.

Upon the New Jersey or Eastern side of the River, nearly opposite the Pea Patch, are two Lighthouses, which at this date (1882), show fixed White Lights. These Lights in range, bearing **N. by E. $\frac{1}{2}$ E.**, lead up the channel between Baker's Shoal and Reedy Island, until the Newcastle Range is reached.

Newcastle Range Beacons.

Upon the Delaware or Northwestern side of the River, about $1\frac{3}{4}$ miles below Newcastle, are two Lighthouses, which at this date (1882), show White Fixed Lights. These Lights in range, bearing **N. by W. $\frac{3}{4}$ W.** (nearly), lead up the channel past the Pea Patch, and to the Eastward of the Bulkhead Shoal, until Deep Water Point Range is reached.

In daytime, heavy draught vessels should, when past the Red Buoy off Goose Island, haul gradually to the Northeastward, leaving the Buoy with Perpendicular Stripes close to on the Port hand.

Deep Water Point Range Beacons.

Upon the New Jersey or Southeastern side of the River, a little below the entrance to Wilmington River, are two Lighthouses, which at this date (1882), show fixed White Lights. These Lights in range, bearing nearly **NE.**, lead up the channel, until Cherry Island Range is reached.

Cherry Island Beacon Range.

Upon the Delaware or Northern side of the River, a little more than two miles above the entrance to Wilmington River, are two Lighthouses, which at this date (1882), show fixed White Lights. These Lights in range, bearing about **N.NE.**, lead up the channel, which has a depth of about 21 feet water at low tide, and is now being widened.

Schooner Lodge Range Beacons.

Upon the Pennsylvania or Northern side of the River, below the Lazaretto, are two Lighthouses, which at this date (1882), show two fixed White Lights. These Lights in range, bearing about **NE.** by **E.** $\frac{1}{2}$ **E.**, lead up the channel in the best water, passing to the Eastward of the Illinois Rock.

Tinicum Island Range Beacons.

Upon the New Jersey or Southern side of the River, a little more than two miles below Fort Mifflin, are two Lighthouses, which at this date (1882), show two fixed Lights — the front White, the rear Red. These Lights in range, bearing about **E.** $\frac{1}{2}$ **S.**, lead up the channel to the Southward of Little Tinicum Island.

Fort Mifflin Bar Range Beacons.

The White Front Light of Tinicum Range, in range with a Red Fixed Light bearing about **SW.** by **W.** $\frac{1}{2}$ **W.**, leads across Fort Mifflin Bar, until the Range Lights on the North side of the River, nearly opposite Fort Mifflin, are reached.

Fort Mifflin Fog Signal Station.

On the Dock at Fort Mifflin, South side of Ship Channel, in Delaware River, is a Bell, which is struck, in thick weather, 8 blows, at intervals of 15 seconds, and then a pause of 42 seconds.

Horse Shoe Lower Range Beacons.

Upon the Northern side of the River, nearly opposite Fort Mifflin, are three Lighthouses — two in front and one in the rear; the Rear Light, kept visible between the Front Lights, bearing about **W.** $\frac{3}{4}$ **N.**, leads up to the Southwest of the Horse Shoe Shoal.

Horse Shoe Upper Range Beacons.

Upon the Southern side of the River are three Lighthouses — two in front and one in the rear. These Lights in range lead up to the Southward of the Horse Shoe Shoal.

Dangers in Approaching and Entering the Delaware Bay by Ship Channel.

Five Fathom Bank.

This dangerous Shoal, upon which there are, at this date (1882), not less than 12 feet water, extends **E.NE.** and **W.SW.** about $\frac{3}{4}$ mile, and its average width is not more than $\frac{1}{4}$ mile. The Eastern part of this Shoal is marked with a Black Buoy.

Bearings and Distances from Black Buoy off the Eastern Part of Five Fathom Bank.

	Distance.
Light-ship off the Northeast end of Five Fathom Bank,* NE. $\frac{3}{4}$ E.	5 $\frac{1}{3}$ miles.
Five Fathom Bank Light-ship, S. by E.	5 $\frac{3}{4}$ "
Red Buoy off Southwest part of Twenty-one Foot Shoal, S.SW.	3 $\frac{3}{4}$ "
Hereford Inlet Lighthouse, NW.	10 "
Cape May Lighthouse, W. by N.	15 $\frac{3}{4}$ "
Red Buoy off Southern part McCries' Shoal, W. by S.	11 "
Whistling Buoy on Northern side of entrance to Delaware Bay, W. by S.	18 $\frac{3}{4}$ "
Cape Henlopen Main Lighthouse, W. by S. $\frac{1}{4}$ S.	22 $\frac{3}{4}$ "

McCries' Shoal.

This Shoal, upon which there is, at this date (1882), not less than 16 feet water, extends **E. by N.** and **W. by S.** about one mile, and its average width is about $\frac{1}{2}$ mile. At this date (1882), this Shoal is marked upon its Southern side with a Red Buoy.

Bearings and Distances from Red Buoy off the Southern Side of McCries' Shoal.

	Distance.
Five Fathom Bank Light-ship, E. by S. $\frac{1}{2}$ S.	12 miles.
Black Buoy off Northeastern part of Five Fathom Bank, E. by N.	11 "
Cape May Lighthouse, NW. $\frac{1}{2}$ N.	7 $\frac{1}{4}$ "
Whistling Buoy on Northern side of entrance to Delaware Bay, W. $\frac{3}{4}$ S.	7 $\frac{3}{4}$ "
Cape Henlopen Main Lighthouse, W. by S. $\frac{1}{2}$ S.	11 $\frac{3}{4}$ "

Cape May Shoals.

Shoal water extends off about 6 miles in a Southwesterly direction from Cape May. A Whistling Buoy has been placed in about 5

* The Whistling Buoy has been removed and a Light-ship placed off the Northeast end of Five Fathom Bank; this Light-vessel shows two fixed Lights, one Red, the other White, and has a steam Whistle which in thick weather gives every 2 minutes two blasts of 4 seconds duration. Thus: a blast of 4 seconds, then an interval of 5 seconds; then a blast of 4 seconds, then an interval of 1 minute 47 seconds. Five Fathom Light-ship bears from the above named Light-ship S.SW. 93 miles.

fathoms water, off the Southwestern part of these Shoals; this Buoy marks the Northern side of the Ship Channel.

Bearings and Distances from Whistling Buoy off Southwestern Part of Cape May Shoals.

	Distance.
Black Buoy off the Eastern part Five Fathom Bank, E. by N.	18¾ miles.
Five Fathom Bank Light-ship, E. ¾ S.	19½ "
Red Buoy off South side McCries' Shoal, E. ¾ N.	7¾ "
Cape May Lighthouse, NE. by N. ¾ N.	7½ "
Cape Henlopen Main Lighthouse, SW. by W.	4¼ "
Beacon on Northern end of Cape Henlopen, W.SW.	3¾ "
Lighthouse on Northwestern part Delaware Break- water, W. by S. ¼ S.	4¾ "
Black Buoy off Southeast part of Shears Shoal, W. ¾ N.	4¼ "
Black Buoy off the Southeast part of Brown Shoal, NW. by N. ¼ N.	8 "
Lighthouse on Brandywine Shoal, N. by W. ¾ W.	10¾ "

Hen and Chickens Shoal.

This Shoal, which extends off about 3¼ miles Southeasterly from the Northern end of Cape Henlopen, has as little as 4 feet water upon it in some places. Its Southern part is marked with a Black Buoy. Cape Henlopen Main Lighthouse bears from this Buoy NW. by N. 2½ miles.

Marshall's Shoal.

A little more than ¼ mile NE. by N. from the Lighthouse on the Northwestern end of Delaware Breakwater, is a small Lump, or Shoal, having about 17 feet water upon it at very low tides. This Shoal is marked with a Buoy painted in Red and Black Horizontal Stripes.

The Shears.

This Shoal is really a continuation of flats from the Western shore; upon it the water varies in depth from 5 to 17 feet. A Black Buoy is placed off its Southeast part. Delaware Breakwater Lighthouse bears from this Buoy S. by W. ¼ W. 1½ miles; Beacon Light, on the North end of Cape Henlopen, S. by E. ½ E., distance 2½ miles.

Brown Shoal.

This Shoal, which lies on the Western side of the Ship Channel, has, at this date, as little as 7 feet water upon it at low tide. It is marked off its Southeast part with a Black Buoy.

Bearings and Distances from Black Buoy off Southeast Part Brown Shoal.

	Distance.
Whistling Buoy on the North side of entrance to Delaware Bay, SE. by S. $\frac{1}{4}$ S.	8 miles.
Cape Henlopen Main Lighthouse, S. $\frac{1}{4}$ E.	9 $\frac{1}{8}$ "
Lighthouse on Delaware Breakwater, S. $\frac{1}{4}$ W.	7 $\frac{7}{8}$ "
Black Buoy off Southeast part of Shears, South nearly	6 $\frac{1}{4}$ "
Cape May Lighthouse, E. $\frac{1}{4}$ S.	7 $\frac{1}{4}$ "
Red Buoy off Southern part of Brandywine Shoal, N. by E. $\frac{1}{2}$ E.	2 $\frac{3}{4}$ "
Lighthouse on Brandywine Shoal, N. $\frac{1}{4}$ E.	3 $\frac{1}{4}$ "

In the Delaware Bay and River there are numerous Shoals lying in the channel-way, most of which, at this date (1882), are marked with Lighthouses and Buoys. For a knowledge of these dangers, see Eldridge's Chart, on a large scale, of Delaware Bay and River.

By Ship Channel from Light-ship off to the Southeastward of Five Fathom Bank to Philadelphia.

Sailing Directions for approaching and entering Delaware Bay and River in Daytime, with favorable winds and fair weather.

Vessels from the Eastward, or Seaward, may leave the Five Fathom Bank Light-ship close to on the Starboard hand, and make good the course **W.** $\frac{3}{4}$ **N.**, leaving the Red Buoy off the Southern part of McCries' Shoal well on the Starboard hand. As you approach Cape Henlopen, keep a sharp lookout for the Whistling Buoy, which lies on the Northern side of entrance to Delaware Bay, and bears from Cape Henlopen Main Lighthouse **NE.** by **E.** 4 miles. When this last-named Buoy is made, leave it about $\frac{1}{4}$ mile on the Starboard hand, and make good the course **N.NW.**, leav-

ing Cape May Shoals well to the Eastward. As you sail in, you will see, nearly in the middle of the Bay, the Lighthouse on Brandywine Shoal; when this is made, bring it to bear **N. $\frac{1}{2}$ W.** and run for it on this course, which will take you well to the Eastward of Brown Shoal; leave the Lighthouse upon the Brandywine Shoal about $\frac{1}{2}$ mile to the Eastward and make good the course **NW. by N. $\frac{3}{4}$ N.** 5 miles, which will bring you up with the Light-ship off Fourteen Foot Bank; leave this Light-ship close to on the Port hand, and continue the course **NW. by N. $\frac{3}{4}$ N.** 10 $\frac{1}{2}$ miles to the Buoy of the Middle; this is a Channel Buoy, and is painted in Black and White Perpendicular Stripes, and may be known by Cross Ledge Lighthouse, which bears from it **SE. $\frac{1}{2}$ S.**, distance 3 $\frac{1}{2}$ miles. Upon this last course, from Fourteen Foot Bank Light-ship to the Buoy of the Middle, the Red Buoy off Southwestern part of Miah Maull Shoal, Cross Ledge Lighthouse, and the Red Buoy about 2 miles Northwest from it, will be left on the Starboard; the Black Buoy off the Southern part of Joe Flogger Shoal, the Black Buoy in the Swash, and the Channel Buoy painted in Black and White Perpendicular Stripes, will all be left on the Port hand. Leave the Buoy of the Middle close to on either hand and make good the course **NW. $\frac{3}{4}$ N.** 21 miles, which will bring you up with the Red Buoy off the Western part of Baker's Shoal; this last-named Buoy bears from Reedy Island Lighthouse about **SSE.**, distance 1 $\frac{3}{4}$ miles. On this last course **NW. $\frac{3}{4}$ N.** from the Buoy of the Middle to the Red Buoy off Baker's Shoal, you will cross Bombay Hook Bar in about 3 $\frac{1}{4}$ fathoms, at low tide, and the following Buoys will be left on the Starboard: first, the Red Buoy off Ben Davis Point; second, the Lighthouse on Ship John Shoal; third, the Red Buoy off Arnold's Point; on the Port hand, the Black Buoy off the Northwest part of Joe Flogger Shoal, the Black Buoy off Bombay Hook Bar, and lastly the Black Buoy off Seventeen Foot Shoal.

Sailing Directions from Reedy Island to Philadelphia in Daytime, with favorable winds and fair weather.

Leave the Red Buoy off the Western side of Baker's Shoal on the Starboard, and the Black Buoy which lies about $\frac{3}{4}$ miles to the Southward of Reedy Island about $\frac{1}{2}$ mile on the Port hand, and run about **N. by E. $\frac{1}{4}$ E.**, when you will soon see an Island

lying nearly in the middle of the River; this is called the Pea Patch: channels lead up on both sides of this Island, but the one on the Eastern side of it is the best and most direct. As you approach the Pea Patch keep a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes, which lies about $1\frac{1}{4}$ miles to the Southward of it; when this is made, leave it a short distance on the Port hand, and run up, keeping nearest the Pea Patch Island, which is bold; when past this Island, leave the Red Buoys on the Starboard, and Black Buoys on the Port hand, carrying not less than $3\frac{1}{2}$ fathoms water at low tide through this channel; when past the Buoy painted in Red and Black Horizontal Stripes, which lies off the Northern part of Bulk Head Shoal, keep the Southeast side of the River best aboard, until nearly abreast Deep Water Point, then haul over for the Northwestern side of the River; as you sail up, you will see, on the last-mentioned side, Wilmington Lighthouse; keep a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes, which lies off the Southwest part of Cherry Island Flats; Wilmington Lighthouse bears from this Buoy **NW.** by **W.** about $\frac{3}{4}$ mile; channels lead up on both sides of these Flats, but on account of the recent deepening the one on the Northwestern side is considered the best; when the last-mentioned Buoy is made, leave it on the Starboard hand, and run through about **N.NE.**, carrying about $3\frac{1}{2}$ fathoms at low tide; when past Cherry Island Range Beacons (before described) keep from $\frac{1}{4}$ to $\frac{1}{3}$ mile from the Northwestern side of the River, leaving the Red Buoy off the Northwestern side of Cherry Island Flats and the Red Buoy off the Southwest part of Marcus Hook Bar, both on the Starboard hand; continue the course along the shore, passing Marcus Hook; small or light draught vessels may cross Schooner Ledge without danger, but heavy draught vessels should bring Schooner Ledge Beacons* in range bearing **NE.** by **E.** $\frac{1}{2}$ **E.** (nearly) and run for them in range. When $1\frac{1}{4}$ miles from Schooner Ledge Front Beacon, you will see the Buoy painted in Red and Black Horizontal Stripes off the Western part of Little Tinicum Island; leave this Buoy on the Port hand, and keep in the middle of the River, leaving the Red Buoy off the Northeast part of Chester Island, and also Tinicum Range Bea-

* The Front Beacon is $3\frac{1}{2}$ miles from Schooner Ledge, and is a Square Red Tower on a white frame building resting on iron piles; the Rear Beacon is an Iron Tower painted black, showing well above the trees.

cons, all on the Starboard hand; keep in the middle of the River until about 2 miles from Fort Mifflin, when you will see the two Buoys on Fort Mifflin Bar; pass about midway between them, and run up in mid-channel, leaving Fort Mifflin and the Red Buoy to the Northeast of it about 250 yards on the Starboard hand; when past the latter, haul gradually to the Eastward around the Horse Shoe Shoal, leaving the Black Buoy on its Southern part on the Port hand; when about a mile past this last Buoy, keep the Western or city side best aboard.

Vessels from the Southward may leave the Light-ship off Winter Quarter Shoal a short distance on the Port hand, and make good the course **NE.** by **N.**, which will clear all the shoals. When abreast the Buoy painted in Red and Black Horizontal Stripes off Fenwick's Island Shoal, steer about **N.** by **W.**, leaving the Black Buoy off the Southeast part of Hen and Chickens (before described) well on the Port hand, and follow the directions before given.

Sailing Directions for Coaster's Channel to the Northward of Five Fathom Bank in Daytime, with favorable winds and fair weather.

With Northerly winds, vessels of not more than 12 or 15 feet draught, may, when Hereford Inlet Lighthouse bears **NW.** about 2 miles, make good the course **SW.** by **W.** $15\frac{1}{2}$ miles; as soon as Cape Henlopen Lighthouse is made, bring it to bear **SW.** by **W.**, which will take you to the Whistling Buoy, which lies on the Northern side of the entrance to Delaware Bay. In running this last course, the Black Buoy off Somers Shoal, which bears about **S.** by **E.** from Cape May Lighthouse, should be left on the Starboard, and the Buoy with Horizontal Stripes on Fifteen Foot Shoal on the Port hand.

By Ship Channel at Night-time.

Sailing Directions for approaching and entering Delaware Bay and River, with favorable winds and fair weather.

Vessels from the Eastward or Seaward may leave the Five Fathom Bank Light-ship close to on the Starboard hand and steer **W.** $\frac{3}{4}$ **N.**, keeping a sharp lookout for the Red Range Light to the Westward of the Delaware Breakwater; as soon as this light

is made, bring it on a range with the Flashing White Light on the Breakwater, and run for them in range bearing **W. $\frac{1}{2}$ S.** until Cape May Light bears **N.NE.**, and Cape Henlopen Main Light **SW.** by **W. $\frac{1}{2}$ W.**; then in about 8 fathoms water with the Whistling Buoy about $\frac{5}{8}$ mile distant, and in range of Cape May Light, make good the course **NW.** until the Beacon on the North Point of Cape Henlopen, and Cape Henlopen Main Light are in range bearing **S. $\frac{1}{4}$ E.**, then run up on this range in order to avoid Brown Shoal; with light winds and flood tide, do not go the Westward of this range until Cape May Light bears **E.** by **S.**; you are then past the last-mentioned shoal; leave the Light on Brandywine Shoal about $\frac{1}{2}$ mile on the Starboard hand and run for the Light-ship off Fourteen Foot Bank (before described) bearing **NW.** by **N. $\frac{3}{4}$ N.** and carrying not less than 5 fathoms water; leave this Light-ship close to on the Port hand and steer **NW.** by **N. $\frac{3}{4}$ N.** with the Flashing White Light on Cross Ledge a little on the Starboard bow, and carrying about 5 fathoms water; leave this last-mentioned Light about $\frac{1}{2}$ mile on the Starboard hand and run with the fixed Red Light on Ship John Shoal, a little on the Starboard bow, bearing **NW.** by **N. $\frac{1}{2}$ N.** and carrying not less than 4 fathoms.

Port Penn Range Lights.

Leave the Red Fixed Light on Ship John Shoal about $\frac{1}{2}$ mile on the Starboard hand, and make good the course **NW. $\frac{3}{4}$ N.** keeping a sharp lookout for Port Penn Range Lights; as soon as these are made bring them on a range and run for them in range bearing about **NW. $\frac{3}{4}$ N.**, carrying at very low tides about $3\frac{1}{4}$ fathoms water across Bombay Hook Bar.

Finn's Point Range Lights.

Continue the course for Port Penn Range Lights until Finn's Point Lights are in range, bearing about **N.** by **E. $\frac{1}{8}$ E.**; this last range will carry you between Baker's Shoal and Reedy Island in nearly mid-channel.

New Castle Range Lights.

Continue the course for Finn's Point Lights until New Castle Lights are in range, then run for them bearing about **N.NW.**; this last range will carry you through the Eastern Channel past Pea Patch Island.

Deep Water Point Range Lights.

Continue the course for New Castle Lights until Deep Water Point Lights are in range, bearing about **NE.**; this last range will lead safely through past the Bulk Head Shoal. In daytime, heavy draught vessels should, when past the Red Buoy off Goose Island, haul gradually to the Northeastward, leaving the Buoy with Perpendicular Stripes close to on the Port hand.

Cherry Island Flats Range Lights.

Continue the course for Deep Water Point until Cherry Island Flats Lights are in range, then run for them bearing about **N.NE.**; this last range will carry you through to the Westward of Cherry Island Flats in about 21 feet water at low tide.

Schooner Ledge Range Lights.

Continue to run up on Cherry Island Range, until the Light at the entrance to Wilmington bears **SW.** by **W.**, then follow the Northwestern shore course about **NE. ½ N.**, keeping not more than three or four hundred yards from it, until Schooner Ledge Lights are in range, bearing about **NE.** by **E. ½ E.**; then run for them on this range, which will lead safely through the Schooner Ledge Channel.

Tinicum Island Range Lights.

Continue to run up on Schooner Ledge Channel Range until Tinicum Island, or the fixed White Light and Red Light on the New Jersey side are in range, bearing about **E. ½ S.**, then run for them until the rear Red Light of Fort Mifflin Bar Range is visible, bearing **SSE.**; then steer **E.** by **N. ½ N.** until the White and last-mentioned Light is in range, bearing about **SW.** by **W. ½ W.**; keep them on this range and you will cross the Bar.

Horse Shoe Lower Range Lights.

Continue the Fort Mifflin Bar Range until the Range Lights on the Pennsylvania side are in range, bearing **W. ¾ N.**; then keep them on this range and steer **E. ¾ S.**

Horse Shoe Upper Range Lights.

Continue the range course **E. ¾ S.** until the first Lights on the New Jersey side are in range, bearing **S. ¾ W.**, then steer **NE.** by **E.**, doubling round the Horse Shoe until the next Light is in

range with the rear Light, bearing about **SW.** by **S.** $\frac{1}{4}$ **S.**; then keep them in range, and run up **NE.** by **N.** $\frac{1}{4}$ **N.** until past the Buoy off the Seventeen Foot Spot; then keep nearest the Western or city side.

Dangers in approaching and entering Delaware Bay by the Coaster's or Cape May Channel.

Eph's Shoal.

This Shoal extends **W.** $\frac{3}{4}$ **N.** and **E.** $\frac{3}{4}$ **S.** $1\frac{1}{8}$ miles, and has as little as 4 feet water upon it in some places. At this date (1882), it is marked off its Eastern and Western ends with Buoys painted in Red and Black Horizontal Stripes; between this Shoal and Cape May there is a narrow channel of 18 feet water at low tide. Cape May Lighthouse bears from Buoy off the Eastern part of this Shoal **NW.** by **W.** $\frac{1}{4}$ **W.**, distance $3\frac{1}{4}$ miles; from Buoy on Western part **NW.** $\frac{1}{2}$ **W.** $1\frac{3}{4}$ miles.

North Shoal.

This Shoal, which lies about $1\frac{1}{4}$ miles Southerly from Cape May Lighthouse, extends about **NW.** and **SE.** 3 miles, and has a width in some places of more than a mile; on many parts of it there is but little water at low tide. Between this Shoal and Cape May there is a channel about $\frac{1}{2}$ mile wide, having a depth of from $3\frac{1}{2}$ to 6 fathoms water.

Cape May Spit.

Shoal water extends off in a Southerly direction from Cape May Point, and at this date (1882), is marked on its outer end with a Red Buoy. Cape May Lighthouse bears from this Buoy **N.** by **E.** $\frac{3}{4}$ **E.** about $\frac{3}{4}$ mile.

Crow Shoal.

This Shoal, which has but little water upon it at low tide, extends about **N.** $\frac{1}{2}$ **E.** and **S.** $\frac{1}{2}$ **W.** $3\frac{3}{4}$ miles. At this date (1882), it is marked upon its Southern part with a Red Buoy. Cape May Lighthouse bears from this Buoy **E.** by **S.** $\frac{1}{2}$ **S.** $1\frac{1}{2}$ miles.

Mummy Shoal.

This Shoal, which in some places has but little water on it, extends **NW.** by **N.** and **SE.** by **S.** about 2 miles. It is marked off its Southeast part with a Black Buoy; Cape May Lighthouse bears

from this Buoy **E.** $\frac{3}{4}$ **N.**, distance $1\frac{3}{4}$ miles. Between the Mummy Shoal and the South end of Crow Shoal is the passage called Ricord's Channel, which has in it from $2\frac{1}{4}$ to 3 fathoms water.

A better knowledge of the shoals in the vicinity of Cape May can be obtained by inspecting Eldridge's Chart of Delaware Bay and River, on a large scale, than by any written description.

*By the Cape May or Coaster's Channel.**

Sailing Directions for Delaware Bay and River in Daytime, with favorable winds and fair weather.

Vessels from the Eastward, of not more than 8 feet draught, should, when abreast Hereford Lighthouse, keep about $1\frac{3}{4}$ miles from shore, and, in order to avoid Eph's Shoal, before described, make good the course **SW.** by **W.**, leaving the Buoy painted in Red and Black Horizontal Stripes off the Eastern part of this last-mentioned Shoal on the Starboard hand. When Cape May Lighthouse bears about **NW.** $\frac{1}{4}$ **W.**, run for it on this bearing, keeping a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes off the Western part of Eph's Shoal; when this Buoy is made, leave it about $\frac{1}{4}$ mile to the Northward and steer to the Westward, leaving the Red Buoy off Cape May Spit close to on the Starboard hand; from this last Buoy, steer about **NW.** $\frac{1}{4}$ **W.** for the Red Buoy off the South part of Crow Shoal; leave this Buoy close to on the Starboard hand and steer for the Buoy painted in Black and White Perpendicular Stripes, at the entrance of Ricord's Channel; when up with this Buoy, which may be left on either hand, make good the course **W.** by **N.** $\frac{1}{2}$ **N.**, leaving the Red Buoy off the Southern part of Brandywine Shoal well on the Starboard hand; when past this Buoy, follow the directions before given. Or, when up with the Buoy with Perpendicular Stripes at the entrance of Ricord's Channel, make good the course **NW.**, leaving the Red Buoy off the Northern part of Brandywine Shoal on the Port hand, and follow the directions before given.

Maurice River Anchorage.

Vessels of light draught, coming down the Bay, may leave the Light-ship off Fourteen Foot Bank about one mile on the Star-

* Strangers in vessels of more than 8 feet draught should use this Channel with caution, as there are frequent changes in this vicinity.

board land and steer **E.NE.** until this Light-ship bears **SW.** $\frac{1}{2}$ **W.**; then make good the course **NE.** $\frac{1}{4}$ **E.**, leaving Dead Man's Shoal well to the Southward. When Egg Island Lighthouse bears **W.NW.**, then anchor on the Flats, off Maurice River, in from 7 to 8 feet water at low tide. This anchorage is much used by coasters of light draught.

High Water in the Delaware Bay and River.

Cape May.

It is high water at Cape May 3h. 10m. before it is at Boston; common tides rise about 5 feet.

Cape Henlopen.

It is high water at Cape Henlopen 3h. 27m. before it is at Boston; common tides rise about $3\frac{3}{4}$ feet.

Egg Island Lighthouse.

It is high water at Egg Island Lighthouse 2h. 25m. before it is at Boston; common tides rise about 6 feet.

Bombay Hook Lighthouse.

It is high water at Bombay Hook Lighthouse 1h. 12m. before it is at Boston; common tides rise about $5\frac{1}{2}$ feet.

Reedy Island.

It is high water at Reedy Island 39 minutes before it is at Boston; common tides rise about $6\frac{1}{4}$ feet.

New Castle.

It is high water at New Castle 24 minutes after it is at Boston; common tides rise about $6\frac{1}{4}$ feet.

Chester.

It is high water at Chester 1h. 18m. after it is at Boston; common tides rise about $6\frac{1}{4}$ feet.

Philadelphia.

It is high water in Philadelphia 2h. 15m. after it is at Boston; common tides rise about 6 feet.

Currents in Delaware Bay and River.

The Currents in Delaware Bay and River are influenced to a considerable extent by the winds. In moderate weather the currents commence setting in soon after Flood tide and begin to run out soon after Ebb.

Beating in to Delaware Bay and River.

In beating in to Delaware Bay and River a better knowledge can be obtained of the depth of water and location of the shoals by inspecting Eldridge's Chart of Delaware Bay and River, on a large scale, than by any written directions.

Soundings in approaching Delaware Bay.

In approaching Delaware Bay from Seaward a better knowledge of the depth of water can be obtained by inspecting the Charts than by any written description.

Delaware and Raritan Canal.

The entrance to this Canal, which is at Bordentown, on the Eastern side of the River, lies about 25 miles above the city of Philadelphia. At this date (1882), there are but few Buoys in the River; it is therefore advisable for strangers bound through this Canal to take pilots at Philadelphia.

MAURICE RIVER.

The entrance to this River, which is on the Eastern side of Delaware Bay, lies about **N. $\frac{3}{4}$ W.** from Cape May Lighthouse, distance $17\frac{1}{2}$ miles; **NE. $\frac{1}{2}$ N.** from Fourteen Foot Bank Light-ship, and **E.NE.** 5 miles from Egg Island Lighthouse.

Maurice River Lighthouse.

On the Eastern side of entrance, near the mouth of Maurice River (New Jersey), is a Lighthouse, which at this date (1882), shows a fixed Red Light. Cape May Lighthouse bears from Maurice River Lighthouse **S. $\frac{3}{4}$ E.**, distance $16\frac{1}{2}$ miles; Lighthouse on Brandywine Shoal **S.SW.**, $13\frac{1}{2}$ miles.

Remarks.

Oyster Beds lie off the entrance to this River; at this date (1882), a Black Buoy marks the Southern part of these obstructions.

Maurice River Lighthouse bears from this Buoy **NE.** by **E.** $\frac{1}{2}$ **E.**, distant a little more than $\frac{3}{4}$ mile; about 3 feet water can be taken to the mouth of this River at low tide, and from thence to Port Norris about 9 feet, at low tide.

**Sailing Directions for Maurice River in Daytime,
with favorable winds and fair weather.**

Small or light draught vessels from the Eastward may follow the directions before given for Cape May or Coaster's Channel, until past the Red Buoy off Cape May Spit, then haul round the Cape at a distance of $\frac{1}{2}$ mile from it, leaving the Red Buoy off the Southern part of Crow Shoal well on the Port hand; when Cape May Lighthouse bears **SE.** make good the course **N.** $\frac{1}{4}$ **E.**, passing midway between Dead Man's and Fishing Creek Shoals, carrying from 7 to 9 feet water at low tide; when about 4 miles from Maurice River Lighthouse, steer about **NW.**; then, about $\frac{3}{4}$ Flood, bring this Lighthouse to bear **NE.** and run for it on this course, keeping a sharp lookout for the Black Buoy (before described) off the Southern part of the Oyster Beds; when this is made, leave it about $\frac{1}{4}$ mile on the Port hand, and steer about **N.** by **W.** for the mouth of Maurice River; from the entrance of this River keep in the middle to Port Norris.

From the Southward, when past Cape Henlopen, follow the directions before given for the Ship Channel, until up with the Light-ship off Fourteen Foot Bank; leave this Light-ship close to on the Port hand, and make good the course **NE.** for Maurice River Lighthouse, and at about $\frac{3}{4}$ Flood follow the directions before given.

From the Delaware River, follow the Ship Channel until about 2 miles North of Fourteen Foot Bank Light-ship, then make good the course **E.NE.** until it bears **SW.**, then steer **NE.** and follow the directions before given.

High Water.

It is high water at the entrance of Maurice River 2h. 25m. before it is at Boston; common tides rise about 6 feet.

Anchorage to the Northward of Cape May Light-house.**Remarks.**

With winds from **NE.** to **SE.** by way of East, vessels of light draught can find good shelter in about 4 fathoms water to the Northward of Cape May Lighthouse.

Sailing Directions in Daytime, with favorable winds and fair weather.

From the Eastward, follow the directions before given for Cape May or Coaster's Channel until past the Red Buoy off the Spit, then haul round Cape May at a distance of about $\frac{1}{2}$ mile, leaving the Red Buoy off the South end of Crow Shoal well on the Port hand; when Cape May Lighthouse bears **ESE.**, follow the shore to the Northward, keeping about $\frac{1}{2}$ mile from it, and anchor from 1 to 3 miles to the Northward of this Lighthouse in about 4 fathoms water.

From Seaward leave the Five Fathom Bank Light-ship close to on either hand, and make good the course **NW.** by **W.** $\frac{1}{2}$ **W.**; as soon as Cape May Lighthouse is made, bring it to bear about **NW.** $\frac{1}{4}$ **W.**, and follow the directions before given.

Anchorage under Delaware Breakwater.**Delaware Breakwater Lighthouse.**

Upon the Northwestern end of Delaware Breakwater, South side of entrance to Delaware Bay, is a Lighthouse, which at this date (1882), shows a fixed White Light varied by flashes; attached to this Lighthouse is a Fog Bell, which in thick weather is struck at intervals of 10 seconds; the Black Buoy on the Southeast part of the Shears, bears from the Lighthouse on Delaware Breakwater **N.** by **E.** $\frac{1}{4}$ **E.**, distance $1\frac{1}{2}$ miles.

Remarks.

Vessels bound to this Anchorage may pass either end of this Breakwater according to wind and tide; do not anchor in the Gap between the Lighthouse and Ice Breaker; the best anchorage is in about 4 fathoms water, with the Lighthouse on the Northwest end of the Breakwater, bearing about **N.** by **W.** and the Eastern end

about **E.NE.** In entering this Harbor it is advisable for heavy draught vessels to pass to the Eastward of the Breakwater, as a Shoal having from 14 to 16 feet water upon it at low tide, extends about 100 yards from the Lighthouse in a Southerly and South-westerly direction.

Sailing Directions for Delaware Breakwater in Daytime, with favorable winds and fair weather.

Vessels from the Eastward or Seaward may leave the Five Fathom Bank Light-ship close to on the Starboard hand, and make good the course **W. $3\frac{1}{4}$ N.**, leaving the Red Buoy off the Southern part of McCries' Shoal well on the Starboard hand; as you approach Cape Henlopen, keep a sharp lookout for the Whistling Buoy which lies on the Northern side of entrance to the Delaware Bay, and bears from Cape Henlopen Main Lighthouse **NE.** by **E.** 4 miles; when this Buoy is made, leave it close to on the Starboard hand, and make good the course **W.** by **S.**, and pass either end of the Breakwater according to wind and tide, and anchor in about 4 fathoms water, with the Lighthouse on the North-western end bearing about **N.** by **W.**, or anchor according as circumstances require. If possible, it is advisable at low tide for vessels of more than 17 feet draught to pass to the Eastward of the Breakwater.

Vessels from the Southward may leave the Light-ship off Winter Quarter Shoal a short distance on the Port hand, and make good the course **NE.** by **N.** which will clear all the Shoals when the Buoy painted in Red and Black Horizontal Stripes off Fenwick's Island Shoal is made; this Shoal has 14 feet water upon it, and bears from Fenwick's Island Lighthouse East $5\frac{3}{4}$ miles; leave this Buoy on the Port hand and steer about **N.** by **W.**, leaving the Black Buoy off the Southeast end of Hen and Chickens well on the Port hand; when past this last-named Buoy steer more Westerly, and haul round Cape Henlopen at a distance of about $\frac{3}{4}$ mile, and follow the directions before given.

Sailing Directions for Delaware Breakwater at Night-time, with favorable winds and fair weather.

Vessels from the Eastward or Seaward may leave the Five Fathom Bank Light-ship close to on the Starboard hand, and

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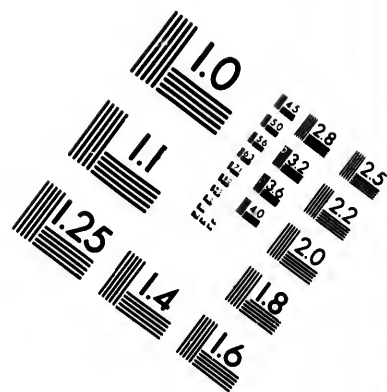
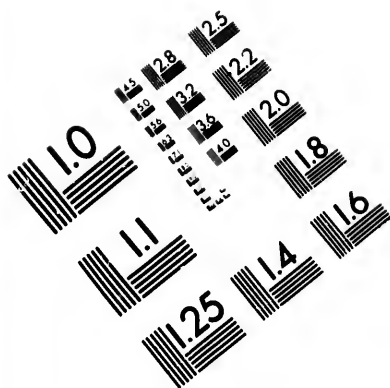
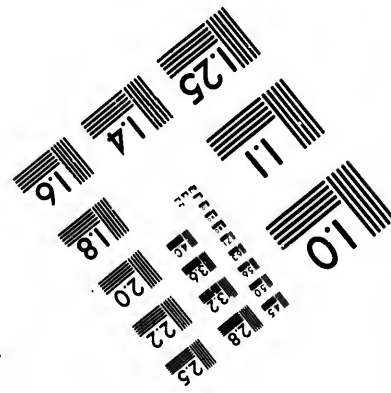
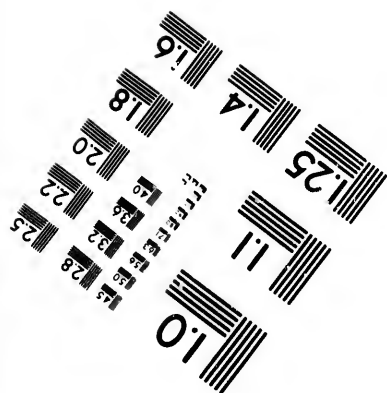
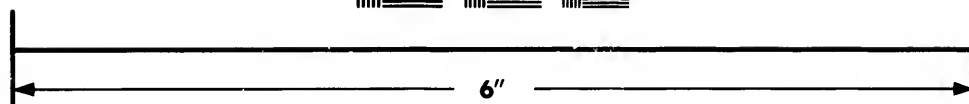
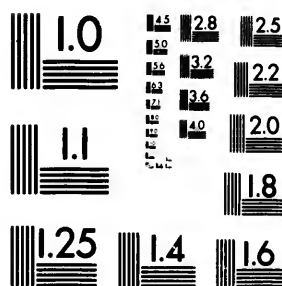


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steer about **W. $\frac{3}{4}$ N.**, keeping a sharp lookout for the Red Range Light to the Westward of Delaware Breakwater; as soon as this Light is made bring it on a range with the Flashing White Light on the Breakwater, and run for them in range bearing about **W. $\frac{1}{2}$ S.**; leave the last-named Light close to, on the Port hand, and anchor as before directed.

From the Southward, leave the Light-ship off Winter Quarter Shoal a short distance on the Port hand, and make good the course **NE. by N.**, which course will clear all the Shoals; when Fenwick's Island Light bears **W. by S.**, make good the course **N. $\frac{3}{4}$ W.**, until the Red Fixed Light to the Westward of Delaware Breakwater is on a range with the Flashing White Light on this Breakwater; then run for them in range bearing about **W. $\frac{1}{2}$ S.** and proceed as before directed.

Mispillion Creek.

The entrance to this Creek, which is on the West side of the Bay, lies **NW.** about 13 miles from the Lighthouse on Delaware Breakwater.

Mispillion Creek Lighthouse.

On the West side of this Creek, near its mouth, is a Lighthouse, which at this date (1882), shows a fixed White Light.

Remarks.

The entrance to this Creek is nearly dry at low tide; only small or very light draught vessels can therefore enter it at high water.

MAHON'S RIVER.

The entrance to this River, which is on the Western side of the Bay, lies Northwesterly 27 miles from Delaware Breakwater, and about $7\frac{1}{2}$ miles **W. $\frac{3}{4}$ N.** from the Lighthouse on Cross Ledge.

Mahon's River Lighthouse.

A little above the entrance, on the West side of this River, is a Lighthouse, which at this date (1882), shows a fixed White Light.

Remarks.

At this date (1882), about 5 feet water, at low tide, can be carried up as far as the Lighthouse.

High Water.

It is high water at the entrance of Mahon's River 1h. 37m. before it is at Boston; common tides rise about 6 feet.

DONA RIVER.

On the West side of the Bay, about $2\frac{1}{2}$ miles to the Northward of Mahon's River Lighthouse, is the entrance to Dona River. About 5 feet water, at low tide, can be taken up to Dona Landing, which is about $1\frac{3}{4}$ miles from the entrance.

Egg Island Lighthouse.

Upon the Southern point of Egg Island is a Lighthouse, which at this date (1882), shows a fixed White Light. Shoal water extends off to the Southwest a long distance from this Lighthouse.

Bearings and Distances from Egg Island Lighthouse.

	Distance.
Cape May Lighthouse, SE. by S. $\frac{3}{4}$ S.	$17\frac{1}{4}$ miles.
Lighthouse on Brandywine Shoal, Scuth nearly . . .	$11\frac{3}{4}$ "
Maurice River Lighthouse, E. $\frac{3}{4}$ N.	$5\frac{1}{2}$ "
Light-ship off Fourteen Foot Bank, S. by W. $\frac{3}{4}$ W. . . .	$7\frac{3}{4}$ "
Lighthouse on Cross Ledge, W. $\frac{1}{2}$ S.	$4\frac{3}{4}$ "

COHANSEY CREEK.

The entrance to this Creek, which is on the Eastern side of the Bay, is Northwesterly $14\frac{1}{4}$ miles from Egg Island Lighthouse, and **NE.** by **N.** $\frac{1}{2}$ **N.** about $2\frac{1}{2}$ miles from the Lighthouse on Ship John Shoal.

Cohansey Lighthouse.

On the Eastern side of the Bay, and Western side of Cohansey Creek, is a Lighthouse, which at this date (1882), shows a fixed White Light.

Remarks.

At this date (1882), about 6 feet water, at low tide, can be taken through a narrow, crooked channel into this Creek.

DUCK CREEK.

The entrance to this Creek, which is on the Western side of the Bay, is Northwesterly about $7\frac{1}{4}$ miles from the Lighthouse on Ship John Shoal, and Southeasterly about $8\frac{1}{2}$ miles from Reedy Island Lighthouse.

Bombay Hook Lighthouse.

On the Western side of the Bay, and South side of entrance to Duck Creek is a Lighthouse, which at this date (1882), shows a fixed White Light. Lighthouse on Ship John Shoal bears from Bombay Hook Lighthouse **SE. $\frac{3}{4}$ E. $7\frac{1}{4}$ miles.**

Remarks.

At this date (1882), about 5 feet water, at low tide, can be taken up to Short's Landing.

BOMBAY HOOK ROADS.

These Roads lie Northwest about 6 miles from the Lighthouse on Ship John Shoal, and nearly opposite Bombay Hook Lighthouse.

Remarks.

This anchorage is much used by vessels waiting for a change of wind and tide.

Sailing Directions.

Vessels in the channel-way, bound up or down the Bay, may, when Bombay Hook Lighthouse bears from **West to W. by N.**, run for it and anchor, according to draught, in from $2\frac{1}{2}$ to 4 fathoms water, sticky bottom.

REEDY ISLAND HARBOR.

This Harbor lies to the Westward of Reedy Island, and is much used by sailing vessels, particularly in Winter, while ice is running. A Spit extends off from the South end of the Island, which is marked on its outer part with a Black Buoy. In entering, this

Buoy is left on the Starboard hand. At low tide, about 11 feet water can be taken into this Harbor by the passage to the Southward of Reedy Island, and about 10 feet through a narrow channel to the Northward of it.

Reedy Island Lighthouse.

Upon the lower or Southern end of Reedy Island is a Lighthouse, which at this date (1882), shows a Flashing White Light. A Fog Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 15 seconds.

Sailing Directions for Reedy Island Harbor in Daytime, with favorable winds and fair weather.

Vessels bound up the Bay, intending to make Reedy Island Harbor, may follow the sailing directions before given for Delaware Bay and River, keeping a sharp lookout for the Black Buoy, which lies about $\frac{3}{4}$ mile to the Southward of Reedy Island; when this is made, leave it close to on the Starboard hand and run about **N.N.W.** until Reedy Island Lighthouse bears **N.E.** by **N.**; you are then past the Spit and may run in, keeping nearer Reedy Island, which is quite bold on its Western side, and anchor in about 4 fathoms water, the Lighthouse bearing about **S.** by **E.**

Coming down the River, when the Black Buoy to the Southward of Reedy Island is made, leave it close to on the Starboard hand, and follow the directions before given.

In order to avoid the long Spit, which extends from the Northern part of Reedy Island, small or light draught vessels, coming down the River, and intending to enter this Harbor to the Northward of this Island, when abreast Reedy Point (which is on the Western side), should haul in and follow the Western shore, keeping not more than 350 yards from it, and carrying from 8 to 10 feet water at low tide; when abreast the village of Port Penn, anchor in from 3 to 4 fathoms water.

Sailing Directions for Reedy Island Harbor in Night-time, with favorable winds and fair weather.

Vessels coming up the Bay at night, intending to make Reedy Island Harbor, may run for Port Penn Beacon Lights in range, bearing about **N.W.** $\frac{3}{4}$ **N.**, until Reedy Island Light bears **N.** $\frac{3}{4}$

E.; then, in about 3 fathoms water, at low tide, run in about North, leaving the Light not more than 300 yards on the Starboard hand; when this Light bears **S.** by **E.**, then anchor in from 4 to 5 fathoms water.

High Water.

It is high water in Reedy Island Harbor 39 minutes before it is at Boston; common tides rise about $6\frac{1}{4}$ feet.

SALEM CREEK.

The entrance to this Creek is on the Eastern side of the River, about 5 miles above Reedy Island Lighthouse, and about 3 miles below Pea Patch Island. About 5 feet water can be taken up to Salem at low tide.

CHRISTIANA CREEK (entrance to Wilmington).

The entrance to this Creek is on the Western side of the River, about 8 miles above Pea Patch Island.

Wilmington Lighthouse.

On the Western side of the River and North side of entrance to Christiana Creek is a Lighthouse, which at this date (1882), shows a fixed White Light. About 9 feet of water can be taken up to Wilmington at low tide.

Schuylkill River.

The entrance to this River is about 4 miles Southwesterly from the city of Philadelphia.

Schuylkill Range Beacons.

On Western side of League Island, East side of entrance to Schuylkill River, are two Beacons which stand on square wooden piers on the Mud Flats outside the bank around League Island; the Front Beacon is painted White with Black Top, the Rear Beacon is a square wooden Tower painted White with Black Lantern; these Beacons at this date (1882), show White Fixed Lights.

Remarks.

These Lights in range bearing about **N.NE.**, lead from the Delaware River through the dredged channel into the Schuylkill.

Dangers Lying off the Coast from Cape Henlopen to Cape Charles.

From Cape Henlopen to Cape Charles, a distance of 110 miles, there are many dangerous Shoals, some of which lie more than 6 miles from the nearest land.

Fenwick's Island Lighthouse.

About 20 miles South from Cape Henlopen, on the coast, is a Lighthouse, the Tower of which is painted White, and at this date (1882), shows a fixed White Light, varied by White Flashes.

Fenwick's Island Shoal.

After leaving the Hen and Chickens Shoal, which lies to the Southeast of Cape Henlopen, bound Southward, the first danger is Fenwick's Island Shoal, which extends about **NE.** by **N.**, and **SW.** by **S.** $1\frac{3}{4}$ miles; at very low tides as little as 14 feet water has been found upon it; at this date (1882), it is marked upon its Western part with a Buoy painted in Red and Black Horizontal Stripes.

Bearings and Distances from Buoy off Fenwick's Island Shoal.

	Distance.
Five Fathom Bank Light-ship, NE $\frac{1}{4}$ N.	27 miles.
Cape Henlopen Main Lighthouse, N. by W. $\frac{3}{4}$ W. . .	20 "
Fenwick's Island Lighthouse from Centre of this Shoal,	
West	6 "
Buoy painted in Red and Black Horizontal Stripes	
off Isle of Wight Shoal, S. $\frac{1}{4}$ W.	$4\frac{1}{2}$ "
Winter Quarter Shoal Light-ship, S. by W. $\frac{3}{4}$ W. . .	33 "

Ten fathoms water was found 300 yards East from this Shoal, and 11 fathoms $\frac{1}{4}$ mile **SE.** from it. In approaching it from the Eastward in thick weather or night-time, the Lead therefore gives no warning, especially for heavy draught vessels.

Isle of Wight Shoal.

This Shoal, which is very small, has at very low tides about 17 feet water upon it; it is marked at this date (1882), on its Western part with a Buoy painted in Red and Black Horizontal Stripes.

Bearings and Distances from Buoy off Isle of Wight Shoal.

	Distance.
Buoy off Fenwick's Island Shoal, N. $\frac{1}{4}$ E. . . .	4 $\frac{1}{2}$ miles.
Fenwick's Island Lighthouse, NW. $\frac{3}{4}$ W. . . .	7 $\frac{1}{8}$ "
Winter Quarter Shoal Light-ship, S.SW. . . .	29 "

Seven fathoms water was found $\frac{1}{4}$ mile East from this Shoal; heavy draught vessels from seaward should not therefore in thick weather or night-time approach nearer than this depth to it.

Little Gull Bank.

This danger, which has on its **SW.** part as little as 11 feet water, lies about 2 miles from shore, and extends **NE. $\frac{1}{2}$ E.**, and **SW. $\frac{1}{2}$ W.** about 1 $\frac{3}{4}$ miles; at this date (1882), it is marked on its Northern part with a Black Buoy; Fenwick's Island Light-house bears from this Buoy North 8 miles; Winter Quarter Shoal Light-ship, **S.** by **W.** 22 miles.

Great Gull Bank.

This danger, which lies about 2 miles Southeast from the Little Gull Bank, extends **NE.** and **SW.** about 3 miles, and at this date (1882), has not less than 21 feet water upon it at low tide.

Winter Quarter Shoal.

This dangerous Shoal, on which at very low tides there are not more than 11 feet water in some places, extends about **E.NE.**, and **W.SW.** 1 mile; 500 yards in a **W.SW.** direction from the Western part of this Shoal 8 fathoms water was found, 7 $\frac{1}{2}$ fathoms near its Southern part, and 9 fathoms near its Southeast part; in approaching this danger from seaward in thick weather or night-time, the Lead therefore gives but little warning; at this date (1882), this Shoal is marked on its Northern part with a first-class Can Buoy, and on its Eastern part with a Light-ship; this Buoy is painted in Red and Black Horizontal Stripes, and has upon it the letters **W. Q. S.**; the Light-ship is moored in about 11 fathoms

water **E. SE.** from the Shoal, and at this time shows one fixed White Light, and has a Bell and Horn for use in thick weather.

Bearings and Distances from Winter Quarter Shoal Light-ship.

	Distance.
Montauk Point Lighthouse, NE.	244 miles.
Fire Island Lighthouse, NE. by N.	187 "
Barnegat Lighthouse, NE. by N. ¼ N.	121 "
Five Fathom Bank Light-ship, NE. by N. ¼ N.	58 "
Fenwick's Island Lighthouse, N. ¾ E.	31 "
Buoy off Fenwick's Island Shoal, N. by E. ¾ E.	33 "
Buoy off Isle of Wight Shoal, N. NE.	29 "
Buoy off Little Gull Bank, N. by E.	22 "
Buoy off Winter Quarter Shoal, NW. by W.	2 ¼ "
Assateague Lighthouse, W. ¾ S.	12 ¾ "
Black Buoy off Southeast part of Chincoteague Shoal, SW. by W.	12 ¼ "
Hog Island Lighthouse, SW.	45 "
Whistling Buoy to the Southeast of Cape Charles, SW. by S.	65 "
Cape Henry Lighthouse, SW. ½ S.	76 "

Assateague Lighthouse.

About 36 miles Southwesterly from Fenwick's Island Lighthouse, and Northeasterly 36 miles from Hog Island Lighthouse, and about 2 miles from the Southwest point of Assateague Island is a Lighthouse, which at this date (1882), is painted Red, and shows a fixed White Light.

Remarks.

Shoals extend off about 2½ miles to the Southward of Assateague Island, and in some places there is but little water upon them at low tide; without this to Chincoteague Shoal there are many spots with from 8 to 15 feet water upon them.

Chincoteague Shoal.

This is a long narrow ridge, extending about **NE. ½ E.** and **SW. ½ W.** 4½ miles, with an average width of about ¼ mile, and having from 8 to 16 feet water upon it; at this date (1882), the Southwestern part of this Shoal is marked with a Red Buoy; Assateague Lighthouse bears from this Buoy **N. ½ W.**, distance

4¾ miles; this last-mentioned Lighthouse bears from the Northeast part of this Shoal **W.NW.**, distance 4 miles; none but small or very light draught vessels should (especially at night-time) pass within this Buoy, unless well acquainted.

Turner's Eastern Lump.

This Lump, on which there are but 8 feet water at low tide, is marked off its Eastern part with a Black Buoy; Assateague Lighthouse bears from this Buoy about **N.NW.**; vessels bound up or down the coast should pass to the Eastward of this Buoy.

Turner's Western Lump.

This danger, on which there are but 6 feet water at low tide, is marked off its outer part with a Black Buoy; Assateague Lighthouse bears from this Buoy about North; vessels should keep outside this Buoy.

Black Fish Bank.

This Bank, which lies a short distance without Chincoteague Shoal, extends **NE.** by **E.** and **SW.** by **W.** about 6½ miles, and has as little as 20 feet water upon it at low tide; large or heavy draught vessels should give Assateague Lighthouse a wide berth.

Chincoteague Anchorage.

This Anchorage, which affords shelter in winds from West to **N.NE.** by way of North, lies **S.SW.** about 2½ miles from Assateague Lighthouse, and is frequently used by vessels when overtaken with Northerly winds bound to the Northeastward; this Anchorage is sometimes of great importance, saving the time of running back to Hampton Roads.

Sailing Directions for Chincoteague Anchorage in Daytime, with favorable winds and fair weather.

From the Southwestward, when Assateague Lighthouse is made, bring it to bear **N.** by **E.** ½ **E.** and run for it on this course; as you approach it keep the Lead going, and when the water shoals to 3½ fathoms, then anchor with good holding ground; from this Anchorage the Lighthouse will be distant about 2½ miles; small or light draught vessels may go farther in and anchor in 3 fathoms water. These directions, with favorable winds, are good for night

or day. In beating in, the Lighthouse may be brought to bear from **N.** by **E.** to **NE.** by **N.**

The Coast from Cape Henlopen to Fenwick's Island Lighthouse.

From Black Buoy off the Southeast part of Hen and Chickens to Fenwick's Island Lighthouse, a distance of 18 miles, vessels of not more than 14 feet draught may approach the shore within $\frac{3}{4}$ mile, without danger.

The Coast from Fenwick's Island Lighthouse to Assateague Lighthouse.

From Fenwick's Island Lighthouse to Assateague Lighthouse, a distance of 36 miles, vessels of not more than 14 feet draught may follow the shore within $\frac{3}{4}$ mile, passing within Little Gull Bank (before described); when about 3 miles from Assateague Lighthouse, it is necessary to haul off and pass without the Red Buoy off the Southwest part of Chincoteague Shoal. (See description of Assateague and Chincoteague Shoals before given.)

The Coast from Assateague Lighthouse to Hog Island Lighthouse.

When past the Red Buoy off Chincoteague Shoals, or Assateague Lighthouse bears North, vessels of not more than 14 feet draught may haul in and follow the shore, keeping about $2\frac{1}{2}$ miles from it until about 2 miles from Hog Island Lighthouse; then haul off and pass Hog Island at least 3 miles from shore.

The Coast from Hog Island Lighthouse to Cape Charles Lighthouse.

From Hog Island Lighthouse to Cape Charles, a distance of about 20 miles, vessels of not more than 14 feet draught may, when past Hog Island Lighthouse, follow the shore, keeping not less than 3 miles from it until Cape Charles Lighthouse bears West.

In thick weather it is advisable for heavy draught vessels to not approach the coast from Cape Henlopen to Cape Charles nearer than from 10 to 12 fathoms water.

CHINCOTEAGUE INLET.

At this date (1882), the entrance to this Inlet is Southwest about $3\frac{1}{4}$ miles from Assateague Lighthouse, and Northwesterly from the Red Buoy off the Southwest part of Chincoteague Shoal.

Remarks.

The channel leading into Chincoteague Inlet, like all other sand bars on the coast, changes in depth and location with almost every gale from seaward. At this date (1882), there are 6 Channel Buoys painted in Black and White Perpendicular Stripes, which in entering are left close to on either hand. At this time there are about 6 feet water upon the Bar at low tide.

Sailing Directions for Chincoteague Inlet in Day-time, with favorable winds and fair weather.

Small or light draught vessels from the Northenstward may leave the Black Buoys off Turner's Lump, and the Red Buoy off the Southwest part of Chincoteague Shoal, all on the Starboard hand; when past the last-named Buoy, haul in about **NW.** by **W.**, keeping a sharp lookout for the Outer or Sea Buoy; when this is made, wait until about $\frac{3}{4}$ flood, then, with a favorable and commanding breeze, leave the Outer or Sea Buoy close to on either hand, and steer **NW.** for the Bar Buoy, which lies inside the Bar; when past this, run about **NW.** by **W.** $\frac{1}{2}$ **W.** for the third Buoy; from this, steer **NW.** by **N.** for the fourth Buoy; then run **NW.** by **W.** for the fifth Buoy; when past the fifth Buoy, vessels may anchor; or from this last Buoy, steer **W.SW.** for Wallop's Island Channel Buoy, where there is safe anchorage.

From the Southwestward, as soon as Assateague Lighthouse is made, bring it to bear **NE.** by **N.** and run for it on this course, keeping a sharp lookout for the Outer or Sea Buoy; when this is made, wait until about $\frac{3}{4}$ flood, then follow the directions before given. These directions were good for 1882.

High Water.

It is high water at Chincoteague Inlet 3h. 53m. before it is at Boston; common tides rise about 3 feet.

METOMKIN INLET.

The entrance to this Inlet is 18 miles Southwesterly from Assateague Lighthouse, or midway between Assateague and Hog Island Lighthouses.

Remarks.

The channel leading into Metomkin Inlet varies in depth and location with almost every gale from seaward. At this date (1882), there are 3 Channel Buoys painted in Black and White Perpendicular Stripes, which in entering are left close to on either hand. At this time there are about 4 feet water upon the Bar at low tide.

Sailing Directions for Metomkin Inlet in Daytime, with favorable winds and fair weather.

Small or very light draught vessels from the Northeastward may leave the Red Buoy off the Southern part of Chincoteague Shoal close to on the Starboard hand and steer **SW. $\frac{1}{2}$ W.** 14 miles, which will bring them up with the Outer or Sea Buoy off Metomkin Inlet; then, at about $\frac{3}{4}$ flood, leave the last-mentioned Buoy on either hand and steer **W. by N.** for the next Buoy, which lies just within the Bar; when past this last Buoy, steer about **W.NW.** for the third Buoy; when past this, steer **W. by N. $\frac{1}{2}$ N.**, passing close to the Point of South Beach to good anchorage.

From the Southwestward, do not approach the coast in less than 4 fathoms water until the Outer or Sea Buoy is made off Metomkin Inlet; then follow the directions before given.

Strangers should not attempt to enter this Inlet without a pilot, except through stress of weather.

High Water.

It is high water at Metomkin Inlet 3h. 46m. before it is at Boston; common tides rise about $3\frac{1}{2}$ feet.

WATCHAPREAGUE INLET.

The entrance to this Inlet is Southwesterly 23 miles from Assateague Lighthouse, $5\frac{1}{2}$ miles Southwesterly from Metomkin Inlet, and Northeasterly 13 miles from Hog Island Lighthouse.

Remarks.

The channel leading into Watchapreague Inlet, like all other sand bars on the coast, changes in depth and location with almost every gale from seaward. At this date (1882), there are 3 Channel Buoys painted in Black and White Perpendicular Stripes, which in entering are left close to on either hand. At this time there are about 9 feet water upon the Bar at low tide.

Sailing Directions for Watchapreague Inlet in Daytime, with favorable winds and fair weather.

Small or light draught vessels from the Northeastward should not approach the coast nearer than 4 fathoms water until the Outer or Sea Buoy off Watchapreague Inlet is made; then, at about $\frac{3}{4}$ flood, leave the last-mentioned Buoy close to on either hand and run in, leaving the Buoys close to on either hand; when the Southwest point of Cedar Island bears **NE.**, then anchor.

From the Southwestward, do not approach nearer the shore than 4 fathoms water until the Outer or Sea Buoy at the entrance of Watchapreague Inlet is made; then follow the directions before given.

The channel leading into Watchapreague Inlet changes so often that it is advisable, excepting in cases of emergency, for strangers to take pilots.

High Water.

It is high water at Watchapreague Inlet 3h. 28m. before it is at Boston; common tides rise about $4\frac{1}{2}$ feet.

LITTLE MACHIPONGO INLET.

The entrance to this Inlet is about $6\frac{3}{4}$ miles Southwesterly from the entrance to Watchapreague Inlet, and $5\frac{1}{2}$ miles Northeasterly from Hog Island Lighthouse.

Remarks.

The depth and location of the channel leading into Little Machipongo Inlet changes with almost every gale from seaward. At this date (1882), there are no Buoys to mark the channel leading in; strangers should therefore not attempt to enter it without pilots.

High Water.

It is high water at Little Machipongo Inlet about the same time it is at Watchapreague Inlet.

Hog Island Lighthouse.

Upon the Southern part of Hog Island and Northern side of entrance to Great Machipongo Inlet is a Lighthouse, which at this date (1882), is painted White, and shows a fixed White Light. This Lighthouse is Southwesterly 36 miles from Assateague Lighthouse, Northeasterly 19 miles from Cape Charles Lighthouse, Northeasterly 32 miles from Cape Henry Lighthouse, and Southwesterly 45 miles from the Light-ship off Winter Quarter Shoal. Hog Island Light serves as a guide to coasters, and also for entering Great Machipongo Inlet.

GREAT MACHIPONGO INLET.

The entrance to this Inlet is a short distance to the Southward of Hog Island Lighthouse.

Remarks.

The depth and location of the channel leading into Great Machipongo Inlet, like all other sand bars on the coast, changes with almost every gale from seaward. At this date (1882), in entering there are 6 Buoys, 5 of which are Channel Buoys, and are painted in Black and White Perpendicular Stripes, and may be left close to on either hand passing in; the other Red Buoy lies off White Point Shoal, and in entering is left on the Starboard hand. At this time there are about 9 feet water upon the Bar at low tide.

Sailing Directions for Great Machipongo Inlet in Daytime, with favorable winds and fair weather.

Small or light draught vessels from the Northeast should not approach Hog Island Lighthouse nearer than $2\frac{3}{4}$ miles until the Outer Buoy at the entrance of Great Machipongo Inlet is made; at this date Hog Island Lighthouse bears from this Buoy **NW. $\frac{1}{4}$ N.**; then, at about $\frac{3}{4}$ flood, with a favorable and commanding breeze, run in, leaving the Buoys close to on either hand; when the Light-

house bears **NE.** then anchor close to the Northern side of the channel.

From the Southwestward, do not approach the shore in less than 4 fathoms water until the Outer Buoy off Great Machipongo Inlet is made; then follow the directions before given.

High Water.

It is high water at Great Machipongo Inlet 3h. 44m. before it is at Boston; common tides rise about $4\frac{1}{4}$ feet.

SAND SHOAL INLET.

The entrance to this Inlet is about 7 miles Southwesterly from Hog Island Lighthouse and $11\frac{1}{2}$ miles Northeasterly from Cape Charles Lighthouse.

Remarks.

The depth and location of the channel leading into Sand Shoal Inlet changes with almost every gale from seaward. At this date (1882), in entering there are 3 Buoys painted in Black and White Perpendicular Stripes; these Buoys may be left close to on either hand. At this time there are about 11 feet water upon the Bar at low tide.

Sailing Directions for Sand Shoal Inlet in Daytime, with favorable winds and fair weather.

From the Northeastward, when past Hog Island Lighthouse, do not approach the shore in less than 4 fathoms water. When the Outer Buoy off Sand Shoal Inlet is made, wait until about $\frac{3}{4}$ flood; then, with a favorable and commanding breeze, run in, leaving the Buoys close to on either hand, and anchor above the Life Saving Station, which is on the Northeast side of the channel.

From the Southwestward, do not approach the shore in less than $3\frac{1}{2}$ fathoms water. When the Outer Buoy off Sand Shoal Inlet is made, follow the directions before given.

High Water.

It is high water at Sand Shoal Inlet 3h. 58m. before it is at Boston; common tides rise about $4\frac{1}{4}$ feet.

SHIP SHOAL INLET.

The entrance to this Inlet is Southwesterly about $4\frac{1}{4}$ miles from Sand Shoal Inlet and about 7 miles Northeasterly from Cape Charles Lighthouse.

Remarks.

The channel at the entrance to this Inlet changes in depth and location with almost every gale from seaward. At this date (1882), there are no Buoys to mark the channel leading into it; it is therefore advisable for strangers not to undertake to enter this place without pilots. At this time, about 6 feet water can be taken over the Bar at low tide.

High Water.

It is high water at Ship Shoal Inlet about the same time it is at Sand Shoal Inlet.

Cape Charles Lighthouse.

Upon Smith's Island, about $1\frac{3}{4}$ miles from its Southwestern Point, is a Lighthouse, the Tower of which, at this date (1882), is painted White and shows a Revolving White Light; Hog Island Lighthouse bears from this Lighthouse **NE.** by **N.** 19 miles; Cape Henry Lighthouse, **SW.** by **S.** $\frac{1}{8}$ S. $13\frac{1}{8}$ miles.

Dangers off Smith's Island.

From Smith's Island Lighthouse, shoal water extends off a long distance in an Easterly, Southerly and Southwesterly direction, and heavy draught vessels, bound into the Chesapeake Bay, should give this Lighthouse a wide berth.

Smith's Island Shoal.

This Shoal, which extends about **NE.** and **SW.** $\frac{3}{4}$ mile, has, at very low tides, as little as 20 feet water upon it. Cape Charles Lighthouse bears from the centre of this Shoal **W.** $\frac{3}{4}$ **N.**, distance $7\frac{1}{2}$ miles. In thick weather, heavy draught vessels from seaward should not approach this danger nearer than 8 fathoms water. Between this Shoal and shore there is a channel of from 4 to 5 fathoms water.

Shark Shoal.

This Shoal, which extends **E.NE.** and **W.SW.** about $\frac{1}{2}$ mile, lies **W.** by **S.** $\frac{1}{2}$ S. $3\frac{1}{4}$ miles from Smith's Island Shoal. At

very low tides there are as little as 16 feet water upon it. Cape Charles Lighthouse bears from the centre of this danger **NW.** by **W.** $\frac{3}{4}$ **W.** $4\frac{3}{4}$ miles. Between this Shoal and Cape Charles Lighthouse there is a channel of from 3 to 4 fathoms water; the least depth is nearest the Shoal.

Nautilus Shoal.

This Shoal lies on a line with Cape Henry and Cape Charles Lighthouses, and at very low tides has about 9 feet water upon it. Cape Charles Lighthouse bears from it **NE.** by **N.** $\frac{1}{2}$ **N.**, distance $4\frac{3}{4}$ miles. Flat Ground, having from 12 to 15 feet water upon it, extends from the last-named Lighthouse to this danger.

Whistling Buoy

At this date (1882), a Whistling Buoy, with the White Letters **C. C.** upon it, is placed in about 6 fathoms water off Southeast from Cape Charles, without all the Shoals. This Buoy is intended to guide vessels in thick weather into Chesapeake Bay.

Bearings and Distances from Whistling Buoy off Cape Charles.

	Distance.
Winter Quarter Shoal Light-ship, NE. by N. . . .	65 miles.
Cape Charles Lighthouse, NW.	$6\frac{1}{2}$ "
Cape Henry Lighthouse, SW. by W. $\frac{1}{3}$ W. . . .	$12\frac{5}{8}$ "
Smith's Island Shoal, NE. $\frac{1}{2}$ N.	$4\frac{3}{8}$ "
Shark Shoal, N. $\frac{1}{2}$ W.	$2\frac{1}{2}$ "
Red Buoy off Southeast end of Middle Ground,	
W. by S.	$8\frac{1}{2}$ "
Red Buoy off Outer entrance to Chesapeake Bay, SW.	
by W. $\frac{1}{4}$ W.	$10\frac{1}{4}$ "

Anchorage under Smith's Island.

Vessels may find shelter under Smith's Island with winds from **West** to **N.W.**; the best anchorage is with Cape Charles Lighthouse bearing about **N.W.** by **W.**; you may approach the shore to the Southward of Shark Shoal according to draught, and anchor in from $2\frac{1}{2}$ to 4 fathoms water.

Cape Henry Lighthouse.

Upon Cape Henry, South side of entrance to Chesapeake Bay, is a Lighthouse, the upper and lower halves of the faces of which show alternately Black and White; this Lighthouse, at this date (1882), shows a fixed White Light; a Fog Signal is placed near this Lighthouse, which at this time gives blasts in thick weather of 5 seconds duration, at intervals of 90 seconds; the Old Tower bears **SW.** by **W.** 340 feet, and will remain as a Day mark.

Bearings and Distances from Cape Henry Lighthouse.

	Distance.
Montauk Point Lighthouse, NE.	320 miles.
Winter Quarter Shoal Light-ship, NE. $\frac{1}{2}$ N.	76 "
Cape Charles Lighthouse, NE. by N. $\frac{1}{4}$ N.	13 $\frac{1}{8}$ "
Thimble Shoal Lighthouse, NW. by W. $\frac{1}{2}$ W.	12 $\frac{1}{4}$ "
Back River Lighthouse, NW. $\frac{1}{2}$ W.	16 "
York Spit Lighthouse, NW. by N. $\frac{1}{4}$ N.	20 $\frac{3}{4}$ "
Whistling Buoy off Cape Charles, NE. by E. $\frac{1}{8}$ E.	12 $\frac{7}{8}$ "
Red Buoy off Southeast end of Middle Ground, NE.	
by N. $\frac{3}{4}$ N.	6 "
Red Buoy at outer entrance of Chesapeake Bay, NE.	
$\frac{1}{4}$ E.	2 $\frac{3}{4}$ "
Black Buoy off Tail of the Horse Shoe, NW.	6 $\frac{1}{4}$ "
Black Buoy off Southeast part of Horse Shoe, NW.	
$\frac{3}{4}$ W.	9 $\frac{1}{2}$ "
Red Buoy off Northwest part of Middle Ground, N.	
by W. $\frac{3}{4}$ W.	13 $\frac{1}{4}$ "

To the Northward and Eastward of Cape Henry Lighthouse, shoal water extends off from $\frac{1}{2}$ to $\frac{3}{4}$ mile, but Northwest from this Lighthouse the shore is bold.

Dangers in Entering Chesapeake Bay.**Middle Ground.**

This long narrow Shoal, which lies on the Northern side of entrance to Chesapeake Bay, extends about **NW.** by **N.** and **SE.** by **S.** 10 $\frac{1}{2}$ miles; the least water upon it at this time is about 10 feet, which is 4 $\frac{3}{4}$ miles from its Southeast part; in approaching this danger at night-time or in thick weather, the Lead gives but little warning in some parts; at this date (1882), it is marked with 3 Red Buoys, one off its Southeast part, one off its Western part, and one off its Northwestern part.

Bearings and Distances from Red Buoy off Southeast part of Middle Ground.

	Distance.
Cape Charles Lighthouse, NE. by N. $\frac{1}{4}$ N.	7 $\frac{1}{4}$ miles.
Cape Henry Lighthouse, SW. by S. $\frac{3}{4}$ S.	6 "
Whistling Buoy off Cape Charles, E. by N.	8 $\frac{1}{2}$ "
Red Buoy off Outer entrance to Chesapeake Bay, S. $\frac{1}{2}$ W.	3 $\frac{1}{2}$ "
Black Buoy off Tail of the Horse Shoe, W. $\frac{1}{2}$ S.	6 $\frac{7}{8}$ "
Black Buoy off Southeast part of Horse Shoe, W. $\frac{1}{4}$ N.	10 "
Thimble Shoal Lighthouse, W. $\frac{1}{4}$ N.	13 $\frac{1}{4}$ "
Back River Lighthouse, W. by N. $\frac{3}{4}$ N.	15 $\frac{1}{2}$ "

Bearings and Distances from Red Buoy off Western part of Middle Ground.

	Distance.
Cape Henry Lighthouse, S. by E. $\frac{3}{4}$ E.	10 $\frac{1}{2}$ miles.
Thimble Shoal Lighthouse, SW. by W. $\frac{1}{2}$ W.	8 $\frac{1}{2}$ "
Back River Lighthouse, W. $\frac{1}{4}$ N.	8 $\frac{3}{4}$ "
York Spit Lighthouse, NW.	10 $\frac{3}{4}$ "
Black Buoy off Tail of Horse Shoe, S. by W.	5 $\frac{5}{8}$ "
Black Buoy off Southeast part Horse Shoe, SW.	6 "
Red Buoy off NW. part Middle Ground, N. by W. $\frac{1}{2}$ W.	2 $\frac{5}{8}$ "

Bearings and Distances from Red Buoy off Northwest part of Middle Ground.

	Distance.
Cape Henry Lighthouse, S. by E. $\frac{3}{4}$ E.	13 $\frac{1}{4}$ miles.
Back River Lighthouse, W. by S. $\frac{1}{4}$ S.	8 $\frac{1}{8}$ "
York Spit Lighthouse, NW. $\frac{1}{2}$ W.	8 $\frac{3}{8}$ "
Black Buoy off Tail of the Horse Shoe, South	8 "
Black Buoy off Southeast part Horse Shoe, SW. by S. $\frac{3}{4}$ S.	7 $\frac{5}{8}$ "
Red Buoy off Western part Middle Ground, S. by E. $\frac{1}{2}$ E.	2 $\frac{5}{8}$ "

Inner Middle Ground.

This Shoal, which has as little as 2 feet water upon its Southern part at low tide, lies about 3 miles to the Eastward of the Buoy off Northwest part of Middle Ground; this danger extends about **N.** **NW.** and **S.E.** $5\frac{1}{4}$ miles, with an average width of 1 mile;

between the Eastern part of this Shoal and Cape Charles there is a channel about 1 mile wide, with a depth of from 4 to 6 fathoms water; at this date (1882), there are no Buoys to mark this danger; between the Inner Middle Ground and Middle Ground there is a narrow Shoal running for several miles parallel with the Inner Middle Ground; this last Shoal has from 7 to 15 feet water upon it.

Bearings and Distances from Southern part of Inner Middle Ground.

	Distance.
Cape Charles Lighthouse, E.N.E.	5 $\frac{3}{4}$ miles.
South Point of the Isaacs Island, E. $\frac{1}{2}$ N.	1 $\frac{3}{4}$ "
The Red Buoy off the Northwest part of Middle Ground, bears from the Northern part Inner Middle Ground, W.S.W.	3 $\frac{1}{2}$ "

The Isaacs.

The Southern part of the small Island called the Isaacs lies about 2 miles to the Southward of Cape Charles, and about **SW.** by **W.** 4 miles from Cape Charles Lighthouse; shoal water extends off to the Northward and Eastward a long distance from this Island, but small or light draught vessels may pass about $\frac{1}{4}$ mile to the Southward of it.

Fisherman's Island.

This small Island has a short distance Northwest from the Isaacs; shoal water extends from Fisherman's Island to the Southwest part of Smith's Island; but small or light draught vessels may pass from $\frac{1}{2}$ to $\frac{3}{4}$ mile to the Westward of it without danger; the passage between the Northwest part of Fisherman's Island and Cape Charles is called Fisherman's Inlet; this Inlet has but little water in it at low tide.

Tail of the Horse Shoe.

This Shoal, which lies on the Western side of entrance to Chesapeake Bay, extends about **N.** by **W.** and **S.** by **E.** $1\frac{1}{3}$ miles, and has at very low tides as little as 16 feet water on it; at this time (1882), it is marked off its Southern part with a Black Buoy, which in going up the Bay is left on the Port hand; large or heavy draught vessels bound up the Bay or into Hampton Roads, should

not, at night-time or thick weather, approach this danger in less than 4 fathoms water.

Between the Tail of the Horse Shoe and Black Buoy off the Southeast part of the Horse Shoe, there is a good channel of 4 fathoms water.

Bearings and Distances from Black Buoy off the Tail of the Horse Shoe.

	Distance.
Cape Henry Lighthouse, SE.	6 $\frac{1}{4}$ miles.
Red Buoy off Southeast part of Middle Ground, E.	
$\frac{1}{2}$ N.	6 $\frac{7}{8}$ "
Red Buoy at Outer entrance Chesapeake Bay, E. SE.	7 "
Thimble Shoal Lighthouse, W. by N. $\frac{1}{4}$ N.	6 $\frac{3}{8}$ "
Red Buoy off Western part of Middle Ground, N.	
by E.	5 $\frac{5}{8}$ "
Red Buoy off Northwest part of Middle Ground,	
North	8 "
Black Buoy off Southeast part Horse Shoe, W. NW.	3 $\frac{3}{8}$ "
Back River Lighthouse, NW. $\frac{3}{4}$ W.	9 $\frac{3}{4}$ "
York Spit Lighthouse, NW. by N. $\frac{3}{4}$ N.	14 $\frac{3}{4}$ "

Back River Lighthouse.

About 1 $\frac{3}{4}$ miles Southeast from the entrance to Back River, on the Western side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed White Light, varied with White Flashes.

Bearings and Distances from Back River Lighthouse.

	Distance.
Cape Henry Lighthouse, SE. $\frac{1}{2}$ E.	16 miles.
Thimble Shoal Lighthouse, S. by E. $\frac{1}{2}$ E.	4 $\frac{1}{2}$ "
York Spit Lighthouse, N. by E.	7 $\frac{1}{2}$ "
Red Buoy off Southeast part Middle Ground, E. by	
S. $\frac{3}{4}$ S.	15 $\frac{1}{2}$ "
Red Buoy off Western part of Middle Ground, E.	
$\frac{1}{4}$ S.	8 $\frac{3}{4}$ "
Red Buoy off Northwest part of Middle Ground, E.	
by N. $\frac{1}{4}$ N.	8 $\frac{1}{8}$ "
Black Buoy off the Tail of the Horse Shoe, SE. $\frac{3}{4}$ E.	9 $\frac{3}{4}$ "

Shoal water extends to the Northward, Northeastward, and Southeastward a long distance from Back River Lighthouse, and

large or heavy draught vessels bound up the Bay, should give it a good berth to the Westward.

York Spit Lighthouse.

On the Easterly end of York Spit, North side of entrance to York River, and West side of Chesapeake Bay is a Lighthouse, which at this date (1882), shows a fixed Red Light; attached to this Lighthouse is a Fog Bell, which in thick weather is struck at intervals of 10 seconds.

Remarks.

Vessels of not more than 18 feet draught may approach this Lighthouse on its East and Southeast sides within $\frac{1}{2}$ mile, and on its South and Southwest sides within $\frac{3}{4}$ mile; vessels of not more than 14 feet draught may cross this Shoal to the Northwestward of the Lighthouse from $\frac{1}{2}$ to 2 miles from it.

Bearings and Distances from York Spit Lighthouse.

	Distance
Cape Henry Lighthouse, SE. by S. $\frac{1}{4}$ S.	20 $\frac{3}{4}$ miles.
Thimble Shoal Lighthouse, South	11 $\frac{3}{8}$ "
Cherrystone Lighthouse, E. by N. $\frac{1}{8}$ N.	10 $\frac{3}{4}$ "
Too's Marshes Lighthouse, W. by N. $\frac{1}{2}$ N.	6 $\frac{3}{4}$ "
New Point Comfort Lighthouse, N. by W.	5 $\frac{1}{2}$ "
Wolf Trap Lighthouse, N. by E. $\frac{1}{2}$ E.	11 $\frac{1}{3}$ "
Black Buoy off the Tail of Horse Shoe, SE. by S. $\frac{3}{4}$ S.	14 $\frac{3}{4}$ "
Red Buoy off Northwest part of Middle Ground, SE. $\frac{1}{2}$ E.	8 $\frac{3}{8}$ "
New Point Comfort Shoal or Middle Ground Buoy, NE. $\frac{1}{2}$ N.	3 $\frac{3}{4}$ "

New Point Comfort Lighthouse.

Upon New Point Comfort, North side of entrance to Mobjack Bay, and West side of Chesapeake Bay is a Lighthouse, which at this date (1882), shows a fixed White Light; shoal water extends off Southeast more than 2 miles from this Lighthouse; this shoal is marked on its outer part with a Black Buoy, which is left to the Westward by vessels bound up or down the Chesapeake Bay.

Bearings and Distances from New Point Comfort Lighthouse.

	Distance.
York Spit Lighthouse, S. by E.	5½ miles.
Cherrystone Lighthouse, E. by S. ¼ S.	12 "
Wolf Trap Lighthouse, NE. ½ N.	6¾ "
Black Buoy off Eastern part New Point Shoal, SE.	
¼ E.	4¼ "

New Point Shoal or Middle Ground.

This Shoal, which is small, lies about 4 miles Southeast from New Point Comfort Lighthouse, and at low tide has as little as 16 feet water upon it; there is a good channel both to the Eastward and Westward of this Shoal; at this date (1882), it is marked on its Eastern side with a Black Buoy, having the words New Point Middle Ground in White Letters upon it; York Spit Lighthouse bears from this Buoy **SW.** ½ **S.** ¾ miles; New Point Comfort Lighthouse, **NW.** ¾ **W.** 4¼ miles, Wolf Trap Lighthouse, **N.** ¾ **E.** 7¾ miles.

Wolf Trap Lighthouse.

Upon the East end of Wolf Trap Shoal, West side of Chesapeake Bay is a Lighthouse, which at this date (1882), shows a fixed Light varied by White Flashes; attached to this Lighthouse is a Bell, which in thick weather is struck at intervals of 15 seconds.

Remarks.

About ⅓ mile to the Westward of Wolf Trap Lighthouse, there is a narrow channel of 4 fathoms water; small or light draught vessels may therefore pass to the Westward of this Lighthouse; about ½ mile to the Eastward of Wolf Trap Lighthouse is a Black Buoy, which marks the Eastern part of this Shoal; heavy draught vessels should not go to the Westward of this Buoy.

Bearings and Distances from Wolf Trap Lighthouse.

	Distance
York Spit Lighthouse, S. by W. ½ W.	11¼ miles.
New Point Comfort Lighthouse, SW. ½ S.	6¾ "
Black Buoy off New Point Shoal or Middle Ground,	
S. ¾ W.	7¾ "
Stingray Point Lighthouse, N. by W. ½ W.	10¾ "
Windmill Point Lighthouse, N. ½ W.	12½ "

	Distance.
Black Buoy off Southeast part of Rappahannock Spit, N. $\frac{1}{4}$ E.	11 $\frac{1}{3}$ miles.
Black Buoy off Eastern part Wolf Trap Shoal, E. $\frac{1}{4}$ N.	$\frac{1}{4}$ "

Stingray Point Lighthouse.

About one mile to the Eastward of Stingray Point, South side of entrance to Rappahannock River, in about 6 feet water at low tide, is a Lighthouse which, at this date (1882), shows a fixed Red Light; attached to this Lighthouse is a Bell, which at this time is struck in thick weather at intervals of 5 and 30 seconds.

Bearings and Distances from Stingray Lighthouse.

	Distance.
Wolf Trap Lighthouse, S. by E. $\frac{1}{2}$ E.	10 $\frac{3}{4}$ miles.
Windmill Point Lighthouse, NE. $\frac{1}{2}$ N.	2 $\frac{3}{4}$ "
Black Buoy off Southwest part Rappahannock Spit, E. by N. $\frac{1}{2}$ N.	3 $\frac{3}{4}$ "

Windmill Point Lighthouse.

About 2 miles Southeast from Windmill Point, upon Rappahannock Spit, North side of entrance to Rappahannock River, and West side of Chesapeake Bay is a Lighthouse, which at this date (1882), shows a fixed White Light; attached to this Lighthouse is a Bell, which at this time is struck in thick weather at intervals of 10 seconds.

Remarks.

Vessels of 18 feet draught or more should not pass to the Westward of the Black Buoy to the Southeast of this Lighthouse, and vessels of 12 feet draught or less may approach it in safety within $\frac{1}{3}$ mile on its Northeast side, and not nearer than $\frac{1}{2}$ mile on its Southwest side; none but small or very light draught vessels should attempt to pass between this Lighthouse and Windmill Point; on its Northern and Northeastern sides York Spit may be approached by the Lead, but its Southern and Southwestern sides are quite bold.

Bearings and Distances from Windmill Point Lighthouse.

	Distance.
Wolf Trap Lighthouse, S. $\frac{1}{2}$ E.	12 $\frac{1}{2}$ miles.
Stingray Point Lighthouse, SW. $\frac{1}{2}$ S.	2 $\frac{3}{4}$ "

	Distance.
Smith's Point Lighthouse, N. $\frac{3}{4}$ E.	17 $\frac{3}{4}$ miles.
Watt's Island Lighthouse, NE. by E. $\frac{1}{4}$ E.	20 "
Buoy off Southeast part Rappahannock Spit, SE. by E. $\frac{1}{2}$ E.	2 $\frac{1}{4}$ "

Smith's Point Lighthouse.

Upon the shoal water extending off to the Eastward of Smith's Point, South side of entrance to the Potomac River, and West side of Chesapeake Bay, in about 12 feet water, is a Lighthouse, which at this date (1882), shows a Revolving White Light; attached to this Lighthouse is a Bell, which in thick weather is struck at intervals of 15 seconds.

Remarks.

Heavy draught vessels, bound up the Chesapeake Bay, when past the Seventeen Foot Lump, should leave Smith's Point Lighthouse at least $\frac{1}{2}$ mile to the Westward; vessels of not more than 12 feet draught, passing up or down the Bay or into the Potomac River, may approach within 250 yards of it; small or light draught vessels may cross the Shoal from $\frac{1}{2}$ to $\frac{3}{4}$ mile to the Westward of this Lighthouse.

Bearings and Distances from Smith's Point Lighthouse.

	Distance.
Windmill Point Lighthouse, S. $\frac{3}{4}$ W.	17 $\frac{3}{4}$ miles.
Point Lookout Lighthouse, NW. by N. $\frac{1}{4}$ N.	10 $\frac{1}{4}$ "
Piney Point Lighthouse, NW.	21 $\frac{3}{4}$ "
Cove Point Lighthouse, N. by W. $\frac{1}{4}$ W.	30 $\frac{3}{4}$ "
Black Buoy off Seventeen Foot Lump, SE. by S. $\frac{3}{4}$ S.	1 "
Red Buoy off Southwestern part Kedge's Straits Middle Ground, N. by E. $\frac{1}{4}$ E.	6 "
Red Buoy off Northwestern part Kedge's Straits Middle Ground, N. $\frac{1}{4}$ E.	11 "

Smith's Point Shoal or Seventeen Foot Lump.

This small Shoal, which at very low tides has as little as 17 feet water upon it, is marked on its Eastern part with a Black Buoy; Smith's Point Lighthouse bears from this Buoy **NW.** by **N. $\frac{3}{4}$ N.**, distance 1 mile. Heavy draught vessels bound up or down the Bay should leave this Buoy to the Westward.

Kedge's Straits Middle Ground.

This extensive Shoal, which extends about **N.NW.** and **S.SE.** 6 miles, varies from 1 to 2 miles in width; its average depth, at low tide, is from 15 to 18 feet water. At this date (1882), it is marked with two Red Buoys, one on its Southwestern edge and the other on its Northwestern edge.

Bearings and Distances from Red Buoy off Southwest Edge of Kedge's Straits.

	Distance.
Smith's Point Lighthouse, S. by W. $\frac{1}{4}$ W.	6 miles.
Point Lookout Lighthouse, W.NW.	7 $\frac{3}{4}$ "
Solomon's Lump or Kedge's Strait Lighthouse, E.NE.	8 "
Red Buoy off Northwest edge of this Shoal, N. by W.	5 $\frac{1}{4}$ "

Bearings and Distances from Red Buoy off Northwest Edge of Kedge's Strait Middle Ground.

	Distance.
Smith's Point Lighthouse, S. $\frac{1}{4}$ W.	11 miles.
Solomon's Lump or Kedge's Strait Lighthouse, E. by S. $\frac{1}{4}$ S.	8 $\frac{3}{4}$ "
Point Lookout Lighthouse, W. by S. $\frac{1}{2}$ S.	6 "

To the Eastward of Kedge's Strait Middle Ground there is a channel of from 3 $\frac{1}{2}$ to 6 fathoms water, but heavy draught vessels should give this danger a wide berth to the Eastward.

Point Lookout Lighthouse.

Upon the North side of the entrance to Potomac River, West side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed White Light. At this time a Fog Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 10 seconds.

Remarks.

Large vessels, passing up or down the Bay, should leave this Lighthouse at least 1 mile to the Westward; and vessels coming down the Bay, bound into the Potomac, should leave it a mile to the Northward.

With winds from **N.NW.** to East by way of North, there is good anchorage about $\frac{3}{4}$ mile to the Westward of Point Lookout Lighthouse, in what is called Cornfield Harbor. Large vessels may anchor in about 5 fathoms water, with the Lighthouse bearing about **E.** by **S.**, distant about 1 mile; small vessels may go

farther in and anchor in 3 fathoms, with the Lighthouse bearing **E SE.**, distant $\frac{3}{4}$ mile.

In entering this Harbor, care should be taken to leave the Red Buoy off the Lighthouse well to the Northward; this Buoy, which marks the Southern part of the shoal water which extends off from the Lighthouse, bears **S. $\frac{1}{2}$ W.** about 1 mile from it.

Bearings and Distances from Point Lookout Lighthouse.

	Distance.
Smith's Point Lighthouse, SE. by S. $\frac{1}{4}$ S.	10 $\frac{1}{2}$ miles.
Solomon's Lump or Kedge's Strait Lighthouse, East	14 $\frac{3}{4}$ "
Red Buoy off Southeast part of Kedge's Strait Middle Ground, E SE.	7 $\frac{3}{4}$ "
Red Buoy off Northwest part of Kedge's Strait Middle Ground, E. by N. $\frac{1}{2}$ N.	6 "
Red Buoy off Point Lookout, S. $\frac{1}{2}$ W.	7 $\frac{1}{8}$ "

Cove Point Lighthouse.

Upon Cove Point, about 4 miles North from the entrance to the Pawtuxent River, and on the West side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed Light, varied by White Flashes. Near the Lighthouse, at this time, is a Fog Bell, which in thick weather is struck at intervals of 12 seconds.

Cove Point is quite bold, and large vessels, bound up or down the Bay, may approach it within $\frac{1}{3}$ mile without danger.

Sharp's Island Lighthouse.

Upon the Southern side of Northern entrance to Choptank River, and about $\frac{1}{4}$ mile from the Northern part of Sharp's Island, East side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed Light.

Remarks.

In order to avoid Sharp's Island Flats, large vessels, bound up or down the Bay, should give the Lighthouse a berth of at least 2 miles to the Eastward.

Bearings and Distances from Sharp's Island Lighthouse.

	Distance.
Red Buoy off the Western part of Sharp's Island Flats, SW.	2 $\frac{1}{4}$ miles.
Red Buoy off the Western part Poplar Island Flats, N. by W.	8 "
Thomas' Point Lighthouse, N. $\frac{1}{2}$ W.	16 $\frac{1}{4}$ "
Black Buoy off Holland Point, NW. $\frac{1}{2}$ N.	8 $\frac{1}{8}$ "

Thomas' Point Lighthouse.

Upon the outer end of the Shoal, making off from Thomas' Point, West side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a Revolving Red Light. Attached to this Lighthouse is a Bell, which is struck, in thick weather, 3 strokes in quick succession, at an interval of 30 seconds.

Remarks.

Thomas' Point Lighthouse may be approached close to by vessels bound up or down the Bay on a bearing from **NW.** to **SW.**

Anchorage under Thomas' Point.

With winds from **SW.** to **NE.** by way of North, there is good anchorage in from $2\frac{1}{2}$ to $3\frac{1}{4}$ fathoms water, at the mouth of South River, under Thomas' Point. Vessels of 18 feet draught should anchor in about $3\frac{1}{4}$ fathoms, with the Lighthouse bearing about **F.NE.**, distant $1\frac{1}{4}$ miles; small vessels may go further up and anchor in $2\frac{1}{2}$ fathoms, with the Old Tower on the end of the Point bearing **NE.** by **E.**, distant $1\frac{1}{4}$ miles.

Bearings and Distances from Thomas' Point Lighthouse.

	Distances.
Greenbury Point Lighthouse, N. by W.	$4\frac{1}{4}$ miles.
Sandy Point Lighthouse, N. by E. $\frac{1}{2}$ E.	$7\frac{1}{8}$ "
Red Buoy off West side of Poplar Island Flats,	
South	$8\frac{1}{2}$ "
Black Buoy off Horse Shoe Point Shoal, S.SW.	4 "
Black Buoy off Tally's Point Shoal, N. $\frac{1}{2}$ E.	2 "

Greenbury Point Lighthouse.

Upon Greenbury Point, North side of entrance to Annapolis Harbor, West side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed White Light. Large vessels, bound up or down the Bay, should leave this Lighthouse at least $2\frac{1}{2}$ miles to the Westward.

Sandy Point Lighthouse.

Upon Sandy Point, West side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed Light, varied by White Flashes. At this time a Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 10 seconds.

Remarks.

Shoal water makes off from this Point about $\frac{3}{4}$ mile. Large or heavy draught vessels, at night, bound up or down the Bay, should leave this Lighthouse at least a mile to the Westward. The Eastern part of this Shoal is marked with a Black Buoy; Sandy Point Lighthouse bears from this Buoy **NW.** by **W.** $\frac{1}{2}$ **W.**, distance $\frac{3}{4}$ mile. Small vessels should not pass within this Buoy.

Bearings and Distances from Sandy Point Lighthouse.

	Distance.
Thomas' Point Lighthouse, S. by W. $\frac{1}{2}$ W. . . .	7 $\frac{1}{8}$ miles.
Love Point Lighthouse, E. by N. $\frac{3}{4}$ N. . . .	5 $\frac{1}{2}$ "
Seven Foot Knoll Lighthouse, North . . .	8 $\frac{1}{3}$ "
Black Buoy off Tally's Point, S. by W. $\frac{3}{4}$ W. . . .	5 $\frac{1}{4}$ "
Black Buoy off Hackett's Point, S. by W. $\frac{1}{2}$ W. . .	3 "
Black Buoy off Sandy Point Shoal, SE. by E. $\frac{1}{2}$ E. . .	$\frac{3}{4}$ "

Seven Foot Knoll Lighthouse.

Upon a Shoal spot at the entrance of the Patapasco River, called Seven Foot Knoll, between the Craighill, Main, and Swash Channels is a Lighthouse, which at this date (1882), shows a fixed Red Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 12 seconds.

Remarks.

About 400 yards to the Westward of the Lighthouse on Seven Foot Knoll, there is a channel of 13 feet water at low tide; this is called Swash Channel.

Craighill Channel Lighthouses.**Craighill Channel (Rear) Lighthouse.**

Near the Southwestern part of Bart's Island, in about 2 feet water, is a Lighthouse, which at this date (1882), shows a fixed White Light.

Craighill Channel (Front) Lighthouse.

In Chesapeake Bay, near the mouth of the Patapasco River, in about 15 feet water at low tide, is a Lighthouse, which at this date (1882), shows two fixed White Lights; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at alternate intervals of 3 seconds and 30 seconds.

Remarks.

Craighill Channel Lighthouses are $2\frac{1}{4}$ miles apart; when a vessel is in this channel, going up or down, these two Lights in range bearing nearly **N. $\frac{1}{4}$ E.**, will show one directly over the other.

Fort Carroll Lighthouse.

Upon Fort Carroll, Northern side of the channel leading up the Patapasco River to Baltimore, is a Lighthouse, which at this date (1882), shows a fixed White Light; attached to this Lighthouse is a Bell, which in thick weather is struck at intervals of 10 seconds.

Hawkins' Point Lighthouse.

Upon the Shoal, near Hawkins' Point, South side of Main Channel is a Lighthouse, which at this date (1882), shows a fixed White Light.

Leading Point Lighthouse.

Upon Leading Point, South side of Main Channel, is a Lighthouse, which at this date (1882), shows a fixed White Light.

Remarks.

The Lights on Hawkins' and Leading Points are intended as Range Lights for the Brewerton Channel; when a vessel is in this channel, going up or down, these Lights bearing nearly **NW.** by **W. $\frac{3}{4}$ W.** will be seen in line one above the other.

Lazaretto Point Lighthouse.

Upon the North side of Baltimore Harbor, opposite Fort McHenry, is a Lighthouse, which at this date (1882), shows a fixed Red Light; at this time a Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 10 seconds.

Sailing Directions for approaching and entering Chesapeake Bay in Daytime, with favorable winds and fair weather.

Vessels from the Northeastward, bound into the Chesapeake Bay, may leave the Light-ship or Winter Quarter Shoal close to on the Starboard hand, and make good the course **SW.** by **S.** 65 miles, which will bring them up with the Whistling Buoy off Cape Charles; on this last course Chincoteague and Hog Island Shoals

will be left well to the Northwestward; heavy draught vessels should, however, keep a sharp lookout for Smith's Island Shoal (before described); when the Whistling Buoy (which bears **SE.** $6\frac{1}{2}$ miles from Cape Charles Lighthouse) is made, leave it close to on either hand, and make good the course **W. by S. $\frac{1}{2}$ S.**, carrying not less than 4 fathoms water, and leaving the Red Buoy off the Southeast part of Horse Shoe Shoal well to the Northward; continue the course **W. by S. $\frac{1}{2}$ S.** until Cape Henry Lighthouse bears South; you are then in the Main Channel which leads up the Bay.

From the Southeastward, when Cape Henry Lighthouse bears **NW.**, run for it on this course, and haul round the Cape at a distance of about a mile from it, as there are no dangers lying near it, except the Shoal Water which extends about $\frac{1}{2}$ mile from shore.

At Night, with favorable winds and fair weather.

Vessels at night, from the Northeastward, may leave the Lightship off Winter Quarter Shoal close to on the Starboard hand, and make good the course **SW. by S.**, leaving Chincoteague Shoals, Hog Island Shoals, and Cape Charles Shoals well to the Northwestward, and carrying from 8 to 12 fathoms water; when Cape Henry Light is made, bring it to bear **SW. by W. $\frac{1}{2}$ W.**, and run for it on this course until the water deepens 12 fathoms; Cape Henry Light will then be distant about $2\frac{3}{4}$ miles; you may then haul up **NW. by W. $\frac{1}{2}$ W.**, which course will lead into the Main Channel.

At night, in order to avoid Shark Shoal, and Smith's Island Shoal (before described), large or heavy draught vessels, when past Hog Island Light, should not approach the coast in less than 9 fathoms water, until Cape Henry Light bears **SW. by W. $\frac{1}{2}$ W.**, when the directions are as before given; at night, large or heavy draught vessels from the Southeastward should not approach Cape Henry in less than 6 fathoms water.

In thick weather, with favorable winds.

Vessels of not more than 18 feet draught, from the Northeastward, when past Hog Island Lighthouse, may track the shore to the Southwestward, keeping in not less than 6 fathoms water, until up with the Whistling Buoy off Cape Charles; this Buoy, which lies in 6 fathoms water, bears **SE.** from Cape Charles

Lighthouse, distance $6\frac{1}{2}$ miles; when this Buoy is made, leave it close to on either hand, and make good the course **SW.** by **W.** for Cape Henry Lighthouse, distant 13 miles; when the water deepens to 12 fathoms, Cape Henry Lighthouse will be distant about $2\frac{3}{4}$ miles, and you may listen for the Fog Signal at the Lighthouse; when this signal is heard, steer more Westerly, and enter the Main Channel.

In thick weather, vessels from the Southeastward may track the shore to the Northward, keeping in not less than 6 fathoms water, until the Fog Signal at Cape Henry Lighthouse is heard.

Beating in to Chesapeake Bay.

By inspecting Eldridge's Chart of Chesapeake Bay, on a large scale, a better knowledge can be obtained of the depth of water, and also the dangers, than by any written directions.

Setting of the Current into Chesapeake Bay.

It is high water at Cape Henry 3h. 36m. before it is at Boston. In moderate weather, in the channel to the Northward of the Cape, the current commences to run out a little after high water on the shore, and commences to run in a short time after low water.

Sailing Directions from Cape Henry Lighthouse to Baltimore in Daytime, with favorable winds and fair weather.

From Cape Henry Lighthouse to Baltimore, by Ship Channel, the distance is about 154 miles; vessels, therefore, bound to this last-mentioned place, will follow the directions before given for approaching and entering the Chesapeake in daytime, with favorable winds and fair weather, until Cape Henry Lighthouse bears **SE.** by **S.** $\frac{1}{2}$ **S.**; then make good the course **NW.** by **N.** $\frac{1}{2}$ **N.** until Back River Lighthouse bears **WSW.**, and the Red Buoy off Northwest part of Middle Ground, East; then, in about $6\frac{1}{2}$ fathoms water, make good the course **N.** $\frac{1}{8}$ **E.** 45 miles, which will bring them up with Smith's Point Lighthouse, South side of entrance to the Potomac River; on this last course, York Spit Lighthouse, Black Buoy off Eastern part of New Point Shoal, Lighthouse on Wolf Trap Shoal, and Lighthouse on Rappahannock Spit, North side of entrance to Rappahannock River, will all be left well to the Westward.

Leave Smith's Point Lighthouse about 1 mile to the Westward, and make good the course **N. by W. $\frac{1}{4}$ W.** 52 miles, which will bring them up with the Black Buoy off Holland Point; on this last course, Point Lookout Lighthouse, Black Buoy off Point No Point, and Cove Point Lighthouse will all be left well to the Westward; the Red Buoys off Kedge's Strait Middle Ground, and the Red Buoy off the Western part of Sharp's Island Flats, well to the Eastward; leave the Black Buoy off Holland Point (which bears **NW. $\frac{1}{4}$ N.** 8 $\frac{1}{2}$ miles from Sharp's Island Lighthouse), about 1 mile to the Westward, and make good the course **N. by E. $\frac{3}{4}$ E.**, leaving the Black Buoy off Horse Shoe Point, the Lighthouse off Thomas' Point Shoal, the Black Buoy off Hackett's Point, and the Black Buoy off Sandy Point Lighthouse all well to the Westward; the Red Buoy off Poplar Island, and the Red Buoy off Kent Point, well to the Eastward.

When abreast Sandy Point Lighthouse. If the wind is favorable, it is advisable to pass through the Craighill Channel; this Channel, which leads into the Brewerton Channel, is about 4 $\frac{1}{4}$ miles in length, and has been deepened to such an extent that, at this date (1882), there is not less than 20 feet water in it at low tide; the width is such that sailing vessels can on'y pass through it with favorable winds; at this time this Channel is marked with 11 Red Buoys, which lie in line nearly North and South, and are all left close to on the Starboard hand by vessels entering the Patapsco River bound to Baltimore.

In order to mark this Channel at night, 2 Lighthouses have been built, which show fixed White Lights; these Lights, when in range, lead up and down this Channel, and bear about **N. $\frac{1}{4}$ E.**; the front or low Lighthouse is painted Brown, and is surmounted by the keeper's dwelling, which is painted White and Lantern Red; the rear or high Lighthouse is an open frame Pyramid of four sides, the lower portion being painted Straw Color and the upper part Brown; these Lighthouses should both be distinctly visible at the South entrance of the Channel in ordinary states of the atmosphere.

Brewerton Channel.

This Channel, which leads up the Patapsco River to Baltimore, is about 5 $\frac{1}{4}$ miles in length, and has been deepened to such an extent that it is now available for large vessels at low tide; at this date (1882), this Channel is marked with 11 Red Buoys, which lie

in line nearly **NW.** by **W.** $\frac{3}{4}$ **W.** and **SE.** by **E.** $\frac{3}{4}$ **E.**, and are all left close to on the Starboard hand by vessels bound to Baltimore.

In order to mark this Channel at night, 2 Lighthouses have been built, one on Hawkins' Point, the other on Leading Point; these Lighthouses are about 1 mile apart, and at this time show fixed White Lights, and when in range lead up and down this Channel, on a bearing of **NW.** by **W.** $\frac{3}{4}$ **W.**

By the Craighill Channel.

From Sandy Point Lighthouse to Baltimore.

Leave the Black Buoy off Sandy Point Lighthouse about $\frac{1}{2}$ mile to the Westward, and make good the course **N.** $\frac{3}{4}$ **W.**, keeping a sharp lookout for the Craighill Channel Lighthouses; as soon as these are made bring them in range, and run for them in range, bearing about **N.** $\frac{1}{4}$ **E.**, leaving the Red Buoys close to on the Starboard hand; when the Lighthouses on Hawkins' and Leading Points are in range, bearing about **NW.** by **W.** $\frac{3}{4}$ **W.**, and the Lighthouse on Seven Foot Knoll bears **SW.** by **W.**, then run in, leaving the Red Buoys close to on the Starboard hand; when Fort Carroll Lighthouse bears **NW.** by **N.**, haul up about **NW.**, passing about midway between the Black Buoy off Hawkins' Point and the Red Buoy off Fort Carroll Lighthouse; when past this last-named Buoy, steer **N.** by **W.** $\frac{1}{2}$ **W.** about 1 mile, or until the Lighthouse on Lazaretto Point bears **NW.** $\frac{1}{2}$ **N.**, then run about **NW.**, keeping the last-named Lighthouse on the Starboard bow, and pass into the Harbor, leaving the Red Buoys on the Starboard, and the Black on the Port hand.

By Ship Channel.

When abreast the Black Buoy off Sandy Point Lighthouse steer about **N.** by **E.** $\frac{3}{4}$ **E.**, leaving the Black Buoys off Belvidere Shoal and Nine Foot Knoll well to the Westward; when the Lighthouse on Seven Foot Knoll bears **W.** $\frac{3}{4}$ **N.** haul up **NW.** by **W.** $\frac{3}{4}$ **W.**, leaving the Red Buoys close to on the Starboard hand, and follow the directions before given.

Swash Channel.

Vessels of not more than 10 or 11 feet draught may follow the directions before given until Seven Foot Knoll Lighthouse bears **NW.**, then run for it on this course, and haul round it at a dis-

tance of 400 yards, leaving it on the Starboard hand, and a Black Buoy which lies about **NW.** $\frac{1}{2}$ mile from this Lighthouse on the Port hand; when past this Buoy follow the directions before given.

Sailing Directions for the Craighill and Brewerton Channels at Night-time, with favorable winds and fair weather.

Follow the directions before given until abreast Sandy Point Light, which leave about 1 mile to the Westward, and when abreast this Light steer about **N. $\frac{1}{2}$ W.**, keeping a sharp lookout for the Craighill Channel Lights (before described); as soon as these are made bring them in range, or so that one Light shows directly above the other, and run for them in range, bearing **N. $\frac{1}{4}$ E.**; continue the course until the Brewerton Channel Lights are in range, or show one directly above the other, then run for these last-named Lights, course about **NW.** by **W. $\frac{3}{4}$ W.**, until Fort Carroll Light (which is on the North side of the River) bears **NW.** by **N.**, then steer more Northerly, passing about midway between the last-named Light and the one on Hawkins' Point; when on a line with these Lights, make good the course **N.** by **W.** until the fixed Red Light on Lazaretto Point bears **NW. $\frac{1}{2}$ N.**; then run for it, and when about midway between Fort Carroll and Lazaretto Point Light, haul over and anchor in about 4 fathoms water on the North side of the river, and wait for daylight before entering the harbor.

High Water.

It is high water in Baltimore Harbor, in moderate weather, about 7h. 10m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

Remarks.

To enter Chesapeake Bay by the North Channel.

This Channel, which leads into the Chesapeake, lies to the Northward of the Middle Ground, Nautilus Shoal, and to the Eastward of the Inner Middle Ground; at this date (1882), there are no Buoys to mark the dangers, and the current of Ebb sets strong across the Shoals in many places; it is, therefore, advisable for strangers not to attempt this Channel, unless they have a favorable and commanding breeze; this Channel to the Northward of the Middle Ground, however, is sometimes of great importance,

especially to light vessels bound into the Chesapeake, when it is impossible to get to the Southward of the Middle Ground.

Sailing Directions for entering the Chesapeake Bay by the North Channel in Daytime, with favorable winds and fair weather.

Vessels of not more than 10 or 11 feet draught, may bring Cape Charles Lighthouse to bear North, and run for it on this course until the water shoals to 3 fathoms; the Lighthouse will then be distant $3\frac{1}{4}$ miles; then make good the course West, carrying $2\frac{1}{2}$ fathoms water across the Flat Ground, and leaving the Nautilus Shoal, which has 9 feet water upon it, well on the Port hand; as you sail in you will see to the Northwestward 2 Small Islands, the first is called the Isaacs, the next or Northwestern, Fisherman's Island; continue the course West, carrying from 4 to 6 fathoms water, until the Northwest end of Fisherman's Island bears **N. $\frac{1}{2}$ E.**, then steer **N. $\frac{3}{4}$ W.**, leaving the Inner Middle Ground, which is nearly dry at low tide, on the Port, and Fisherman's Island and Cape Charles, the former not more than $\frac{1}{2}$ mile on the Starboard hand; continue the course **N. $\frac{3}{4}$ W.**, until about 4 miles past the last-named Island, or you are to the Northward of the Inner Middle Ground; then steer about **NW.**, and proceed up the Bay as before directed.

Directions to pass to the Southward of the Inner Middle Ground.

Vessels of not more than 10 feet draught, may bring Cape Charles Lighthouse to bear North, and run for it on this course until the water shoals to 3 fathoms; then make good the course West, carrying about $2\frac{1}{2}$ fathoms across the Flat Ground, and leaving the Nautilus Shoal, which has 9 feet water upon it, well on the Port, and the Isaacs, Fisherman's Island, and Inner Middle Ground well on the Starboard hand; continue the course West, crossing the Outer Middle Ground in from 14 to 18 feet water; when past this shoal, run up the Bay as before directed.

Anchorage to the Northward of Cape Charles.

With winds from **N.NE.** to **SE.** by way of East, vessels may find good anchorage in about 4 fathoms water, between the Inner Middle Ground and shore about 2 miles to the Northward of Cape Charles

Sailing Directions for Cape Charles Anchorage in Daytime, with favorable winds and fair weather.

Vessels of not more than 10 or 11 feet draught, may bring Cape Charles Lighthouse to bear North, and run for it on this course, until the water shoals to 3 fathoms; the Lighthouse will then be distant $3\frac{1}{4}$ miles; then make good the course West, carrying $2\frac{1}{2}$ fathoms water across the Flat Ground, and leaving the Nautilus Shoal, which has 9 feet water upon it, well on the Port hand; as you sail in you will see to the Northwestward 2 Small Islands, the first is called the Isaacs, the next or Northwestern, Fisherman's Island; continue the course West, carrying from 4 to 6 fathoms water, until the Northwest end of Fisherman's Island bears **N. $\frac{1}{2}$ E.**, then steer **N. $\frac{3}{4}$ W.**, leaving the Inner Middle Ground, which in some places is nearly dry at low tide, on the Port, and Fisherman's Island and Cape Charles (the former not more than $\frac{1}{2}$ mile) on the Starboard hand; continue the course **N. $\frac{3}{4}$ W.**, until about 2 miles past Fisherman's Island, then anchor from three-fourths to 1 mile from shore in about 4 fathoms water.

Vessels coming down the Bay, may bring York Spit Lighthouse to bear **W. by N.**, on which bearing keep it and steer **E. by S.**, leaving the Inner Middle Ground well to the Southward; continue the course **E. by S.**, until about $1\frac{1}{2}$ miles from shore, then haul to the Southward, and anchor in about 4 fathoms water; this anchorage is about $1\frac{1}{2}$ miles to the Northward of Cape Charles.

MAGOTHY BAY.

The entrance to this Bay, which is nearly 2 miles wide, lies between Fisherman's Island and the Isaacs on the Southwest, and Smith's Island on the Northeast.

Remarks.

At this date (1882), about 6 feet water at low tide can be carried into this Bay; the channel, which leads in close to the Southwest end of Smith's Island, is narrow and at this time is not marked with Buoys; there are extensive Flats both at the entrance and within this Bay, and it may properly be called a Shoal Water place.

Sailing Directions for Magothy Bay in Daytime, with favorable winds and fair weather.

Vessels of not more than 6 or 7 feet draught, from the Northeastward, may at about $\frac{3}{4}$ flood leave Cape Charles Lighthouse about

$\frac{3}{4}$ mile to the Northwestward, and follow the shore to the Southwestward, keeping in not less than 2 fathoms water; when the Southwest point of Smith's Island bears **NW.** by **W.**, run for it and haul round it at a distance of 175 yards, and anchor in the narrow channel in from 3 to 5 fathoms water, the end of the point bearing **S.** by **W.** about $\frac{1}{2}$ mile.

From Chesapeake Bay or the Southeastward, bring Cape Charles Lighthouse to bear **N.** by **E.**, and run for it until the Southwest point of Smith's Island bears **NW.** by **W.**, then follow the directions before given.

The Channel, leading into Magothy Bay, is liable to sudden changes, both in depth and location; it is, therefore, advisable for strangers to proceed with caution.

High Water.

It is high water at the entrance of Magothy Bay 3h. 3m. before it is at Boston; common tides rise about 3 feet.

LYNN HAVEN ROADS.

These Roads lie nearly West, 3 miles from Cape Henry Lighthouse, and East-Southerly 12 miles from Old Point Comfort Lighthouse.

Remarks.

Lynn Haven Roads afford shelter with winds from **SE.** to **W.** by **S.** by way of South, and there are no dangers in entering them night or day; in winter it is advisable to have a strict watch, that the place may be left on the first indication of a Northerly wind.

Sailing Directions for Lynn Haven Roads.

Vessels from Seaward, bound to Lynn Haven Roads, may follow the directions before given for approaching and entering Chesapeake Bay, until abreast Cape Henry Lighthouse; then haul in and anchor about $1\frac{1}{2}$ miles from shore in from $4\frac{1}{2}$ to 5 fathoms water good holding ground; Cape Henry Lighthouse bears from this anchorage **E.** by **S.**, distance 3 miles; small vessels may go farther in and anchor with the Lighthouse bearing East in about 4 fathoms water.

Beating in to Lynn Haven Roads.

In beating in to these Roads, when to the Southward of the Tail of the Horse Shoe (before described), there are no dangers except

Crimp's Bank; this danger, which has as little as 16 feet water upon it, lies $1\frac{1}{4}$ miles from shore, and well to the Westward of the Roads; Thimble Shoal Light bears from the centre of this Bank **NW.** by **N.**, distance $4\frac{3}{4}$ miles; the above directions will answer for night or day.

High Water.

It is high water in Lynn Haven Roads 3h. 36m. before it is at Boston; common tides rise about 3 feet.

HAMPTON ROADS.

These Roads lie West-Northerly about $16\frac{1}{2}$ miles from Cape Henry Lighthouse, and about 3 miles Southwesterly from Old Point Comfort Lighthouse.

Thimble Shoal Lighthouse.

Upon a small Shoal, on the South side of Horse Shoe Shoal, and North side of entrance to Hampton Roads, is Thimble Shoal Lighthouse, which at this date (1882), shows a fixed Light varied by Red and White Flashes; at this time there are 2 Bells attached to this Lighthouse, which in thick weather are both struck at the same time, at intervals of 5 seconds; one Bell is on the North, and the other on the South side of this Lighthouse.

Bearings and Distances from Thimble Shoal Lighthouse.

	Distance.
Cape Henry Lighthouse, SE. by E. $\frac{1}{2}$ E.	$12\frac{1}{4}$ miles.
Back River Lighthouse, N. by W. $\frac{1}{2}$ W.	$4\frac{1}{2}$ "
York Spit Lighthouse, North	$11\frac{7}{8}$ "
Old Point Comfort Lighthouse, W. by S.	$3\frac{1}{4}$ "
Entrance Buoy to the Northeast of Cape Henry Lighthouse, E. by S. $\frac{1}{2}$ S.	$13\frac{1}{2}$ "
Black Buoy off the Tail of the Horse Shoe, E. by S. $\frac{1}{4}$ S.	$6\frac{3}{8}$ "
Black Buoy off Eastern part Horse Shoe, E. $\frac{1}{2}$ S.	$3\frac{1}{4}$ "
Black Buoy off North side Willoughby's Bank, SW.	1 "
Rip Raps or Fort Wool, SW. by W. $\frac{3}{4}$ W.	$3\frac{1}{3}$ "

Vessels of not more than 13 feet draught, from Chesapeake Bay bound to Hampton Roads or Norfolk, may, when Thimble Shoal Lighthouse bears **SW.** by **W.**, run for it, leaving it about $\frac{1}{2}$ mile

on the Starboard hand, and crossing the Horse Shoe Shoal in about 16 feet water.

Old Point Comfort Lighthouse.

In front of the Fort, upon Old Point Comfort, North side of entrance to Hampton Roads, is a Lighthouse, which at this date (1882), shows a fixed White Light. Near this Lighthouse is a Bell, which, at this time, is struck, in thick weather, at intervals of 10 seconds.

Bearings and Distances from Old Point Comfort Lighthouse.

	Distance.
Thimble Shoal Lighthouse, E. by N.	3 $\frac{1}{4}$ miles.
Black Buoy off North side of Willoughby's Bank,	
East	2 $\frac{1}{2}$ "
Red Buoy off Southwest end of Hampton Bar, W.SW.	2 $\frac{1}{3}$ "
Horizontal Striped Buoy off Eastern part of Newport	
News Middle Ground, SW. $\frac{1}{2}$ W.	4 $\frac{5}{8}$ "

Newport News Middle Ground.

This Shoal, which is very narrow, lies nearly in the middle of the Roads and extends about 1 mile East and West. At this date (1882), it is marked on each end with a Horizontal Striped Buoy; the least depth of water found upon it at low tide is about 14 feet, which is near its Western end. Old Point Comfort Lighthouse bears from the Buoy on the Eastern part of this Shoal **NE.** $\frac{1}{2}$ **E.** 4 $\frac{5}{8}$ miles, Northern part Sewall's Point **E.** $\frac{1}{4}$ **N.** 2 $\frac{5}{8}$ miles, Lighthouse off the entrance to Nansemond River **SW.** by **W.** $\frac{1}{2}$ **W.** 3 $\frac{1}{2}$ miles, Newport News Point **NW.** by **W.** $\frac{1}{2}$ **W.** 2 miles.

Remarks.

Hampton Roads affords anchorage in from 3 $\frac{1}{4}$ to 10 fathoms water, and is sheltered from all winds, except those from the Northeast; at such times small vessels may find good shelter under Sewall's Point; large vessels may pass a short distance to the Northward or Southward of the Middle Ground, and run up and anchor about 1 mile to the Northwestward of Newport News Point. The Shore to the Westward of this Point is bold, and heavy draught vessels may approach it within $\frac{1}{3}$ mile without danger.

Sailing Directions for Hampton Roads in Daytime, with favorable winds and fair weather.

Vessels from seaward, bound to Hampton Roads, may follow the directions before given for approaching and entering Chesapeake Bay until up with the entrance Buoy; Cape Henry Lighthouse bears from it **SW.** $\frac{1}{2}$ **W.**, distance $2\frac{3}{8}$ miles. When this Buoy is made, leave it about $\frac{1}{4}$ mile on the Starboard hand and make good the course **W.** by **N.** $\frac{1}{2}$ **N.**, leaving Cape Henry well on the Port and the Black Buoy off the Tail of the Horse Shoe well on the Starboard hand. As you sail in you will see the Lighthouse on Thimble Shoal (before described); bring this Lighthouse to bear **W.NW.** and run for it on this course, leaving it about $\frac{1}{3}$ mile on the Starboard hand, and run in with Old Point Comfort Lighthouse on the Starboard bow, leaving the Black Buoy off the Northwest part of Willoughby's Bank well on the Port hand and passing about midway between Old Point Comfort Lighthouse and Fort Wool or the Rip Raps; when Old Point Comfort Lighthouse bears **NE.** make good the course **SW.** and anchor to the Northeast of the Buoy on the Eastern part of Middle Ground in from 4 to 9 fathoms water. With indications of Northeast gales, small or light draught vessels may bring Old Point Comfort Lighthouse to bear **NE.** $\frac{1}{2}$ **N.** and make good the course **SW.** $\frac{1}{2}$ **S.**, keeping a sharp lookout for the Black Buoy which lies about 1 mile to the Northward of Sewall's Point; when this Buoy is made, leave it close to on the Port hand and run to the Southward, and anchor close in under the last-named Point, in from $2\frac{1}{2}$ to 3 fathoms water, out of the way of steamers bound to Norfolk.

Heavy draught vessels, coming down the Chesapeake Bay, should follow the Ship Channel until Thimble Shoal Lighthouse bears **W.** by **N.** $\frac{1}{4}$ **N.**, then run for it on this course, leaving the Black Buoy off the Tail of the Horse Shoe close to on the Starboard hand; when abreast this last-named Buoy, steer about **W.** $\frac{3}{4}$ **N.** and follow the directions before given.

Vessels of not more than 15 feet draught, coming down the Chesapeake Bay, may, when Thimble Shoal Lighthouse bears **W.** by **S.** $\frac{1}{2}$ **S.**, run for it on this course, crossing the Eastern part of the Horse Shoe in not less than 17 feet water; leave this last-named Lighthouse about $\frac{1}{2}$ mile on the Starboard hand, and follow the directions before given.

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Sailing Directions for Hampton Roads at Night-time, with favorable winds and fair weather.

Vessels from seaward may follow the directions before given for approaching and entering the Chesapeake, at night-time, until Cape Henry Light bears South, distance about $1\frac{3}{4}$ miles; then, in from 10 to 12 fathoms water, make good the course **W. by N. $\frac{1}{2}$ N.** When well past Cape Henry Light, bring Thimble Shoal Light to bear **W. by N. $\frac{1}{2}$ N.** and run for it on this course until about 1 mile from it; then gradually haul to the Westward, leaving it not more than $\frac{1}{3}$ mile on the Starboard hand. When past this Light, steer for Old Point Comfort Light, bearing **W. $\frac{1}{2}$ S.**, and leave it not more than $\frac{1}{4}$ mile on the Starboard hand; bring this last-named Light to bear **NE.** and steer **SW.** until the water shoals to 6 or 7 fathoms, then anchor in the Roads. Craney Island Light bears about **S. by E.** from this Anchorage.

Beating in to Hampton Roads.

In beating in to Hampton Roads, at night or day, when well past Cape Henry Lighthouse, bring Thimble Shoal Light to bear from **W. by N. to NW. by W.** until about 2 miles from it, then use the Lead and stand to the Northward until you strike the South side of the Horse Shoe in 4 fathoms water, and to the Southward until you strike 4 fathoms off the North side of Willoughby's Bank. When abreast Thimble Shoal Light, keep Old Point Comfort Light bearing from West to **W. by S.**; when past the last-named Light, keep it bearing from **NE. $\frac{1}{2}$ N. to NE. by E.** until up with the Anchorage in the Roads.

High Water.

It is high water in Hampton Roads 2h. 45m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet. The current, in moderate weather, commences to set out of these Roads a short time after high water, and commences to run in a short time after low water.

NORFOLK.

This place, which is situated on the Eastern side of the Elizabeth River, lies about South $9\frac{3}{4}$ miles from Old Point Comfort Lighthouse, and Southeasterly about 8 miles from Hampton Roads.

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Craney Island Lighthouse.

On the West side of the channel, near the entrance to the mouth of the Elizabeth River, is a Lighthouse, which at this date (1882), shows a fixed White Light. At this time a Fog Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 12 seconds. Vessels bound to Norfolk may leave this Lighthouse about 175 yards on the Starboard hand.

Lambert's Point Lighthouse.

Upon the end of Shoal making off from Lambert's Point, East side of channel in Elizabeth River, is a Lighthouse, which at this date (1882), shows a fixed Red Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 10 seconds; vessels bound to Norfolk may leave this Lighthouse about 260 yards on the Port hand.

Naval Hospital Point Lighthouse.

Upon Naval Hospital Point, West side of Elizabeth River, and opposite the city of Norfolk, is a Lighthouse, which at this date (1882), shows a fixed Red Light; vessels bound up the River can pass close to this Lighthouse.

Remarks.

The Channel leading from Hampton Roads to Norfolk is narrow, but the Flats are well marked with Buoys; at low tide about 20 feet water can be taken up to Norfolk.

Sailing Directions from Hampton Roads to Norfolk in Daytime, with favorable winds and fair weather.

Vessels bound to Norfolk may follow the directions before given for Hampton Roads until past Old Point Comfort, then bring the Lighthouse on this Point to bear **NE. $\frac{1}{2}$ N.**, on which bearing keep it and steer **SW. $\frac{1}{2}$ S.**, leaving the Black Buoy to the Northward of Sewall's Point well on to the Port hand; when past this Buoy, keep a sharp lookout for the Red Buoy off the Northeast end of Craney Island Flats; when this is made leave it close to on the Starboard hand, and steer for Craney Island Lighthouse (bearing about **S. $\frac{1}{4}$ W.**), until up with the first Black Buoy, which is left on the Port hand; when past this last Buoy run in,

leaving the Black Buoys on the Port, and the Red Buoys on the Starboard hand, until up with Craney Island Lighthouse, which may be left about 175 yards on the Starboard hand; when past this Lighthouse, which stands at the entrance of the River, run up, leaving the next Black Buoy and Lambert's Point Lighthouse about 175 yards on the Port hand; when past this last-named Lighthouse, keep the Eastern side of the River best aboard, leaving the Buoys as they are set to mark the Channel until abreast Fort Norfolk, which is on the Eastern side, and may be left close to on the Port; when past this Fort, steer for the Lighthouse on Naval Hospital Point, leaving it close to on the Starboard hand, and haul over for the town.

Sailing Directions for Night-time.

At about $\frac{1}{2}$ flood, vessels of not more than 10 feet draught may follow the directions before given for Hampton Roads, until past Old Point Comfort Light; then bring Craney Island Light to bear South, and run for it on this course, leaving it about 175 yards on the Starboard hand; when past this Light, run for Lambert's Point Light, bearing about **S. $\frac{3}{4}$ E.**; leave this last-named Light about 175 yards on the Port, and run up with Naval Hospital Point Light a little on the Starboard bow, and carrying from 4 to 6 fathoms water; when past this last-named Light, which may be left close to on the Starboard hand, anchor in from 5 to 7 fathoms water.

High Water.

It is high water at Norfolk 2h. 26m. before it is at Boston; common tides rise about $2\frac{3}{4}$ feet.

NANSEMOND RIVER.

The entrance to this River bears **SW.** by **W.** from Old Point Comfort Lighthouse, distance 9 miles.

Nansemond River Lighthouse.

Upon the Flats, about $\frac{1}{2}$ mile North from Pig Point, and East side of the channel leading into Nansemond River, is a Lighthouse, which at this date (1882), shows a fixed Red Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 7 seconds.

Sailing Directions for Nansemond River in Daytime, with favorable winds and fair weather.

Follow the directions before given for Hampton Roads, until past Old Point Comfort; then bring the Lighthouse on this Point to bear **NE.**, and make good the course **SW.**, leaving the Buoy painted in Red and Black Horizontal Stripes off the East end of Middle Ground on the Starboard hand; when past this Buoy, bring the Lighthouse (before described) at the entrance of Nansemond River to bear **W.SW.**, and run for it on this course, keeping a sharp lookout for the entrance Buoy, which lies off the Flats in 3 fathoms water, and is painted in Black and White Perpendicular Stripes, and bears about **E.NE.** 2 miles from the last-mentioned Lighthouse; when the entrance Buoy is made, leave it close to on either hand, and steer about **W.** by **S.** $1\frac{1}{4}$ miles to the next Buoy painted in White and Black Perpendicular Stripes, carrying from $2\frac{3}{4}$ to $3\frac{1}{4}$ fathoms water; leave this last Buoy close to on either hand, and run in, leaving the Black Buoys and Lighthouse, the latter about 400 yards on the Port, and the Red Buoys on the Starboard hand; if bound up the River, it is advisable for strangers to take pilots, as the channel is very narrow in many places.

High Water.

It is high water in Nansemond River 2h. 15m. before it is at Boston; common tides rise about $2\frac{3}{4}$ feet.

HAMPTON CREEK.

The entrance to this Creek bears **NW.** by **W.** $\frac{1}{2}$ **W.** from Old Point Comfort Lighthouse, distance about $1\frac{3}{4}$ miles.

Remarks.

From the entrance of this Creek to the village of Hampton, the distance is about $\frac{1}{2}$ mile; about 6 feet water can be carried up abreast this village at low tide.

Sailing Directions for Hampton Creek in Daytime, with favorable winds and fair weather.

Small vessels may follow the directions before given for Hampton Roads, until past Old Point Comfort; then at about $\frac{3}{4}$ flood

bring the Lighthouse on this Point to bear **NE.** by **E.** $\frac{1}{2}$ **E.**, and run **SW.** by **W.** $\frac{1}{2}$ **W.**, keeping a sharp lookout for the Red Buoy off the Western part of Hampton Bar; this Buoy bears **SW.** by **W.** $\frac{3}{4}$ **W.** from Old Point Comfort Lighthouse, distance about $2\frac{1}{2}$ miles; when the Buoy is made, haul round it, leaving it a short distance on the Starboard hand, and steer **N.** by **E.** about $\frac{1}{2}$ mile, then haul up **NE.**, until the mouth of the Creek is fairly open, when you may run in, leaving the Red Buoy near the entrance on the Starboard hand, and keep in the middle to the village.

Remarks.

Anchorage in Hampton Cove.

During Northeast gales, vessels of not more than 7 or 8 feet draught, may find good shelter in Hampton Cove, which lies a short distance to the Northwest of Old Point Comfort Lighthouse, and between Hampton Bar and the North shore.

Sailing Directions for Hampton Cove in Daytime.

Follow the directions before given for Hampton Creek, until up with the Red Buoy off the Western part of Hampton Bar; then haul round this Buoy, leaving it a short distance on the Starboard hand, and steer **N.** by **E.** about $\frac{3}{4}$ mile; then haul up **E.NE.**, passing to the Northward of Hampton Bar, and carrying from 9 to 12 feet water, and anchor in about 9 feet water at low tide; Old Point Comfort Lighthouse bears from this anchorage **E.** by **S.** $\frac{1}{2}$ **S.**, distance about 1 mile.

High Water.

It is high water at the mouth of Hampton Creek 2h. 39m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

JAMES RIVER.

From Newport News Point, Northern side of entrance to the James River, to City Point, the distance is about 55 miles; from City Point to the city of Richmond (by way of Dutch Gap Canal), the distance is about 23 miles, making about 78 miles from Newport News to Richmond.

Remarks.

At this date (1882), about 14 feet water can be carried, at low tide, from Newport News, the entrance of the River, to City Point; above this it is not prudent to go without steam or a pilot. In running this River, strangers must be guided entirely by the Buoys.

White Shoal Lighthouse.

About 6 miles Northwesterly from Newport News Point, in the middle of the River, upon the Eastern part of White Shoal, in 4 feet water, is a Lighthouse, which at this date (1882), shows a fixed White Light. Attached to this Lighthouse is a Bell, which, in thick weather, is struck at intervals of 10 seconds. Vessels bound up the River may leave this Lighthouse about $\frac{1}{3}$ mile on the Starboard hand.

Point of Shoals Lighthouse.

In the River, about $6\frac{3}{4}$ miles West-Northerly from White Shoal Lighthouse, on the Eastern side of the channel, is a Lighthouse, which at this date (1882), shows a fixed White Light. Attached to this Lighthouse is a Bell, which in thick weather is struck at alternate intervals of 5 seconds and 20 seconds. Vessels bound up the River may leave this Lighthouse close to on the Starboard hand.

Deep Water Shoals Lighthouse.

In the River, about 5 miles above Point of Shoals Lighthouse, on the Eastern side of the channel, is a Lighthouse, which at this date (1882), shows a fixed White Light. Attached to this Lighthouse is a Bell, which in thick weather is struck at intervals of 15 seconds. Vessels bound up the River may leave this Lighthouse close to on the Starboard hand.

Jordan's Point Lighthouse.

Upon the South side of the River, about 52 miles from Newport News Point and $2\frac{3}{4}$ miles below City Point, is a Lighthouse, which at this date (1882), shows a fixed White Light. At this place a Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 10 seconds.

Dutch Gap Canal Lights.

About 13 miles above City Point, at each end of the Canal, is a fixed Red Light.

JAMES RIVER.

Sailing Directions from Old Point Comfort Lighthouse to City Point in Daytime, with favorable winds and fair weather.

Vessels bound up the James River may follow the directions before given for Hampton Roads, leaving Old Point Comfort Lighthouse about $\frac{1}{4}$ mile on the Starboard hand; when past this Lighthouse make good the course **SW.** by **W.** until Newport News Point, which lies on the Northern side of entrance to the River, bears **NW.**; then run in, leaving this last-named Point about $\frac{1}{2}$ mile to the Northward. When past Newport News Point you will see White Shoal Lighthouse, which bring to bear **NW.** by **W.**, and run for it on this course, leaving the Black Buoy off Nase-way Shoal on the Port hand; when abreast White Shoal Lighthouse, which may be left $\frac{1}{4}$ mile on the Starboard hand, steer about **NW.** by **W.**, leaving the Black Buoy off Day's Point a short distance on the Port hand; when past this last Buoy, steer more Westerly, leaving the Beacon and Black Buoy both on the Port hand; when past the Beacon and Buoy, steer about **W.** by **N.** $\frac{1}{2}$ **N.** for the Red Buoy off Brown's Shoal. This last-named Buoy bears **SE.** $1\frac{1}{2}$ miles from Point of Shoals Lighthouse. Leave this last Buoy close to on the Starboard hand and steer about **W.** by **N.**, carrying about $2\frac{1}{2}$ fathoms water across the Flat Ground. When Point of Shoals Lighthouse bears **N.** by **W.**, run for it on this course, leaving it about 300 yards on the Starboard hand, and steer about **N.** by **E.** $\frac{3}{4}$ **E.**, leaving the Black Buoy off Harding's Point close to on the Port hand, and run for Deep Water Shoals Lighthouse, bearing **N.** by **E.**, leaving the Black Buoys to the Eastward of the Lighthouse off Lawn Creek Flats both on the Port hand. When abreast Deep Water Shoals Lighthouse, which may be left about 300 yards on the Starboard hand, make good the course **N.** by **E.** $\frac{1}{2}$ **E.**, leaving the Black Buoy off the Southeast part of Hog Island Flats on the Port hand; when past this last-named Buoy, haul gradually to the Northward, carrying about 4 fathoms water and keeping a sharp lookout for the Red Buoy off Tree Island Shoal; when this last-named Buoy, which lies near the Starboard side of the River, is made, run for it, bearing about **NW.** by **N.** $\frac{1}{2}$ **N.**, and leave it close to on the Star-

board hand; from this last Buoy steer about **NW. $\frac{1}{2}$ W.** and gradually haul to the Westward, carrying not less than 3 fathoms and leaving the Black Buoy off the Northwest part of Hog Island Flats on the Port hand; Hog Island Point bears from this last Buoy **SW. by W. $\frac{1}{2}$ W.**, a little more than a mile; when past the last-named Buoy, steer about West to the Black Buoy off Hog Island Shoal; leave this Buoy close to on the Port and make good the course **SW. by W. $\frac{1}{2}$ W.**, leaving the Black Buoys off Goose Hill Middle Ground on the Port and carrying not less than 14 feet water across the Flat Ground. When past these last Buoys you will see the Red Buoy off Goose Hill Shoal; leave this last Buoy on the Starboard hand, and keep the Starboard side of the River best aboard, course about **NW.**, leaving the Black Buoy off Swan's Point Shoal on the Port hand; when past this last Buoy, steer about **NW. by W. $\frac{1}{2}$ W.**, carrying not less than 15 feet and leaving a Red Buoy on the Starboard and the Black Buoys off Swan's Point and Brown's Shoal close to on the Port; from this last Buoy the course changes to about **W. $\frac{1}{2}$ S.**, leaving the Buoy painted in Red and Black Horizontal Stripes, which lies on a Wreck off Dollard's Wharf, which is nearly opposite the Chickahominy River, on the Starboard hand; when past this Buoy, continue the course **W. $\frac{1}{2}$ S.** until the Red Buoy off Dancing Point Flats bears **W.** by **N. $\frac{3}{4}$ N.**, then run for it on this course, leaving it close to on the Starboard; when past this last Buoy, keep in the middle of the River until about a mile from Windmill Point, when you will see the Buoys painted in Red and Black Horizontal Stripes on Menzie's Middle Ground; leave both these last-named Buoys well on the Port hand and haul round Windmill Point, leaving the Black Buoys to the Westward of this Point on the Port hand and the Red Buoy off Buckler's Point on the Starboard hand; from this last-named Buoy the course is about West $1\frac{1}{2}$ miles to the Black Buoy off the Eastern part of Harrison's Bar. From the last-named Buoy to City Point (distant about 6 miles), the channel is narrow; it is therefore necessary to be guided entirely by the Buoys. It is advisable for vessels bound to Richmond to take steam or a pilot at City Point.

High Water.

It is high water at Newport News Point, entrance to James River, 2h. 19m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet. At Hog Island Point, 38 minutes before it is at Boston; common

tides rise about 2 feet. At City Point, 3h. 7m. after it is at Boston; common tides rise about 3 feet. At the city of Richmond, 5h. 23m. after it is at Boston; common tides rise $3\frac{1}{2}$ feet.

PETERSBURG.

This place, which lies on the Southeast side of the Appomattox River, is Southwesterly about 9 miles from City Point.

Remarks.

The Appomattox River, from City Point to Petersburg, is very narrow, crooked and shallow; it is therefore advisable for vessels bound to Petersburg to take steam or a pilot at City Point. At this date (1882), it is said that about 9 feet water can be taken up this River at low tide.

High Water.

It is high water at Petersburg 5h. 26m. after it is at Boston; common tides rise about $2\frac{3}{4}$ feet.

BACK RIVER.

The entrance to this River lies about $1\frac{3}{4}$ miles Northwesterly from Back River Lighthouse, and about 6 miles Southwesterly from York Spit Lighthouse.

Remarks.

At this date (1882), about 9 feet water at low tide can be carried across the Bar as far as the entrance of the River; beyond this there are many shoals lying in the middle of it, which at this date are not marked with Buoys; it is, therefore, not advisable for strangers to attempt to enter this place without pilots.

High Water.

It is high water at the entrance of Back River 3h. 17m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

POQUOSIN RIVER.

The entrance to this River lies about $7\frac{1}{4}$ miles Northwesterly from Back River Lighthouse, and West-Southerly about 7 miles from York Spit Lighthouse.

Remarks.

At low tide about 16 feet water can be carried in abreast York Point, which is the first on the Northern side, and from this Point by the Southwestern branch 8 feet can be taken up about 2 miles; from the entrance 9 feet water by the Northwestern branch can be taken up for more than a mile; at this date (1882), the channel in entering this River is not buoyed.

Sailing Directions for Poquosin River in Daytime, with favorable winds and fair weather.

From Seaward, bound to Poquosin River, follow the sailing directions before given from Cape Henry to Baltimore, until York Spit Lighthouse is made; then bring it to bear **N.NW.**, and run for it on this course, leaving the Black Buoy which lies about a mile Southeast from this Lighthouse close to on the Starboard hand; when past this Buoy make good the course **W.NW.** until York Spit Lighthouse bears East; then make good the course West, leaving the Black Buoy off the Northern part of Poquosin Flats on the Port hand; when about 2 miles past this last-mentioned Buoy, the entrance to the River will then be fairly open, when you may run in about **SW. $\frac{1}{2}$ W.**, carrying not less than $2\frac{1}{2}$ fathoms water, until York Point, which is on the Northern side of entrance, bears **NW.** by **W.**; then anchor in about $2\frac{1}{2}$ fathoms water and take a pilot, as above this the channel is narrow.

From Chesapeake Bay, bound to Poquosin River, follow the Ship Channel until abreast York Spit Lighthouse, which may be left about $\frac{1}{4}$ mile on the Starboard hand, and run to the Southward, leaving the Black Buoy to the Southeast of this Lighthouse close to on the Starboard hand; when past this Buoy follow the directions before given.

High Water.

It is high water at the entrance of Poquosin River 2h. 45m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

YORK RIVER.

The entrance to this River is West-Northerly about 6 miles from York Spit Lighthouse.

Too's Point Lighthouse.

Upon a shoal about $\frac{1}{2}$ mile North from Too's Point, South side of entrance to York River, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time, attached to this Lighthouse, is a Bell, which in thick weather is struck 2 strokes in quick succession, then a single stroke at intervals of 30 seconds.

Bell's Rock Lighthouse.

Upon Bell's Rock, in about 10 feet water, Northeast side of York River, about 20 miles above Yorktown, and $2\frac{3}{4}$ miles below the entrance to Mattaponi and Pamunkey Rivers, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time, attached to this Lighthouse, is a Bell, which in thick weather is struck at intervals of 15 seconds.

Remarks.

From Too's Point Lighthouse, entrance to York River, to Bell's Rock Lighthouse, the distance is about 26 miles; about 18 feet water at low tide can be taken up as far as the last-mentioned Lighthouse.

Sailing Directions for York River in Daytime, with favorable winds and fair weather.

Vessels bound into York River may bring York Spit Lighthouse (before described), to bear **N.NW.** and run for it on this course, keeping a sharp lookout for the Black Buoy that lies about $\frac{3}{4}$ mile Southeast from it; when this Buoy is made, leave it about $\frac{3}{4}$ mile on the Starboard hand, and make good the course **NW.** by **W.**, leaving the Red Buoy off the Elbow Spit on the Starboard hand, and the Black Buoys off Poquosin Flats and Too's Point Shoal on the Port hand; the latter Buoy bears **E. $\frac{3}{4}$ S.** from Too's Point Lighthouse, distance $1\frac{5}{8}$ miles; continue the course **NW.** by **W.** until the last-named Lighthouse bears **W.SW.**; the river will then be fairly open, and you may run in about **W.** by **S.**, leaving Too's Point Lighthouse about $\frac{1}{2}$ mile on the Port hand; when past this

Lighthouse keep the middle of the river until about $2\frac{1}{2}$ miles past Yorktown (which is on the South side); you will then see the Black Buoy off Sandy Point; leave this Buoy on the Port hand, and the Red Buoys off Poplar Creek and Page's Rock both on the Starboard hand; when abreast the last-named Buoy, you will see, about 1 mile to the Northwestward, the Black Buoy on the lower end of the Middle Ground; leave this last-named Buoy about 250 yards on the Port, and keep the Northeast side of the River best aboard, carrying from 4 to 8 fathoms through the narrow channel, until abreast the Black Buoy off the upper part of Middle Ground; leave this last Buoy close to on the Port hand, and still keep the Northeast side best aboard, carrying from 4 to 5 fathoms through the narrow channel, and leaving the Red Buoys off Ronne's Lower and Upper Flats close to on the Starboard hand; when past the last-named Buoy, run for Bell's Rock Lighthouse, bearing about **NW.** by **N.**, leaving it on the Starboard hand and carrying from $3\frac{1}{2}$ to 4 fathoms water; if bound up the Mattaponi or Pamunkey Rivers, it is advisable to take a pilot at Bell's Rock Lighthouse.

Vessels of not more than 14 feet draught, coming down the Chesapeake Bay bound into York River, may cross York Spit Shoal about a mile to the Westward of York Spit Lighthouse, and run to the Southwest until it bears **E.SE.**; then make good the course **W.NW.**, leaving the Red Buoy off the Elbow Spit on the Starboard, and the Black Buoys off Poquosin Flats and Too's Point Shoal on the Port hand; when the River is fairly open, run in as before directed.

High Water.

It is high water at the entrance of York River 2h. 52m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet; it is high water at Bell's Rock Lighthouse, in York River, 1h. 46m. before it is at Boston; common tides rise about 3 feet.

MOBJACK BAY.

The entrance to this Bay, which is to the Southward of New Point Comfort Lighthouse, is about 5 miles **N.NW.** from York Spit Lighthouse.

Remarks.

Mobjack Bay is about $3\frac{1}{2}$ miles wide and about 6 miles in length, and affords good shelter in all but Southeast winds; from 3 to 4 fathoms water can be carried up to the anchorage.

Sailing Directions for Mobjack Bay in Daytime, with favorable winds and fair weather.

Vessels bound to Mobjack Bay may follow the directions before given from Cape Henry to Baltimore, until past York Spit Lighthouse; then bring New Point Comfort Lighthouse to bear **N.NW.** and run for it on this course; when about 2 miles from this Lighthouse, keep a sharp lookout for the Red Buoy off New Point Comfort Spit; this Buoy bears from the Lighthouse **SW.** by **W.** $\frac{1}{2}$ **W.** about 1 mile; as soon as this Buoy is made bring it to bear **NW.**, and run for it on this course, leaving it about $\frac{1}{2}$ mile on the Starboard hand; when past this last-named Buoy, it is advisable for vessels of 18 feet draught to run up **N.W.** about 1 mile, and anchor in about 4 fathoms water; New Point Comfort Lighthouse bears from this anchorage East $2\frac{1}{4}$ miles; vessels of less than 18 feet draught may leave the Red Buoy off New Point Comfort Spit about $\frac{1}{4}$ mile on the Starboard hand, and run up about **NW.**, and anchor in the middle of the Bay from 2 to 6 miles above the Lighthouse, in from 3 to 4 fathoms water at low tide.

Vessels coming down the Chesapeake Bay may leave the Black Buoy, which lies about two miles Southeast from New Point Comfort Lighthouse, about $\frac{1}{4}$ mile on the Starboard hand, and gradually haul to the Westward, carrying about 4 fathoms water. When the Red Buoy off New Point Comfort Spit bears **NW.**, then proceed as before directed.

RIVERS IN MOBJACK BAY.

There are several Rivers which empty into Mobjack Bay. At the entrance of most of these Rivers good shelter, in Southeasterly gales, may be found for vessels of not more than 12 or 15 feet draught.

SEVERN RIVER.

The entrance to this River, which is on the Eastern side of Mobjack Bay, bears from New Point Comfort Lighthouse **W.** by **N.** $\frac{1}{2}$ **N.** about $5\frac{3}{4}$ miles. About 18 feet water can be carried up as far as the Southwest branch, which is nearly 2 miles from the entrance.

Sailing Directions for Severn River in Daytime.

Vessels bound into Severn River may follow the directions before given for Mobjack Bay until New Point Comfort Lighthouse bears **E. SE.**; then make good the course **W. NW.**, carrying not less than 3 fathoms water, until Severn River is fairly open, bearing **W. SW.**; then, under short sail, run in, and when past the first point of marsh on the Northern side, keep the Starboard side best aboard, and anchor in from 3 to $3\frac{1}{2}$ fathoms water, secure from all winds.

WARE RIVER.

The entrance to Ware River is on the Western side of Mobjack Bay, about $2\frac{1}{4}$ miles to the Northward of Severn River. About 15 feet water, at low tide, can be carried up as far as Wilson's Creek, which is nearly 3 miles from the entrance.

Sailing Directions for Ware River in Daytime.

Vessels bound into Ware River may follow the directions before given for Mobjack Bay until New Point Comfort Lighthouse bears **SE.** by **E.**; then make good the course **NW.** by **W.** until the River is fairly open, bearing about **NW.** by **W.** $\frac{1}{2}$ **W.**; then run in, keeping in the middle and carrying from $2\frac{1}{2}$ to 4 fathoms water. When about $1\frac{1}{2}$ miles above the entrance, haul round the Point on the Port hand, and anchor in about 3 fathoms, secure from all winds.

NORTH RIVER.

The entrance to North River, which lies at the head of Mobjack Bay, is Northwesterly about $6\frac{1}{2}$ miles from New Point Comfort Lighthouse; 3 fathoms water, at low tide, can be carried up as far as Blackwater River, which is on the Eastern side, about $2\frac{1}{2}$ miles from the entrance.

Sailing Directions for North River in Daytime.

Vessels bound into North River may leave the Red Buoy, which lies 1 mile Southwest from New Point Comfort Lighthouse, about $\frac{1}{4}$ mile on the Starboard hand and make good the course **NW. $\frac{3}{4}$ N.**, $6\frac{1}{4}$ miles; the River will then be fairly open; then run in, keeping about in the middle and carrying from 3 to 4 fathoms water, and anchor a little above Blackwater River, in from $2\frac{1}{2}$ to 3 fathoms water. About $\frac{3}{4}$ mile below the entrance to Blackwater River, and nearly in the middle of the River, is a Shoal spot of 10 feet water; the best channel is to the Westward of this danger.

EAST RIVER.

The entrance to this River is on the Eastern side of Mobjack Bay, about 5 miles above New Point Comfort Lighthouse. About 13 feet water, at low tide, can be carried across the bar, and 16 feet water can be carried up this narrow River some $2\frac{1}{4}$ miles from the entrance.

Sailing Directions for East River in Daytime.

Vessels bound into the East River may leave the Red Buoy to the Southwest of New Point Comfort about $\frac{1}{4}$ mile on the Starboard hand and steer **NW. by N.**, $3\frac{1}{2}$ miles, carrying from 3 to $3\frac{1}{2}$ fathoms water. When East River is fairly open, bearing about **N. by E. $\frac{1}{2}$ E.**, then run in, carrying about 13 feet water across the bar; when past the entrance, keep the middle of the River and anchor anywhere in from 3 to 4 fathoms water. A Spit, having but little water upon it, extends off about $\frac{3}{4}$ mile **S.SW.** from the Point on the Port side of the entrance to this River.

High Water.

It is high water in Mobjack Bay 2h. 55m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

PIANKATANK RIVER.

The entrance to this River lies Northwesterly about $9\frac{1}{2}$ miles from the Lighthouse on the Wolf Trap, and 3 miles Southwest from Stingray Point Lighthouse.

Stingray Point Lighthouse.

About 1 mile East of Stingray Point, South side of entrance to the Rappahannock River and North side of entrance to Piankatank River, in about 6 feet water, is a Lighthouse, which at this date (1882), shows a fixed Red Light. At this time, attached to this Lighthouse is a Bell, which in thick weather is struck at intervals of 5 seconds and 30 seconds.

Remarks.

About 20 feet water, at low tide, can be carried up the Piankatank River as far as Wilton's Point, which is about 5 miles from the entrance. At this date (1882), there are no Buoys above Stove Point Spit; it is therefore not advisable to go above Hill's Bay, which is on the South side of entrance, without a pilot.

Sailing Directions for Piankatank River in Daytime, with favorable winds and fair weather.

Vessels from the Southward, bound into Piankatank River, may follow the directions before given from Cape Henry to Baltimore until Stingray Point Lighthouse is made; bring this Lighthouse to bear **NW.** by **N.**, and run for it on this course, keeping a sharp lookout for the Black Buoy which lies about **S. ½ W.** 1 mile from this Lighthouse; when this Buoy is made, run for it, bearing about **SW.**, leaving it close to on the Port hand; when past the Buoy, steer **W.** by **S. ½ S.**, carrying about 3 fathoms water, and leaving the Black Buoy off Cherry Point Spit about 400 yards on the Port hand and run about **S.** by **W.**, carrying from 4 to 8 fathoms water through the narrow channel; leave the Red Buoy off Stove Point Spit about 200 yards on the Starboard hand, and anchor inside Cherry Point in about 3½ fathoms water. The Red Buoy off Stove Point Spit bears **NW.** about ½ mile from this anchorage.

Coming down Chesapeake Bay, leave the Black Buoy which lies about 2 miles Southeast from the Lighthouse on Rappahannock Spit close to on the Starboard hand, and steer about **SW.** by **W. ½ W.**; when the Black Buoy to the Southward of Stingray Point Lighthouse is made, follow the directions before given.

High Water.

It is high water at the entrance of Piankatank River 1h. 36m. before it is at Boston; common tides rise about 1½ feet.

RAPPAHANNOCK RIVER.

The entrance to this River, which is between Windmill Point on the North and Stingray Point on the South, lies about 42 miles Northwesterly from Cape Henry Lighthouse, 23 miles North from York Spit Lighthouse, 12½ miles Northwesterly from Wolf Trap Lighthouse, and 19 miles Southwesterly from Smith's Point Lighthouse, South side of entrance to Potomac River.

Bowler's Rock Lighthouse.

Nearly opposite Bowler's Rock, on the Port side of the channel in the Rappahannock River, about 28 miles from its mouth, is a Lighthouse, which at this date (1882), shows a fixed White Light. Attached to this Lighthouse is a Bell, which in thick weather is struck at intervals of 10 seconds. Vessels bound up the River must leave this Lighthouse close to on the Port hand.

Remarks.

At this date (1882), about 20 feet water, at low tide, can be carried up as far as Bowler's Rock Lighthouse, 12 feet from this Lighthouse to Port Royal, and 6 feet from this last-named place over Spottwood's Bar to Fredericksburg. The River at this time is buoyed as far as Mill Creek, which is a short distance below Port Royal. The channel is nearly midway the River until up with Bowler's Rock Lighthouse; beyond this, irregular.

Sailing Directions for Rappahannock River in Day-time, with favorable winds and fair weather.

Vessels from the Southward, bound into the Rappahannock River, may follow the directions before given from Cape Henry to Baltimore, until Windmill Point Lighthouse (before described) is made; bring this Lighthouse to bear from **N.** by **W.** to **N.N.W.**, and run for it on this course until the entrance to the River is fairly open; then run in about **W.** by **N.**, passing about midway between Stingray Point Lighthouse and Windmill Point Lighthouse; continue the course **W.** by **N.**, leaving the Black Buoy off Sturgeon Creek Shoal well on the Port hand; this Buoy bears from Windmill Point Lighthouse **W.** ½ **S.** about 5 miles; when past this Buoy, keep about mid-way the River course from West to **N.** by **W.**, carrying not less than 4 fathoms water, until up with the

Black Buoy off Punch Bowl Shoal; this last-named Buoy is $6\frac{1}{2}$ miles below Bowler's Rock Lighthouse; leave this Buoy about 250 yards on the Port hand, and steer **W.NW.** 2 miles to the Red Buoy off Tapley's Point Shoal; leave this Buoy about 250 yards on the Starboard hand, and steer **NW. $\frac{1}{2}$ N.**, leaving the Black Buoy off Jones Point Shoal a short distance on the Port hand; when past this last Buoy, continue the course **NW. $\frac{1}{2}$ N.**, keeping a sharp lookout for the Black Buoy off Dumpling Shoal; when this Buoy is made, bring it to bear **W.NW.**, and run up with it a little on the Port bow, carrying about 20 feet water through the narrow channel; leave this Black Buoy off Dumpling Shoal about 250 yards on the Port hand, and run for the Red Buoy off Dumpling Rock; this last-named Buoy is $\frac{7}{8}$ mile below Bowler's Rock Lighthouse; leave this last Red Buoy off Dumpling Rock about 100 yards on the Starboard hand and run up, leaving the next Red Buoy off Bowler's Ledge on the Starboard, and the Lighthouse close to on the Port hand.

Sailing Directions for Rappahannock River in Daytime, from Bowler's Rock Lighthouse to Port Royal.

Leave Bowler's Rock Lighthouse close to on the Port hand and run up, keeping about midway the River and carrying from 3 to 4 fathoms water; when about $3\frac{1}{2}$ miles above this Lighthouse, keep a sharp lookout for the Red Buoy off Ross Rocks; when about $\frac{1}{2}$ mile from this Buoy, bring it to bear **NW.**, and run for it on this course, leaving it about 100 yards on the Starboard hand, and run up, with the Black Buoy off Upper Jones Point a little on the Port bow; when past this Buoy, which is left on the Port hand, run for the Red Buoy off Margerite Marsh, and leave it close to on the Starboard hand; when past this last Buoy, steer for the end of the Wharf at Tappahannock, bearing about **W.NW.**; when past this Wharf, which may be left 250 yards on the Port hand, the course is more Northerly, passing between the Red and Black Buoys off Naylor's Hole; when past these last Buoys, you will see the two Black Buoys off Mount Landing Creek; both these Buoys are left a short distance on the Port hand; when past these last-named Buoys, keep the Starboard side of the River best aboard, and gradually haul to the Westward until you make the Red Buoy off Mulberry Island Shoal; when about 1 mile from this Buoy, run

for it, bearing about **W.** by **N.** $\frac{1}{2}$. **N.**, and haul round it at a distance of 100 yards, leaving it on the Starboard hand; when past this Buoy, haul up about **N.** $\frac{3}{4}$ **W.**, keeping in the middle of the River for about 2 miles; then keep the Starboard side best aboard until past Smith's Wharf, which is on the Starboard side of the River; when about $1\frac{1}{2}$ miles past this Wharf, haul gradually towards the Port side until up with Layton's Wharf, which is on the Port side; when past this Wharf, keep midway the River (leaving Leedstown on the Starboard), until abreast Saunders' Wharf, which is on the Port side; when past this Wharf, keep the Port side best aboard, leaving the Black Buoy off Catch Point on the Port hand; when past this last Buoy, keep in the middle again and haul round Ware Point, keeping the Port side best aboard, leaving Port Micon about 150 yards on the Port hand; when past Port Micon, keep midway for about $2\frac{1}{2}$ miles, when the River suddenly turns to the Southward; haul round North Bend Point, which is left on the Starboard hand at a distance of 200 yards, passing through the reach called the Devil's Elbow; when past this you will see the Red Buoy off North Bend Shoal; leave this Buoy close to on the Starboard hand and gradually haul to the Northward; when about 1 mile past this last Buoy the River turns to the South-westward, and you may keep the Starboard side best aboard. As you sail up, you will see the Red Buoy on the Middle Ground; bring this Buoy to bear **SW.** and run for it, leaving it close to on the Starboard hand; when past this Buoy haul gradually to the Westward, leaving Port Tobacco on the Port, and Long Point (which is on the Northern side), about 250 yards on the Starboard; when past this Point, make good the course **NW.** $\frac{1}{2}$ **N.** $1\frac{1}{4}$ miles. You will then be past Nanzatico and will be up with Oaken Brow; when past the last-named place, you will see the Red Buoy off the Elbow Flats; when about $\frac{1}{2}$ mile from this last Buoy, bring it to bear **WSW.** and run for it, leaving the village of Camden on the Port hand, and passing through the narrow channel, carrying from 3 to 4 fathoms water; leave the last-named Buoy close to on the Starboard, and keep the Port side best aboard to Port Royal.

It is advisable to take a pilot from Port Royal to Fredericksburg, as at this date (1882), there are no Buoys in the River above the former place.

From the entrance of the Rappahannock River to Bowler's Rock Lighthouse the distance is 28 miles; from the last-named place to

Port Royal, in a direct line, about 30 miles; thence, 15 miles in a direct line to Fredericksburg.

High Water.

It is high water, in moderate weather, at the entrance of the Rappahannock River 1h. 5m. before it is at Boston; common tides rise about $1\frac{1}{4}$ feet. At Tappahannock, 1h. 37m. after it is at Boston; rise about $1\frac{1}{4}$ feet. At Port Royal, 4h. 41m. after it is at Boston; rise about $2\frac{1}{4}$ feet. And at Fredericksburg, 7h. 11m. after it is at Boston; rise about 3 feet.

CORROTOMAN RIVER.

The entrance to this River, which is on the Northern side of the Rappahannock, is about $9\frac{1}{2}$ miles above Windmill Point.

Remarks.

About 3 fathoms water, at low tide, can be taken up about $3\frac{1}{2}$ miles above the entrance, and 12 feet can be carried to the Steamboat Landing, which is about $4\frac{1}{2}$ miles from the mouth of this River. At this date (1882), there are no Buoys in this River.

Sailing Directions for Corrotoman River in Day-time.

Vessels bound into the Corrotoman River may follow the directions before given for the Rappahannock, until past Windmill Point; then keep about midway until abreast the Corrotoman; this last River, which is on the Northern side of the Rappahannock, may be known by its width, which is more than 2 miles at its entrance; when this River is fairly open, run in about midway and anchor near the mouth in about $3\frac{1}{2}$ fathoms water. It is not advisable to go above this without a pilot, as there are many Shoals and Spits, which extend off from both sides, none of which, at this time, are marked with Buoys.

ANTEPOISON CREEK.

The entrance to this Creek, which is on the West side of Chesapeake Bay, lies Northwest about $4\frac{3}{4}$ miles from Windmill Point

Lighthouse; about 7 feet water at low tide can be carried up about $1\frac{3}{4}$ miles above its entrance.

DIMER'S CREEK.

The entrance to this Creek, which is on the West side of Chesapeake Bay, lies about 6 miles Northwest from Windmill Point Lighthouse; about 11 feet water at low tide can be taken up about $1\frac{1}{2}$ miles above its entrance.

DIVIDING CREEK.

The entrance to this Creek, which is on the West side of Chesapeake Bay, is about 8 miles Northwest from Windmill Point Lighthouse; about 14 feet water at low tide can be carried up about $1\frac{1}{2}$ miles above its entrance.

GREAT WICOMICO RIVER.

The entrance to this River, which is on the West side of Chesapeake Bay, lies Northwesterly about 13 miles from Windmill Point Lighthouse, and Southwesterly $6\frac{3}{4}$ miles from Smith's Point Lighthouse, which is on the South side of entrance to the Potomac River.

Remarks.

In entering Great Wicomico River, about 18 feet water at low tide can be taken up 4 miles above Fleet's Point; this last-named Point is on the North side of the entrance.

Sailing Directions for Great Wicomico River in Daytime, with favorable winds and fair weather.

Vessels from the Southward, bound into Great Wicomico River, may follow the directions before given from Cape Henry Lighthouse to Baltimore, until up with the Black Buoy which lies a little more than 2 miles to the Southeast of Windmill Point Lighthouse; leave

this Buoy close to on the Port hand, and make good the course **N.** $\frac{3}{4}$ **W.** 13 miles, which will bring them abreast the Black Buoy off Dammeron's Marsh Shoal; the river will then be fairly open bearing **NW.**; leave the last-named Buoy close to on the Port hand, and steer about **NW.** by **N.** for the next Red Buoy off Fleet's Point Shoal, leaving it about 200 yards on the Starboard hand, and run about **W.NW.**, leaving the Red Buoy off Fleet's Point Flats about $\frac{1}{4}$ mile on the Starboard; when past this last Buoy haul up **N.** **NW.** and run about $1\frac{1}{2}$ miles, keeping in the middle and carrying not less than 3 fathoms, and anchor in from 3 to 4 fathoms water.

Coming down Chesapeake Bay, leave the Lighthouse off Smith's Point about $\frac{3}{4}$ mile on the Starboard hand, and make good the course **SW.** by **S.** $\frac{1}{2}$ **S.** 7 miles, when you will see the Black Buoy off Dammeron's Marsh Shoal; leave this Buoy close to on the Port, and follow the directions before given.

High Water.

It is high water at the mouth of Great Wicomico River about 15 minutes after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

POTOMAC RIVER.

The entrance to this River, which is on the West side of Chesapeake Bay, lies between Smith's Point on the South and Point Lookout on the North; from Cape Henry Lighthouse to Smith's Point Lighthouse the distance is 60 miles; from thence to the city of Washington, about 98 miles.

Smith's Point Lighthouse.

Upon the Shoal Water extending off to the Eastward of Smith's Point, South side of entrance to the Potomac River and West side of Chesapeake Bay, in about 12 feet water, is a Lighthouse, which at this date (1882), shows a Revolving White Light; attached to this Lighthouse, at this time, is a Bell, which in thick weather is struck at intervals of 15 seconds.

Remarks.

Heavy draught vessels bound up the Chesapeake or Potomac River, when past Smith's Point Shoal, or the Seventeen Foot Lump, should leave Smith's Point Lighthouse at least $\frac{1}{2}$ mile to the Westward; vessels of not more than 12 feet draught, passing up or down the Bay, or into the Potomac River, may approach within 250 yards of it; small or light draught vessels may cross the Shoal from $\frac{1}{2}$ to $\frac{3}{4}$ mile to the Westward of this Lighthouse.

Bearings and Distances from Smith's Point Lighthouse.

	Distance.
Windmill Point Lighthouse, S. $\frac{3}{4}$ W.	17 $\frac{3}{4}$ miles.
Point Lookout Lighthouse, NW. by N. $\frac{1}{4}$ N.	10 $\frac{1}{2}$ "
Emey Point Lighthouse, NW.	21 $\frac{3}{4}$ "
Cove Point Lighthouse, N. by W. $\frac{1}{4}$ W.	30 $\frac{3}{4}$ "
Black Buoy off Smith's Point Shoal, or Seventeen	
Foot Lump, SE. by S. $\frac{3}{4}$ S.	1 "
Black Buoy off Ragged Point, NW. $\frac{1}{4}$ W.	25 $\frac{1}{3}$ "

Point Lookout Lighthouse.

Upon the North side of the entrance to the Potomac River, West side of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 10 seconds; Smith's Point Lighthouse bears from Point Lookout Lighthouse, **SE.** by **S. $\frac{1}{4}$ S.** 10 $\frac{1}{2}$ miles; Red Buoy off Point Lookout Shoal bears from Point Lookout Lighthouse **S. $\frac{1}{4}$ W.**, distance about 1 mile.

Remarks.

Large vessels, passing up or down the Bay, should leave this Lighthouse at least 1 mile to the Westward, and vessels coming down the Bay, bound into the Potomac, should leave it a mile to the Northward.

With winds from **N.NW** to East by way of North, there is good anchorage about $\frac{3}{4}$ mile to the Westward of Point Lookout Lighthouse, in what is called Cornfield Harbor; large vessels may anchor in about 5 fathoms water, with the Lighthouse bearing **E.** by **S.**, distant about 1 mile; in entering this Harbor, care should be taken to leave the Red Buoy off the Lighthouse well to the Northward.

Piney Point Lighthouse.

Upon Piney Point, Northeast side of Potomac River, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 20 seconds.

Bearings and Distances from Piney Point Lighthouse.

	Distance.
Smith's Point Lighthouse, SE.	21 $\frac{3}{4}$ miles.
Black Buoy off Ragged Point, WNW.	3 $\frac{1}{2}$ "
Blakistone Island Lighthouse. NW. by W. $\frac{3}{4}$ W.	11 "

Heavy draught vessels, bound up the River, should not approach nearer than $\frac{1}{2}$ mile to this Lighthouse.

Blakistone Island Lighthouse.

Upon the Southeast side of Blakistone Island, North side of Potomac River, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 16 seconds.

Bearings and Distances from Blakistone Island Lighthouse.

	Distance.
Piney Point Lighthouse, SE by E. $\frac{3}{4}$ E.	11 miles.
Black Buoy off Ragged Point Lighthouse, SE. by E. $\frac{1}{2}$ E.	7 $\frac{1}{2}$ "
Lower Mid-channel Buoy, painted in Black and White Perpendicular Stripes, West	3 "

Heavy draught vessels should leave this Lighthouse at least $\frac{1}{2}$ mile to the Northward.

Lower Cedar Point Lighthouse.

Upon the end of Yates Shoal, West side of the Potomac River, nearly opposite Lower Cedar Point, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 12 seconds; vessels bound up the River may leave this Lighthouse close to on the Port hand.

Mathias Point Lighthouse.

Upon the end of Shoal extending off to the Northward from Mathias Point, South side of Potomac River, is a Lighthouse,

which at this date (1882), shows a fixed White Light; at this time a Fog Bell is attached to this Lighthouse, which in thick weather is struck twice in quick succession, with a single stroke between at 30 seconds' interval; vessels bound up the River may leave this Lighthouse, when abreast it, about 250 yards on the Port hand.

Upper Cedar Point Fog-Signal Station.

At this date (1882), there is on the outer part of the Shoal making off from Upper Cedar Point, North side of Potomac River, and about 2 miles above Mathias Point Lighthouse, a station, which has a Bell that is struck in thick weather at intervals of 15 seconds; vessels bound up the River may leave this Fog Signal Station about $\frac{1}{4}$ mile on the Starboard hand.

Fort Washington Lighthouse.

On the wharf at Fort Washington, East side of Potomac River, and about 5 miles below Alexandria, is a Lighthouse, which at this date (1882), shows a fixed White Light; vessels bound up the River may leave this Lighthouse about 150 yards on the Starboard hand.

Jones' Point Lighthouse.

Upon Jones' Point, West side of the Potomac River, a little below Alexandria, is a Lighthouse, which at this date (1882), shows a fixed White Light; vessels bound up the River may leave this Lighthouse from 300 to 400 yards on the Port hand.

Remarks.

At this date (1882), the Shoals in the Potomac River are well marked with Beacons and Buoys; about 19 feet water at low tide can be taken up as far as Alexandria, and from this about 15 feet water at low tide can be taken to some parts of the city of Washington.

Sailing Directions for the Potomac River in Day-time, with favorable winds and fair weather.

Vessels from Seaward or the Southward, bound up the Potomac River, may follow the directions before given from Cape Henry to Baltimore, until up with Smith's Point Lighthouse; give this Lighthouse a berth of about $\frac{1}{2}$ mile, leaving it on the Port hand, and make good the course **NW. $\frac{1}{4}$ W.** 25 miles, which will bring

them up with the Black Buoy off Ragged Point; this Buoy bears **W.N.W.** from Piney Point Lighthouse, distance $3\frac{1}{2}$ miles; when the Black Buoy off Ragged Point is made, leave it about $\frac{1}{4}$ mile on the Port, and make good the course **W. by N. $\frac{1}{2}$ N.** 10 miles, which will bring them up with the Lower Mid-channel Buoy, which is painted in Black and White Perpendicular Stripes; Blackstone Island Lighthouse bears from this last-named Buoy East 3 miles; when the Lower Mid-channel Buoy is made, run for it, bearing about **W. by N. $\frac{1}{2}$ N.**, and leave it close to on either hand; when past this Buoy you will see the Second Mid-channel Buoy painted in Black and White Perpendicular Stripes, bearing about **N.W. $\frac{1}{2}$ W.**, which may be left close to on either hand; when past the Second Mid-channel Buoy, you will see the Buys painted in Black and White Perpendicular Stripes, which mark the channel across the Kettlebottom Shoals; pass these Buys close to, leaving them on either hand; when past the last Buoy painted in White and Black Perpendicular Stripes on Kettlebottom Shoals, you will see the Black Buoy off Machodac Flats; run for this last Black Buoy, bearing about **N.W. by N. $\frac{1}{2}$ N.**, leaving it on the Port hand, and run up, leaving the Red and White Beacon off Lower Cedar Point Flats on the Starboard, and the Lighthouse a short distance on the Port hand; when past this Lighthouse keep the Starboard side best aboard, leaving the next Beacon painted in Black and White off Persimmon Point on the Port hand; when about 2 miles past the last-named Beacon, or Mathias Point Lighthouse bears **W. by N.**, gradually haul to the Westward around it, leaving it about 350 yards on the Port, and the Beacon on Port Tobacco Flats well on the Starboard hand; when past the last-named Lighthouse, the River suddenly turns to the Southwestward, and it is necessary to keep the Starboard side best aboard, leaving the Fog Signal Station off Lower Cedar Point about $\frac{1}{4}$ mile on the Starboard hand, and the Black Buys off Dade's Shoal, and the Black and White Beacon on Middle Ground on the Port hand; when past this last Beacon you will see the two Red Buys off Jennifer's Flats, which must both be left not more than 300 yards on the Starboard hand; when past these two last Buys you will see the two Horizontal Striped Buys off Ten Foot Lump and Maryland Point Shoal, both of which may be left about 300 yards on the Port; when past these two last-named Buys, you will see the two Black Buys off Potomac Creek Flats and Aquia Creek Flats, both of which must be

left not more than $\frac{1}{4}$ mile on the Port hand; when past these keep the Starboard side best aboard, carrying from $3\frac{1}{2}$ to 4 fathoms water, and leaving the next Red Buoy, off Douglass Point, close to on the Starboard, and the next Black Buoy, off Clifton Flats, close to on the Port hand; when past the Black Buoy off Clifton Flats, keep midway the River, leaving the Red Buoy off Chicomuxen Flats on the Starboard hand, still keeping in the middle until you make the Black Buoys off Upper and Lower High Point Flats; when these are made, leave them both close to on the Port hand; when about $\frac{1}{2}$ mile past these Buoys, keep the Starboard side best aboard, leaving Indian Head a short distance on the Starboard hand, and the Black Buoy off Craney Island Flats, and the Black Buoy off Hallowing Point, both about 250 yards on the Port hand; when past the Black Buoy off Hallowing Point, steer nearly North for White Stone Point, carrying from 5 to 6 fathoms water, and leaving the Red Buoy off Brent's Shoal, on the Starboard hand; when past this last Buoy, keep the Port side best aboard for about 1 mile; then gradually haul over, keeping on the Starboard side of the River, leaving the Red Buoy off Mockley's Point Shoal on the Starboard, and the Black Buoy off Sheridan's Lower Shoal on the Port hand; leave the Lighthouse at Fort Washington about 150 yards on the Starboard hand, and keep the Starboard side of the River best aboard for about 1 mile, leaving the Black Buoy on Sheridan's Upper Shoal on the Port hand; then keep in the middle, leaving the Red Buoy off Broad Creek Flats on the Starboard hand; when past this Buoy, steer for Rosier's Bluff, which is on the Eastern side of the River, leaving it close to on the Starboard, and the Black Buoy nearly opposite this Bluff on the Port hand; when past this last Buoy, run for the next Black Buoy, carrying from 5 to 7 fathoms water through the narrow channel, and leaving Jones' Point Lighthouse about $\frac{1}{4}$ mile on the Port, and the Red Buoys opposite Alexandria on the Starboard hand; when past the last-named place, keep the Starboard side of the River best aboard, carrying from 4 to 7 fathoms water through the narrow channel, leaving the Black Buoys on the Port, and the Red Buoys on the Starboard hand to the city; when up with Greenleaf's Point, the Southern part of the city, the channel leads close along by the wharves. Vessels bound through the Long Bridge to Georgetown should leave the Buoy painted in Black and Red Hori-

zontal Stripes, which lies about $\frac{3}{4}$ mile from the Southern part of the city of Washington, on the Starboard hand.

Vessels coming down the Chesapeake Bay, bound up the Potomac River, may give the Red Buoy (which lies about 1 mile South from Point Lookout Lighthouse) a small berth, leaving it on the Starboard hand, and make good the course **W.NW.** about 5 miles; then steer **NW. $\frac{1}{4}$ W.**, and follow the directions before given.

High Water in the Potomac River.

It is high water at Point Lookout, North side of entrance to the Potomac River, 1h. 27m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet. It is high water at Blakistone Island Lighthouse 2h. 21m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet. It is high water at Mathias Point 4h. 46m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet. It is high water at Indian Head 7h. 15m. after it is at Boston; common tides rise $1\frac{1}{2}$ feet. It is high water at Washington Long Bridge 8h. 32m. after it is at Boston; common tides rise about $2\frac{3}{4}$ feet.

COAN RIVER.

The entrance to this River, which is on the South side of the Potomac, lies Northwesterly from Smith's Point Lighthouse $13\frac{3}{4}$ miles; and West-Southerly $7\frac{1}{4}$ miles from Point Lookout Lighthouse.

Remarks.

About 12 feet water at low tide can be taken into the mouth of Coan River, and 8 feet can be carried some 3 miles above this point.

Sailing Directions for Coan River in Daytime, with favorable winds and fair weather.

Vessels from the Southward, bound to Coan River, may follow the directions before given from Cape Henry to Baltimore, until up with Smith's Point Lighthouse; leave this Lighthouse about $\frac{1}{2}$ mile on the Port hand, and make good the course **NW. $\frac{1}{2}$ W.** until Point Lookout Lighthouse bears **E. by N.**, then make good the course **W. by S.**, keeping a sharp lookout for the 2 Black

Buoys,* which lie on the Flats, extending off from Coan River; when these Buoys are made, pass about midway between them, and run in about **V** by **W.**, with the River fairly open, and carrying from 3 to 4 fathoms water, and also keeping a sharp lookout for the Red Buoy off Travis' Point Shoal; when this last Buoy is made, bring it to bear **SW. ½ S.** and run for it on this course, and leave it close to the Starboard hand; when past this last Buoy, run for the Red Buoy off Travis' Point Spit, rounding it close to on the Starboard, and run up about **W.** by **S.**, carrying not less than 13 feet water; when about ½ mile past this Buoy, haul gradually to the Westward, and in order to avoid the Spit on the South side, anchor close in under Travis' Point in about 10 feet water; there are many shoal places above this, which at this date (1882), are not marked with Buoys; it is, therefore, advisable to take a pilot if bound farther up the River.

High Water.

It is high water at the entrance of Coan River 1h. 33m. after it is at Boston; common tides rise about 1½ feet.

YEOCOMICO RIVER.

The entrance to this River, which is on the South side of the Potomac, about 4 miles above Coan River, bears West about 9 miles from Point Lookout Lighthouse, and Northwesterly about 17¾ miles from Smith's Point Lighthouse.

Remarks.

The entrance to Yeocomico River, which is about 1 mile wide, lies between Lynch's Point on the North and Thicket Point on the South; about 15 feet water at low tide can be carried as far as Barn Point, which is about 1 mile from the entrance; above this the River divides into three parts, which are called Northwest Branch, West Branch, and South Branch; about 9 feet water at low tide can be taken up to Kinsale, which is on the West Branch about 3 miles above the entrance.

* In entering Coan River, the first Black Buoy is a Potomac River Buoy, and must be left on the Starboard hand.

**Sailing Directions for Yeocomico River in Daytime,
with favorable winds and fair weather.**

Vessels from the Southward, bound to Yeocomico River, may follow the directions before given from Cape Henry to Baltimore, until up with Smith's Point Lighthouse; leave this Lighthouse about $\frac{1}{2}$ mile on the Port hand, and make good the course **NW. $\frac{1}{4}$ W.** until Point Lookout Lighthouse bears East; then make good the course West, leaving the Black Buoys off Coan River well on the Port hand; as you sail in keep a sharp lookout for the Red Buoy at the entrance of the River; when this Buoy is made, leave it close to on the Starboard hand, and run **W. by N. $\frac{1}{2}$ N.** until Lynch's Point, the first on the Starboard hand, bears North; then run in about **W. by S.**, carrying not less than 15 feet water; with Northerly winds, when the South Branch is fairly open, haul to the Southward and run up, carrying not less than 15 feet water through the narrow channel and keeping nearest Barn Point, which is on the East side; when past this Point, anchor in about $2\frac{1}{2}$ fathoms water; above this there are numerous Shoals and Spits in the different branches of the River, none of which at this time are marked with Buoys; in entering this River with Southerly winds, it is advisable when the Northwest Branch is open to run in mid-way, and anchor when past the two first Points in from 10 to 11 feet water.

Vessels coming down the Chesapeake Bay, bound to Yeocomico River, may leave the Red Buoy (which lies about a mile to the Southward of Point Lookout) on the Starboard hand, and steer **W.NW.** until this Lighthouse bears East, on which bearing keep it, and steer West, and follow the directions before given.

High Water.

It is high water at the mouth of Yeocomico River 1h. 58m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

LOWER MACHODOC RIVER.

The entrance to this River, which is on the South side of the Potomac, lies West $2\frac{1}{2}$ miles from the Black Buoy off Ragged Point, and **SE. $5\frac{1}{2}$ miles** from Blakistone Island Lighthouse.

Remarks.

About 12 feet water at low tide can be carried up to the Narrows, which is about $1\frac{1}{2}$ miles from the entrance; Spits having but little water upon them extend off from both sides, making the channel narrow, especially in one place; about 5 feet water at low tide can be taken through the Narrows, and 8 feet can be taken about $1\frac{1}{2}$ miles above this.

Sailing Directions for Lower Machodoc River in Daytime, with favorable winds and fair weather.

Vessels bound to Lower Machodoc River may follow the directions before given for the Potomac, until abreast the Black Buoy off Ragged Point; leave this Buoy about $\frac{1}{4}$ mile on the Port hand, and make good the course **W. by N.** about 3 miles, when the River will then be fairly open, bearing about **S. by E. $\frac{1}{2}$ E.**, then run in, keeping a sharp lookout for the Black Buoy off Cole's Point Shoal; when this Buoy is made, leave it on the Port hand, and run for the Black Buoy off Cole's Point Spit, leaving it close to on the Port hand, and the Red Buoy off Glebe Shoal on the Starboard hand; when past the last-named Buoy run up about $\frac{1}{3}$ mile, and anchor in from 12 to 13 feet water at low tide; if bound up through the Narrows, it is advisable to take a pilot.

High Water.

It is high water at the mouth of Lower Machodoc River 2h. 21m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

NOMINI BAY.

The entrance to this Bay is on the South side of the Potomac River, nearly opposite Blakistone Lighthouse, and about 5 miles to the Eastward of Nomini Cliffs.

Remarks.

This Bay affords good shelter in Southerly and Southwesterly winds, but is exposed to Northerly and Northeasterly winds; in entering there are no dangers except the Flats which extend from the shores; from $2\frac{1}{2}$ to 3 fathoms can be carried in at low tide.

**Sailing Directions for Nomini Bay in Daytime,
with favorable winds and fair weather.**

Vessels bound into Nomini Bay may follow the directions before given for the Potomac River, until up with the Black Buoy off Ragged Point; leave this Buoy about $\frac{1}{4}$ mile on the Port hand, and make good the course **W. by N. $\frac{1}{4}$ N.** until Blakistone Island Lighthouse bears **N. by W. $\frac{1}{2}$ W.**, the Bay will then be fairly open, bearing **S. by E. $\frac{1}{2}$ E.**, and they may boldly run in, keeping midway, and anchor in from $2\frac{1}{2}$ to 3 fathoms water.

CURRIOMAN BAY.

This Bay, which has about 7 or 8 feet water in it at low tide, lies inside of Hollis's Marshes, which form the Southwestern part of Nomini Bay; vessels of not more than 7 feet draught may find shelter in this Bay from all winds.

**Sailing Directions for Currioman Bay in Daytime,
with favorable winds and fair weather.**

Vessels bound into Currioman Bay may follow the directions before given for Nomini Bay, until Blakistone Island Lighthouse bears **N. by W. $\frac{1}{2}$ W.**, then run in **S. by E. $\frac{1}{2}$ E.**, keeping a sharp lookout for the Red Buoy which lies on the end of Spit which extends off Southeast from Elbow Point; as soon as this Buoy is made, bring it to bear **SW. by S.**, and run for it on this course, leaving it close to on the Starboard hand, and carrying about 8 feet water through the narrow channel; when past this Buoy, haul gradually to the Northwest, carrying from 8 to 10 feet water; when Elbow Point bears East, anchor in about 8 feet water.

High Water.

It is high water at the entrance of Currioman Bay 2h. 23m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

MATTOX CREEK.

The entrance to this Creek, which is on the South side of the Potomac River, lies Northwest about 7 miles from Nomini Cliffs, and **W. ½ N.** 10 miles from Blakistone Island Lighthouse.

Remarks.

About 6 feet water at low tide can be carried up into this Creek as far as Massey's and Wirt's Wharves; in entering, however, the channel is narrow, and there are no Buoys at this date (1882), to mark the dangers; it is therefore advisable for strangers bound in to take pilots.

High Water.

It is high water at the mouth of Mattox Creek 2h. 40m. after it is at Boston; common tides rise about 2 feet.

SMITH'S CREEK, OR WINTER HARBOR.

This Creek, which is on the North side of the Potomac, near its entrance, is Northwesterly $15\frac{1}{2}$ miles from Smith's Point Lighthouse, and about 5 miles Northwesterly from Point Lookout Lighthouse.

Remarks.

This Creek or Harbor, which is much frequented by small vessels, is said to be free from ice, excepting in very severe winters; at this time, in entering, there are 3 Buoys, which mark the channel leading in; about 10 feet water at low tide can be carried into this place.

Sailing Directions for Smith's Creek in Daytime, with favorable winds and fair weather.

Vessels from the Southward, bound to Smith's Creek or Winter Harbor, may leave the Lighthouse off Smith's Point about $\frac{1}{2}$ mile on the Port hand, and make good the course **NW. ½ N.**; when about 4 miles past Point Lookout Lighthouse, keep a sharp lookout for the Black Buoy which lies off Kitt's Point Shoal; when this Buoy is made, bring it to bear North, and run for it, leaving it close to on the Port hand, and the Red Buoys off Windmill Point Shoal

close to on the Starboard hand; when past the Upper Buoy, anchor nearest the Starboard shore, in not less than 10 feet water.

Coming down the Chesapeake Bay, leave the Red Buoy (which lies about a mile from Point Lookout Lighthouse) a short distance on the Starboard hand, and steer about **NW ½ W.**; when about 4 miles past this Buoy, keep a sharp lookout for the Black Buoy off Kitt's Point Flats; when this last Buoy is made, follow the directions before given.

High Water.

It is high water at the mouth of Smith's Creek 1h. 37m. after it is at Boston; common tides rise about 1½ feet.

ST. MARY'S RIVER.

The entrance to this River is on the North side of the Potomac River, about 7 miles Northwesterly from Point Lookout Lighthouse, and 1¼ miles above the entrance to Smith's Creek or Winter Harbor.

Remarks.

The entrance to St. Mary's River, which is between Kitt's Point on the East and St. George's Island on the West, is about 2 miles wide; the principal danger in entering this River is St. George's Bar; this danger extends off more than a mile from the Southeastern part of St. George's Island, and is marked on its outer part with a Buoy painted in Red and Black Horizontal Stripes; vessels bound into the Potomac River must leave this Buoy on the Starboard hand, and those bound into St. Mary's River on the Port hand; when past this Buoy, by keeping midway the River, there are no dangers, and about 3½ fathoms water can be carried up to St. Mary's, which is about 5 miles above the entrance.

Sailing Directions for St. Mary's River in Daytime, with favorable winds and fair weather.

Vessels coming up the Chesapeake Bay, bound to St. Mary's River, may follow the directions before given from Cape Henry to Baltimore, until up with Smith's Point Lighthouse; leave this Lighthouse about ½ mile on the Port hand, and make good the course **NW.** 16 miles; the entrance to this River will then be

open, bearing about North, and the Buoy painted in Red and Black Horizontal Stripes, which lies off St. George's Bar, will then be seen; leave this Buoy about 300 yards on the Port hand, and run up about North, keeping in the middle of the River to St. Mary's.

Coming down the Chesapeake Bay, leave the Red Buoy, which lies about South from Point Lookout Lighthouse, a short distance on the Starboard hand, and make good the course **NW. $\frac{3}{4}$ W.** 7 miles; St. Mary's River will then be open, bearing about North; then run in, leaving the Buoy painted in Red and Black Horizontal Stripes, off St. George's Bar, on the Port hand, and follow the directions before given.

BRETON'S BAY.

The entrance to this Bay, which is on the North side of the Potomac River, is Northwest $9\frac{3}{4}$ miles from Piney Point Lighthouse, and Northeasterly $2\frac{3}{4}$ miles from Blakistone Island Lighthouse.

Remarks.

The entrance to this Bay, which is between Kaywood's Point on the West and Higgins' Point on the East, is about $\frac{3}{4}$ mile wide; about 15 feet water can be carried up to Lover's Point, 3 miles from the entrance, and from this about 8 feet to Leonardtown, which is $1\frac{1}{2}$ miles above the last-named Point.

Sailing Directions for Breton's Bay in Daytime, with favorable winds and fair weather.

Vessels bound into Breton's Bay may follow the directions before given for the Potomac River, until abreast the Black Buoy off Ragged Point; leave this Buoy a short distance on the Port hand, and make good the course **NW. $\frac{1}{2}$ W.** about 5 miles; then keep a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes, which lies off Heron Island Shoal; Blakistone Island Lighthouse bears from this Buoy about West 2 miles; when this last-named Buoy is made, leave it close to on the Port hand, and run about **N. $\frac{1}{4}$ E.**, and in order to avoid the Shoal extending off Southwest from Higgins' Point, at the entrance of the Bay, keep the Port side best aboard, until about a mile from the mouth; then

keep midway until up with Lover's Point before mentioned, then keep the Port side best aboard to Leonardtown; at Lover's Point, Spits extend off from both sides of the River, making the channel very narrow; it is therefore necessary, when passing this place, to proceed with caution.

High Water.

It is high water at the entrance of Breton's Bay 2h. 30m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

ST. CLEMENT'S BAY.

The entrance to St. Clement's Bay, which lies about $1\frac{1}{2}$ miles to the Westward of Breton's Bay, is only separated from the latter by Newton's Neck; vessels bound into the first mentioned Bay pass to the Westward of this Neck, while those bound into the latter place pass to the Eastward of it.

Remarks.

About 16 feet water at low tide can be taken up as far as Shipping Point, which is about 2 miles from the entrance, and 10 feet can be carried up $2\frac{1}{2}$ miles above this; in entering this Bay, Spits extend off from both sides, having but little water upon them.

Sailing Directions for St. Clement's Bay in Daytime, with favorable winds and fair weather.

Vessels bound into St. Clement's Bay may follow the directions before given for the Potomac River, until abreast the Black Buoy off Ragged Point; leave this Buoy a short distance on the Port hand, and make good the course **NW. $\frac{1}{2}$ W.** about 5 miles; then keep a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes, which lies off Heron Island Shoal; Blackstone Island Lighthouse bears from this Buoy about West 2 miles; when this last-named Buoy is made, leave it about $\frac{1}{4}$ mile on the Port hand, and steer about **NW. $\frac{1}{2}$ W.**, carrying from 3 to $3\frac{1}{2}$ fathoms water; when Long Point, which is on the Eastern side about $\frac{1}{2}$ mile above the entrance, bears **NW.** by **N. $\frac{1}{2}$ N.**, run for it on this course, passing between the Spits at the entrance, and carrying not less than 15 feet water; leave this Point about 300 yards on

the Starboard hand, and run up, and anchor about $\frac{1}{2}$ mile above it, in from $2\frac{1}{2}$ to 3 fathoms water; if bound farther up, keep midway the Bay; between Blakistone Island Lighthouse and Heron Island there is a narrow channel, having about 3 fathoms water in it; strangers, however, should not attempt this passage.

High Water.

It is high water at the entrance of St. Clement's Bay 2h. 35m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

WICOMICO RIVER.

The entrance to this River is on the North side of the Potomac, about $4\frac{1}{2}$ miles Northwest from Blakistone Island Lighthouse, and nearly opposite Nomini Cliffs, which are on the South side of the Potomac.

Remarks.

The entrance to this River, which is about $1\frac{1}{4}$ miles wide, lies between St. Margaret's Island on the East and Cob Point on the West; shoal water extends off Southeast from this last Point for more than a mile, and is marked on its outer part with a Buoy painted in Red and Black Horizontal Stripes; vessels bound up the Potomac must leave this Buoy on the Starboard hand, but vessels bound into Wicomico River must leave it on the Port hand. There is a good channel of 5 fathoms water which leads up about 3 miles from this Buoy; above this the River is full of shoals.

Sailing Directions for Wicomico River in Day-time, with favorable winds and fair weather.

Vessels bound into Wicomico River may follow the directions before given for the Potomac, until up with the Lower Mid-channel Buoy, which is painted in Black and White Perpendicular Stripes; Blakistone Island Lighthouse bears from this Buoy East about 3 miles; when this Buoy is made, leave it close to on either hand, and steer **N. by W. $\frac{1}{2}$ W.**, keeping a sharp lookout for the Buoy painted in Red and Black Horizontal Stripes, which lies about $1\frac{1}{2}$ miles Southeast from Cob Point; when this Buoy is made, leave it a short distance on the Port hand. As

you sail in, the Red Buoy off St. Margaret's Island Shoal will be seen; leave this Buoy about 150 yards on the Starboard hand, and run about **N. $\frac{1}{2}$ E.** $\frac{1}{2}$ mile, when you may anchor in from 5 to 6 fathoms water.

Or, when past the Red Buoy off St. Margaret's Island Shoal, you may steer about **N. $\frac{1}{2}$ E.**, leaving the Black Buoy off Lancaster Point Spit about 150 yards on the Port hand; when past this last-named Buoy, run up about **N.NW.** $\frac{3}{4}$ mile, and anchor in about 5 fathoms water; above this the River is full of shoals.

High Water.

It is high water at the mouth of Wicomico River 2h. 35m. after it is at Boston; common tides rise about 2 feet.

PORT TOBACCO RIVER.

The entrance to this River, which is on the North side of the Potomac, lies Northeasterly about $2\frac{1}{2}$ miles from Mathias Point Lighthouse.

Remarks.

About 6 feet water at low tide can be carried from Windmill Point, which is on the West side of entrance, to Fourth Point, and from this about 3 or 4 feet to Port Tobacco Landing.

Sailing Directions for Port Tobacco Landing in Daytime, with favorable winds and fair weather.

Vessels bound into Port Tobacco River may follow the directions before given for the Potomac, until the Beacon opposite Mathias Point Lighthouse is made; bring this Beacon to bear West about $\frac{1}{2}$ mile, and in order to avoid the shoal water which extends off from Windmill Point (which is the first on the Port hand in entering), steer about **N. by E.**, carrying about 8 feet water across the flats; when past this last-named Point, keep midway the River to Port Tobacco Landing.

High Water.

It is high water in Port Tobacco River 4h. 46m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

Tides in the Potomac River.

The tides in the Potomac, like all other Rivers in the Chesapeake Bay, are varied by winds. Strong Southeast winds increase the tides, but after blowing from the North or Northwest a short time, the tides rise but little.

PATUXENT RIVER.

The entrance to this River, which lies on the West side of Chesapeake Bay, is between Hog Island Point on the South and Drum Point on the North, and is 17 miles Northwesterly from Point Lookout Lighthouse, and Southwesterly $4\frac{1}{2}$ miles from Cove Point Lighthouse.

Remarks.

The principal danger in entering this River is a Shoal which extends off a little more than $\frac{1}{2}$ mile from Hog Island Point, which is on the South side of the entrance. This danger is marked with a Black Buoy, which in going in, is left on the Port hand. From 5 to 11 fathoms water can be taken into the mouth of this River. This is a good harbor of refuge for vessels bound up or down the Chesapeake Bay.

Sailing Directions for entering the Patuxent River in Daytime, with favorable winds and fair weather.

Vessels bound into Patuxent River may follow the directions before given from Cape Henry to Baltimore, until Cove Point Lighthouse is made; bring this Lighthouse to bear **N.** by **W.**, and run for it on this course, leaving Cedar Point, which is quite bold, well on the Port hand; when past this Point, gradually haul to the Westward, keeping a sharp lookout for the Black Buoy off Hog Island Point Shoal, which extends off about $\frac{1}{2}$ mile from the Southern side; when this Buoy is made, leave it about 300 yards on the Port hand, and steer **W S W.** about 1 mile, when you may gradually haul to the Southward and anchor in the Cove on the Southern side, in from 5 to 10 fathoms water, good holding ground.

In order to avoid the flat ground which extends off from the

Western shore, about 2 miles to the Southward of Cove Point, heavy draught vessels, coming down the Chesapeake Bay bound into this River, may leave Cove Point Lighthouse about 1 mile to the Westward, and steer South about 3 miles; the River will then be open, bearing about **W.SW.**; then run in, keeping a sharp lookout for the Black Buoy off Hog Island Point, and follow the directions before given.

Beating into Patuxent River.

In beating into this River, care should be taken to avoid the Shoal which extends off from Hog Island Point, which is on the South side; when past the Buoy which marks this danger, you may stand well over towards Drum Point, which is bold, and is the first Point on the North side in entering; when past this last-named Point, keep the South side best aboard, as there is a Shoal $\frac{1}{2}$ mile to the Westward of Drum Point, which extends more than $\frac{1}{2}$ mile from shore.

Anchorage off the Mouth of Patuxent River.

With Westerly winds, vessels may find shelter off the mouth of this River; heavy draught vessels should anchor in from 4 to 7 fathoms water. Cove Point Lighthouse bears from this anchorage North about $3\frac{1}{2}$ miles.

High Water.

It is high water at the mouth of Patuxent River 2h. 10m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

HERRING BAY.

This Bay, which lies to the Northward of Holland Point, is on the West side of the Chesapeake, about 10 miles Northwesterly from Sharp's Island Lighthouse, and 10 miles Southwesterly from Thomas' Point Lighthouse.

Remarks.

With Westerly winds, vessels may find good shelter in this Bay; shoal water extends off Northeasterly about $1\frac{1}{2}$ miles from Holland Point, which is on the South side of the entrance, and shoal

water also makes off from the Western and Northwestern sides of this Bay; vessels in entering should, therefore, use the Lead, which is a sure guide.

**Sailing Directions for Holland Bay in Daytime,
with favorable winds and fair weather.**

Vessels coming up the Chesapeake Bay may follow the directions before given from Cape Henry to Baltimore, until the Black Buoy off to the Eastward of Holland Point is made; leave this Buoy about $\frac{1}{4}$ mile on the Port hand and steer **N.** by **W.** about $1\frac{1}{2}$ miles (carrying not less than 4 fathoms water); then haul in, and anchor, according to draught, in from $2\frac{1}{2}$ to $3\frac{1}{2}$ fathoms water.

Vessels coming down the Chesapeake Bay may leave the Black Buoy off Thomas' Point about $\frac{1}{4}$ mile on the Starboard hand, and make good the course **S.** by **W.** $\frac{1}{2}$ **W.**, leaving the Black Buoy off Horse Shoe Point well on the Starboard hand; when Holland Bay is fairly open, run in and anchor as before directed.

FAIRHAVEN LANDING.

This landing lies on the West side of Holland Bay. A Spit, having but little water upon it, extends about $1\frac{3}{4}$ miles from Parker's Island, which is on the North side, leaving a channel of 10 feet water between this Spit and the Western shore.

**Sailing Directions for Fairhaven Landing in Daytime,
with favorable winds and fair weather.**

Vessels from the Southward, of not more than 7 or 8 feet draught, bound to Fairhaven Landing, may leave the Black Buoy off Holland Point close to on the Port hand, and steer about **N.** $\frac{1}{2}$ **E.**, about $1\frac{1}{4}$ miles; then haul round the Shoal which makes off to the Northward of Holland Point, keeping in about $2\frac{1}{2}$ fathoms, and run up about **W.** by **S.** until Holland Point bears **SE.** by **E.**; then haul round the Southern end of the Spit, and run up about **N.** by **E.**, carrying from 9 to 10 feet water through the narrow channel, passing inside or to the Westward of the Spit; when the end of the Wharf bears **SW.** by **W.**, then run for it on this course.

High Water.

It is high water in Holland Bay 3h. 20m. after it is at Boston ; common tides rise about 1 foot.

WEST RIVER.

The entrance to this River, which is on the West side of Chesapeake Bay, lies about $3\frac{1}{2}$ miles Southwest from the Lighthouse off Thomas' Point.

Remarks.

The entrance to this River, which is about $1\frac{3}{4}$ miles wide, lies between Saunders' Point on the North and Curtis Point on the South. Shoals extend off a long distance from both these Points, which at this time, are marked with Buoys. About $1\frac{1}{2}$ miles from the entrance, the River divides into two branches; the Northwest branch is called Rhode River. About 13 feet water, at low tide, can be taken in as far as the mouth of Rhode River, which is about 2 miles from the entrance, and 9 feet can be carried up about 2 miles above this point; about 9 feet water can be carried up into Rhode River.

Sailing Directions for West River in Daytime, with favorable winds and fair weather.

Vessels coming up the Chesapeake Bay may follow the directions before given from Cape Henry to Baltimore until the Lighthouse off Thomas' Point is made; bring this Lighthouse to bear **N.** by **E.**, and run for it, leaving the Black Buoy off Horse Shoe Point well on the Port hand; when about 2 miles from Thomas' Point Lighthouse, haul up **NW.**, until this last-named Lighthouse bears **NE. $\frac{3}{4}$ E.**, on which bearing keep it, and steer **SW. $\frac{3}{4}$ W.** leaving the Red Buoy off Saunders' Point well on the Starboard hand, and carrying not less than 15 feet water. As you sail in you will see the Black Buoy off Curtis Point Shoal and the Red Buoy off Dutchman's Point Flats; Thomas' Point Lighthouse bears from the former **NE. $\frac{1}{2}$ E.**, about 3 miles; when these Buoys are made, pass about midway between them and run up about **W.** by **S.**, 2 miles; then anchor in from 10 to 12 feet water; or, when past the Buoys, steer about **W. $\frac{3}{4}$ S.**, about 1 mile, when Rhode River will

then be open, bearing about **N.NW.**; then run up midway and anchor near the mouth in about 12 feet water, secure from all winds.

Vessels coming down the Chesapeake Bay, bound into West River, may leave the Black Buoy off to the Southward of Thomas' Point Lighthouse close to on the Starboard hand, and steer **SW. $\frac{3}{4}$ W.**, keeping a sharp lookout for the Black Buoy off Curtis' Point Shoal; when this Buoy is made, follow the directions before given.

High Water.

It is high water at the entrance of West River 4h. 44m. after it is at Boston; common tides rise about 1 foot.

SOUTH RIVER.

The entrance to this River, which is about 2 miles to the Northward of West River, lies between Thomas' Point on the North and Saunders' Point on the South.

Remarks.

The entrance to South River is about 2 miles wide. Shoal water extends off from both Thomas' and Saunder's Points. About 14 feet water, at low tide, can be carried up some 5 miles from the entrance.

Sailing Directions for South River in Daytime, with favorable winds and fair weather.

Vessels coming up the Chesapeake Bay, bound into South River, may follow the directions before given from Cape Henry to Baltimore, until Thomas' Point Lighthouse is made; then bring it to bear **N.** by **E.**, and run for it on this course until about 2 miles from it; South River will then be open, bearing about **NW.** by **N.**; then run **NW.**, keeping a sharp lookout for the Buoys which mark the channel leading in; when these are made, leave the Red Buoy off Marshy Point on the Starboard and the Black Buoy on Turkey Point Middle Ground on the Port hand, and anchor above the last-named Buoy in from $2\frac{1}{2}$ to 4 fathoms water; or, when past the Black Buoy on Turkey Point Middle Ground, steer about **NW. $\frac{1}{2}$**

N., leaving the Red Buoy off Hill's Point on the Starboard hand; when past this Buoy, keep in the middle (leaving the Black Buoy off Glebe Creek Flats on the Port hand), until up with the Bridge.

Vessels coming down the Chesapeake Bay may leave the Black Buoy to the Southward of Thomas' Point about $\frac{1}{4}$ mile on the Starboard hand, and steer **W.** by **S.**, keeping a sharp lookout for the Buoys at the entrance of the River; when these are made, follow the directions before given.

Anchorage under Thomas' Point.

Remarks.

With winds from **SW.** to **NE.**, by way of North, vessels may find good shelter to the Westward of Thomas' Point, in from $2\frac{1}{2}$ to $3\frac{1}{2}$ fathoms water, good holding ground.

Sailing Directions for the Anchorage under Thomas' Point.

Vessels coming up the Chesapeake Bay may follow the directions before given from Cape Henry to Baltimore, until Thomas' Point Lighthouse is made; then bring this Lighthouse to bear **N.** by **E.**, and run for it on this course until about $1\frac{1}{2}$ miles from it; then run in **NW.**, and anchor according to draught, in from $2\frac{1}{2}$ to $3\frac{1}{2}$ fathoms water, good holding ground.

Coming down the Chesapeake Bay, vessels of more than 16 feet draught should leave the Black Buoy to the Southward of Thomas' Point Lighthouse at least $\frac{1}{3}$ mile on the Starboard hand, and gradually haul to the Westward, and anchor in about $3\frac{1}{2}$ fathoms water, with the Lighthouse bearing about **NE.** by **E.**, about $1\frac{1}{4}$ miles from it; light draught vessels may go farther in and anchor in $2\frac{1}{2}$ fathoms water.

High Water.

It is high water at Thomas' Point or the entrance of South River 4h. 44m. after it is at Boston; common tides rise about 1 foot.

ANNAPOLIS HARBOR.

This Harbor, which is on the Southwest side of Severn River, about $1\frac{1}{4}$ miles from its mouth, lies Northwesterly about 5 miles

from Thomas' Point Lighthouse, and West-Northerly about $1\frac{1}{4}$ miles from Greenbury Point Lighthouse, which is on the Northern side of entrance to this River.

Remarks.

At this date (1882), the channel leading up to Annapolis is well buoyed; about 20 feet water at low tide can be carried past Greenbury Point Lighthouse, and from 12 to 15 feet can be taken up into the Harbor.

Sailing Directions for Annapolis Harbor in Day-time, with favorable winds and fair weather.

Coming up the Bay, bound to Annapolis Harbor, follow the directions before given from Cape Henry to Baltimore, until up with the Lighthouse off Thomas' Point; leave this Lighthouse about $\frac{1}{4}$ mile on the Port hand and steer about North, keeping a sharp lookout for the Black Buoy off Tally's Point; Thomas' Point Lighthouse bears from this Buoy **S. $\frac{1}{2}$ W.** $1\frac{1}{8}$ miles; when this Buoy off Tally's Point is made, leave it close to on the Port hand, and make good the course **N. by W.** $\frac{3}{4}$ **W.**; as you sail in you will see on the Port hand the Red Buoy off Greenbury Point Shoal; for the deepest water bring this Buoy to bear **NW. $\frac{1}{2}$ W.** and run for it on this course, leaving it close to on the Starboard hand, and carrying not less than 20 feet water; when past this last Buoy you will see farther up two Black Buoys, both of which may be left close to on the Port hand, when past these Buoys, the Northwesternmost of which is nearly opposite the Lighthouse, you will see the Red Buoy off Port Madison; leave this last Buoy on the Starboard hand, and run into the Harbor, leaving the Black Buoy off Sycamore Flats on the Port hand, and anchor opposite the town, in from 2 to $2\frac{1}{2}$ fathoms water.

Coming down Chesapeake Bay, bound to Annapolis Harbor, leave the Black Buoy off Sandy Point Lighthouse a short distance on the Starboard hand, and make good the course **SW. by S.** $\frac{1}{2}$ **S.** 3 miles, leaving the Black Buoy off Hackett's Point on the Starboard hand; when past this Buoy steer about **WSW.**, keeping a sharp lookout for the Red Buoy off to the Southeastward of Greenbury Point Lighthouse; when this last-named Buoy is made (which bears from Greenbury Point Lighthouse **S. by E.** $\frac{3}{4}$ **E.** $\frac{3}{4}$ mile), follow the directions before given.

ANNAPOLIS ROADS.

These Roads lie from $1\frac{1}{4}$ to $2\frac{1}{2}$ miles Southeast from Greenbury Point Lighthouse, and have from $3\frac{1}{2}$ to 8 fathoms water in them.

Sailing Directions for Annapolis Roads.

Vessels coming up Chesapeake Bay, intending to anchor in these Roads, may follow the directions before given from Cape Henry to Baltimore, until Greenbury Point Lighthouse bears **NW.**; then run boldly in and anchor according to draught in from $3\frac{1}{2}$ to 8 fathoms water, soft, muddy bottom.

Coming down Chesapeake Bay, leave the Black Buoy off Sandy Point Lighthouse about $\frac{1}{4}$ mile on the Starboard hand, and make good the course **SW.** by **S.** $\frac{1}{2}$ **S.**, leaving the Black Buoy off Hackett's Point well on the Starboard hand; when Greenbury Point Lighthouse bears **NW.**, follow the directions before given.

High Water.

It is high water in Annapolis Harbor 5h. 20m. after it is at Boston; common tides rise about 1 foot.

MAGOTHY RIVER.

The entrance to this River, which is on the East side of Chesapeake Bay, lies Northwesterly about $2\frac{3}{4}$ miles from the Lighthouse on Sandy Point, and $5\frac{3}{4}$ miles Southerly from Bodkin Point Lighthouse.

Remarks.

The entrance to this River, which is between Stony Point on the North and Persimmon Point on the South, is about $\frac{1}{2}$ mile wide; about 10 feet water can be carried into this River at low tide; the channel leading in is nearest Stony Point.

Sailing Directions for Magothy River in Daytime, with favorable winds and fair weather.

Vessels coming up the Bay, bound into Magothy River, may leave the Black Buoy off Sandy Point Lighthouse about $\frac{1}{4}$ mile on the Port hand, and steer about **N.** by **W.** about $2\frac{1}{4}$ miles; the

River will then be open, and the Black Buoy which lies off the entrance will be seen; leave this last Buoy close to on the Port hand, and run in about **W.NW.**, leaving the Red Buoy off Stony Point Shoal on the Starboard, and the Black Buoy off Persimmon Point Shoal on the Port hand, and run up and anchor about $\frac{3}{4}$ mile inside Stony Point in from 12 to 15 feet water.

Coming down the Chesapeake Bay, when the Black Buoy off the entrance to Magothy River is made, run in as before directed.

High Water.

It is high water at the mouth of Magothy River 6h. 5m. after it is at Boston; common tides rise about 1 foot.

CHERRYSTONE INLET.

The entrance to this Inlet, which is on the Eastern side of Chesapeake Bay, lies about 20 miles North from Cape Henry Lighthouse, **NE.** $\frac{1}{2}$ **E.** $15\frac{1}{4}$ miles from Back River Lighthouse, **E.** by **N.** $10\frac{3}{4}$ miles from York Spit Lighthouse, and $9\frac{1}{2}$ miles above Cape Charles

Cherrystone Lighthouse.

On the Shoal, West side of entrance to this Inlet, in about 5 feet water at low tide, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time there is attached to this Lighthouse a Bell, which in thick weather is struck twice in quick succession, at intervals of 30 seconds.

Remarks.

The Channel leading into Cherrystone Inlet is very narrow, and strangers entering should proceed with caution; with favorable winds about 12 feet water at low tide can be carried in abreast the Lighthouse, and about 9 feet can be taken from this Point to the wharves.

Sailing Directions for Cherrystone Inlet in Day-time, with favorable winds and fair weather.

Vessels from Seaward or the Southwestward, bound to Cherrystone Inlet, may follow the directions before given from Cape Henry to Baltimore, until Back River Lighthouse bears **W.SW.**;

then make good the course **E.NE.** until Cherrystone Inlet Lighthouse bears North; then run for it on this course, carrying from $2\frac{1}{2}$ to 4 fathoms water, and leaving Old Plantation Flats, on which there are about 7 feet water, well on the Port hand; when about $1\frac{1}{4}$ miles from the Lighthouse, keep a sharp lookout for the Black Buoy, which lies about $\frac{1}{2}$ mile to the Southward of the Lighthouse; when this Buoy is made, bring it to bear about **N. $\frac{1}{2}$ W.** and run for it, carrying about 12 feet water through the narrow channel; leave this Buoy close to on the Port hand, and under *short sail* run in, leaving the Black Buoy to the Eastward of the Lighthouse close to on the Port; when past this last-named Buoy, run for the next Black Buoy, carrying about 3 fathoms water; leave this last Buoy close to on the Port hand, and the next Red Buoy close to on the Starboard hand, carrying not less than 9 feet water; when past the last-named Red Buoy you will see a small Island, which may be left about 150 yards on the Port hand; when past this Island follow the narrow channel to the Northward, until the end of the wharf on the Eastern side bears **NE.**; then run for it, carrying not less than 9 feet water to the outer end.

Vessels of not more than 7 or 8 feet draught, coming down the Chesapeake Bay, may bring the Lighthouse on the Wolf Trap to bear **NW.** by **N.**, and make good the course **SE.** by **S.**; as they approach the Eastern shore a sharp lookout should be kept for the Red Buoy, which lies about a mile to the Westward of Cherrystone Inlet Lighthouse; when this Buoy is made, leave it on the Port hand, and run to the Eastward across the Flats, leaving the Black Buoy, which lies about $\frac{1}{2}$ mile to the Southward of the Lighthouse, close to on the Port hand, and follow the directions before given.

Strangers should not attempt to beat into Cherrystone Inlet.

High Water.

It is high water at the entrance of Cherrystone Inlet 3h. 6m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

HUNGER'S CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, lies Northeasterly $8\frac{3}{4}$ miles from the Lighthouse

at the entrance to Cherrystone Inlet; East 10 miles from the Lighthouse on Wolf Trap Shoal, and **SE.** 17 miles from the Lighthouse on Rappahannock Shoal.

As we have no personal knowledge at this time of the dangers in navigating this Creek, we shall therefore only give the sailing directions issued by the Lighthouse Board, July 1, 1881.

Sailing Directions for Hunger's Creek in Day-time, with favorable winds and fair weather.

In entering this Creek, leave the Red Can Buoy which lies off the entrance close to on the Starboard hand, and steer for Wilkin's Dwelling House, leaving the Black Can Buoy close to on the Port hand; the course over the Bar is **E. $\frac{1}{2}$ N.** As soon as you deepen to 2 fathoms, haul up for the North end of the Bluff on Wilkin's Farm, and when abreast it, steer for the outer end of the Wharf, leaving the Red Buoy close to on the Starboard and the Black Buoy on the Port. The soundings are very irregular, *varying* from 9 to 15 feet. The most water that can be carried between the two upper Buoys is 6 feet at low tide.

High Water.

It is high water at the entrance of Hunger's Creek 2h. 15m. before it is at Boston; common tides rise about $2\frac{2}{3}$ feet.

NASWADDOX CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, is $12\frac{3}{4}$ miles Northeasterly from the Lighthouse at the entrance to Cherrystone Inlet, and about $4\frac{1}{4}$ miles Northeasterly from the entrance to Hunger's Creek.

Remarks.

About 4 feet water, at low tide, can be carried through a narrow channel into this Creek, but as there are at this date (1882), no Buoys to mark the channel leading in, no sailing directions can therefore be given; small or light draught vessels bound to this Creek should therefore take pilots.

OCCOCHANNOCK CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, lies about 18 miles Northeasterly from the Lighthouse at the entrance of Cherrystone Inlet, and **E.** by **S.** $\frac{1}{4}$ **S.** $14\frac{1}{2}$ miles from the Lighthouse on Rappahannock Spit.

Remarks.

In entering this Creek there are two channels, called the Northern and Southern Channels, both of which, at this time, are marked with Buoys. About 5 feet water, at low tide, can be carried into this Creek.

NANDUA CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, lies 16 miles **E.** $\frac{1}{2}$ **N.** from the Lighthouse on Rappahannock Spit, and about 9 miles South from the Lighthouse at Watt's Island.

Remarks.

About 6 feet water, at low tide, can be taken across the Bar into this Creek.

Sailing Directions for Nandua Creek in Daytime, with favorable winds and fair weather.

Vessels of not more than 6 feet draught, bound into Nandua Creek, should, after making the Buoys at the entrance, wait until about $\frac{3}{4}$ flood; then run in, leaving the Outer Bar Buoy (Red) close to on the Starboard hand, and the Inner Bar Buoy (Black) close to on the Port hand; when past the Black Buoy on the Inner part of the Bar, you will see the Red Buoy which lies on the Outer point of the Shoal which extends from the Point on the Southern side of entrance; leave the last-named Buoy close to on the Starboard hand, and run up about 1 mile **S.SE.**, and anchor in from 10 to 12 feet water.

High Water.

It is high water at Nandua Creek 42 minutes before it is at Boston; common tides rise about 2 feet.

PUNGOTEAGUE CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, lies **E.** by **N.** 17 miles from the Lighthouse on Rappahannock Spit, and South about $6\frac{1}{2}$ miles from the Lighthouse at Watt's Island.

Remarks.

At this time the channel leading into Pungoteague Creek is well marked with Buoys; about 10 feet water, at low tide, can be taken into this place.

Sailing Directions for Pungoteague Creek in Day-time, with favorable winds and fair weather.

Vessels bound up the Bay, of not more than 7 or 8 feet draught, may bring the Lighthouse on the Wolf Trap Shoal to bear **SW.** $\frac{1}{2}$ **S.**, and make good the course **NE.** $\frac{1}{2}$ **N.** 20 miles, which will take them abreast the entrance to Pungoteague Creek; then, at $\frac{1}{2}$ flood, run in, keeping a sharp lookout for the Outer Black Buoy, which lies to the Southwestward of a small Islet (called South Marsh); when this Buoy is made, leave it close to on the Port, and run in, leaving the Black Buoys close to on the Port and the Red Buoys close to on the Starboard hand, and anchor in from 10 to 15 feet water.

Coming down the Bay, bring the Lighthouse on Smith's Point Shoal to bear **NW.**, and make good the course **SE.** about 20 miles, which will take them off the entrance to Pungoteague Creek; then follow the directions before given.

High Water.

It is high water at the entrance of Pungoteague Creek 32 minutes before it is at Boston; common tides rise about 2 feet.

MACHOTANK CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, lies about $2\frac{1}{2}$ miles Northeasterly from the entrance to Pungoteague Creek, and **SE.** by **S.** $\frac{1}{2}$ **S.** 5 miles from the Lighthouse at Watt's Island.

Remarks.

At this date (1882), the entrance to this Creek is marked with a Buoy painted in Red and Black Horizontal Stripes, with a board upon it with the word Machotank. About 5 feet water can be taken into this Creek at low tide.

ONANCOCK CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, near the entrance to Pocomoke Sound, lies $4\frac{1}{2}$ miles **SE.** by **S.** from the Lighthouse on Watt's Island.

Remarks.

At this date (1882), the channel leading into this Creek is well marked with Buoys. About 7 feet water, at low tide, can be taken into this place.

Sailing Directions for Onancock Creek in Daytime, with favorable winds and fair weather.

Vessels of not more than 7 feet draught, bound up or down the Chesapeake Bay, may bring the Lighthouse on Watt's Island to bear **NE.** by **N.**, and run for it on this course until about 3 miles from it; then steer more Easterly, until this Lighthouse bears **NW.** by **N.**; then make good the course **SE.** by **S.**, keeping a sharp lookout for the Outer Buoy, which is painted in Black and White Perpendicular Stripes; then, at about $\frac{1}{2}$ flood, leave this Buoy close to on either hand, and run in, leaving the Black Buoys close to on the Port, and the Red Buoys close to on the Starboard hand.

High Water.

It is high water at Onancock Creek about the same time it is at Boston; common tides rise about 2 feet.

CHESCONESSEX CREEK.

The entrance to this Creek, which is on the Eastern side of Chesapeake Bay, near the entrance to Pocomoke Sound, lies about $4\frac{1}{2}$ miles **E.SE.** from the Lighthouse at Watt's Island.

Remarks.

At this date (1882), the channel leading into Chesconessex Creek is marked with Buoys. About 13 feet water can be taken into this place at low tide.

Sailing Directions for Chesconessex Creek in Day-time, with favorable winds and fair weather.

Vessels of not more than 10 feet draught, bound up or down the Chesapeake Bay, may bring the Lighthouse on Watt's Island to bear **NE.** by **N.**, and run for it on this course; when about 3 miles from it, keep a sharp lookout for the Black Buoy, No. 1, which lies about 2 miles Southwest from the Lighthouse; when this Buoy is made, leave it close to on the Port hand, and make good the course **E. ½ N.** for the Red Buoy, No. 2, off Scottshall's Shoal; this last Buoy marks the entrance to the channel leading into this Creek; Watt's Island Lighthouse bears from it **NW.** by **W.** 3 miles; when the last-named Buoy is made, leave it close to on the Starboard hand, and the next Black Buoy close to on the Port, and run in about East, leaving the next Red Buoy close to on the Starboard (carrying not less than 13 feet), and anchor in not less than 13 feet water.

High Water.

It is high water at the entrance of Chesconessex Creek about the same time it is at Boston; common tides rise about $2\frac{1}{4}$ feet.

POCOMOKE SOUND.

The entrance to this Sound, which lies between Watt's Island Lighthouse and the Eastern Shore of Chesapeake Bay, is from 4 to 9 miles wide and 12 miles long.

Watt's Island Lighthouse.

Off the South end of Watt's Island is a Lighthouse, which at this date (1882), shows a fixed White Light, varied by White Flashes every 2 minutes.

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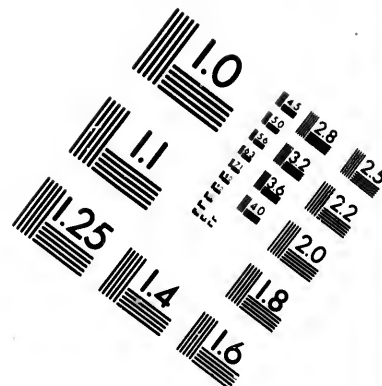
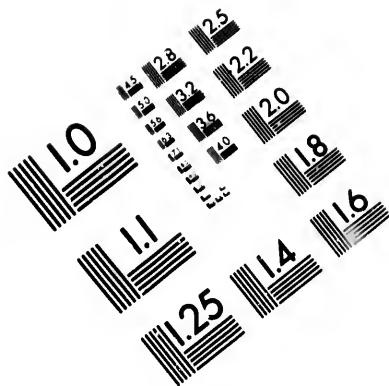
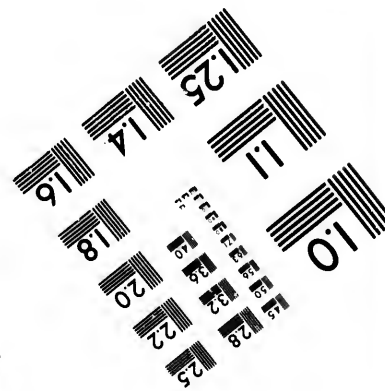
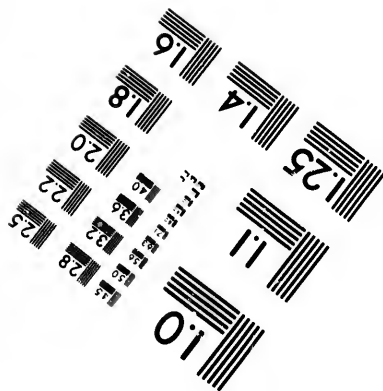
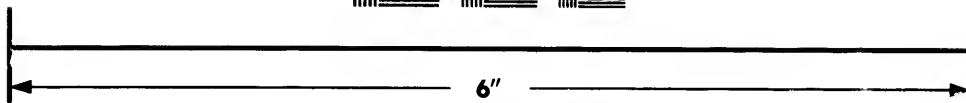
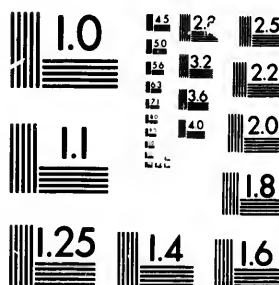


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Remarks.

In entering Pocomoke Sound, shoal water extends off a long distance on both sides, and there is but little water near the upper part; 4 fathoms can be carried up as far as the Red Buoy, No. 4, which lies off Tunnel's Spit, and from this about 10 feet, at low tide, to the mouth of Pocomoke River.

Sailing Directions for Pocomoke Sound in Day-time, with favorable winds and fair weather.

Coming from seaward, or up the Chesapeake Bay, follow the directions before given from Cape Henry to Baltimore, until the Lighthouse on the Rappahannock Spit bears **SW.** by **W.**; then steer **NE.** by **E.** until the Lighthouse at Watt's Island is made; bring this last-named Lighthouse to bear **NE.** by **N.**, and run for it on this course, keeping a sharp lookout for the Black Buoy which lies off Southwest about 2 miles from Watt's Island Lighthouse; when this Buoy is made, leave it about $\frac{1}{2}$ mile on the Port hand, and steer about **NE.** by **E.** $\frac{1}{2}$ **E.**, leaving the Black Buoy off Southeast from the Lighthouse about $\frac{1}{4}$ mile on the Port; when past this Buoy, steer **NE.** $\frac{3}{4}$ **N.**, leaving the Red Buoy off Beach Island Flats on the Starboard, and the Black Buoy off Upper Watt's Island Shoal on the Port hand; when past the last-named Buoy, haul up **N.** by **E.** $\frac{1}{2}$ **E.** and run $3\frac{1}{2}$ miles, leaving the Red Buoy off the Southwest part of Tunnel's Spit on the Starboard, and the Black Buoy off Broad Creek Flats close to on the Port hand, and carrying not less than 12 feet water between the two last-named Buoys; when past this last Black Buoy off Broad Creek Flats, make good the course **NE.** by **E.** $4\frac{1}{2}$ miles, which will take you to the Black Buoy which lies off Messougo Point Shoal, North side of entrance to Pocomoke River. Vessels of not more than 7 feet draught may, when past the Black Buoy off Broad Creek Shoal, steer **NE.** by **N.**, and anchor at the head of the Sound in from 7 to 9 feet water.

Vessels coming down the Chesapeake Bay, bound into Pocomoke Sound, may bring the Lighthouse on Smith's Point Shoal to bear **NW.** by **N.**, and make good the course **SE.** by **S.**, leaving the Red Can Buoy off the Southwest part of Tangier Shoal close to on the Port hand; when past this Buoy, steer **SE.** by **E.** until the Lighthouse at Watt's Island bears **NE.** by **N.**; then follow the directions before given.

High Water.

It is high water in Pocomoke Sound 20 minutes after it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

POCOMOKE RIVER.

The entrance to Pocomoke River lies 12 miles **NE.** $\frac{1}{4}$ **N.** from Watt's Island Lighthouse. From its mouth to Snowhill the distance is 23 miles. Strangers bound up should therefore follow the directions for Pocomoke Sound, and take a pilot at the entrance of the River.

HUNTING CREEK.

This Creek lies on the Southeast side of Pocomoke Sound. The Red Buoy, No. 2, which marks the entrance of the channel leading into Hunting Creek, lies **NE.** by **E.** $6\frac{3}{4}$ miles from Watt's Island Lighthouse. About 10 feet water, at low tide, can be taken into this place.

Sailing Directions for Hunting Creek.

Vessels bound to Hunting Creek may follow the directions before given for Pocomoke Sound, until up with the Black Buoy, No. 5, which lies off Upper Watt's Island Shoal; this Buoy bears **NE.** by **E.** from Watt's Island Lighthouse, distance $3\frac{1}{4}$ miles; when this last-named Buoy is made, leave it close to on the Port hand, and steer **NE.** by **E.**, carrying not less than 15 feet water; when about 2 miles past this Buoy, keep a sharp lookout for the Red Buoy off Half Moon Island Shoal; when this is made, leave it close to on the Starboard hand, and anchor to the Northward of Half Moon Island and take a pilot into the Creek.

High Water.

It is high water at the entrance of Hunting Creek 20 minutes after it is at Boston; common tides rise about $2\frac{1}{2}$ feet.

GUILFORD CREEK.

This Creek, which lies on the Southeastern side of Pocomoke Sound, is about $2\frac{1}{2}$ miles Northeast from Hunting Creek. Guilford Creek and Hunting Creek both have the same entrance. About 7 feet water can be taken into Guilford Creek at low tide.

Sailing Directions for Guilford Creek.

Follow the directions before given for Hunting Creek, and anchor to the Northward of Half Moon Island and take a pilot.

MUDDY CREEK and MESSONGO CREEK.

From $1\frac{1}{2}$ to $2\frac{1}{2}$ miles to the Northward of Guilford Creek are Muddy Creek and Messongo Creek, both of which have but little water in them at low tide.

TANGIER SOUND.

The Southern entrance to this Sound, which lies nearly North and South, is between Watt's Island Lighthouse on the East and Tangier Island on the West.

Jane's Island Lighthouse.

In about 5 feet water, on the Shoal extending off Southwest from Jane's Island (East side of Tangier Sound), is a Lighthouse, which at this date (1882), shows a fixed White Light. At this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 15 seconds.

Remarks.

Tangier Sound is from $2\frac{1}{2}$ to 6 miles wide, and about 26 miles long. Shoal water extends off from both sides a long distance in several places, but the channel has deep water in it; by the Southern entrance 7 fathoms can be taken up within 2 miles of Clay Island Lighthouse. At this time most of the Spits are marked with Buoys.

**Sailing Directions for Tangier Sound in Daytime,
with favorable winds and fair weather.**

Coming up the Chesapeake Bay, bound to Tangier Sound, follow the sailing directions before given from Cape Henry to Baltimore, until the Lighthouse on Rappahannock Spit bears **SW.**, then make good the course **NE.**; as soon as Watt's Island Lighthouse is made, bring it to bear **E. $\frac{3}{4}$ N.**, and run for it on this course, keeping a sharp lookout for the Black Buoy, No. 1, off Tangier Island Flats. Watt's Island Lighthouse bears from this Buoy **E. $\frac{1}{2}$ N.** about 5 miles; when this Buoy is made, leave it about $\frac{1}{4}$ on the Port hand, and steer **NE.** by **E.**, leaving the Black Buoy which lies off Southeast from Tangier Island about $\frac{1}{4}$ mile on the Port hand; continue the course **NE.** by **E.** about $\frac{1}{2}$ mile past this last-named Buoy, when Tangier Sound will be fairly open; then, with Watt's Island Lighthouse bearing **E.** by **S.**, make good the course **N.** by **E.** about 6 miles (carrying from 7 to 13 fathoms water), which will take you up with the Red Buoy off Great Fox Island Shoal; leave the last-named Buoy about $\frac{1}{2}$ mile on the Starboard hand, and steer about **N.** by **E.**, leaving the Red Buoy to the Westward of Jane's Island Lighthouse about $\frac{1}{4}$ mile on the Starboard hand; when past this last Buoy, the course is about **N.NE.**, leaving the Black Buoy off Terrapin Sands about 250 yards on the Port hand; when about $\frac{1}{2}$ mile past the last Buoy, haul up about **N.NW.** for the Red Buoy off Piney Island Shoal; the Lighthouse in Kedge's Straits bears from this Buoy about West $3\frac{1}{4}$ miles; when the Red Buoy off Piney Island Shoal is made, leave it about $\frac{1}{2}$ mile on the Starboard hand, and make good the course **N.** by **W. $\frac{1}{4}$ W.**, leaving the Red Buoy off Deil's Island Shoal close to on the Starboard hand; when past this last Buoy, steer about North 3 miles, then run for Clay Island Lighthouse, bearing **N. $\frac{1}{2}$ E.**, leaving the Red Buoy on the Northern part of Drumming Shoal (which has 8 feet water upon it at low tide) well on the Starboard hand.

Coming down the Chesapeake Bay, bound to Tangier Sound by the Southern entrance, when past Smith's Point Lighthouse, bring it to bear **NW.** by **N.**, and make good the course **SE.** by **S.** for the Red Buoy off the Southwest part of Tangier Shoal; leave this Buoy on the Port hand, and steer **SE.** by **E.** until Watt's Island Lighthouse bears **E. $\frac{3}{4}$ N.**, then run for it on this course, and follow the directions before given.

High Water.

It is high water at Watt's Island Lighthouse, Southern entrance to Tangier Sound, about the same time as it is at Boston; common tides rise about 2 feet.

CEDAR STRAITS.

These Straits, which lead from Pocomoke Sound to Tangier Sound, lie about 3 miles to the Southward of Jane's Island Lighthouse. From 2 to 3 feet water can be taken through these Straits at low tide.

KEDGE'S STRAITS.

The entrance to these Straits, which lead through from Chesapeake Bay into Tangier Sound, bears East from Point Lookout Lighthouse, distance about 13 miles, and the entrance from Tangier Sound bears Northwest about $6\frac{1}{2}$ miles from Jane's Island Lighthouse.

Solomon's Lump Lighthouse.

Off Solomon's Lump, upon the Southern side of the channel leading through Kedge's Straits, in about 6 feet water, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck twice in quick succession, then a signal blow at an interval of 30 seconds.

Remarks.

About 9 feet water can be carried through this Strait at low tide; at this date (1882), the channel leading through is marked with three Buoys.

Sailing Directions for Kedge's Straits in Daytime, with favorable winds and fair weather.

Coming up the Chesapeake Bay, follow the sailing directions before given from Cape Henry to Baltimore, until Smith's Point

Lighthouse bears **SW.** by **S.** $\frac{1}{2}$ **S.**, then make good the course **NE.** by **N.** $\frac{1}{2}$ **N.**, until the Lighthouse at Kedge's Straits bears **E.** by **S.** $\frac{1}{2}$ **S.**, then run for it on this course, keeping a sharp lookout for the Buoy painted in Black and White Perpendicular Stripes, which lies at the entrance of the channel leading in; when this Buoy is made, bring it to bear East, and run for it on this course, leaving it close to on either hand; when past this Buoy, continue the course East (carrying not less than 12 feet water), until the Lighthouse bears **SE.** by **E.** $\frac{1}{2}$ **E.**, then run for it on this course, carrying about 11 feet water, and leaving the Red Buoy and Lighthouse about 300 yards on the Starboard hand; when past the Lighthouse, make good the course **E.** by **S.**, carrying not less than 9 feet water across the Flat Ground, and leaving the Black Buoy off South Marsh Spit well on the Port hand; when the water deepens to 8 or 10 fathoms, you are then in Tangier Sound.

Vessels from Tangier Sound, bound through Kedge's Straits into Chesapeake Bay, may bring the Lighthouse, which stands on the South side of the channel in the Straits, to bear **W.** by **N.**, and run for it on this course; when the water shoals to 3 fathoms, steer about **W.** by **N.** $\frac{1}{2}$ **N.**, leaving the Black Buoy off South Marsh Spit well on the Starboard, and the Lighthouse about 300 yards on the Port hand; continue the course **W.** by **N.** $\frac{1}{2}$ **N.**, until the Lighthouse bears **SE.** by **E.** $\frac{1}{2}$ **E.**, then make good the course **NW.** by **W.** $\frac{1}{2}$ **W.**, until the Buoy painted in Black and White Perpendicular Stripes, which lies at the entrance of the passage, bears West; then run for it on this course, and leave it close to on either hand; when past this Buoy, steer **W.** by **N.** into the Bay.

High Water.

It is high water at the Western entrance of Kedge's Straits 1h. 27m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

HOLLAND'S STRAITS.

The Eastern entrance to these Straits, which lies between South Marsh Island on the South and Bloodsworth Island on the North, is about $5\frac{1}{2}$ miles to the Northward of the Lighthouse in Kedge's Straits.

Remarks.

These Straits, which lead through from Chesapeake Bay to Tangier Sound, have but little water in them at low tide, and at this date (1882), there are no Buoys to mark the channel; strangers should not, therefore, attempt this passage without a pilot.

HOOPER'S STRAITS.

The entrance to these Straits, which lead through from Chesapeake Bay into the Northern part of Tangier Sound, bears **NE.** $14\frac{3}{4}$ miles from the Lighthouse at Point Lookout, and Northwesterly about 11 miles from the Lighthouse in Kedge's Straits.

Hooper's Straits Lighthouse.

Upon the Northern side of the channel leading from Chesapeake Bay through Hooper's Straits into Tangier Sound, in about 6 feet water, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 12 seconds.

Remarks.

By the following directions about 10 feet water at low tide can be carried through these Straits; that part of the channel between the Black Buoy off the Southeast part of Bishop's Head Shoal and Clay Island Lighthouse is very narrow, and has about 12 feet water in it.

Sailing Directions for Hooper's Straits in Daytime, with favorable winds and fair weather.

Coming up the Chesapeake Bay, follow the sailing directions before given from Cape Henry to Baltimore, until Point Lookout Lighthouse bears **SW.**, then make good the course **NE.**; as soon as the Lighthouse in Hooper's Straits is made, bring it to bear **E.** by **N.**, and run for it on this course; when about 2 miles from it, keep a sharp lookout for the Red Buoy which lies about $1\frac{1}{2}$ miles to the Westward of this Lighthouse; when this Buoy is made, leave it about $\frac{1}{4}$ mile on the Starboard hand, and run for the Lighthouse bearing about **E. $\frac{1}{2}$ N.**, carrying from

3 to 4 fathoms water; leave the Lighthouse about $\frac{1}{4}$ mile on the Port hand, and when it bears **N.NW.**, run about **SE. $\frac{3}{4}$ E.** for the Black Buoy off Bishop's Head Shoal, carrying from $2\frac{1}{2}$ to 5 fathoms water; when up with the last-named Buoy (which may be left close to on the Port hand), vessels of not more than 9 feet draught may steer **E.NE.** across the Flat Ground into Tangier Sound.

When past the Black Buoy off Bishop's Head, vessels of 12 feet draught must haul up **NE.** by **E.**, or nearly, for the Lighthouse on Clay Island, and track the narrow channel into Tangier Sound, carrying about 12 feet water at low tide.

Vessels of not more than 9 feet draught, from Tangier Sound bound to Chesapeake Bay by way of Hooper's Straits, may follow the directions before given for Tangier Sound, until up with the Red Buoy off Drumming Shoal; Clay Island Lighthouse bears from this Buoy **N. $\frac{1}{2}$ W.** $2\frac{1}{4}$ miles; when about $\frac{1}{4}$ mile past the Red Buoy off Drumming Shoal, steer about **W.** by **N.** across the Flat Ground, carrying about 9 feet water, and keeping a sharp lookout for the Black Buoy off Bishop's Head Shoal; when this Buoy is made, leave it close to on the Starboard hand, and steer about **NW. $\frac{3}{4}$ W.**, leaving the Lighthouse on the Northern side of the Straits about $\frac{1}{4}$ mile on the Starboard hand; when this last-named Lighthouse bears **N.NW.**, run about West, carrying not less than $2\frac{1}{2}$ fathoms water, leaving the Red Buoy which lies about $1\frac{1}{2}$ miles to the Westward of the Lighthouse on the Port hand; when past this last Buoy, make good the course **W.** by **S.** into Chesapeake Bay.

There are many Shoals in the vicinity of Hooper's Straits, Kedge's Straits, Tangier and Pocomoke Sounds, a better idea of which can be obtained by inspecting Eldridge's Chart of Chesapeake Bay on a large scale than by any written directions.

High Water.

It is high water at the Western entrance of Hooper's Straits 1h. 40m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

CRISFIELD HARBOR, OR LITTLE ANNEMESSEX RIVER.

The entrance to this Harbor, which is on the Eastern side of Tangier Sound, lies about $\frac{3}{4}$ mile to the Eastward of Jane's Island Lighthouse.

Somers' Cove, or Crisfield Harbor Lighthouse.

Upon the Northern side of the River, in 6 feet water at low tide, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 15 seconds.

Remarks.

About 9 feet water can be carried into this River at low tide; at this time (1882), the River is well buoyed.

Sailing Directions for Crisfield Harbor in Day-time, with favorable winds and fair weather.

Vessels of not more than 8 or 9 feet draught, coming up the Chesapeake Bay, bound to Crisfield Harbor, may follow the directions before given for Tangier Sound, until about 2 miles from Jane's Island Lighthouse; then bring this Lighthouse to bear **NE. $\frac{1}{2}$ N.**, and run for it on this course, leaving it about 350 yards on the Port hand, and carrying not less than 14 feet water; when past this Lighthouse you will see the Red Buoy off Long Point Shoal; continue the course **NE. $\frac{1}{2}$ N.**, until this Buoy bears East, then run in, leaving the Red Buoys on the Starboard, and the Lighthouse in the River about 200 yards on the Port hand; when the latter bears **NW. by N.**, steer **SE. by S.**, and anchor about $\frac{1}{4}$ mile from it in about 9 feet water at low tide; if bound to the wharf at Somers' Cove, leave the Lighthouse in the River about 200 yards on the Port hand, and run to the Northeastward, leaving the Red Buoys on the Starboard, and the Black Buoys on the Port hand, and carrying about 8 feet water to the end of the above-mentioned wharf.

Coming through Kedge's Straits follow the directions before given for these Straits, until the water deepens to 10 fathoms; then steer to the Southeastward, carrying deep water, and keeping a sharp

lookout for the Black Buoy off Terrapin Sands; Jane's Island Lighthouse bears from this last-named Buoy **S. $\frac{1}{4}$ E.** 2 miles; when this Buoy is made, leave it close to on the Starboard hand, and steer **S. by W. $\frac{1}{2}$ W.**, leaving the Red Buoy to the Westward of Jane's Island Lighthouse on the Port hand; when past this Buoy, haul round the Lighthouse at a distance of $\frac{1}{3}$ mile, leaving it on the Port hand, and follow the directions before given.

Coming through Hooper's Straits, bound to Crisfield Harbor, when past the Black Buoy off Bishop's Head Shoal, steer **E. NE.** across the Flat Ground, carrying about 9 feet water at low tide; when the water deepens in Tangier Sound to about 8 fathoms, then, with Clay Island Lighthouse bearing **N. $\frac{1}{2}$ E.**, steer **S. $\frac{1}{2}$ W.**, leaving the Red Buoy off the Northern part of Drumming Shoal, and the Red Buoy off the Southwest part of Deil's Island Shoal, both on the Port hand; when past the last-named Buoy, the course is about **S. by E. $\frac{1}{2}$ E.**, and distance $3\frac{1}{2}$ miles, to the Red Buoy off Piney Island Shoal; leave this last-named Buoy close to on the Port hand, and steer about **SE. by S. $\frac{3}{4}$ S.**, carrying deep water, and keeping a sharp lookout for the Black Buoy off Terrapin Sands; Jane's Island Lighthouse bears from this last-named Buoy **S. $\frac{1}{4}$ E.** 2 miles; when this is made, leave it close to on the Starboard hand, and steer **S. by W. $\frac{1}{2}$ W.**, leaving the Red Buoy to the Westward of Jane's Island Lighthouse on the Port hand; when past this Buoy, haul round the Lighthouse at a distance of $\frac{1}{3}$ mile, and follow the directions before given.

BIG ANNEMESSEX RIVER.

The entrance to this River, which is on the Eastern side of Tangier Sound, lies East about $6\frac{1}{2}$ miles from the Lighthouse in Kedge's Straits, and Northeasterly $5\frac{1}{2}$ miles from the Lighthouse at Jane's Island.

Remarks.

About 12 feet water at low tide can be carried up through a narrow channel about $4\frac{1}{2}$ miles from the entrance; at this date (1882), there are no Buoys in this River, strangers in entering should therefore proceed with caution.

Sailing Directions for Big Annemessex River in Daytime, with favorable winds and fair weather.

Vessels of not more than 8 or 10 feet draught, coming up Chesapeake Bay, may follow the sailing directions before given for Tangier Sound, until up with the Red Buoy which lies about $\frac{3}{4}$ mile to the Westward of Jane's Island Lighthouse; leave this Buoy about $\frac{1}{4}$ mile on the Starboard hand and steer about **NE.** by **N.** $\frac{1}{2}$ **N.**, leaving the Black Buoy off Terrapin Sands close to on the Port hand, and make good the course **N.NE.** 3 miles, carrying not less than $2\frac{1}{2}$ fathoms water; Big Annemessex River will then be fairly open, bearing about East; then run in, keeping the Northern side best aboard, and when past the first Point on the Northern side, anchor in from 10 to 15 feet water; if bound further up a pilot will be necessary.

Coming through Kedge's Straits, bound to Big Annemessex River, follow the directions before given for these Straits, until about a mile past the Lighthouse; then bring it to bear **W.** $\frac{3}{4}$ **N.**, and make good the course **E.** $\frac{3}{4}$ **S.**, until the water shoals to $3\frac{1}{2}$ fathoms on the Eastern side of Tangier Sound; then run in, keeping the Northern side best aboard, and follow the directions before given.

Coming through Hooper's Straits, bound to Big Annemessex River, follow the directions before given for Little Annemessex River, until past the Red Buoy off Piney Island Shoal (which is left on the Port hand); then, with the Lighthouse in Kedge's Straits bearing **W.** $\frac{3}{4}$ **N.**, follow the directions before given.

MANOKIN RIVER.

This River, which lies to the Northward of Big Annemessex River, is only separated from the latter by Jericho Marshes.

Remarks.

At this date (1882), there are no Buoys in this River; it is therefore advisable for strangers bound to this place to follow the directions before given for Big Annemessex River, and take a pilot at the entrance.

WICOMICO RIVER.

The entrance to this River, which is on the Eastern side of Tangier Sound, between Long Point on the South and Nanticoke Point on the North, lies 4 miles **E.** by **S.** $\frac{1}{2}$ **S.** from Clay Island Lighthouse.

Remarks.

About 12 feet water at low tide can be carried into this River as far as Wingate Point, and with a good pilot about 8 feet can be taken up to White Haven, which is about 6 miles from the entrance; at this date (1882), the River is only buoyed as far as Wingate Point, which is but a short distance from the entrance.

Sailing Directions for Wicomico River in Day-time, with favorable winds and fair weather.

Vessels of not more than 8 or 10 feet draught, from the Southward, bound to Wicomico River, may follow the sailing directions before given for Tangier Sound, until abreast the Red Buoy off the Northern part of Drumming Shoal; Clay Island Lighthouse bears **N.** $\frac{1}{2}$ **W.** from this Buoy, distance $2\frac{1}{3}$ miles; when the Buoy is made, leave it close to on the Starboard hand, and steer **E.** by **N.** $\frac{1}{2}$ **N.**, keeping a sharp lookout for the Black Buoy off Nanticoke Spit; when this is made, leave it close to on the Port, and continue the course **E.** by **N.** $\frac{1}{2}$ **N.**, carrying about 14 feet water, and passing between the Red Buoy off Long Point Flats and the Black Buoy off Nanticoke Point Flats; when past the latter Buoy, which should be left close to on the Port hand, steer **SE.** by **E.** $\frac{1}{2}$ **E.**, until the next Red Buoy, off the Southern part of Monie Bay Flats, bears **E.** $\frac{3}{4}$ **N.**, then run for it on this course, carrying about 14 feet water through the narrow channel; leave the last-named Buoy close to on the Starboard hand, and haul up about **N.** by **W.** for the Black Buoy off Wingate Point Shoal; leave this last Buoy close to on the Port hand, and anchor, when past it, in the narrow channel in from 4 to 5 fathoms water; if bound further up, a pilot is necessary. Vessels of not more than 8 or 9 feet draught, coming through Hooper's Straits, bound to Wicomico River, may follow the directions before given for these Straits, until abreast the Black Buoy off the Southern part of Bishop's Head Shoal; leave this Buoy close to on the Port hand, and steer about **E.** by **S.** across the Flat Ground,

carrying from 8 to 9 feet water at low tide; when the Red Buoy off the Northern part of Drumming Shoal is made, follow the directions before given.

NANTICOKE RIVER.

The entrance to this River, which is on the Northern side of Tangier Sound, between Nanticoke Point on the East and Frog Point on the West, lies about 2 miles East from Clay Island Lighthouse.

Clay Island Lighthouse.

Upon the Southwestern extremity of Clay Island, Eastern side of entrance to Fishing Bay, is a Lighthouse, which at this date (1882), show a fixed White Light. This Light is intended to guide vessels into Fishing Bay, and also into Nanticoke River.

Remarks.

From the mouth of Nanticoke River to Vienna the distance is about 16 miles. About 3 fathoms water can be carried as far as Ragged Point, which is about $3\frac{1}{4}$ miles from the entrance, and from this about 8 feet can be taken up to Vienna.*

Sailing Directions for Nanticoke River in Daytime, with favorable winds and fair weather.

Vessels from the Southward, bound to Nanticoke River, may follow the sailing directions before given for Tangier Sound, until up with the Red Buoy off the Northern part of Drumming Shoal; Clay Island Lighthouse bears from this Buoy **N. $\frac{1}{2}$ W.** $2\frac{1}{3}$ miles; when the Buoy is made, leave it close to on the Starboard hand, and make good the course **NE.**, leaving the Black Buoy off Nanticoke Point Spit about $\frac{1}{4}$ mile on the Starboard hand, and carrying not less than 3 fathoms water; continue the course **NE.**, until Clay Island Lighthouse bears **NW.** by **W. $\frac{1}{2}$ W.**; then, with the entrance fairly open, run in about **N. by E. $\frac{1}{2}$ E.**, with Roaring Point, which is on the Eastern side, a little on the Starboard bow, and carrying from $3\frac{1}{2}$ to 5 fathoms water; leave the last-named Point about $\frac{1}{4}$ mile on the Starboard hand, and when abreast it, haul up North, keeping the Western side best aboard, carrying not

* Seaford lies about 16 miles further up this River.

less than 3 fathoms water; when about 2 miles above Roaring Point, it is advisable to anchor in about 3 fathoms water, and, if bound further up, take a pilot.

Coming through Hooper's Straits, bound to Nanticoke River, follow the directions before given for these Straits, until up with the Black Buoy off Bishop's Head Shoal; leave this Buoy close to on the Port hand, and steer about **E.** by **S.**, carrying about 9 feet across the Flat Ground; when the Red Buoy off Drummond Shoal is made, leave it close to on the Starboard hand, and follow the directions before given.

FISHING BAY.

The entrance to this Bay, which is about 3 miles wide, lies between Clay Island Lighthouse on the East and Bishop's Head on the West.

Remarks.

The entrance to the channel leading into Fishing Bay is about $\frac{3}{4}$ mile to the Westward of Clay Island Lighthouse. About 12 feet water, at low tide, can be carried through a narrow channel as far as Fishing Point, and about 7 feet can be taken up about 2 miles above this last-mentioned Point. There is much shoal water in this Bay, and at this date (1882), there are no Buoys to mark the channel leading in; it is therefore advisable for strangers, in vessels of more than 6 feet draught, to take pilots.

Sailing Directions for Fishing Bay in Daytime, with favorable winds and fair weather.

Vessels of not more than 6 feet draught, coming through Tangier Sound, bound to Fishing Bay, may follow the sailing directions before given for that Sound, until abreast the Red Buoy off the Northern part of Drumming Shoal; Clay Island Lighthouse bears from this Buoy **N. $\frac{1}{2}$ W.** $2\frac{1}{3}$ miles; when this Buoy is made, leave it close to on the starboard hand, and steer about **N** by **W.** $\frac{1}{2}$ **W.**, keeping a sharp lookout for the Red Buoy off Shark's Fin Shoal; Clay Island Lighthouse bears from this last-named Buoy **NE.** by **N. $\frac{1}{2}$ N.**, about 1 mile; when the last-named Buoy is made, leave it close to on the Port hand, and run about **NW.**,

until Clay Island Lighthouse bears **E.NE.**; then steer about **N. ½ W.**, about 2 miles, carrying from 6 fathoms to 8 feet; then steer more Westerly, keeping nearly in the middle, and carrying from 2 to 5 fathoms water through the narrow channel; when about 1 mile from Fishing Point, which is on the East side, steer more Northerly, and anchor about 200 yards to the Westward of it in about 3 fathoms water. If bound further up a pilot is necessary, even for vessels of 6 feet draught.

Coming through Hooper's Straits, bound to Fishing Bay, follow the directions before given for these Straits, until up with the Black Buoy off Bishop's Head Shoal; leave this Buoy close to on the Port hand, and steer **E.NE.**, leaving the Red Buoy off Shark's Fin Shoal on the Starboard hand; when this last-named Buoy bears **SE.**, steer **NW.**, and follow the directions before given.

HONGAR RIVER.

The entrance to this River lies about 2 miles Northwesterly from the Lighthouse in Hooper's Straits.

Remarks.

The entrance to Hongar River, which is about $1\frac{1}{2}$ miles wide, lies between the Southeast part of Hooper's Island on the West and Crab Point on the East; in entering, shoal water extends off about $\frac{1}{2}$ mile from both sides; from 5 to 8 fathoms water can be carried in as far as Windmill Point, which is on the East side about $2\frac{1}{2}$ miles from the entrance, and 3 fathoms can be taken up about 4 miles above this; at this date (1882), there are no Buoys to mark the channel leading in.

Sailing Directions for Hongar River in Daytime, with favorable winds and fair weather.

Vessels coming up the Chesapeake Bay, bound to this River, may follow the directions before given from Cape Henry to Baltimore, until Point Lookout Lighthouse bears **SW.**, then make good the course **NE.**; as soon as the Lighthouse in Hooper's Straits is made, bring it to bear **E.** by **N.** and run for it on this course; when about 2 miles from it, keep a sharp lookout for the Red Buoy

which lies about $1\frac{1}{2}$ miles to the Westward of this Lighthouse; when this Buoy is made, leave it about $\frac{1}{4}$ mile on the Starboard, and when it bears **S.** by **E.** $\frac{1}{2}$ **E.** make good the course **N.** by **W.** $\frac{1}{2}$ **W.**, carrying from 4 to 8 fathoms water; as you sail in, you will see Windmill Point, which is on the Eastern side; bring this Point to bear **NW.** $\frac{1}{2}$ **W.** and run for it, carrying not less than 5 fathoms water; leave the last-named Point about $\frac{1}{2}$ mile on the Starboard, and anchor a little above it in about 7 fathoms water; it is not prudent to go above this without a pilot.

Coming down the Chesapeake Bay, bound to Hongar River, bring the Lighthouse in Hooper's Straits to bear **E.** by **N.** and run for it on this course; when the Red Buoy which lies about 2 miles to the Westward of the Lighthouse is made, follow the directions before given.

Vessels of not more than 9 feet draught, from Tangier Sound, bound to Hongar River by way of Hooper's Straits, may follow the directions before given for this Sound, until up with the Red Buoy off the Northern part of Drumming Shoal; Clay Island Lighthouse bears from this Buoy **N.** $\frac{1}{2}$ **W.** $2\frac{1}{3}$ miles; when about $\frac{1}{4}$ mile past this Buoy off Drumming Shoal, steer about **W.** by **N.**, carrying about 9 feet water across the Flat Ground, and keeping a sharp lookout for the Black Buoy off Bishop's Head Shoal; when this last-named Buoy is made, leave it close to on the Starboard-hand, and steer about **NW.** $\frac{3}{4}$ **W.**, leaving the Lighthouse on the Northern side of the Straits about $\frac{1}{4}$ mile on the Starboard-hand, and steer about **W.** by **N.**, until the Red Buoy which lies about 2 miles to the Westward of the Lighthouse bears **S.** by **E.** $\frac{1}{2}$ **E.**, then make good the course **N.** by **W.** $\frac{1}{2}$ **W.**, carrying from 4 to 8 fathoms water, and follow the directions before given.

LITTLE CHOPTANK RIVER.

The entrance to this River, which is on the Eastern side of Chesapeake Bay, lies about 5 miles Southeasterly from Sharp's Island Lighthouse.

Remarks.

The entrance to Little Choptank River, which is about $2\frac{1}{2}$ miles wide, lies between Hill's Point on the North and James' Point.

the South; shoal water extends off a long distance from both these Points, but the channel in entering at this time (1882), is marked with Buoys; about 15 feet water at low tide can be carried inside Ragged Point which is about 2 miles above the entrance.

Sailing Directions for Little Choptank River in Daytime, with favorable winds and fair weather.

Vessels of not more than 10 feet draught coming up the Chesapeake Bay bound to Little Choptank River, may follow the sailing directions before given from Cape Henry to Baltimore, until Sharp's Island Lighthouse is made; then run for it, bearing about **N.** by **E.**, keeping a sharp lookout for the Red Buoy off James' Point Shoal; the Southern part of Sharp's Island bears **N.** by **W.** 2 miles from this Buoy; when the Red Buoy off James' Point Shoal is made, run for it, bearing about **E. N. E.**, and leave it close to on the Starboard hand, carrying about $2\frac{1}{2}$ fathoms water across the Flat Ground; continue the course **E. N. E.** until the water deepens to 4 or 5 fathoms, then leave the Black Buoy off Hill's Point Shoal about $\frac{1}{4}$ mile on the Port hand, and steer about **S. E.** by **E.**, leaving the Red Buoy off Abbott's Point Shoal well on the Starboard hand; as you sail in, the Black Buoy off Ragged Point will be seen; in order to avoid the shoal water on the Western side, vessels of more than 9 feet draught should, as soon at this last Buoy is made, bring it to bear South and run for it, carrying about 15 feet water; leave the last-named Buoy off Hill's Point Shoal close to on the Port hand, and steer South about $\frac{1}{4}$ mile; then haul up **E.** by **S.** and anchor in from 3 to 4 fathoms water; Ragged Point bears **N. W.** about $\frac{3}{4}$ mile from this anchorage; at this date there are no Buoys above Ragged Point; it is therefore advisable for strangers bound further up to take pilots.

Coming down the Chesapeake Bay bound to Little Choptank River, keep a sharp lookout for the Red Buoy which lies off about $1\frac{1}{2}$ miles to the Westward of Sharp's Island; the Lighthouse off the Northern part of this Island bears **N. E.** from this Buoy, distance $2\frac{1}{4}$ miles; as soon as the Buoy is made, leave it about $\frac{1}{4}$ mile on the Port hand, and make good the course **S. E.** by **S.** 3 miles, which will bring you up with the Red Buoy off James' Point Shoal; when this last Buoy is made, leave it close to on the Starboard hand, and follow the directions before given.

SHARP'S ISLAND.

This Island, which lies on the Eastern side of Chesapeake Bay, extends nearly 2 miles North and South, and is about $\frac{1}{2}$ mile wide; shoal water extends off a long distance in every direction from it; heavy draught vessels bound up or down the Bay should give it a wide berth.

Sharp's Island Lighthouse.

About $\frac{1}{3}$ mile from the Northwest part of Sharp's Island, in about 7 feet water, is a Lighthouse,* which at this date (1882), shows a fixed White Light; at this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 12 seconds; this Lighthouse is intended to guide vessels up the Chesapeake, and also marks the entrance to Choptank Bay.

CHOPTANK BAY.

The entrance to this Bay, which is about 3 miles Northeasterly from Sharp's Island Lighthouse, lies between Cook's Point on the Southeast and Tilghman's Island on the Northwest.

Remarks.

Choptank Bay extends about 8 miles in an Easterly and Westerly direction, and its average width North and South is about 4 miles; in entering shoal water extends off from both sides, but at this time the channel leading in is marked with Buoys; there are several creeks on the Northern side, a description of which will hereafter be given.

HARRIS' CREEK.

The entrance to this Creek, which is nearly 3 miles wide, lies on the Northern side of Choptank Bay, between Black Walnut Point on the West and Nelson's Point on the East.

* Sharp's Island Lighthouse has been carried away by ice, but will probably be rebuilt before the publication of this work.

Remarks.

About 15 feet water can be carried up Harris' Creek as far as Change Point, which is on the Eastern side; above this the channel is narrow, and there are many Spits and Shoals extending off from both sides, some of which have but little water upon them; at this date (1882), there are no Buoys in this Creek to mark the channel leading in; it is therefore advisable for strangers to not go above Change Point without pilots.

Sailing Directions for Harris' Creek in Daytime, with favorable winds and fair weather.

Coming up Chesapeake Bay, bound to this Creek, follow the sailing directions before given from Cape Henry to Baltimore, until Sharp's Island Lighthouse bears **N NE.**, then run for it on this course; you can pass in on either side of this Island, but the Southern passage is the deepest and most direct for vessels bound up Choptank Bay; therefore, leave the Southern part of this Island about $1\frac{1}{4}$ miles on the Port hand, and steer **NE. $\frac{1}{2}$ N.** for the Red Buoy off Cook's Point * (carrying deep water); this Buoy bears **E. by N. $\frac{1}{2}$ N.** 3 $\frac{1}{2}$ miles from Sharp's Island Lighthouse; when the Buoy is made, leave it close to on the Starboard hand, and steer about **E. by N. $\frac{1}{2}$ N.**, until Cook's Point bears South; then make good the course North for Change Point, which is the second on the Eastern side of entrance, carrying not less than $2\frac{1}{2}$ fathoms water; when about a mile from this last-named Point, haul up **NW. $\frac{1}{2}$ N.**, and anchor in about $2\frac{1}{2}$ fathoms water; Change Point bears **NE.**, distance about $\frac{1}{2}$ mile, from this anchorage; if bound further up, a pilot is necessary.

Coming down Chesapeake Bay, bound to Harris' Creek, bring Sharp's Island Lighthouse to bear **S SE.** and run for it on this course until the water shoals to 3 fathoms; the Lighthouse will then be distant $1\frac{1}{4}$ miles; then steer **E. by S. $\frac{1}{2}$ S.** for the Black Buoy off Low's Point, carrying about 13 feet water across the Flat Ground; leave this Buoy about 300 yards on the Port hand, and steer about East for the Red Buoy off Cook's Point, leaving it about $\frac{1}{4}$ mile on the Starboard hand; when Cook's Point bears

* Cook's Point, which lies on the Southeast side of entrance to Choptank Bay, bears **E. $\frac{1}{4}$ S. $3\frac{1}{2}$ miles** from Sharp's Island Lighthouse.

South, make good the course North, and follow the directions before given.

BROAD CREEK.

The entrance to this Creek, which is about $1\frac{1}{2}$ miles wide, lies on the Northern side of Choptank Bay, between Nelson's Point on the West and Royston's Island on the East.

Remarks.

About 13 feet water at low tide can be carried through a narrow channel as far as Deep Neck Point, which is about $2\frac{1}{2}$ miles above the entrance; at this date (1882), there are no Buoys to mark the channel leading up to this Creek; strangers, in vessels of more than 6 feet draught, bound up, should therefore take pilots.

Sailing Directions for Broad Creek in Daytime, with favorable winds and fair weather.

Coming up Chesapeake Bay, bound to this Creek, follow the directions before given for Harris' Creek, until up with the Red Buoy off Cook's Point; leave this Buoy close to on the Starboard hand, and make good the course **NE** by **E**.; as you sail in, you will see, nearly ahead, Royston's Island, which is small and lies nearly North and South; continue the course for this Island until about $\frac{3}{4}$ mile from it, then, in about 3 fathoms water, run in about North, carrying about $3\frac{1}{4}$ fathoms water; in order to avoid a Shoal Spit which extends off from Nelson's Point, which is the first on the West side, keep nearer Royston's Island; when past this Island, vessels of more than 7 feet draught should anchor in from 3 to 4 fathoms water, and if bound further up take pilots; but those of less than 7 feet draught by keeping in the middle may pass up 2 or 3 miles further.

Coming down the Chesapeake Bay follow the directions before given for Harris' Creek, until up with the Red Buoy off Cook's Point; leave this Buoy close to on the Starboard hand, and follow the directions before given.

Choptank River Lighthouse.

Upon the Southeast extremity of a Shoal at the Eastern part of Choptank Bay, in about 10 feet water, is a Lighthouse, which at this date (1882), shows a fixed White Light; at this time a Fog Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 10 seconds. This Light is intended to guide vessels into Choptank River, and also Treadhaven Creek.

TREADHAVEN CREEK.

The entrance to this Creek, which lies between Batchelder's Point on the East and Benoni's Point on the West, is about 1 mile North from Choptank Lighthouse.

Remarks.

About 3 fathoms water can be carried up Treadhaven Creek to Oxford, which is on the Eastern side about $1\frac{1}{2}$ miles from the entrance, and about 7 feet at low tide can be taken up to Easton Point, which is 6 miles above Oxford; at this date (1882), there are no Buoys in this Creek to mark the channel leading up.

Sailing Directions for Treadhaven Creek in Day-time, with favorable winds and fair weather.

Vessels coming up or down the Chesapeake Bay may follow the directions before given for Harris' Creek, until up with the Red Buoy off Cook's Point; leave this Buoy close to on the Starboard hand and make good the course **E. $\frac{1}{2}$ N.**; as you sail up the Bay you will see Choptank Lighthouse, which bring to bear East, and run for it on this course; leave this Lighthouse about $\frac{1}{4}$ mile on Starboard hand, carrying about 15 feet water across the Flat Ground which lies to the Northwest of it; when Treadhaven Creek is fairly open, then, with the Lighthouse bearing **S. $\frac{1}{2}$ W.**, run in **N. $\frac{1}{2}$ E.**, keeping the Eastern side best aboard and carrying 18 feet to Oxford Point; if bound into Town Creek, which is the harbor for Oxford, a pilot is necessary; vessels bound up to Easton Point should take pilots at Oxford.

CHOPTANK RIVER.

The entrance to this River, which lies between Chlora's Point on the North and Castlehaven Point on the South, is about 2 miles Southeast from Choptank River Lighthouse.

Remarks.

In entering Choptank River, shoal water extends off from both sides. A Red Buoy marks the Southwest side of the entrance, and most of the Spits and Shoals lying in this River are marked with Buoys, at this date (1882), as far as Hunting Creek. About 3 fathoms water can be carried up to Jamaica North Point Shoal, which is about 11 miles from the entrance, and with a good pilot, 12 feet can be carried up about 15 miles further.

**Sailing Directions for Choptank River in Daytime,
with favorable winds and fair weather.**

Vessels of not more than 8 feet draught, coming up Chesapeake Bay bound to this River, may follow the directions before given from Cape Henry to Baltimore, until Sharp's Island Lighthouse bears **N.NE.**, then run for it on this course. You can pass into Choptank Bay on either side of this Island, but the Southern passage is the deepest and most direct for vessels bound up this Bay; therefore, leave this Island about $1\frac{1}{4}$ miles on the Port hand, and when it bears North, make good the course **NE. $\frac{1}{2}$ N.** for the Red Buoy off Cook's Point before described (carrying deep water); this Buoy bears **E. by N.**, $3\frac{1}{3}$ miles from Sharp's Island Lighthouse; when the Red Buoy off Cook's Point is made, leave it close to on the Starboard hand and run for Choptank River Lighthouse, bearing about **E. $\frac{1}{4}$ N.**; as you approach this Lighthouse, keep a sharp lookout for the Red Buoy off Castlehaven Shoal; this last-named Buoy bears about **S. by E.** from the Lighthouse, distance $\frac{7}{8}$ mile; leave this Buoy a short distance on the Starboard hand, and run in about **SE. by E.**, carrying deep water through the narrow channel at the entrance of the River; continue the course until the Black Buoy off Howell's Point bears **S.SE.**, then run for it on this course, leaving it close to on the Port hand; when past this, haul gradually to the Eastward, carrying deep water, and leaving the Black Buoy off Drumming Ground Shoal on the Port,

and the Red Buoy off Hambrook Bar on the Starboard hand; after passing this last named Buoy, which may be left close to, steer about **SE.** $\frac{1}{4}$ **E.**, $2\frac{1}{4}$ miles, leaving the village of Cambridge on the Starboard. This last course and distance will bring you up with the Black Buoy off Lower South Flats; haul round this Buoy, leaving it close to on the Port hand, and when about 200 yards past it, steer for the Red Buoy off Upper South Flats; between the two last Buoys the channel is deep, but very narrow; it is therefore necessary to proceed with caution; when past the Red Buoy off the Upper South Flats, which may be left close to on the Starboard hand, haul up about **NE.**, carrying about 3 fathoms water and leaving the Red Buoy off Oyster Shell Point Shoal close to on the Starboard hand; when past this last Buoy, steer East until the Black Buoy off Jamaica Point South Shoal bears **N.** by **E.**; then run for it on this course and leave it close to on the Port hand. About $\frac{1}{4}$ mile to the Southward of the last-named Buoy, the channel is very narrow, with not less than 5 fathoms water; it is therefore necessary, when running for it, to proceed with great caution. When past the Black Buoy off Jamaica Point South Shoal, run for the Red Buoy off Secretary Creek Shoal, leaving it on the Starboard, and the Black Buoy off Jamaica Point (North Shoal) close to on the Port hand; when past this last Buoy, steer **N.** $\frac{3}{4}$ **E.**, until the Red Buoy off Cabin Creek Shoal bears **NE.** by **E.** $\frac{1}{2}$ **E.**; then run for it on this course, carrying about 12 feet water across the Flat Ground and leaving it close to on the Starboard hand; when past this last Buoy, keep in the middle, carrying from 3 to 19 fathoms water and leaving the Red Buoys off Cabin Creek Neck and Hunting Creek both on the Starboard hand. At this date (1882), there are no Buoys above this; it is therefore not prudent to proceed further without a pilot.

Coming down Chesapeake Bay, bound to Choptank River, bring Sharp's Island Lighthouse to bear **S.SE.**, and run for it on this course until the water shoals to 3 fathoms; the Lighthouse will then be distant $1\frac{1}{4}$ miles; then steer **E.** by **S.** $\frac{1}{2}$ **S.** for the Black Buoy off Low's Point, carrying about 13 feet water across the Flat Ground; leave this Buoy about 300 yards on the Port hand, and steer about East for the Red Buoy off Cook's Point, leaving it close to on the Starboard hand and run for Choptank River Lighthouse, and follow the directions before given.

EASTERN BAY.

The entrance to this Bay, which is on the Eastern side of Chesapeake Bay, lies North about 11 miles from Sharp's Island Lighthouse, and about 6 miles Southeasterly from Thomas' Point Lighthouse.

Remarks.

The entrance to the Eastern Bay, which is between Kent Point on the North and Poplar Island on the South, is 3 miles wide. Shoal water extends off more than 2 miles Northeast from the Northern part of Poplar Island, and also about $\frac{3}{4}$ mile from the South Point of Kent Island, making the width of the channel leading in less than $\frac{3}{4}$ mile wide; the outer parts of both these Shoals are marked with Buoys. Shoal water also extends off a long distance from most of the Points in this Bay, but at this date (1882), these Shoals are marked with Buoys.

COXE'S CREEK.

The entrance to this Creek, which is on the Northern side of Eastern Bay, lies about $3\frac{1}{2}$ miles Northeast from Kent Point, between Turkey Point on the East and Kent Island on the West.

Remarks.

About 10 feet water can be taken up Coxe's Creek through a narrow channel, about 3 miles from the entrance. At this date (1882), there are no Buoys to mark the channel leading into this Creek.

Sailing Directions for Coxe's Creek in Daytime, with favorable winds and fair weather.

Coming up the Chesapeake Bay, bound to Coxe's Creek, follow the sailing directions before given from Cape Henry to Baltimore, until Kent Point is made; this Point bears **SE.** by **S.** $\frac{1}{2}$ **S.** from Thomas' Point Lighthouse, distance $4\frac{3}{4}$ miles; when Kent Point is made, run for it, bearing about **E.NE.**, keeping a sharp lookout for the Black Buoy which lies about $\frac{3}{4}$ mile Southeast from it;

when this is made, leave it close to on the Port hand, and steer about **NE.** by **E.** about $2\frac{1}{2}$ miles; then about **N.** $\frac{1}{2}$ **W.**, keeping about $\frac{1}{2}$ mile from the Eastern side of Kent Island and carrying about 4 fathoms water. As you sail in, you will see on the Starboard Turkey Point, the Eastern side of entrance; when this Point bears East, anchor at the mouth in about 3 fathoms water, as it is not prudent to go further up without a pilot.

Coming down Chesapeake Bay, bound to Cox's Creek, bring Thomas' Point Lighthouse to bear **N.** by **W.** $\frac{1}{2}$ **W.**, and make good the course **S.** by **E.** $\frac{1}{2}$ **E.**; when the Red Buoy which lies about a mile Southwest from Kent Point is made, leave it about $\frac{1}{4}$ mile on the Port hand and steer about **E SE.**, leaving the Black Buoy to the Southeast of Kent Point close to on the Port hand, and follow the directions before given.

Upon the Western side of Cox's Creek are two small Creeks called Shipping Creek and Warehouse Creek; about 9 feet water can be taken into the former, and 8 feet into the latter.

CRAB ALLEY CREEK.

The entrance to this Creek, which is on the Northern side of Eastern Bay, lies Northeast about $6\frac{1}{2}$ miles from Kent Point, and Northwesterly $4\frac{1}{4}$ miles from Tilghman's Point.

Remarks.

About 6 feet water can be carried up about $1\frac{1}{2}$ miles above the mouth of this Creek; at this date there are no Buoys to mark the channel leading into it.

Sailing Directions for Crab Alley Creek in Daytime, with favorable winds and fair weather.

Small or light draught vessels coming up or down Chesapeake Bay, bound to Crab Alley Creek, may follow the directions before given for Cox's Creek until up with the Black Buoy off Kent Point; leave this Buoy close to on the Port hand, and steer **NE.** by **E.** $\frac{1}{2}$ **E.** $4\frac{1}{2}$ miles, which will bring them up with the Black Buoy off Bodkin Island Shoal; leave this last Buoy close to on the Port hand and steer **NE.**; as you sail in, you will

see the Red Buoy off Tilghman's Point Shoal; continue the course **NE.** until this last Buoy bears **S.** by **E.** $\frac{3}{4}$ **E.**, then make good the course **N.** by **W.** $\frac{3}{4}$ **W.**, carrying not less than 10 feet water, and passing about midway between Parson's Island and Bodkin Island; the former lies on the East and the latter on the West side of the passage; when the Northern Point of Bodkin Island bears **SW.** haul up about **NW.** and run about $\frac{1}{2}$ mile, and anchor at the mouth of the Creek in from 2 to 3 fathoms water; above this a pilot is necessary.

KENT ISLAND NARROWS.

This narrow passage, which leads from Eastern Bay into Chester River, lies nearly North 6 miles from Tilghman's Point, and South-easterly about 5 miles from Love Point Lighthouse.

Remarks.

The average width of Kent Island Narrows is about 200 yards, and length about $\frac{5}{8}$ mile; in entering this passage, there is not more than 2 or 3 feet water upon the Flats, at low tide, at the entrance on either side.

Sailing Directions for Kent Island Narrows in Day-time, with favorable winds and fair weather.

Small vessels, of very light draught, coming up or going down the Chesapeake, may follow the directions before given for Crab Alley Creek, until up with the Red Buoy off Tilghman's Point; leave this Buoy close to on the Starboard hand and steer **NE.** by **E.**; as you sail in, you will see to the Southward the Black Buoy off Coffin Point Shoal; continue the course until this last Buoy bears **S.** by **W.**, then make good the course **N.** by **E.**, carrying not less than 12 feet water; when the Southern part of Parson's Island (which is the first on the Port hand) bears **W.** by **N.**, haul up **N.** by **W.** and run $2\frac{1}{2}$ miles (carrying not less than 12 feet water), which will bring them up with Hood's Point, which is left on the Starboard hand; when abreast this last Point, steer North $1\frac{1}{2}$ miles to the entrance of the Narrows.

ST. MICHAEL'S RIVER.

The entrance to this River, which lies at the Southeast part of Eastern Bay, is about 4 miles Southeast from Tilghman's Point.

Remarks.

About 18 feet water can be carried up this River as far as St. Michael's, which is about $1\frac{1}{4}$ miles from the entrance, and 9 feet can be taken to the wharves at this place, and 12 feet can be carried up about 5 miles above this; at this date (1882), the River is well buoyed as far as Long Point.

Sailing Directions for St. Michael's River in Day-time, with favorable winds and fair weather.

Coming up the Chesapeake, bound to St. Michael's River, follow the sailing directions before given from Cape Henry to Baltimore, until Kent Point is made (this Point bears **SE.** by **S.** $\frac{1}{2}$ **S.** from Thomas' Point Lighthouse, distance $4\frac{3}{4}$ miles); when Kent Point is made, bring it to bear about **E.NE.** and run for it on this course, leaving the shoal water to the Westward of Poplar Island well on the Starboard hand; as you approach this Point keep a sharp lookout for the Black Buoy which lies about $\frac{3}{4}$ mile Southeast from it; when this Buoy is made, leave it close to on the Port hand and steer **NE.** by **E.** $\frac{1}{2}$ **E** $4\frac{1}{2}$ miles, which will bring you up with the Black Buoy off Bodkin Island Shoal; leave this Buoy close to on the Port hand, and the next Red Buoy off Tilghman's Point Shoal on the Starboard hand; when past this last-named Buoy you will see the Black Buoy off Coffee Point Shoal; when this bears **SE.** run for it on this course, and leave it close to on the Port hand; when past it steer **S.** $\frac{1}{2}$ **E.** 2 miles, leaving the Red Buoy off Bozman's Island Shoal on the Starboard, the Black Buoy off Herring Island Shoal on the Port, and Red Buoy off Hamlington's Point about 250 yards on the Starboard hand; from the last Buoy steer about **S.SE.**, leaving the Red Buoy off Scotland Point Shoal close to on the Starboard, and the Black Buoy off Fairview Point at the entrance of the River close to on the Port hand; abreast this last Buoy the channel is very narrow; when past the Black Buoy off Fairview Point, you will see the Red Buoy off Stony Point; leave this Buoy on the Starboard hand, and if

bound to St. Michael's, when about $\frac{1}{4}$ mile past it, run in for the wharves, and in order to avoid the shoal water which extends off from the first Point on the Port, keep nearer the Starboard side, carrying about 9 feet water to the wharves at low tide; if bound further up, when past the Red Buoy off Stony Point, run to the Southward, leaving the Black Buoy off Gibson's Point on the Port hand; when past this last Buoy steer about **SE. $\frac{1}{2}$ S.** for the Black Buoy off Long Point; haul round this Buoy, leaving it on the Port hand, and keep in the middle for about 2 miles; above this a pilot is necessary.

LEEDS CREEK.

The entrance to this Creek lies on the Northeastern side of St. Michael's River, nearly opposite the village of St. Michael's; about 9 feet water can be taken up about 2 miles from the entrance.

Sailing Directions for Leeds Creek in Daytime.

Follow the directions before given for St. Michael's River until past the Red Buoy off Stony Point, then run for the Black Buoy off Gibson's Point Flats, bearing about **SE. by S. $\frac{1}{2}$ S.**, until about $\frac{1}{4}$ mile from it, then haul to the Eastward until this last Buoy bears **S.SW.**; the entrance to the Creek will then be fairly open; then run in about **N.NE.**, keeping about midway and carrying up from 9 to 18 feet water.

WYE RIVER.

The entrance to this River, which is on the Eastern part of Eastern Bay, lies about 3 miles Southeasterly from the Red Buoy off Tilghman's Point.

Remarks.

A little more than a mile from the entrance Wye River divides into two parts or branches; the Eastern branch is called Front Wye River, and the Northern Back Wye River. This last-named River (about $2\frac{1}{2}$ miles above the entrance) divides into two parts, the Northernmost of which is called Big Wye River.

FRONT WYE RIVER.

About 3 fathoms water can be carried up through a narrow channel to Pickering's Creek, which is $5\frac{1}{4}$ miles from the entrance, and about 8 feet can be taken up to Wye Narrows, which is about 2 miles above the last-named place. At this date (1882), there are no Buoys to mark the channel leading up this last-named River.

BACK WYE RIVER.

About 12 feet water can be carried up Back Wye River as far as the mouth of Big Wye River, and 8 feet can be taken up to Wye Narrows, which is $2\frac{1}{2}$ miles above the last-named place. About 8 feet water can be carried through Wye Narrows.

BIG WYE RIVER.

About 8 feet water can be carried up through a narrow channel, about 4 miles from the mouth of Big Wye River.

Sailing Directions for Wye River in Daytime, with favorable winds and fair weather.

Follow the directions before given for St. Michael's River, until up with the Red Buoy off Tilghman's Point Shoal; when past this Buoy, you will see the Black Buoy off Coffee Point Shoal; when this Buoy bears **SE.**, run for it and leave it close to on the Port hand; when past it, steer about **S. $\frac{1}{2}$ E.** 2 miles, leaving the Red Buoy off Bozman's Island Shoal on the Starboard, and the Black Buoy off the West part of Herring Island Shoal on the Port, and the Red Buoy off Hamlington's Point on the Starboard hand; when past this last-named Buoy, haul gradually to the Eastward, when you will see the Black Buoy off the East side of Herring Island; when this last Buoy bears **NE.**, haul up for it and leave it close to on the Port hand, and run about **N.NE.**, leaving the Red Buoy off Wyetown Point Shoal close to on the Starboard hand; when past this last Buoy, Wye River will then be fairly open and you may

run in, keeping the Port side best aboard, and anchor above Bruff's Island, which is the first on the Starboard side; if bound up Back Wye River or Front Wye River, a pilot will be necessary at this anchorage.

CHESTER RIVER.

The entrance to this River, which is on the Eastern side of Chesapeake Bay, lies Southeast about 10 miles from Bodkin Point Lighthouse, and East-Northerly about 6 miles from Sandy Point Lighthouse.

Remarks.

From the entrance of Chester River to Chestertown the distance is about 20 miles. About 3 fathoms water, at low tide, can be taken up as far as Melton Point, and from this last-mentioned place, which is about 15 miles from the entrance, about 9 feet can be taken to Chestertown. At this date (1882), the River is buoyed as far as Deep Point Shoal, which is about 11 miles from the entrance.

Love Point Lighthouse.

Upon the Shoal which extends off from Love Point, East side of entrance to Chesapeake Bay, and Southwest side of entrance to Chester River, is a Lighthouse, which at this date (1882), shows a fixed White Light. At this time a Bell is attached to this Lighthouse, which in thick weather is struck at intervals of 8 seconds. Vessels of more than 7 feet draught, bound into Chester River, should not pass between Love Point and this Lighthouse. Love Point Lighthouse bears from Sandy Point Lighthouse **E.** by **N.** $\frac{3}{4}$ **N.**, distance $5\frac{1}{2}$ miles, from Bodkin Point Lighthouse **SE.** $\frac{1}{2}$ **S.** $8\frac{1}{4}$ miles, from Red Buoy off Love Point Shoal **SW.** $\frac{1}{2}$ **S.** about 1 mile.

Sailing Directions for Chester River in Daytime, with favorable winds and fair weath. r.

Coming up the Chesapeake Bay, follow the directions before given from Cape Henry to Baltimore, until past Sandy Point Lighthouse; then bring this Lighthouse to bear **SW.** by **W.**, and make good the course **NE.** by **E.** until Love Point Lighthouse bears

SE.; then steer more Easterly, keeping a sharp lookout for the Red Buoy which lies about 1 mile to the Northeast of it; when this Buoy is made, haul round it at a distance of $\frac{1}{4}$ mile, leaving it on the Starboard hand, and when it bears **NW.**, steer about **S. $\frac{1}{2}$ W.**, leaving the Lighthouse well on the Starboard and the Black Buoy, which lies about $1\frac{1}{2}$ miles Southeast from it, on the Port hand; when past this last Buoy, steer about **SE.** by **S. $\frac{1}{2}$ S.**, $1\frac{1}{4}$ miles, leaving the Red Buoy off Long Point Shoal on the Starboard, and the Black Buoys off Cockey's Island Shoal and Cedar Point Shoal both close to on the Port hand; when past the last Black Buoy, the River gradually turns to the Northward; it is therefore necessary to steer about **NE.** by **E.**, leaving the Black Buoy off Hail Point, the extreme part of Eastern Neck, about $\frac{1}{4}$ mile on the Port hand, and haul up about **N.** by **W. $\frac{1}{2}$ W.**, leaving the Red Buoy off Piney Point a short distance on the Starboard hand; when past this last Buoy, the course is Northeasterly, leaving the Black Buoy off Gum Point Shoal close to on the Port hand, the Buoy painted in Red and Black Horizontal Stripes on Nichols' Marsh Shoal on either hand, the Red Buoy off Old Field Bar on the Starboard, the Buoy painted in Red and Black Horizontal Stripes on Lower Spaniard's Shoal on either hand, and the Black Buoy off Deep Point Shoal on the Port hand. At this date (1882), there are no Buoys above Deep Point Shoal; it is therefore advisable for vessels bound further up to take pilots.

High Water.

It is high water in Chester River 7h. 18m. after it is at Boston; common tides rise about 2 feet.

Pool's Island Lighthouse.

Upon the Western side of Pool's Island, Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed White Light. At this time a Bell is placed near this Lighthouse, which in thick weather is struck at intervals of 12 seconds. Bodkin Point Lighthouse bears from the Lighthouse on Pool's Island **SW.**, distance $10\frac{1}{4}$ miles; Turkey Point Lighthouse bears from Pool's Island Lighthouse **NE.** by **E.**, distance $15\frac{1}{3}$ miles.

SASSAFRAS RIVER.

The entrance to this River, which is on the Eastern side of Chesapeake Bay, lies Northeasterly about 10 miles from Pool's Island Lighthouse, and Southwest about 5 miles from the Lighthouse on Turkey Point.

Remarks.

About 12 feet water, at low tide, can be carried up to Frederic, which is $7\frac{1}{2}$ miles from the entrance. At this date (1882), there are not any Buoys in this River.

Sailing Directions for SassafRAS River in Day-time, with favorable winds and fair weather.

Coming up the Chesapeake Bay, bound to SassafRAS River, follow the directions before given from Cape Henry to Baltimore, until up with the Red Buoy which lies off to the Westward of Swan Point; Bodkin Point Lighthouse bears from this Buoy **W.NW.**, distance $4\frac{1}{2}$ miles; leave the Red Buoy off Swan Point about $\frac{1}{4}$ mile on the Starboard hand, and make good the course **NE.** by **N.** 6 miles, which will bring you up with the Black Buoy on the Northeast side of Nine-Foot Shoal; leave the last-named Buoy (which bears **S.** $\frac{1}{4}$ **W.** from Pool's Island Lighthouse, distance 4 miles), about $\frac{1}{4}$ mile on the Port hand, and make good the course **NE.** by **N.** $\frac{3}{4}$ **N.** $7\frac{1}{4}$ miles to the Red Buoy off Worton Point; when about $\frac{1}{4}$ mile past the last-named Buoy which is left on the Starboard hand, steer about **NE.** by **E.** $\frac{1}{4}$ **E.** about $5\frac{1}{4}$ miles, leaving Howell's Point, which is bold, about $\frac{1}{4}$ mile on the Starboard hand. SassafRAS River will then be open, bearing about **E.** by **S.**; you may then run in, keeping the Northern side best aboard, carrying not less than 12 feet water at low tide, until about $\frac{1}{2}$ mile from Ordinary Point (which is on the Northern side), then anchor; above the last-named Point, the River narrows to about $\frac{1}{3}$ mile; it is not advisable to go above this without a pilot.

High Water.

It is high water in SassafRAS River 9h. 16m after it is at Boston; common tides rise about $2\frac{1}{3}$ feet.

Turkey Point Lighthouse.

On the Bluff Point separating the mouths of Elk and Susquehanna Rivers, at the head of Chesapeake Bay, is a Lighthouse, which at this date (1882), shows a fixed White Light; Pool's Island Lighthouse bears from Turkey Point Lighthouse, **SW.** by **W.**, distance $15\frac{1}{3}$ miles; Fishing Battery Lighthouse, East side of channel entrance to Havre de Grace, **SW.** $\frac{1}{4}$ **S.** $4\frac{1}{3}$ miles; Havre de Grace Lighthouse, **SW.** by **W.** $\frac{1}{2}$ **W.** $6\frac{1}{2}$ miles.

HAVRE-DE-GRACE.

This place, which is situated on the Western side of entrance to Susquehanna River, lies Southwest about $6\frac{1}{2}$ miles from Turkey Point Lighthouse.

Fishing Battery Lighthouse.

Upon the Flats, East side of the channel leading up to Havre de Grace, is a Lighthouse, which at this date (1882), shows a fixed White Light; vessels bound to Havre de Grace should leave this Lighthouse about 200 yards on the Starboard hand.

Havre-de-Grace Lighthouse.

Upon Concord Point, West side of entrance to Susquehanna River, near Havre de Grace is a Lighthouse, which at this date (1882), shows a fixed Red Light.

Remarks.

The channel leading from Locust Point to Havre de Grace (a distance of about 4 miles) is very narrow, but at this date (1882), is well marked with Buoys; at this time about 7 feet water at low tide can be taken from Locust Point to Havre de Grace.

By Ship Channel.**Sailing Directions from Swan Point to Havre de Grace in Daytime, with favorable winds and fair weather.**

Coming up the Chesapeake Bay, bound to Havre de Grace, follow the sailing directions before given by Ship Channel from Cape Henry

to Baltimore, until up with the Red Buoy which lies about $1\frac{3}{4}$ miles to the Westward of Swan Point, Eastern side of Chesapeake Bay; Bodkin Point Lighthouse bears from this Buoy **W.N.W.**, distance $4\frac{1}{2}$ miles; leave this Buoy off Swan Point about $\frac{1}{4}$ mile on the Starboard hand, and make good the course **NE.** by **N.** 6 miles, which will bring you up with the Black Buoy on the Northeast side of Nine Foot Shoal; leave the last-named Buoy (which bears **S.** $\frac{1}{4}$ **W.** from Pool's Island Lighthouse, distance 4 miles), about $\frac{1}{4}$ mile on the Port hand, and make good the course **NE.** by **N.** $\frac{1}{4}$ **N.** $7\frac{1}{4}$ miles to the Red Buoy off Worton Point; when about $\frac{1}{4}$ mile past the last-named Buoy which is left on the Starboard hand, steer about **NE.** by **E.** $\frac{1}{4}$ **E.**, leaving the Black Buoy off Shad Battery well on the Port, and Howell's Point, which is bold, about $\frac{1}{3}$ mile on the Starboard hand; continue the course until about $2\frac{1}{2}$ miles from Turkey Point Lighthouse, then steer about **N.** by **E.**, passing about midway between the last-named Lighthouse and the land on the Western side of the passage, until Turkey Point Lighthouse bears **SE.** $\frac{1}{2}$ **E.**, then make good the course **NW.** $\frac{1}{2}$ **W.**, carrying not less than 12 feet water at low tide, and leaving the Black Buoy* off Locust Point on the Port hand; when past this last Buoy steer more Westerly, keeping a sharp lookout for the Black Buoy which lies at the entrance of the narrow channel; Fishing Battery Lighthouse bears from this Buoy **N.NE.** about $\frac{1}{2}$ mile; when this Buoy is made at the entrance bring it to bear North and run for it, leaving it close to on the Port hand, and the Lighthouse about 200 yards on the Starboard, and run up the narrow channel, course about **N.** by **E.**, leaving the Black Buoys close to on the Port, and the Red Buoys close to on the Starboard hand, carrying from 7 feet to 3 fathoms water to the anchorage off the town.

By the Middle Channel.

From Baltimore bound to Havre de Grace leave the Red Buoy which lies about $\frac{3}{4}$ mile to the Southward of the Old Towers on North Point close to on the Port hand, and make good the course **NE.** by **E.** $\frac{1}{2}$ **E.**, passing about midway between the Craighill Range Lighthouses, and carrying not less than 13 feet water across

* Fishing Battery Lighthouse bears from the Black Buoy off Locust Point **NW.** $\frac{1}{4}$ **N.** distant $1\frac{1}{2}$ miles.

the Flat Ground; as you approach Pool's Island, keep a sharp lookout for the Black Buoy which lies **S.S.W.** about $\frac{3}{4}$ mile from the Southern part of this Island; when this Buoy is made, leave it about 300 yards on the Port hand, and make good the course **NE. $\frac{1}{2}$ E.**, carrying from 7 to 10 fathoms water through the narrow channel, and leaving the Red Buoy (which bears **SE.** from Pool's Island about a mile) close to on the Starboard hand, and the Black Buoy on the Southern part of Shoal well on the Port hand; when past the last-named Buoy, steer about **E.NE.** a mile, which will bring you into the Ship Channel; the course is then **NE.** by **N. $\frac{3}{4}$ N.** to Red Buoy off Worton Point; when past the last-named Buoy follow the directions before given.

By the West Channel.

Vessels of not more than 6 feet draught from Baltimore bound to Havre de Grace, may leave the Red Buoy (which lies about $\frac{3}{4}$ mile to the Southward of the Old Towers on North Point), close to on the Port hand, and make good the course **NE.** by **E. $\frac{1}{2}$ E.**, passing about midway between the Craighill Range Lighthouses, and carrying not less than 13 feet water across the Flat Ground; when about half way from the last-named Lighthouse to Pool's Island Lighthouse, haul up about **NE. $\frac{1}{2}$ N.**, carrying not less than 9 feet water; as you approach Pool's Island Lighthouse, keep a sharp lookout for the three Buoys which lie to the Westward of this last-named Lighthouse; the first is Red, and marks the Flats extending off to the Westward of Pool's Island; the second is painted in Red and Black Horizontal Stripes, and marks a pile of ballast; the third is Black, and marks the Flats which make off from the Western shore; leave the Buoy painted in Red and Black Horizontal Stripes a short distance on either hand, and steer **NE.** by **E. $\frac{1}{4}$ E.** $4\frac{3}{4}$ miles to the Red Buoy off Worton Point, carrying not less than 7 feet water at low tide; when past this last-named Buoy follow the directions before given.

High Water.

It is high water at Havre de Grace 10h. 33m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

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NORTHEAST RIVER.

The entrance to this River which is at the head of Chesapeake Bay, lies $4\frac{1}{2}$ miles to the Eastward of Havre-de-Grace, and North-easterly about 5 miles from Turkey Point Lighthouse; vessels bound to Northeast River leave Turkey Point Lighthouse to the Eastward, while those bound into Elk River leave it to the Westward.

Remarks.

About 13 feet water at low tide can be carried from Turkey Point Lighthouse through a narrow channel to the entrance of Northeast River, and about 7 feet water at low tide can be taken up to Charlestown, which is about $2\frac{1}{2}$ miles from the entrance; at this date (1882), there are no Buoys in this River.

Sailing Directions for Northeast River in Daytime, with favorable winds and fair weather.

Vessels of not more than 6 or 7 feet draught, coming up the Chesapeake Bay, bound to North River, may follow the directions before given for Havre de Grace Harbor by either channel; until about $2\frac{1}{2}$ miles from Turkey Point Lighthouse; then run **NE.** by **N. $\frac{1}{2}$ N.**, leaving it about $\frac{1}{2}$ mile on the Starboard hand; when this Lighthouse bears **SE.**, make good the course **N.NE.**, keeping not more $\frac{1}{2}$ mile from the land on the Starboard side, and carrying not less than 9 feet water, leaving Red Point (which is the first on the Starboard side at the entrance of the River) about $\frac{1}{3}$ mile on the Starboard hand, and steer about **N. by E. $\frac{3}{4}$ E.**, keeping in the middle until abreast the village of Charlestown; then anchor in from 8 to 9 feet water; from Havre de Grace, bound to North River, leave the Black Buoy at the Southern entrance of the channel (this Buoy lies about $\frac{1}{2}$ mile to the Southward of Fishing Battery Lighthouse) close to on the Starboard hand, and steer about **SE. by E.** with Turkey Point Lighthouse on the Starboard bow, leaving the Black Buoy off Locust Point on the Starboard hand, and carrying not less than 12 feet water across the Flat Ground; continue the course **SE. by E.** until about $\frac{1}{2}$ mile from Turkey Point Lighthouse, then steer about **N.NE.**, and follow the directions before given.

High Water.

It is high water at the entrance of Northeast River 10h. 30m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

ELK RIVER.

The entrance to this River which is between Turkey Point Lighthouse on the North, and Wroth's Point on the South, is $15\frac{1}{2}$ miles Northeastly from Pool's Island Lighthouse.

Remarks.

About 18 feet water at low tide can be carried up as far as Bohemia River, which is about $3\frac{3}{4}$ miles from the entrance, and from this about 14 feet to the entrance of Back Creek; the latter leads up to Chesapeake City, the entrance of the Chesapeake and Delaware Canal; at this date (1882), there are no Buoys in this River.

BOHEMIA RIVER.

The entrance to this River is Northeast $3\frac{3}{4}$ miles from Turkey Point Lighthouse; about 8 feet water at low tide can be carried up to Stony Point, which is on the Northeast side about 2 miles from the entrance, and 14 feet can be taken up about $1\frac{1}{4}$ miles above this last-named Point.

**Sailing Directions for Bohemia River in Daytime,
with favorable winds and fair weather.**

Coming up the Chesapeake Bay bound to Bohemia River, follow the directions before given for Havre de Grace Harbor, until about $2\frac{1}{2}$ miles from Turkey Point Lighthouse; then with the entrance to Elk River fairly open run in about **NE.** by **E.** between the last-named Lighthouse and Wroth's Point, keeping nearer the latter; when past Turkey Point Lighthouse, which is left on the Port hand, keep in the middle for about $3\frac{1}{2}$ miles; Bohemia River will then be fairly open, bearing about **E. $\frac{1}{2}$ S.**; then run in, keeping the Northern side best aboard, carrying from 7 to 10 feet water, and

anchor off Stony Point in about 15 feet water; above this the channel is very narrow; if bound further up, it is advisable to take a pilot.

From Havre de Grace, bound to Bohemia River, leave the Black Buoy off the Southern entrance to the channel (this Buoy lies about $\frac{1}{2}$ mile to the Southward of Fishing Battery Lighthouse), close to on the Port hand, and steer about **SE** by **E.** until up with the Black Buoy off Locust Point; leave this last Buoy on the Starboard hand, and steer about **SE. $\frac{1}{2}$ S.**, leaving Turkey Point Lighthouse about $\frac{3}{4}$ mile on the Port hand; when Elk River is fairly open then run in, and follow the directions before given.

CHESAPEAKE AND DELAWARE CANAL.

The Western entrance to this Canal, which is at the head of Back Creek, near Chesapeake City, lies Northeasterly 46 miles from the city of Baltimore, Northeasterly $36\frac{1}{2}$ miles from Bodkin Point Lighthouse, and Northeasterly $10\frac{3}{4}$ miles from Turkey Point Lighthouse, North side of entrance to Elk River.

Remarks.

About 14 feet water, at low tide, can be carried from Turkey Point Lighthouse to entrance of Back Creek, a distance of $7\frac{1}{2}$ miles, and from this there is a sufficient depth of water to the entrance of the Canal.

Sailing Directions from Turkey Point Lighthouse to the Entrance of Chesapeake and Delaware Canal in Daytime.

Coming up the Chesapeake Bay, bound to the Chesapeake and Delaware Canal, follow the directions before given for Havre de Grace Harbor, by either channel, until about $2\frac{1}{2}$ miles from Turkey Point Lighthouse; then, with the entrance to Elk River fairly open, run in about **NE.** by **E.** between the last-named Lighthouse and Wroth's Point, keeping nearer the latter; when past Turkey Point Lighthouse, which is left on the Port hand, keep about in the middle of the River, carrying from 14 feet to 7

fathoms water, until up with the entrance of Back Creek, which is on the Eastern side about $7\frac{1}{2}$ miles from Turkey Point Lighthouse. A pilot is necessary from here to the Canal.

Sailing Directions from Chesapeake and Delaware Canal to Baltimore in Daytime, with favorable winds and fair weather.

After leaving the Canal, a pilot is necessary as far as the mouth of Back Creek, which is about $3\frac{1}{4}$ miles below Chesapeake City; when past the entrance to this Creek, run down the Elk River, keeping about in the middle, and carrying from 14 feet to 7 fathoms water, and leaving Turkey Point Lighthouse about $\frac{3}{4}$ mile on the Starboard hand; when past the last-named Lighthouse, make good the course **SW.** by **W.** $\frac{1}{4}$ **W.**, 11 miles to Red Buoy off Worton Point; on this last course Howell's Point, which is bold, will be left on the Port, and the Black Buoy off Shad Battery Shoal well on the Starboard hand; when the Red Buoy off Worton Point is made, leave it about $\frac{1}{4}$ mile on the Port hand, and steer about **SW.** by **S.**, $3\frac{1}{2}$ miles, which will bring you up with the Black Buoy which lies **E.** by **S.** $\frac{1}{2}$ **S.**, $1\frac{1}{3}$ miles from Pool's Island Lighthouse; when this last Buoy is made, leave it on the Starboard hand, and run to the Southwestward, leaving a Red Buoy a short distance on the Port hand; from this last Buoy steer **SW.** $\frac{1}{4}$ **W.**, leaving the Black Buoy off the Southwestern part of Pool's Island close to on the Starboard hand, and make good the course **SW.** by **W.** $\frac{1}{4}$ **W.**, about 9 miles, carrying not less than 14 feet water, to Red Buoy which lies about $\frac{3}{4}$ mile to the Southward of the Old Towers off North Point, and passing about midway between the Craighill Range Lighthouses; when past the Red Buoy off North Point, run about West until the Lighthouses on Hawkins' and Leading Points are in range; then run for them in range, bearing about **NW.** by **W.** $\frac{3}{4}$ **W.**, until about $1\frac{1}{2}$ miles from Hawkins' Point Lighthouse; then steer more Northerly, passing about midway between the Red and Black Buoy to the Southwestward of Fort Carroll Lighthouse; when past these last-named Buoy, steer **NW.** by **N.**, passing about midway between the Lighthouse on Lazaretto Point and Fort McHenry, and enter the Harbor, leaving the Red and Black Buoy as they are set to mark the channel to the city of Baltimore.

High Water.

It is high water at the entrance of Elk River 10h. 25m. after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

BUSH RIVER.

The entrance to this River, which is on the Western side of Chesapeake Bay, lies Northeasterly $3\frac{1}{4}$ miles from Pool's Island Lighthouse.

Remarks.

About 8 feet water, at low tide, can be taken up this River as far as Beach Point, which is $3\frac{1}{4}$ miles from the entrance, and about 7 feet can be carried up as far as the Railroad Bridge, which is 3 miles above the last-named Point. At this date (1882), there are no Buoys in this River.

Sailing Directions for Bush River in Daytime, with favorable winds and fair weather.

Small or light draught vessels, coming up the Chesapeake Bay, bound to Bush River, may follow the directions before given for Havre de Grace Harbor in either channel, until about $2\frac{1}{2}$ miles past Pool's Island Lighthouse; the entrance to this River will then be fairly open, bearing about **N.NW.**; then run in about midway, and keep in the middle as far as Beach Point, which is on the Port side, about $3\frac{1}{4}$ miles from the entrance; then keep the Starboard side best aboard to the Railroad Bridge, carrying not less than 7 feet water at low tide.

High Water.

It is high water at the entrance to Bush River 8h. 10m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

GUNPOWDER RIVER.

The entrance to this River, which is between Spry's Island on the Southeast and Lower Island Point on the Northwest, lies

Northeasterly about 7 miles from Craighill Channel Front Light-house, and West-Northerly $3\frac{1}{4}$ miles from Pool's Island Light-house.

Remarks.

About 13 feet water, at low tide, can be carried from the entrance of this River to Carroll's Point, which is on the Port side about $1\frac{1}{2}$ miles from the entrance, and about 6 feet can be taken up to the Railroad Bridge, which is $4\frac{3}{4}$ miles above this last-named Point. At this date (1882), there are no Buoys in this River.

Sailing Directions for Gunpowder River in Daytime, with favorable winds and fair weather.

Small or light draught vessels from Baltimore may leave the Red Buoy (which lies about $\frac{3}{4}$ mile to the Southward of the Old Towers at North Point) close to on the Port hand, and make good the course **NE.** by **E.**, passing between the Craighill Range Light-houses, and carrying not less than 10 feet water at low tide across the Flat Ground; when about $2\frac{1}{2}$ miles from Pool's Island Light-house, haul up about **NW.** $\frac{1}{2}$ **W.**, passing about midway between Spry's Island, which lies on the Starboard, and Miller's Island on the Port, carrying not less than 10 feet water; when the entrance to Powder River is open, bearing about **NE.**, then run in, keeping about midway between Spry's Island, which is on the Starboard side, and Lower Island Point on the Port; after passing Carroll's Point, which is the second on the Port side, keep the Port side best aboard, carrying not less than 6 feet water up to the Railroad Bridge.

Coming down the Chesapeake Bay, follow the sailing directions before given from Chesapeake and Delaware Canal to Baltimore, until up with the Black Buoy which lies about $\frac{3}{4}$ mile Southwesterly from the Southwest Point of Pool's Island; leave this Buoy close to on the Port hand, and follow the directions before given.

High Water.

It is high water in Gunpowder River 7h. 55m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

MIDDLE RIVER.

The entrance to this River is about $2\frac{1}{2}$ miles to the Westward of Gunpowder River; about 8 feet water at low tide can be taken up about $1\frac{1}{2}$ miles from the entrance; the River then divides into two branches, the Northernmost of which is called Galloway's Creek; about 6 feet water can be taken up to the head of this Creek, and 7 feet can be carried up the other branch nearly to the Railroad Bridge; at this date (1882), there are no Buoys in Middle River or its tributaries.

Sailing Directions for Middle River in Daytime, with favorable winds and fair weather.

From Baltimore follow the sailing directions before given for Gunpowder River, until about midway between Stry's Island and Miller's Island; then steer about **NW.** by **W.** $\frac{3}{4}$ **W.** $2\frac{1}{2}$ miles, carrying not less than 9 feet water at low tide; the entrance to Middle River will then be open and you may run in, keeping the Port side best aboard; when past the entrance keep in the middle, carrying not less than 8 feet, and anchor in about 9 feet water at the mouth of Galloway's Creek.

Coming down the Chesapeake Bay, bound to Middle River, follow the sailing directions before given from the Canal to Baltimore, until up with the Black Buoy which lies Southwest about $\frac{3}{4}$ mile from the Southern part of Pool's Island; leave this last-mentioned Buoy close to on the Port hand, and make good the course **NW.** by **W.** $\frac{3}{4}$ **W.** $5\frac{1}{4}$ miles; the entrance to Middle River will then be open, and you may then run in as before directed.

High Water.

It is high water at the entrance of Middle River 7h. 45m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

BACK RIVER.

The entrance to this River, which is between Hart's Island and Rocky Point, lies West-Southerly $6\frac{1}{2}$ miles from Pool's Island Lighthouse, and Northwesterly $\frac{3}{4}$ mile from (Craighill Channel) rear Lighthouse.

Remarks.

About 8 feet water at low tide can be carried within 1 mile of the Railroad Bridge, and about 5 feet can be taken up to this Bridge; at this date (1882), there are no Buoys in this River.

**Sailing Directions for Back River in Daytime,
with favorable winds and fair weather.**

Coming up the Chesapeake Bay, or from Baltimore, bound to Back River, pass about midway between the Craighill Range Lighthouses, and make good the course **NE. ½ E.**, carrying not less than 10 feet water across the Flat Ground; when about $2\frac{1}{2}$ miles from Pool's Island Lighthouse, haul up about **NW. ½ W.**, and run about $2\frac{1}{2}$ miles, passing about midway between Spry's Island, which lies on the Starboard, and Miller's Island on the Port; then steer about **SW.** across the Flat Ground for the entrance of Back River, distant about 3 miles, carrying not less than 7 feet water; enter the River about midway between Rocky Point and Hart's Island, and gradually haul to the Northwestward, keeping in the middle for about 2 miles, carrying not less than 8 feet; then anchor. It is not prudent to go above this without a pilot.

Coming down the Chesapeake Bay, follow the sailing directions before given from Chesapeake and Delaware Canal to Baltimore, until up with the Black Buoy which lies about $\frac{3}{4}$ mile to the Southwest of Pool's Island; leave this last-named Buoy close to on the Starboard hand, and make good the course **NW. ½ W.** about $3\frac{1}{4}$ miles, carrying not less than 10 feet water across the Flat Ground; then steer about **SW.** for the entrance of Back River, and follow the directions before given.

High Water.

It is high water at the entrance of Back River 7h. 40m. after it is at Boston; common tides rise about $1\frac{1}{2}$ feet.

Currituck Beach Lighthouse.

On the coast of North Carolina, about midway between Cape Henry and Body Island Lighthouse, is a Lighthouse painted Red, which at this date (1882), shows a fixed White Light, varied by a Red Flash every 90 seconds; Cape Henry Lighthouse bears from Currituck Lighthouse **N.** by **W.** 34 miles; Body Island Lighthouse

bears from Currituck Beach Lighthouse **S.** by **E.** $\frac{1}{2}$ **E.**, distance 36 miles; to the North and South of this Lighthouse there are high White Sand Hills; no other prominent objects are seen in the vicinity.

Coast from Cape Henry to Currituck Beach Lighthouse.

From Cape Henry to Currituck Beach Lighthouse there are no dangers excepting the Sand Bars which lie near the shore; heavy draught vessels may therefore approach this part of the coast within 2 or 3 miles without danger.

Body Island Lighthouse.

Upon Body Island, about $1\frac{1}{2}$ miles Northwest from Oregon Inlet, and about $\frac{3}{4}$ mile from the Atlantic, is a Lighthouse, which at this date (1882), is painted in Black and White Belts, and shows a fixed White Light; Currituck Beach Lighthouse bears from Body Island Lighthouse **N.** by **W.** $\frac{1}{2}$ **W.**, distance 36 miles; Cape Hatteras Lighthouse bears from Body Island Lighthouse, South, distance 35 miles.

Coast from Currituck Beach Lighthouse to Body Island Lighthouse.

From Currituck Beach Lighthouse to Body Island Lighthouse there are no dangers excepting the Sand Bars which lie near the shore; heavy draught vessels may therefore approach this part of the coast within 1 or 2 miles without danger.

OREGON INLET.

The entrance to this Inlet (which leads through Roanoke and Croatan Sounds into Albemarle Sound), lies about $1\frac{1}{2}$ miles Southeast from Body Island Lighthouse.

Remarks.

The channel leading into Oregon Inlet is across Sand Bars, which like all others varies in depth and location with almost every gale from seaward; at this date (1882), there are no Buoys to

mark the channel leading in ; it is therefore advisable for strangers bound in to take pilots.

High Water.

It is high water in Oregon Inlet 4h. 22m. before it is at Boston ; common tides rise about 2 feet.

Cape Hatteras Lighthouse.

About 2 miles North from the Southern extremity of Cape Hatteras is a Lighthouse, the Tower of which, at this date (1882), is painted in Red, 27 feet from the ground ; above this, in Black and White Spiral Bands. This Lighthouse, at this time, shows a Flashing White Light every 10 seconds.

Bearings and Distances from Cape Hatteras Lighthouse.

	Distance.
Montauk Point Lighthouse, NE. by N. $\frac{1}{4}$ N. . . .	394 miles.
Barnegat Lighthouse, N. by E. $5\frac{1}{2}$ E. . . .	283 "
Five Fathom Bank Light-ship, N. by E. $\frac{1}{4}$ E. . . .	221 "
Winter Quarter Shoal Light-ship, N. by E. , nearly . . .	165 "
Body Island Lighthouse, North	35 "
Lighthouse at Ocracoke Inlet, W. by S. $\frac{1}{2}$ S. . . .	24 "
Cape Lookout Lighthouse, SW. $\frac{3}{4}$ W.	62 "

Hatteras Shoals.

These Shoals extend off Southeast from Cape Hatteras from 9 to 10 miles. The depth of water upon them, undoubtedly like those in the vicinity of Nantucket, varies with almost every gale from seaward. There are channels or passages for small vessels between these Shoals, but they are constantly changing ; it is therefore advisable, especially for heavy draught vessels, in night-time or thick weather, to give them a wide berth, or not approach them in less than 14 fathoms water.

Coast from Body Island Lighthouse to Cape Hatteras.

Platt's Shoals.

From 6 to 7 miles to the Southward of Body Island Lighthouse, and about 2 miles from shore, are several spots having from 24 to

30 feet water upon them; these are called Platt's Shoals. Seven fathoms water was found between these dangers and the shore.

Wimble Shoals.

These Shoals, upon which as little as 20 feet water has been found, lie about 2 miles from shore, and about 16 miles to the Southward of Bodv Island Lighthouse. There is a channel of about 30 feet water between these dangers and the shore.

HATTERAS INLET.

The entrance to this Inlet lies West-Southerly about 12 miles from Cape Hatteras Lighthouse, and East-Northerly about 14 miles from Ocracoke Inlet.

Remarks.

In entering Hatteras Inlet, the channel is across Sand Bars, which vary in depth and location with almost every heavy gale from seaward. The best channel leading in is marked with Buoys, which are changed with the shifting of the channel so as to mark the deepest water across the bar. There is usually good water across the bar leading into Hatteras Inlet, but at this date, however, only 7 feet at low tide can be taken up into Pamlico Sound.

Hatteras Inlet Lighthouse.

Upon the Shoal known as Oliver's Reef, on the North side of the entrance to Hatteras Inlet from Pamlico Sound, in about 7 feet water, is a Lighthouse, which at this date (1882), shows a Red Light which flashes every 30 seconds. Cape Hatteras Lighthouse bears from Hatteras Inlet Lighthouse **W. $\frac{3}{4}$ N.**, distance 12 miles. At this time a Fog Bell is attached to this Lighthouse. This Lighthouse is intended to guide vessels from Pamlico Sound into Hatteras Inlet.

**Sailing Directions for Hatteras Inlet in Daytime,
with favorable winds and fair weather.**

It is advisable for vessels of much size, bound into this Inlet, to take pilots off the bar; but as it sometimes happens that they are

compelled to enter this place, in order to save their lives, the following directions may therefore, in such cases, be invaluable :

Cape Hatteras Lighthouse bears from the Outer or Sea Buoy painted in Black and White Perpendicular Stripes, off this Inlet, about **E.NE.** 12 miles. Having made the Sea Buoy off this Inlet, wait, if possible, until about $\frac{3}{4}$ flood ; then, with a commanding breeze, run in, leaving the Buoys painted in Black and White Perpendicular Stripes close to on either hand, the Buoys painted in Red and Black Horizontal Stripes on obstructions on either hand, the Black Buoys on the Port, and the Red Buoys on the Starboard hand, and anchor as soon as the water becomes smooth. The current sets strong into Hatteras Inlet.

High Water.

It is high water in Hatteras Inlet 4h. 25m. before it is at Boston ; common tides rise about $2\frac{1}{4}$ feet. Strong winds from seaward increase the tides.

OCRACOKE INLET.

The entrance to this Inlet is West-Southerly 26 miles from Cape Hatteras Lighthouse, West-Southerly 15 miles from Hatteras Inlet, and Northeasterly 38 miles from Cape Lookout Lighthouse.

Ocracoke Lighthouse.

Upon the North side of entrance to Ocracoke Inlet is a Lighthouse, which at this date (1882), shows a fixed White Light. Cape Hatteras Lighthouse bears from Ocracoke Lighthouse **E.** by **N.** $\frac{1}{2}$ **N.**, distance 25 miles ; Cape Lookout Lighthouse bears from Ocracoke Lighthouse **SW.**, distance 40 miles.

Remarks.

The channel leading into Ocracoke Inlet is across a Sand Bar, upon which there are usually from 10 to 12 feet water at low tide. In entering, the best water is marked with Buoys, which are moved with the shifting of the channel so as to mark the deepest water across the bar. In September, 1827, we are told, the deepest water across this bar was 12 feet at low tide ; between the years 1849 and 1857, from 10 to 13 feet.

**Sailing Directions for Ocracoke Inlet in Daytime,
with favorable winds and fair weather.**

At this date (1881), Ocracoke Lighthouse bears from the Sea Buoy, which is painted in Black and White Perpendicular Stripes, North, distance about $3\frac{3}{4}$ miles; having made this Buoy, vessels of 7 or 8 feet draught should, if possible, wait until about $\frac{3}{4}$ flood; then, with a favorable and commanding breeze, run in, leaving the Buoys painted in Black and White Perpendicular Stripes close to on either hand, the Buoys painted in Red and Black Horizontal Stripes, which are upon obstructions in the channel-way, on either hand, the Red Buoys on the Starboard and the Black on the Port hand, and anchor as soon as the water becomes smooth; if bound into Pamlico Sound, a pilot is necessary.

High Water.

It is high water in Ocracoke Inlet 4h. 25m. before it is at Boston; common tides rise about $2\frac{1}{4}$ feet. Strong winds from seaward increase the tides.

Cape Lookout Lighthouse.

Near the extremity of Cape Lookout is a Lighthouse, the Tower of which at this date (1882), is painted in Black and White Checkers; at this time this Lighthouse shows a fixed White Light.

Bearings and Distances from Cape Lookout Lighthouse.

	Distance.
Cape Hatteras Lighthouse, NE. $\frac{3}{4}$ E.	62 miles.
Ocracoke Lighthouse, NE.	40 "
Frying Pan Shoals Light-ship, SW. $\frac{1}{4}$ W.	90 "

CAPE LOOKOUT SHOALS.

These Shoals extend off Southeasterly about 12 miles from Cape Lookout Lighthouse; it is advisable for heavy draught vessels, in thick weather or at night, to give them a wide berth, or not approach them in less than 14 fathoms water.

Coast from Ocracoke Inlet to Cape Lookout Shoals.

From Oregon Inlet to Cape Lookout Shoals there are no dangers except the Sand Bars, which lie near the shore; heavy draught vessels may therefore approach this part of the coast within 1 or 2 miles without danger.

CAPE LOOKOUT COVE.

This Cove lies **SW.** $\frac{1}{2}$ **W.** from Cape Lookout Lighthouse, distance about $\frac{3}{8}$ mile.

Remarks.

At this date (1880), this Cove affords shelter in all winds for small vessels of not more than 7 or 8 feet draught; vessels of more than 8 feet draught may find shelter in it with winds from **N.NE.** to South by way of East.

Sailing Directions for Cape Lookout Cove in Daytime with favorable winds and fair weather.

Small or light draught vessels, from the Northeast, may, when past Cape Lookout Shoals, haul to the Northward, keeping in not less than 5 fathoms water; when Cape Lookout Lighthouse bears **E.NE.**, then run for it on this course, until about $\frac{3}{4}$ mile from it; the Cove will then be open, bearing about South; then run in, keeping close to the Hook or Starboard side, and anchor near the Western side of the Cove in not less than 10 feet water, with room to swing with the change of wind.

From the Southwestward, bring Cape Lookout Lighthouse to bear **E.NE.**, and run for it on this course, until the Cove is fairly open, bearing about South; then run in as before directed.

Vessels of 10 feet draught may run for Cape Lookout Lighthouse, bearing **E.NE.**, until the water shoals to 3 fathoms; then run about **S.** by **W.**, and anchor at the mouth of the Cove in not less than 3 fathoms water.

BEAUFORT HARBOR, and MOREHEAD CITY, N. C.

The entrance to Beaufort Harbor lies Northwest about $8\frac{1}{2}$ miles from Cape Lookout Lighthouse.

Remarks.

The channel leading into this harbor is across Sand Bars, which, like all other barred harbors on the coast, vary in depth and location with almost every gale from seaward; the best water leading in is marked with Buoys, which are changed with the shifting of the channel; at this date (1881), about 16 feet water, at low tide, can be taken over the bar, and from this about 20 feet can be carried up to Morehead City; but little water at low tide can be carried to the wharves at Beaufort; this last-named place lies about $1\frac{1}{2}$ miles East from the wharf at Morehead City.

Sailing Directions for Beaufort Harbor and Morehead City in Daytime, with favorable winds and fair weather.

Cape Lookout Lighthouse bears from the Outer or Sea Buoy (which is painted in Black and White Perpendicular Stripes), off the Bar, **E. SE.**, distance 8 miles; vessels bound in, after having made this Buoy, will, if possible, wait until about $\frac{1}{2}$ flood; then with a favorable and commanding breeze run in, leaving the Buoys painted in White and Black Perpendicular Stripes close to on either hand, the Black Buoys on the Port and the Red Buoys on the Starboard hand; when about $\frac{1}{4}$ mile past Fort Macon, which should not be left more than $\frac{1}{3}$ mile on the Port hand, keep about 200 yards from the Port side, carrying not less than 4 fathoms water, until the Red Beacon on the West end of Shark Shoal bears **N. NW.**, then run up with it a little on the Starboard bow, and leave it about 100 yards on the Starboard hand; when past this Beacon, run for the end of the Railroad Wharf, bearing about **N. NW.**

High Water.

It is high water in Beaufort Harbor 4h. 18m. before it is at Boston; common tides rise about 3 feet. Strong winds from seaward increase the tides.

Coast from Cape Lookout to Cape Fear.

Cape Fear bears from Cape Lookout Lighthouse **SW.** by **W.** $\frac{1}{2}$ **W.**, distance 85 miles; between these two Capes there are no dangers except the Sand Bars, which lie near the shore; vessels may therefore approach this part of the coast within 1 or 2 miles without danger.

Inlets between Beaufort Harbor and Cape Fear.

Between Beaufort Harbor and Cape Fear, a distance of 82 miles, there are several Inlets, the Channels of which lead in across Sand Bars, which vary in depth with almost every gale from seaward; at the present time we have no knowledge of the depth of water in entering these Inlets, and cannot therefore give any directions in relation to navigating them.

CAPE FEAR.

This Cape lies **SW.** by **W.** $\frac{1}{2}$ **W.** from Cape Lookout Lighthouse, distance 85 miles.

Cape Fear, or Frying Pan Shoals.

These Shoals, which lie Southeasterly about 16 miles from Cape Fear, are marked off their outer part with a Light-ship and Red Buoy.

Frying-Pan Shoals Light-ship.

About 1 mile without the Eighteen Foot Shoal, in about 10 fathoms water, is moored a Light-ship, which at this date (1882), shows 2 fixed White Lights, and has a Bell and Horn, one of which is sounded in thick weather.

Bearings and Distances from Frying-Pan Shoals Light-ship.

	Distance.
Entrance to Beaufort Harbor, NE. $\frac{1}{4}$ N.	88 miles.
Cape Lookout Lighthouse, NE. $\frac{1}{4}$ E.	90 "
Cape Fear Lighthouse, entrance to Cape Fear River, NW. by N. $\frac{1}{2}$ N.	22 "
Georgetown Lighthouse, W. by S. $\frac{3}{4}$ S.	71 "
Cape Roman Lighthouse, SW. by W. $\frac{3}{4}$ W.	85 "
Rattlesnake Shoal Light-ship, SW. by W. $\frac{3}{8}$ W.	108 "
Martin's Industry Light-ship, SW. by W. nearly	164 "

Remarks.

In approaching Cape Fear, or Frying Pan Shoals, from the Eastward, the soundings are quite regular, but from the Westward very irregular; heavy draught vessels approaching these dangerous shoals in thick weather should use the Lead often, and sailing vessels should not run into less than 15 fathoms water.

FRYING PAN SHOALS SLUE.

This channel across Frying Pan Shoals, in which at this date (1882), there are about 11 feet water, is marked with 2 Buoys painted in Black and White Perpendicular Stripes, one of which lies on the Western side of the shoal, the other on the Eastern, a little more than 2 miles apart; these Buoys lie Southeasterly, a little more than 7 miles from the pitch of the Cape.

Sailing Directions for Frying Pan Shoals Slue in Daytime, with favorable winds and fair weather.

Vessels of not more than 8 or 9 feet draught, from the Northeastward, bound through this Slue, should not approach the Shoal in less than 5 or 6 fathoms water, until the Black and White Perpendicular Striped Can Buoy, which lies at the Eastern entrance of the Slue, about 7 miles Southeasterly from the Pitch of the Cape, is made; bring this Buoy to bear **SW.** and run for it, leaving it close to on either hand; when past it, steer **SW.** by **W.** $\frac{1}{2}$ **W.** about 2 miles, for the Black and White Perpendicular Striped Can Buoy at the Western entrance of the Slue; if bound to Cape Fear River, when past the last-named Buoy, steer about **NW.** $\frac{1}{2}$ **N.**

From the Southwestward, intending to pass through Cape Fear Slue, do not approach the shoal in less than 6 fathoms water, until the Can Buoy painted in Black and White Perpendicular Stripes, which lies Southeasterly about 8 miles from the Cape, is made; bring this Buoy to bear **NE.** and run for it, leaving it close to on either hand, and steer **NE.** by **E.** $\frac{1}{2}$ **E.** about 2 miles, to the Buoy painted in Black and White Perpendicular Stripes at the Western entrance of the Slue.

CAPE FEAR RIVER ENTRANCE TO WILMINGTON.

The entrance to this River lies about 20 miles **NW.** by **N.** from Frying Pan Shoal Light-ship, and Northeasterly 85 miles from Cape Roman.

Cape Fear Lighthouse.

Upon Bald Head, Northwesterly end of Smith's Island entrance to Cape Fear River, is a Lighthouse, painted White, which at this date (1882), shows a fixed White Light.

Cape Fear Range Beacon (Front).

In front of Cape Fear Lighthouse is a Ship's Lantern, suspended from a White Stake, which at this time shows a White Light; these two lights form a range to guide vessels through the dredged Bald Head Channel into Cape Fear River.

Remarks.

The channel leading into Cape Fear River is across a Sand Bar, which changes in depth with almost every gale from seaward; the best water is marked with Buoys, which are changed with the shifting of the channel; at this date (1881), there are about 9 feet water, at low tide, in the Seaward Channel.

Sailing Directions for Cape Fear River in Day-time, with favorable winds and fair weather.

Seaward Channel.

From the Northeastward, when past Frying Pan Shoals Light-ship, steer about **NW.** by **W.** 14 miles (taking care to not approach the Shoal in less than 6 fathoms water), then steer more Northerly; when Cape Fear Lighthouse is made, bring it to bear **NE.** by **E.** $\frac{1}{4}$ **E.**, and run for it on this course, until the Outer or Sea Buoy is made; this Buoy is painted in Black and White Perpendicular Stripes, and has the letters C. F. upon it; Cape Fear or Bald Head Lighthouse bears **NE.** by **E.** $\frac{1}{4}$ **E.** from it; when the Sea Buoy is made, wait, if possible, until about $\frac{3}{4}$ flood; then leave it close to on either hand, and run in with the Beacon in range of the

Lighthouse, bearing **NE.** by **E.** $\frac{1}{4}$ **E.**, leaving the Outer Bar Buoy, which is Black, on the Port hand, and steer more Northerly, leaving the Buoy with Red and Black Perpendicular Stripes about $\frac{1}{4}$ mile on the Port hand, and Inner Bar Buoy (Black) close to on the Port; when past the last Buoy, steer about **NE.** by **N.**, leaving the Red Buoy on the North Breaker on the Starboard hand; the course is then **NE.** for the Black Buoy off Bald Head Shoal; leave the last-named Buoy on the Port hand, and haul gradually to Port, and leave the Black Buoy off Rip Shoal on the Port; when past the last-named Buoy, get Oak Island well open, then steer **NW.** by **N.** $\frac{1}{2}$ **N.** for the Red Buoy off Battery Island Shoal, leaving it on the Starboard hand; when past the last Buoy steer for the centre of Smithville, and anchor abreast the town in about 5 fathoms water. If bound to Wilmington, it is advisable to take a pilot here. These directions were good for 1881. From the Southwestward, as soon as Cape Fear Lighthouse is made, bring it bear **NE.** by **E.** $\frac{1}{4}$ **E.**, and run for it on this course, until the Outer or Sea Buoy is made, then follow the directions before given.

Oak Island Range Beacons.

Upon Oak Island, to the Southward of the Main Channel, at the mouth of Cape Fear River, are two White Skeleton Structures, or Beacons, pyramidal in form, standing on a square foundation 12 feet high; these Beacons at this date (1882), show fixed Red Lights, and are intended as a range for the Oak Island Channel.

Remarks.

The passage leading into Cape Fear River, by the Oak Island Channel, is across a Sand Bar, which varies in depth with almost every gale from seaward; the best water is marked with Buoys, which are changed with the shifting of the channel; at this date (1881), there is about 10 feet water, at low tide, in the Oak Island Channel.

Sailing Directions for Cape Fear River in Day-time, with favorable winds and fair weather.

Oak Island Channel.

From the Northwestward, follow the directions before given for the Seaward Channel, until the Oak Island Beacons are made, then at about $\frac{3}{4}$ flood get them in range, bearing **NE.**, and run in, leav-

ing the Outer or Sea Buoy (which is painted in Black and White Perpendicular Stripes, with the letters C. F. upon it) close to on either hand, and the Bar Buoy (Red) on the Starboard hand; when past the Bar Buoy, haul gradually to the Eastward, and steer about **E. by N.** for the Black Buoy off Rip Shoal, leaving it on the Port hand; when past the last-named Buoy, get Oak Island well open, and then steer **NW.** by **N. ½ N.** for the Red Buoy off Battery Island Shoal, leaving it on the Starboard hand; when past the last Buoy, steer for the centre of Smithville, and anchor off the town in about 5 fathoms water. If bound to Wilmington, it is advisable to take a pilot at this anchorage. These directions were good for 1881.

From the Southwestward, as soon as Oak Island Beacons are made, bring them in range, and follow the directions before given.

High Water.

It is high water at the entrance of Cape Fear River 4h. 3m. before it is at Boston; common tides rise about 4½ feet. Strong winds from seaward increase the tides.

Inlets between Cape Fear Lighthouse and Georgetown Lighthouse.

Between Cape Fear Lighthouse and Georgetown Lighthouse, a distance of 70 miles, there are several Inlets, the entrances to which are across Sand Bars. At this time we have no knowledge of the depth of water leading in; no directions can therefore be given for navigating them.

Coast from Cape Fear Lighthouse to Georgetown Lighthouse.

Between Cape Fear Lighthouse and Georgetown Lighthouse there are no dangers, except the Sand Bars lying near the shores; vessels may therefore approach this part of the coast, from 1 to 2 miles, without danger.

GEORGETOWN and WINYAH BAY, S. C.

The entrance to this Bay is West-Southerly about 72 miles from Frying Pan Shoals Light-ship, West-Southerly 70 miles from Cape Fear Lighthouse, and 14 miles Northeasterly from the Lighthouse at Cape Roman.

Georgetown Lighthouse.

Upon the Southern part of North Island, East side of entrance to Georgetown Harbor, is a Lighthouse, the Tower of which, at this date (1882), is painted White, and shows a fixed White Light. Cape Fear Lighthouse bears from Georgetown Lighthouse **NE.** $\frac{7}{8}$ **E.**, distance 70 miles; Frying Pan Shoals Light-ship bears from Georgetown Lighthouse **E.** by **N.** $\frac{3}{4}$ **N.**, distance 71 miles; Cape Roman Lighthouse bears from Georgetown Lighthouse **SW.** $\frac{1}{2}$ **S.**, distance $15\frac{3}{4}$ miles.

Remarks.

The passage leading into Georgetown Harbor is across a Sand Bar, which is liable to change its depth and location with almost every gale from seaward. The best water is marked with Buoys, which are changed with the shifting of the channel. At this date (1881), there are about 7 feet water, at low tide, upon the bar.

Sailing Directions for Georgetown Harbor in Day-time, with favorable winds and fair weather.

Light draught vessels from the Northeast may, when past Frying Pan Shoals Light-ship, make good the course **W.SW.** 70 miles, which will take them abreast the entrance to Georgetown Harbor; then, at about $\frac{3}{4}$ flood, get the Lighthouse to bear **N.NW.**, and run for it on this course, leaving the Outer or Sea Buoy painted in Black and White Perpendicular Stripes (which lies off the Western part of East Bank) close to on either hand, and steer about **NW.** by **N.** for the Black Buoy off the South Breaker, leaving it on the Port, and the Red Buoy off the North Breaker on the Starboard hand; when past the last-named Buoy, haul gradually to **N.** by **W.**, leaving the Black Buoy on the Inner Bar on the Port, and steer about **NW.** by **N.** $\frac{1}{2}$ **N.**, leaving the Red Buoy off Dry Bar on the Starboard hand, and Channel Buoy painted in Black and White Perpendicular Stripes close to on either hand; when past this last Buoy, the course is about **N.** $\frac{1}{2}$ **W.** for Fishing Rip Buoy painted in Red and Black Horizontal Stripes; leave this last-named Buoy about half cable's length on the Starboard hand, and run **N.** by **W.** until Georgetown Lighthouse bears East; then anchor in from 4 to 5 fathoms water. It is said that the holding ground is bad at this anchorage; it is therefore advisable for ves-

sels, in heavy weather, to keep in the middle and run up about $1\frac{1}{2}$ miles further, where there is good holding ground. If bound to Georgetown, a pilot is necessary at this anchorage. These directions were good for 1881.

From $1\frac{1}{2}$ to 2 miles to the Northward of Georgetown Lighthouse there is good anchorage in about 5 fathoms water, with winds from **SW.** to **NW.** by way of West.

High Water.

It is high water at the entrance of Georgetown Harbor 3h. 46m. before it is at Boston; common tides rise about $3\frac{1}{2}$ feet. Strong winds from seaward increase the tides.

Cape Roman Lighthouse.

Upon the Northeastern part of a low, sandy Island, covered with a low growth of bay wood, is a Lighthouse, the Tower of which is painted Red. This Lighthouse shows a fixed White Light, which flashes once every minute.

Bearings and Distances from Cape Roman Lighthouse.

	Distance.
Frying Pan Shoals Light-ship, NE. by E. $\frac{3}{4}$ E. . . .	85 miles.
Bull's Bay Lighthouse, SW. by W.	11 "
Rattlesnake Shoal Light-ship, SW.	25 "

Between Georgetown Lighthouse and Cape Roman Lighthouse shoal water extends off a long distance; vessels will therefore give this part of the coast a wide berth.

In order to guide passing vessels outside the Shoals, at this date (1882), a Buoy painted in Red and Black Horizontal Stripes, with the letters C. R. upon it, is placed about $\frac{3}{4}$ mile outside Cape Roman Outer Breakers; Cape Roman Lighthouse bears from this Buoy **NW.** by **W.**, about $7\frac{1}{4}$ miles; Frying-pan Shoal Light-ship **NE.** by **E.** $\frac{3}{8}$ **E.**, distance 80 miles; Rattlesnake Shoal Light-ship **SW.** by **W.** $\frac{1}{4}$ **W.**, 27 miles.

NORTH AND SOUTH SANTEE RIVERS.

The entrance to these Rivers lies between Georgetown Lighthouse and Cape Roman. At this time we have no knowledge of the depth of water leading in; no directions can therefore be given for navigating them.

BULL'S BAY HARBOR.

The entrance to this Harbor lies about 10 miles Southwesterly from Cape Roman Lighthouse, and Northeasterly about 16 miles from Rattlesnake Shoal Light-ship.

Bull's Bay Lighthouse.

Upon the Northeast end of Bull's Island, on a White Dwelling, is a Lantern, which at this date (1882), shows a fixed White Light. Cape Roman Lighthouse bears from Bull's Bay Lighthouse **NE.** by **E.**, 11 miles; Rattlesnake Shoal Light-ship bears from Bull's Bay Lighthouse **SW.** by **S.**, distance about 14 miles.

Shoal water extends off a long distance from Bull's Bay Lighthouse. At this time, a Buoy painted in Red and Black Horizontal Stripes marks the outer part of this danger. Bull's Bay Lighthouse bears from this Buoy **N.** by **W.**, about $5\frac{1}{4}$ miles; Cape Roman Lighthouse **NE.** $\frac{3}{4}$ **N.**, distance about 14 miles; Rattlesnake Shoal Light-ship **SW.** by **W.**, 11 miles.

Remarks.

The channel leading into Bull's Bay Harbor is across a Sand Bar, which varies in depth with almost every gale from seaward. The best water is marked with Buoys, which are changed with the shifting of the channel. At this date (1881), there is about 12 feet water at low tide in the channel across the bar. This is an excellent Harbor in Southeast gales, and in fact is well sheltered in all winds.

Sailing Directions for Bull's Bay Harbor in Day-time, with favorable winds and fair weather.

From the Northeastward, when past the Buoy painted in Red and Black Horizontal Stripes which lies outside Cape Roman Shoals, bring Bull's Bay Lighthouse to bear **NW.** by **W.** $\frac{1}{2}$ **W.**, and run for it on this course, leaving the Buoy without Bull's Breakers about 4 miles on the Port hand; continue the course for the Lighthouse until the Sea Buoy painted in Black and White Perpendicular Stripes, with letters B. B. on it, is made; then, at about $\frac{3}{4}$ flood, leave this Buoy close to on either hand, and run for the Lighthouse bearing **NW.** by **W.** $\frac{1}{2}$ **W.** until about 3 cables

length from the shore; then haul to the Northward, leaving the Black Buoy off Bull's Point close to on the Port hand; when past this last Buoy, follow the beach to the Westward, carrying deep water, and, when well sheltered, anchor in from 4 to 5 fathoms water.

From the Southwestward, leave Rattlesnake Shoal Light-ship close to on the Port, and steer **NE.** by **E.**, leaving the Buoy painted in Red and Black Horizontal Stripes outside Bull's Breakers well on the Port hand; when Bull's Bay Lighthouse bears **NW.** by **W.** $\frac{1}{2}$ **W.**, follow the directions before given.

High Water.

It is high water in Bull's Harbor 4h. 29m. before it is at Boston; common tides rise about $4\frac{3}{4}$ feet. Strong winds from seaward increase the tides.

Rattlesnake Shoal.

This Shoal, upon which there are about 5 feet water at low tide, extends about **E.** $\frac{1}{2}$ **N.** and **W.** $\frac{1}{2}$ **S.**, 2 miles. It is very narrow, and at this date (1882), is marked off its Eastern and Western ends with Buoys painted in Red and Black Horizontal Stripes. At this time, about $1\frac{1}{4}$ miles Southeasterly from this Shoal, is placed a Light-ship. Between this Shoal and the shore there is a channel of about $1\frac{1}{2}$ miles in width, having at low tide a depth of from 12 to 14 feet water; small or light draught vessels may therefore pass about $\frac{3}{4}$ mile within the Buoys on this danger.

Rattlesnake Shoal Light-ship.

About $1\frac{1}{4}$ miles Southeasterly from this Shoal, in about 5 $\frac{1}{2}$ fathoms water, is moored a Light-ship, which at this date (1882), shows two fixed Lights, and has a Bell, which is struck in thick weather. Painted on each side, in large black letters, are the words Rattlesnake Shoal.

Bearings and Distances from Rattlesnake Shoal Light-ship.

	Distance.	
Frying Pan Shoals Light-ship, NE. by E. $\frac{3}{8}$ E. . . .	108	miles.
Cape Roman Lighthouse, NE.	25	"
Outer Buoy off Cape Roman Shoals, NE. by E. $\frac{1}{4}$ E. . . .	27	"
Eastern Buoy off Rattlesnake Shoal, N. $\frac{1}{2}$ E. . . .	$1\frac{3}{8}$	"

Western Buoy off Rattlesnake Shoal, NW. by W.	Distance.
$\frac{1}{2}$ W.	2 $\frac{1}{4}$ miles.
Outer or Sea Bnoy, which lies off the entrance to Main Ship Channel, Charleston Harbor, SW. $\frac{1}{2}$ W.	6 "
Martin's Industry Light-ship, SW. $\frac{1}{4}$ W.	58 "

Vessels in daytime may run direct from Rattlesnake Shoal Light-ship to Martin's Industry Light-ship, carrying from 5 to 8 fathoms water, and leaving the bars off Charleston Harbor about 2 miles to the Northwestward.

CHARLESTON HARBOR.

The entrance to this Harbor by Main Ship Channel is Southwesterly about 115 miles from Frying Pan Shoals Light-ship, 6 miles Southwesterly from Rattlesnake Shoal Light-ship, and Northeasterly 51 miles from Martin's Industry Light-ship.

Charleston Main Lighthouse.

Upon the Southern part of Morris Island, West side of entrance to Charleston Harbor, is a Lighthouse, which at this date (1882), is painted in Black and White Bands, three of each color, commencing with Black at the top. This Lighthouse, at this time, shows a fixed White Light.

Morris Island Range Beacons.

Upon the Southern end of Morris Island, West side of entrance to Charleston Harbor, are two Range Beacons for crossing the Bar; the front is painted Red, the rear Black. Both these Beacons, at this date (1882), show fixed Red Lights.

Sullivan's Island Range Beacons.

Upon Sullivan's Island, North side of entrance to Charleston Harbor, are two Range Beacons; the front is painted White, the rear is also White. Both these Beacons, at this time, show Red Fixed Lights.

Fort Sumter Lighthouse.

Upon the Northwest face of Fort Sumter, Southwest side of entrance to Charleston Harbor, is a Lighthouse, which at this date

(1882), shows a fixed White Light. Vessels bound up may approach this Lighthouse on its Northeast side within 300 yards without danger.

Fort Ripley Shoal Lighthouse.

Upon Fort Ripley Shoal, North side of entrance to Charleston Harbor, in about 8 feet water, is a Lighthouse, which at this date (1882), shows a fixed Red Light. Attached to this Lighthouse, at this time, is a Bell, which in thick weather is struck at intervals of 10 seconds.

Remarks.

The channel leading into Charleston Harbor is across a Sand Bar, which is liable to change with almost every gale from seaward. At this time, Range Lights and Buoys are used to show the deepest water; these are changed with the shifting of the channel, so as to mark the best water leading in. Appropriations have been made from time to time by the United States Government for the purpose of improving Charleston Harbor, and Jetties extending off from both sides are now in course of construction for that purpose. At this date (1881), there are about 11 feet water, at low tide, across the Bar which leads into the Main Channel.

To Vessels in Distress.

At this date (1882), Charleston affords good facilities to vessels in distress, there being a Dry Dock and two Marine Railways, capable of docking or hauling vessels of 1,000 tons, with everything necessary for repairs.

Sailing Directions for Charleston Harbor in Day-time, with favorable winds and fair weather.

Main Channel.

From the Northeastward, leave the Light-ship off Rattlesnake Shoal close to on the Starboard hand, and make good the course **SW.** $\frac{1}{2}$ **W.** 6 miles, which will bring you up with the Sea Buoy which is painted in Black and White Perpendicular Stripes and has the letter C. upon it; Charleston Main Lighthouse bears from this Buoy (which lies in about 5 fathoms water off entrance to Main Channel) **WNW.** distance $3\frac{5}{8}$ miles; when this Buoy is made, wait, if possible, until about $\frac{3}{4}$ flood; then bring the Beacons on

the South end of Morris Island in range, and run for them in range, leaving the Sea Buoy close to on either hand; the Outer Bar Buoy, which is painted in Black and White Perpendicular Stripes, on the Starboard, and the Middle Buoy, which is painted Black, on the Port hand; when past the last-named Buoy, you will see the Junction Bell Buoy painted in Black and White Perpendicular Stripes, which leave close to on the Starboard hand, and get Sullivan's Island Beacons in range, bearing about **N. $\frac{1}{2}$ W.**, and run for them in range, carrying from 3 to 7 fathoms water, leaving a Red Buoy on Pumpkin Hill Bar on the Starboard, and the South Jetty Buoy (Black) on the Port hand; when past the last-named Buoy, steer North-easterly, leaving the other Black Jetty Buoy close to on the Port hand, and run **N.N.W.** until Sullivan's Island Lights are again in range, bearing about **N. $\frac{1}{2}$ W.**, leaving the Black Buoy off Cummings' Point on the Port hand; when Fort Ripley Lighthouse opens to the Northward of Fort Sumter, then steer **N.W. $\frac{1}{2}$ W.** until Fort Sumter bears **S.S.W.**; the course is then about **W. $\frac{1}{2}$ N.**, leaving the Black Buoy off Fort Sumter on the Port, and the Buoy painted in Red and Black Horizontal Stripes off the Lower Middle on the Starboard hand; continue the course **W. $\frac{1}{2}$ N.**, leaving the Buoy painted in Red and Black Horizontal Stripes off Battery Point Shoal close to on the Port hand, and make good the course **N. by W.** for the city. These directions were good for 1881.

Sailing Directions for South Channel.

If the wind is unfavorable to cross the Bar by the Main Channel, you may, by the following directions, enter by the South Channel: At about $\frac{3}{4}$ flood get the Beacons on Sullivan's Island in range, bearing about **N. $\frac{1}{2}$ W.**, and run for them in range, leaving the Bar Buoy (Black) on the Port, Middle Buoy (Red) on the Starboard, and Inner Junction Bell Buoy, painted in Black and White Perpendicular Stripes, close to on the Starboard hand; when past the last-named Buoy, follow the directions before given for Main Channel.

REBELLION ROADS.

These Roads, in which vessels may anchor in from 4 to 6 fathoms water, lie Northwesterly about 1 mile from Fort Sumter.

Sailing Directions for Rebellion Roads.

Follow the directions before given for the Main Channel, until the Lighthouse on Fort Sumter bears **SE.** by **S.**; then make good the course **NW** by **N.**, and anchor when Fort Ripley Lighthouse bears **W.** by **S.**, in about 5 fathoms water.

SWASH CHANNEL.

This Channel lies about 3 miles to the Northward of the Main Channel; until the Jetties at the entrance of the harbor are completed, strangers should not attempt to enter it, as changes are constantly taking place.

High Water.

It is high water in Charleston Harbor 4h. 5m. before it is at Boston; common tides rise about $5\frac{1}{4}$ feet. Strong winds from seaward increase the tides.

NORTH EDISTO RIVER, S. C.

The entrance to this River lies Southwesterly 26 miles from Rattlesnake Light-ship, Southwesterly 18 miles from Charleston Main Lighthouse, and Northeasterly 34 miles from Martin's Industry Light-ship.

Remarks.

The entrance to North Edisto River is across a Sand Bar, which is liable to change in depth with every gale from seaward; Buoys are placed so as to mark the best water leading in; at this date (1881), there is about 10 feet water across the Bar at low tide.

Sailing Directions for North Edisto River in Day-time, with favorable winds and fair weather.

Vessels from the Northeastward, bound to North Edisto River, may leave the Light-ship off Rattlesnake Shoal close to on the Starboard hand, and make good the course **SW.** $\frac{1}{2}$ **W.** 14 miles, which will bring them up with the Buoy painted in Black and White Perpendicular Stripes, which lies off Stono Inlet; when this

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Buoy, which has the letter S. painted on it, bears **NW.** $\frac{1}{2}$ mile, make good the course **W.SW.** 10 miles, to Sea Buoy painted in Black and White Perpendicular Stripes, with the letters N. E. upon it; this last Buoy marks the entrance to North Edisto River; when the last-named Buoy is made, wait, if possible, until about $\frac{3}{4}$ flood, then, with a favorable and commanding breeze, bring the Sea Buoy to bear **NW.** $\frac{1}{2}$ **W.**, and run in, leaving it close to on either hand; continue the course **NW.** $\frac{1}{2}$ **W.** about $1\frac{3}{4}$ miles, leaving the Inner Buoy close to on either hand; when past the last Buoy, run for the entrance of the river, keeping about midway, and carrying from 5 to 9 fathoms water; when about a mile above the entrance, or the first Creek upon the Port side is open, then anchor in about 7 fathoms water, good holding ground.

Strangers should not attempt to enter this river with light winds, as the current in some places sets strong across the Bars.

High Water.

It is high water at the mouth of North Edisto River 4h. 24m. before it is at Boston; common tides rise about $5\frac{3}{4}$ feet. Strong winds from seaward increase the tides.

SOUTH EDISTO RIVER.

The entrance to this River is Southwesterly 36 miles from Rattlesnake Shoal Light-ship, Southwesterly 28 miles from Charleston Main Lighthouse, Southwesterly $9\frac{1}{2}$ miles from entrance to North Edisto River, Northeasterly 26 miles from Martin's Industry Light-ship, and Northeasterly 6 miles from Hunting Island Lighthouse.

Remarks.

The entrance to South Edisto River is across a Sand Bar, which is liable to change in depth with every gale from seaward; Buoys are placed so as to mark the best water leading in; at this date (1881), there are 12 feet water across the Bar at low tide.

Sailing Directions for South Edisto River in Day-time, with favorable winds and fair weather.

Small or light draught vessels, from the Northeastward, bound to this River, should, as soon as the Lighthouse on the North part of

Hunting Island is made, bring it to bear **SW.** by **W.** $\frac{1}{2}$ **W.**, and run for it on this course, until the water shoals to 4 fathoms; then at about $\frac{3}{4}$ flood run in, keeping a sharp lookout for the Buoys which mark the North and South Breakers; when these are made, bring the Black Buoy on the South Breaker to bear **W.** by **N.** $\frac{1}{2}$ **N.**, and run for it on this course, leaving the Red Buoy on the North Breaker on the Starboard, and the Black Buoy on the South Breaker on the Port hand; when past the last-named Buoy, steer **NW.** by **N.** $\frac{1}{2}$ **N.** for Bay Point, distant 2 miles, carrying not less than 14 feet water, and leaving the Point not more than 200 yards on the Starboard hand; when abreast this Point, steer **NW.** for Pine Island Point, carrying from 3 to 5 fathoms water through the narrow channel; when abreast the last-named Point, anchor about 300 yards from it, in from 4 to 5 fathoms water; if bound further up, a pilot is necessary. These directions were good for 1881.

From the Southwestward, leave Martin's Industry Light-ship close to on the Port hand, and make good the course **NE.** $\frac{1}{2}$ **N.**, until Hunting Island Lighthouse bears **WNW.**; then steer more Northerly, and follow the directions before given.

High Water.

It is high water in South Edisto River 4h. 20m. before it is at Boston; common tides rise about 6 feet.

ST. HELENA SOUND, S. C.

The entrance to this Sound lies Southwesterly 36 miles from Rattlesnake Shoal Light-ship, Southwesterly 28 miles from Charleston Main Lighthouse, and Northeasterly 23 miles from Martin's Industry Light-ship.

Hunting Island Lighthouse.

Upon the Northern end of Hunting Island, Southeast side of entrance to St. Helena Sound, is a Lighthouse, which at this date (1882), is painted White from the base to the height of the trees in the background, the portion above this being Black; at this time this Lighthouse shows a fixed White Light, which flashes at intervals of 30 seconds.

Martin's Industry Light-ship bears from the Lighthouse on Hunting Island **S.SW.**, distance 20 miles; Rattlesnake Light-ship bears from this Lighthouse **NE.** by **E.** $\frac{1}{4}$ **E.**, distance 40 miles.

Remarks.

The channel leading into St. Helena Sound is across a Sand Bar, which is liable to change with almost every gale from seaward; at this time, Buoys are used to show the best water; these are changed with the shifting of the channel, so as to mark the deepest water leading in. At this date (1882), there are about 16 feet water, at low tide, in the channel across the Bar. At this time there are three passages across the Bar leading into this Sound, called East Channel, Main Channel, and South Channel, all of which at this time are buoyed. We shall, however, only give directions for the Main or Middle Channel.

Sailing Directions for Bull River and St. Helena Sound in Daytime, with favorable winds and fair weather.

By the Main Channel.

Vessels from the Northeastward, bound to St. Helena Sound, may leave the Light-ship off Rattlesnake Shoal close to on the Starboard hand, and make good the course **SW.** 30 miles (leaving the Sea Buoys off Charleston Harbor and Stono Inlet well on the Starboard hand, and carrying not less than 5 fathoms water); then steer about West, keeping a sharp lookout for the Lighthouse (before described) on Hunting Island; when this is made, bring it to bear **W.** $\frac{1}{2}$ **N.**, and run for it on this course, until the Sea Buoy* (which is painted in Black and White Perpendicular Stripes, with the letters St. H. upon it) is made; then wait, if possible, until about $\frac{1}{2}$ flood and run in, leaving it close to on either hand, and steer about **W.SW.**, leaving the Bar Buoy painted in Black and White Perpendicular Stripes close to on either hand; when past this last Buoy, steer **W.** by **N.** $\frac{1}{2}$ **N.**, leaving the Red Buoy on North Breaker on the Starboard, and the Turning Buoy (Black) on the Port hand; from this last Buoy steer about **NW.** by **N.** $\frac{3}{4}$ **N.**, leaving Mid-channel Buoy

* At this date (1881), Hunting Island Lighthouse bears from the Sea Buoy at the entrance of St. Helena Sound, **W.** $\frac{1}{2}$ **N.**, distance $6\frac{1}{2}$ miles.

Painted in Black and White Perpendicular Stripes close to on either hand, and the Junction Buoy painted in Black and White Perpendicular Stripes on the Starboard, and Pelican Bank Buoy (Black) on the Port hand; when past this last Buoy, the course is about **NW.** by **W.** $\frac{1}{2}$ **W.**, along the North side of Pelican Bank, carrying from 4 to 7 fathoms water, and leaving the Buoy painted in Red and Black Horizontal Stripes, off the Southeast end of Combahee Spit, and the Beacon on Combahee Shoal both about $\frac{1}{3}$ mile on the Starboard hand; when past this Beacon, continue the course **NW.** by **W.** $\frac{1}{2}$ **W.**, carrying from 5 to 7 fathoms water, and leaving the Red Buoy off Combahee Bank on the Starboard, and the Black Buoy off Marsh Island Spit on the Port hand; when past the last-named Buoy, if bound to Bull River, keep the Starboard side best aboard for about a mile, then keep in the middle, carrying deep water to the mouth of this River, which is about 3 miles from the Black Buoy off Marsh Island Spit; if bound up the Coosaw River, a pilot is necessary off the entrance of Bull River.

From the Southwestward, leave Martin's Industry Light-ship close to on the Port hand, and make good the course **NE.** about 18 miles; then gradually haul to the Northward until the Light-house on the Northern part of Hunting Island bears **W.** $\frac{1}{2}$ **N.**; then follow the directions before given. From the Sea Buoy off the entrance to St. Helena Sound to the entrance of Bull River the distance is $15\frac{1}{2}$ miles.

High Water.

It is high water in St. Helena Sound 4h. 21m. before it is at Boston; common tides rise about 6 feet. Strong winds from seaward increase the tides.

PORT ROYAL SOUND, S. C.

The entrance to Port Royal Sound, by the Southeast Channel, is Southwesterly 55 miles from Rattlesnake Shoal Light-ship, Southwesterly 48 miles from Charleston Main Lighthouse, and $2\frac{1}{2}$ miles Northeasterly from Martin's Industry Light-ship.

Martin's Industry Light-ship.

About $1\frac{1}{4}$ miles Southeast from Martin's Industry Shoal, entrance to Port Royal Sound, in about 8 fathoms water, is moored a Light-ship, the Hull of which, at this date (1882), is painted Red, with the words Martin's Industry on each side in large letters. At this time this Light-ship shows two fixed White Lights, and has a Bell and Horn. This Light-vessel is intended to guide vessels into Port Royal Sound, and also along the coast, clear of danger, to Tybee entrance.

Bearings and Distances from Martin's Industry Light-ship.

	Distance.	
Rattlesnake Shoal Light-ship, NE. $\frac{1}{4}$ E.	58	miles.
Charleston Main Lighthouse, NE. $\frac{1}{8}$ N.	51	"
Hunting Island Lighthouse, N.NE.	20	"
Tybee Lighthouse, entrance to Savannah River, W. by S. $\frac{3}{4}$ S.	15	"
Whistling Buoy off entrance to Savannah River, SW. $\frac{1}{2}$ W.	11	"
Sea Buoy painted in Black and White Perpendicular Stripes, off the entrance of South Channel, leading into Port Royal Sound, W. by S. $\frac{1}{2}$ S.	$2\frac{1}{4}$	"
Sea Buoy painted in Black and White Perpendicular Stripes, off the entrance of Southeast Channel, leading into Port Royal Sound, NE. by N. $\frac{1}{2}$ N.	$2\frac{1}{3}$	"

Vessels in daytime may run direct from Martin's Industry Light-ship to Rattlesnake Shoal Light-ship, carrying from 5 to 8 fathoms water, and leaving the Bars off Charleston Harbor about 2 miles to the Northwestward.

Hilton Head Range Lights.

Upon Hilton Head, West side of entrance to Port Royal Sound, are 2 Range Lights. The front Lighthouse is a Tower on a White Dwelling; the rear Lighthouse is a White Skeleton Tower. These Lighthouses, which at this date (1882),* show fixed Red Lights, are $1\frac{1}{8}$ miles apart, and range **W.** $\frac{3}{4}$ **N.** and **E.** $\frac{3}{4}$ **S.** and are intended to guide vessels across the Bar in the deepest water. The front Lighthouse lies from the Sea Buoy off the entrance to the channel off the Bar, $9\frac{3}{4}$ miles.

* On and after Feb. 1, 1883, the front light will be Fixed White.

Paris Island Range Lights.

Upon the Southeast point of Paris Island, near the head of Port Royal Sound, are 2 Range Lights. The Lantern of the front Lighthouse is on a White Skeleton Pyramid; the rear Lighthouse is a Triangular Skeleton Pyramid, covered with Black Slats 40 feet from the top, and painted White below. These Lighthouses, which at this date (1882), show fixed White Lights, are 1 mile apart and range **NW.** by **N. $\frac{1}{2}$ N.** and **SE.** by **S. $\frac{1}{2}$ S.**, and are intended to guide vessels up to the anchorage in Port Royal Sound.

Remarks.

The channel leading into Port Royal Sound is across Sand Bars, which are liable to change in depth with every gale from seaward. At this time, Range Lights and Buoys are used to show the best water across the Bar; these are changed with the shifting of the channel. At this date (1882), there are two passages across the Bar leading into this Sound, called Southeast Channel and South Channel, both of which, at this time, are buoyed; there are 18 feet in the former and 16 feet in the latter.

Sailing Directions for Port Royal Sound in Day-time, with favorable winds and fair weather.

Southeast Channel.

Vessels from the Northeastward may, when about 4 miles from Martin's Industry Light-ship, bring it to bear **SW.** by **S. $\frac{1}{2}$ S.**, and run for it on this course, keeping a sharp lookout for the Sea Buoy painted in Black and White Perpendicular Stripes with the letters P. R. upon it; leave this Buoy close to on either hand, and make good the course **W. $\frac{3}{4}$ N.**, leaving the Mid-channel Buoy painted in Black and White Perpendicular Stripes close to on either hand, the Red Buoy on the Northeast Breaker on the Starboard hand, and Turning Buoy, painted in Black and White Perpendicular Stripes, close to on either hand; when past the last-named Buoy, make good the course **NW.** by **N. $\frac{1}{2}$ N.**, carrying from 4 to 9 fathoms water, leaving the Mid-channel Buoys painted in Black and White Perpendicular Stripes close to on either hand, and the Black Buoys off Joiner's Bank and Fishing Rip Shoal on the Port hand; when past the last-named Buoy, you will see the

Light-ship.

Distance.

58 miles.

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Industry Light-

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Range Beacons (before described) on Paris Island; bring them in range, bearing **NW.** by **N.** $\frac{1}{2}$ **N.**, and run for them in range until about $\frac{3}{4}$ mile past the Wharf at Bay Point, which is the first on the Starboard side; then anchor in from 5 or 6 fathoms water.

Sailing Directions for Port Royal Sound at Night-time, with favorable winds and fair weather.

By the Southeast Channel.

Vessels from the Northeastward, when about 4 or 5 miles from Martin's Industry Light-ship, may bring it to bear **SW.** by **S.**, and run for it on this course; then, with a commanding breeze, at about $\frac{1}{4}$ or $\frac{1}{2}$ flood, bring the two fixed Red Lights upon Hilton Head in range, and run for them in range, bearing about **W.** $\frac{3}{4}$ **N.**, until the two White Lights on the Southeast part of Paris Island are in range, bearing about **NW.** by **N.** $\frac{1}{2}$ **N.**; then run up for them in range until about $1\frac{1}{2}$ miles from the Front Light, or the water shoals to $4\frac{1}{2}$ fathoms at low tide; then anchor in Port Royal Sound.

The current sets strong in some places across the Breakers; it is therefore highly important, in running in at night, to watch the Ranges, as a slight deviation may lead to difficulty.

Sailing Directions for Port Royal Sound in Day-time, with favorable winds and fair weather.

By the South Channel.

From the Southwestward, when about 4 miles from Martin's Industry Light-ship, bring it to bear **NE.** by **E.**, and run for it on this course, leaving the Black Buoy off the Southeast part of Gas-kin Bank well on the Port hand; when the Sea Buoy at the entrance of the South Channel, painted in Black and White Perpendicular Stripes with the letters **P. R.** upon it, is made, then, at about $\frac{1}{2}$ flood, bring it to bear **NW.** by **N.** $\frac{1}{2}$ **N.**, and run for it on this course, leaving it close to on either hand, and the Red Buoy off the Southwest end of Martin's Industry Shoal on the Starboard hand; when past the last-named Buoy, haul up **N.** by **E.** $\frac{1}{2}$ **E.**, leaving Mid-channel Buoy, painted in Black and White Perpendicular Stripes, close to on either hand, and Red Buoy off the Northern part of Martin's Industry Shoal on the Starboard hand; from this last Buoy steer about North for Middle Channel Buoy,

Painted in Black and White Perpendicular Stripes; when past this last-named Buoy, you are in the Main Channel, and may follow the directions before given for the Southeast Channel.

High Water.

It is high water in Port Royal Sound 4h. 13m. before it is at Boston; common tides rise about $6\frac{1}{2}$ feet. Strong winds from seaward increase the tides.

BEAUFORT RIVER.

The entrance to this River is on the East side of Port Royal Sound. From the entrance to Beaufort the distance is about $8\frac{1}{2}$ miles. At this time Beaufort River is buoyed as far as Battery Creek, which is about 4 miles below the town. About 11 feet water can be taken up through a narrow channel, to Beaufort, at low tide.

Sailing Directions for Beaufort River in Daytime.

Vessels of not more than 10 feet draught, bound to Beaufort, may follow the directions before given for Port Royal Sound, until the Black Buoy off the Lower Middle, at the entrance of the River, is made; the Front Beacon on Paris Island bears from this Buoy **NW.** $\frac{1}{2}$ **N.** about $1\frac{1}{4}$ miles; leave the last-named Buoy on the Port, and the Red Buoy off Station Creek on the Starboard hand, and run in about **N.** $\frac{1}{2}$ **E.**, leaving the Black Buoy off the Upper Middle on the Port hand; when past this last Buoy, the course is about **N.** by **W.** to the Red Buoy off Chowan Spit; leave this last Buoy on the Starboard hand, and keep the Port side best aboard until the Black and Red Buoys off Battery Creek are made; after passing these two Buoys, which are both left on the Port hand, keep the Starboard side best aboard for $\frac{1}{2}$ mile; then keep in the middle, carrying not less than 11 feet water, at low tide, to Beaufort. When a little more than a mile below the town, an Island will be seen lying nearly in the middle of the River; the Main Channel leads up to the Westward of this Island.

High Water.

It is high water in Beaufort River 3h. 31m. before it is at Boston; common tides rise about $7\frac{1}{2}$ feet.

TYBEE ROADS.

These Roads, which are near the entrance to Savannah River, lie Southwesterly 70 miles from Rattlesnake Shoal Light-ship, Southwesterly about 14 miles from Martin's Industry Light-ship, and East-Sontherly about $14\frac{1}{2}$ miles from the city of Savannah.

Tybee Lighthouse.

Upon the Northeast end of Tybee Island, Northeastern side of entrance to Tybee Roads, is a Lighthouse, painted White, which at this date (1882), shows a fixed White Light.

Tybee Beacon.

About $\frac{3}{4}$ mile, in front of Tybee Main Lighthouse, is a White Skeleton Tower, which at this date (1882), shows a fixed White Light. This Beacon, in range of Main Lighthouse, serves as a guide to cross the bar.

Remarks.

At this date (1881), there are 17 feet water, at low tide, in the Ship Channel leading into Tybee Roads. Vessels may anchor in these Roads with the Main Lighthouse bearing from **SW.** by **W.** to **W.** by **S.**, distant from $\frac{3}{4}$ to $1\frac{1}{2}$ miles, in from 4 to $2\frac{1}{2}$ fathoms water at low tide. These Roads are somewhat exposed to Easterly winds.

Sailing Directions for Tybee Roads, with favorable winds.

By the Main Channel.

Vessels from the Northeastward may leave Martin's Industry Light-ship close to on the Starboard hand, and make good the course **SW.** $\frac{1}{2}$ **W.** 11 miles, which will bring them up with the Whistling Buoy off the Bar; then, with a commanding breeze, get the Beacon before described in range of the Main Lighthouse, bearing about **W.** by **N.** $\frac{1}{2}$ **N.**, and run for them in range, leaving the Whistling Buoy close to on either hand, the Black Buoy off South Breaker on the Port, and the Bell Buoy painted Red, off the Outer Bar, on the Starboard hand, carrying about 17 feet water at low tide; when past the last-named Buoy, haul up about **NW.** $\frac{1}{2}$

W.; large vessels should anchor when the Main Lighthouse bears **W.** by **S.**, distant $1\frac{1}{2}$ miles, in about 4 fathoms water, at low tide. With Easterly or Southeasterly winds, vessels of not more than 14 or 15 feet draught may, at low tide, run in and anchor to the Northwestward of Tybee Light by the following directions: Follow the directions before given for Tybee Roads, until abreast the Black Buoy off Beacon Point Shoal; Tybee Main Lighthouse bears from this Buoy **W.** $\frac{1}{2}$ **S.** about $\frac{3}{8}$ mile; leave this Buoy a short distance on the Port hand, and make good the course **W.** by **N.** $\frac{1}{2}$ **N.** about 1 mile, when you will see, nearly ahead, the Bell Buoy painted in Red and Black Horizontal Stripes, which lies on the East end of Tybee Knoll Spit; Tybee Main Lighthouse bears from this Buoy **SSE.** about $\frac{1}{2}$ mile; leave the Bell Buoy about 150 yards on the Starboard hand, and steer about **W.** by **S.** $\frac{3}{4}$ **S.**, and anchor when the water shoals to 3 fathoms; Tybee Main Lighthouse bears from this anchorage **E.** by **S.**, distance about $\frac{3}{4}$ mile. Small or light draught vessels may go further up and anchor near the Lighthouse off Cockspur Island * in from 8 to 15 feet water at low tide.

Providing there is no error in the compass, vessels of not more than 12 feet draught, at night-time, with favorable winds, may follow the directions before given for Tybee Roads, until the Bell Buoy off the Outer Bar is made; Tybee Main Lighthouse bears from this Buoy **W.** by **N.** $\frac{1}{2}$ **N.**, distance $3\frac{1}{2}$ miles; leave the Bell Buoy a short distance on the Starboard hand, and make good the course **NW.** by **W.** $\frac{1}{2}$ **W.** until Cockspur Island Light bears **W.** by **S.** $\frac{1}{2}$ **S.**; then run for it on this course until Tybee Main Light bears **E.** by **S.**; then anchor in from $2\frac{1}{2}$ to 3 fathoms water at low tide. Small or light draught vessels may go further up, carrying from 8 to 10 feet water at low tide, and anchor about 250 yards to the Southward of the Light, in about 3 fathoms water.

By the Northern Channel.

With Northwesterly winds, vessels in daytime, of not more than 13 feet draught, may enter Tybee Roads by the following directions: Bring Tybee Main Lighthouse to bear about **W.** by **S.**, and

* Upon a Knoll connected with the Eastern end of Cockspur Island, near the entrance of Savannah River, is a Conical Tower painted White, and at this date (1882), shows a fixed White Light. This Light is intended to guide vessels into the channel South of Cockspur Island.

run for it on this course, leaving the Outer Buoy, painted in Black and White Perpendicular Stripes, close to on either hand; when past this Buoy, continue the course **W.** by **S.**, leaving the Red Buoy on the North Breaker a short distance on the Starboard hand; when over the Bar, and the water deepens to $3\frac{1}{2}$ fathoms at low tide, steer West-Northerly and anchor in the Roads in from $2\frac{1}{2}$ to $3\frac{1}{2}$ fathoms water at low tide. If intending to anchor to the Northwest of Tybee Lighthouse, follow the directions before given.

High Water.

It is high water in Tybee Roads 4h. 11m. before it is at Boston; common tides rise about 7 feet.

SAVANNAH RIVER.

From Tybee Main Lighthouse to the city of Savannah the distance is about 14 miles.

Tybee Knoll Cut Range Beacons.

Upon the Eastern end of Long Island, in Savannah River, are two Beacons, which at this date (1882), show two fixed White Lights. The Front Light is on a White Dwelling; the Rear Light is shown from a White Skeleton Tower. These Lights range **W.** $\frac{3}{4}$ **S.** and **E.** $\frac{3}{4}$ **N.**, and are intended to lead vessels through the dredged channel from Tybee Roads into Savannah River.

Fig Island Range Beacons.

The Front Beacon stands near the South side of Fig Island, in the Savannah River, near the city of Savannah; the Rear Light is shown from the Cupola of the Exchange Building. At this date (1882), these Lights are Red, and, when in range, are intended to lead through the "Wrecks" Channel.

Remarks.

From Tybee Roads to the city of Savannah, a distance of about 15 miles, the channel, in many places, is very narrow; but at this time it is well marked with Buoys. Improvements in several places have been made by dredging, and this will probably be continued; no depth will, therefore, at this time be given.

To Vessels in Distress.

At this date (1882), Savannah affords good facilities to vessels in distress, there being a Dry Dock 380 feet long by 75 feet wide, which can take on 3 feet blocking, from 13 to 15 feet depth of water; there are also 2 Marine Railways, one capable of hauling vessels of 1,200 tons, the other 300 tons, with everything necessary for repairs.

Sailing Directions for Savannah River in Daytime, with favorable winds.

Vessels from the Northeastward may leave Martin's Industry Light ship close to on the Starboard hand, and make good the course **SW. $\frac{1}{2}$ W.** 11 miles, which will bring them up with the Whistling Buoy off the bar; then on the first of the flood, with a commanding breeze, get the Beacon before described in range of Tybee Main Lighthouse, bearing about **W. by N. $\frac{1}{2}$ N.**, and run for them in range, leaving the Whistling Buoy close to on either hand, the Black Buoy off the South Breaker on the Port, and the Bell Buoy painted Red off the Outer Bar on the Starboard hand, carrying about 17 feet water at low tide; when past the last-named Buoy, haul up about **NW. by W.**, leaving the 2 Black Buoys on Inner Bar and Beacon Point Shoal on the Port hand; continue the course **NW. by W.**, until the Oyster Bed Lighthouse,* which stands in the River, bears about **W. $\frac{3}{4}$ N.**, then run for it on this course; as you sail in, there will be seen the Bell Buoy painted in Red and Black Perpendicular Stripes; this last-mentioned Buoy bears about **N.NW.** from Tybee Main Lighthouse, distance $\frac{1}{2}$ mile; leave the Bell Buoy on the Port, and the Red Buoy on Ten Foot Lump on the Starboard hand, and steer about **W. by N. $\frac{1}{2}$ N.**, leaving the Red Buoy on St. Michael's Shoal on the Starboard hand, and Black Buoy at the entrance of Burden Channel on the Port hand; when the Beacons on the Eastern part of Long Island are in range, bearing **W. $\frac{3}{4}$ S.**, run for them in range, leaving the Inner Black Buoy in Burden Channel on the Port, and the Red Buoy on the Upper Oyster Bed Shoal on the Starboard hand; continue to run on the range until about 200 yards past the last-

* Oyster Bed Lighthouse is a White Pyramidal Tower, top of Lantern Black, and at this date (1882), shows a fixed Red Light.

named Buoy, then steer more Northerly through the narrow channel, carrying from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water, and leaving the White Wooden Frame Beacon and Black Buoy on the Port hand, and the Oyster Bed Lighthouse not more than 200 yards on the Starboard hand; when past the last-named Lighthouse, there will be seen on the Port a White Wooden Beacon, and on the Starboard a Red Buoy; leave the former well on the Port, and the latter about 150 yards on the Starboard hand, and run about **W.** by **S.** $\frac{1}{2}$ **S.**, for the White Beacon No. 1, on the Northern Bank of Long Island; leave this Beacon about 300 yards on the Port, and the Red Buoy about the same distance on the Starboard hand, and run along the Northern shore of Long Island, keeping about 300 yards from it, until abreast the White Beacon No. 2; then steer about **NW.** $\frac{1}{2}$ **N.** for White Beacon No. 3, on the Starboard side of the River; leave Beacon No. 3 about 100 yards on the Starboard hand, and run along the Starboard shore, keeping about 100 yards from it, to White Beacon No. 4; from this run about West for White Beacon No. 5, on Port side; leave Beacon No. 5 about 100 yards on the Port hand, and follow the Port shore, keeping not more than 100 yards from it, to White Beacon No. 6; leave Beacon No. 6 about 100 yards on the Port hand, and steer about **NW.** by **N.** $\frac{1}{2}$ **N.**, for White Beacon No. 7, on the Starboard side of River; leave Beacon No. 7 about 100 yards on the Starboard hand, and keep close to the Starboard shore for about $\frac{1}{2}$ mile; the course of the River is then more Southerly; leave the Black Buoy off Northwest end of Elba Island a short distance on the Port, and the Red Buoy off Barnwell Island Flats, and White Beacon No. 8 on the Starboard hand, passing through the narrow channel; when past Beacon No. 8, keep the Port side close aboard, until past Fort Jackson, which is on the Port side; then leave the Red Buoys and Lighthouse on the Starboard hand, and when past the Lighthouse, which is on the Starboard side of the channel, keep the Port side close aboard to the city of Savannah. These directions were good for 1881.

High Water.

It is high water at Savannah (Dry Dock) 3h. 14m. before it is at Boston; common tides rise about $6\frac{1}{2}$ feet. Strong winds from seaward increase the tides.

CALIBOGUE SOUND, S. C.

The entrance to this Sound, which is between the Southwest end of Hilton Head Island and Daufuskie Island, is about $1\frac{1}{2}$ miles wide, and lies **N. $\frac{1}{4}$ E.** $5\frac{1}{2}$ miles from Tybee Main Lighthouse.

Daufuskie Range Beacons.

On the Northeast Point of Daufuskie Island, West side of Calibogue Sound, about $1\frac{1}{2}$ miles above the entrance, are two Beacons, which at this date (1882), show two fixed White Lights; the Front Light is shown from a Red Lantern with White Tower, the Rear Light is shown from a Red Lantern on a White Dwelling; these two Lights in range, bearing about **N. $\frac{3}{4}$ W.**, are intended to guide vessels from Tybee Roads into Calibogue Sound.

Remarks.

At this date (1881), in entering Calibogue Sound, there is about 9 feet water upon the bar at low tide; this depth lies **N. by E.** $2\frac{1}{4}$ miles from Tybee Main Lighthouse.

Sailing Directions for Calibogue Sound in Day-time, with favorable winds and fair weather.

Follow the directions before given for Tybee Roads, then at about $\frac{1}{2}$ flood leave the Black Buoy on the end of the Spit, which bears **NE.** by **N. $\frac{1}{2}$ N.**, $1\frac{1}{4}$ miles from Tybee Main Lighthouse, on the Port, and steer about **N. $\frac{1}{2}$ E.**, leaving the Red Bar Buoy a short distance on the Starboard hand, carrying at $\frac{1}{2}$ flood about 12 feet water across the bar; when past this last-named Buoy, bring the Lighthouses on the Northeastern part of Daufuskie Island in range, and run for them in range, bearing about **N. $\frac{3}{4}$ W.**; when about a mile from the Front Lighthouse, then haul up about **N. by E.**, keeping about in the middle of the Sound, and anchor abreast the Lighthouse in from 4 to 8 fathoms, good holding ground.

Sailing Directions for Calibogue Sound at Night, with favorable winds and fair weather.

Vessels of not more than 12 feet draught, may at about $\frac{1}{2}$ flood bring the Beacon Light in range with Tybee Main Lighthouse, and run for them in range, bearing about **W. by N. $\frac{1}{2}$ N.**, leaving the

Whistling Buoy close to on either hand; when past the Bell Buoy on the Outer Bar (which is left on the Starboard hand), make good the course **NW. $\frac{3}{4}$ W.**, until the Beacon Lights before described for entering Calibogue Sound are in range, then run for them in range, bearing about **N. $\frac{3}{4}$ W.**, carrying not less than 12 feet water across the bar; when about a mile from the Front Light, haul up about **N. by E.**, and anchor abreast the Lights in the middle of the Sound in from 4 to 8 fathoms water.

High Water.

It is high water at the entrance of Calibogue Sound 4h. 5m. before it is at Boston; common tides rise about 7 feet. Strong winds from seaward increase the tides.

WASSAW SOUND, GA.

The entrance to this Sound, which is between the Southwestern end of Tybee Island and the Northeast end of Wassaw Island, is about 2 miles wide, and lies Southwesterly about 20 miles from Martin's Industry Light-ship, and about $9\frac{1}{2}$ miles Southwesterly from the Whistling Buoy off entrance to Tybee Roads. Vessels from the Northeastward, bound to Wassaw Sound, can run direct from Martin's Industry Light-ship to the Sea Buoy off this Sound.

Remarks.

The entrance to Wassaw Sound is across a Sand Bar, which is liable to vary in depth with every gale from seaward. Buoys are used to show the deepest water leading in; these are changed with the shifting of the channel. At this date (1881), there are about 11 feet water, at low tide, in the channel across this Bar.

**Sailing Directions for Wassaw Sound in Daytime,
with favorable winds and fair weather.**

Vessels from the Northeastward may leave Martin's Industry Light-ship close to on the Starboard hand, and make good the course **SW. $\frac{1}{2}$ W.** 11 miles, which will bring them up with the Whistling Buoy (with the letter T. upon it) off Tybee Roads; leave this Buoy close to on either hand, and steer **SW. $8\frac{3}{4}$ miles**

to Outer or Sea Buoy of Wassaw Sound; this last Buoy is painted in Black and White Perpendicular Stripes, and has the letter W. upon it; when the Sea Buoy is made, wait, if possible, until about $\frac{1}{2}$ flood; then, with a commanding breeze, bring this Buoy to bear **W.** by **N. $\frac{1}{2}$ N.**, and run for it, leaving it close to on either hand, and the Black Buoy off the South Breaker on the Port, and run for the Red Buoy off the North Breaker, leaving it on the Starboard hand; then, about **W. $\frac{1}{2}$ N.**, carrying from 4 to 6 fathoms water, and leaving Wassaw Point about 300 yards on the Port; when abreast this Point, you will see the Red Buoy off the Southeast end of Cabbage Spit; leave this last Buoy about 200 yards on the Starboard hand, and make good the course **W. $\frac{1}{2}$ N.** about $\frac{1}{2}$ mile, then anchor in from $4\frac{1}{2}$ to 6 fathoms water. These directions were good for 1881.

High Water.

It is high water in Wassaw Sound 4h. 5m. before it is at Boston; common tides rise about $6\frac{3}{4}$ feet. Strong winds from seaward increase the tides.

OSSABAW SOUND, GA.

The entrance to this Sound, which is between Wassaw Island on the Northeast and Ossabaw Island on the Southwest, is about $3\frac{1}{2}$ miles wide, and lies Southwesterly 27 miles from Martin's Industry Light-ship, and Southwesterly about 17 miles from the Whistling Buoy which lies off the entrance to Tybee Roads.

Remarks.

The entrance to Ossabaw Sound is across Sand Bars, which are liable to vary in depth with every gale from seaward. Buoys are used to show the deepest water leading in; these are changed with the shifting of the channel. At this time there are two channels, called North and South Channels, both of which are buoyed. At this date (1881), there are 7 feet water, at low tide, in the Northern Channel across the Bar, and 18 feet by the Southern Channel, until up with the Turning Buoy; then there are about 12 feet, at low tide, to the mouth of the Ogeechee River. Vernon and Ogeechee Rivers both empty into Ossabaw Sound.

**Sailing Directions for Ossabaw Sound in Daytime;
with favorable winds and fair weather.**

By the South Channel.

Vessels from the Northeastward, bound to Ossabaw Sound, may leave the Whistling Buoy (which has the letter T. upon it, off entrance to Tybee Roads) close to on either hand, and make good the course **SW. $\frac{1}{2}$ S.** 19 miles, which will bring them up with the Outer or Sea Buoy off the entrance to Ossabaw Sound; this Buoy is painted in Black and White Perpendicular Stripes, and has the letter O. upon it; when this Buoy is made, wait until about $\frac{1}{3}$ flood; then, with a commanding breeze, bring it to bear **NW. $\frac{3}{4}$ N.**, and run in, leaving it close to on either hand, and the Red Buoy off the North Breaker on the Starboard hand; when past the last-named Buoy, haul up about North, leaving the Black Buoy off the South Breaker on the Port hand; from this steer about **NW.** for the Turning Buoy, which is at this time Black No. 3, leaving it close to on either hand. If bound to Ogeechee River, run about **W. $\frac{3}{4}$ S.** about a mile from the Turning Buoy, carrying about 13 feet water at low tide; then **NW.** by **W.**, leaving the Red Buoy off Raccoon Spit close to on the Starboard hand; continue the course **NW.** by **W.** about 2 miles, where there is anchorage abreast Raccoon Key, in from 4 to 6 fathoms water. If bound into Vernon River, when abreast the Turning Buoy (which is Black No. 3), steer about **N. $\frac{3}{4}$ W.**, carrying about 11 feet water to Anchorage Buoy, painted in Black and White Perpendicular Stripes; when up with this last-named Buoy, steer about **NW.**, carrying deep water to Pine Point, which is the first on the Starboard hand; when past this Point, keep about 200 yards from the Starboard shore, until the Northeast Point of Raccoon Island bears **SW.**; then run for it on this course, keeping close to the Island, and anchor about $\frac{1}{2}$ mile above the last-named Point, in about 7 fathoms water. These directions were good for 1881.

By the North Channel.

With Northeasterly winds, light draught vessels bound into Vernon River, may, after making the Black Bar Buoy (which lies $4\frac{1}{2}$ miles to the Northward of entrance to the South Channel), bring it to bear **NW.** by **W. $\frac{1}{2}$ W.**, and run for it on this course,

leaving it on the Port, and the Red Buoy off the North Breaker on the Starboard hand; when past the last-named Buoy the course is about **NW.** by **N.**, leaving the Inner Buoy painted in Black and White Perpendicular Stripes close to on either hand, and the next, painted in Black and White Perpendicular Stripes (which is called the Anchorage Buoy) close to on either hand; when past this last Buoy, follow the directions before given for the South Channel. These directions were good for 1881.

High Water.

It is high water in Ossabaw Sound 4h. 11m. before it is at Boston; common tides rise about $6\frac{1}{2}$ feet. Strong winds from seaward increase the tides.

ST. CATHERINE'S SOUND, GA.

The entrance to this Sound, which is between the Southwest Point of Ossabaw Island and Northeast end of St. Catherine's Island, is about $1\frac{1}{2}$ miles wide, and lies Southwesterly about 23 miles from the Whistling Buoy off the entrance to Tybee Roads, and Southwesterly about $4\frac{1}{2}$ miles from the Outer or Sea Buoy, which lies off the entrance of the South Channel leading into Ossabaw Sound.

Remarks.

The entrance to St. Catherine's Sound is across a Sand Bar, which is liable to change in depth with every gale from seaward. Buoys are used to show the deepest water leading in; these are changed with the shifting of the channel. At this date (1881), there are about 10 feet water at low tide, in the channel across the Bar. There are three Rivers which empty into St. Catherine's Sound; the Northern is called Bear River, the Middle Medway River, and the Southern, North Newport River.

Sailing Directions for St. Catherine's River in Daytime, with favorable winds and fair weather.

Vessels from the Northeastward, bound to St. Catherine's Sound, may leave the Whistling Buoy off Tybee Roads (which has the letter T. upon it) close to on the Starboard hand, and make good the course **SW. $\frac{1}{2}$ S.** 19 miles, which will bring them up with the

Outer or Sea Buoy (with the letter O. upon it) which lies off the entrance to Ossabaw Sound; leave the last-named Buoy close to on the Starboard hand, and steer **SW.** by **S.** about 4 miles; then, at about $\frac{1}{2}$ flood, bring the Northern part of St. Catherine's Island to bear **W.** by **N.**, and run for it, keeping a sharp lookout for the entrance Buoy (Black); when this is made, leave it close to on the Port hand, and run about **W.NW.** for the Middle Buoy (Black), leaving it on the Port hand; when past this last Buoy, the course is about West to the Inner or Turning Buoy, which is Black No. 5; leave this last Buoy on the Port hand, and, if bound up Bear River, make good the course **W.NW.**, carrying from 4 to 6 fathoms water, and leaving the Black Buoy off Medway Spit on the Port and the Southwest Point of Ossabaw Island, which is the first on the Starboard, not more than $\frac{1}{4}$ mile on the Starboard hand, and anchor about a mile above the last-named Point, in about $3\frac{1}{2}$ fathoms water. If bound up Medway or North Newport Rivers, when up with the Turning Buoy, which is Black No. 5, leave it close to on the Port hand, and run **SW.** about 300 yards, crossing the Middle Ground in about 12 feet water at low tide; when over this Shoal, and the water deepens to 6 fathoms, haul in about **W.** by **S.**, leaving the Red Buoy off the West end of Middle Ground well on the Starboard hand, and anchor about $\frac{1}{2}$ mile **S.SW.** from the last-named Buoy, near the Northeast end of St. Catherine's Island, in from 5 to 7 fathoms water. If bound up Medway or North Newport Rivers, a pilot is necessary at this anchorage. These directions were good for 1881.

High Water.

It is high water in St. Catherine's Sound 3h. 53m. before it is at Boston; common tides rise about $7\frac{1}{4}$ feet. Strong winds from seaward increase the tides.

SAPELO SOUND, GA.

The entrance to this Sound, which is between St. Catherine's Island on the Northeast and Sapelo Island on the Southwest, is about 1 mile wide, and lies Southwesterly about 32 miles from the Whistling Buoy off the entrance to Tybee Roads, and about $9\frac{1}{2}$ miles Southwesterly from the entrance to St. Catherine's Sound.

Remarks.

The entrance to Sapelo Sound is across a Sand Bar, which is liable to change in depth with every gale from seaward. Buoys are used to show the deepest water leading in; these are changed with the shifting of the channel. At this date (1881), there are about 18 feet water, at low tide, in the channel across the Bar. There are several Rivers which empty into Sapelo Sound; the two most navigable are South Newport and Sapelo Rivers.

Sailing Directions for Sapelo Sound in Daytime, with favorable winds and fair weather.

Vessels from the Northeastward, bound to Sapelo Sound, may leave the Whistling Buoy (which has the letter T. upon it) off entrance to Tybee Roads close to on the Starboard hand, and make good the course **SW.** by **S.** $\frac{1}{4}$ **S.** 32 miles, which will bring them up with the Outer or Sea Buoy painted in Black and White Perpendicular Stripes (with the letter S. upon it), which lies off the entrance to Sapelo Sound; when this Buoy is made, then, at about $\frac{1}{3}$ flood, bring it to bear about **W.** $\frac{1}{2}$ **N.**, and run for it on this course, leaving it close to on either hand, and run for the Entrance Buoy, painted in Black and White Perpendicular Stripes, leaving it close to on either hand, and the Black Buoy off Breaker Shoal on the Port hand; when past the last-named Buoy the course is about **W.** $\frac{3}{4}$ **S.**, leaving the Channel Buoy painted in Black and White Perpendicular Stripes close to on the Starboard hand; when past this last Buoy, steer about **W.** $\frac{1}{2}$ **S.**, leaving the Southwest Point of St. Catherine's Island about $\frac{1}{3}$ mile on the Starboard hand. If bound to Sapelo River, continue the course **W.** $\frac{1}{2}$ **S.**, leaving the Buoy painted in Red and Black Horizontal Stripes, off Cedar Hammock Spit, well on the Starboard hand. As you enter the Sound, there will be seen on the Port the Black Buoy off High Point, the Buoy painted in Red and Black Horizontal Stripes off Dog Hammock Spit, the Black Buoy off Dog Hammock Flats, and the Buoy painted in Red and Black Horizontal Stripes off Four Mile Spit; the three first mentioned are left on the Port, the last, which lies at the entrance of Sapelo River, on the Starboard hand; when abreast the Buoy at the entrance of the River, anchor about 150 yards from it, in from 4 to 5 fathoms water. If bound to any of the rivers which empty into Sapelo Sound, a pilot is necessary at this anchorage.

Vessels bound to Sapelo Sound should not approach the Bar in less than 5 fathoms water, until the Outer or Sea Buoy bears **W. ½ N.** These directions were good for 1881.

High Water

It is high water in Sapelo Sound 4h. 2m. before it is at Boston, common tides rise about 7 feet. Strong winds from seaward increase the tides.

DOBOY SOUND, G.A.

The entrance to this Sound, which is between Sapelo Island on the Northeast and Wolf Island on the Southwest, is a little more than a mile wide, and lies Southwesterly 56 miles from Martin's Industry Light-ship, and Southwesterly about 11 miles from the entrance to Sapelo Sound.

Sapelo Main Lighthouse.

Upon the Southwest end of Sapelo Island, Northeast side of the entrance to Doboy Sound, is a Lighthouse, the Tower of which at this time is painted in alternate Red and White Horizontal Belts. At this date (1882), this Lighthouse shows a fixed White Light, which Flashes every 45 seconds.

Beacon Range Light.

In front of Sapelo Main Lighthouse is a Frame Tower 20 feet high. This Tower, at this date (1882), shows a fixed White Light.

Wolf Island Range Beacons.

Near the Northeast end of Wolf Island, Southwestern side of entrance to Doboy Sound, are two Beacons. The Front Light is shown from the top of a White Dwelling, the Rear Light is shown from a Brown open-framework structure; both these Beacons, at this date (1882), show fixed White Lights. These two Lights range with the Outer or Sea Buoy at the Southern entrance

Remarks.

The entrance to Doboy Sound is across Sand Bars, which are liable to vary in depth with every gale from seaward. Buoys are

used in daytime to show the deepest water leading in; these are changed with the shifting of the channel. At this date (1882), Range Lights are used at night, at the Southern or Main Channel, to show the best water across the Bar. At this time there are about 13 feet water in the Southern or Main Channel across the Bar at low tide.

**Sailing Directions for Doboy Sound in Daytime,
with favorable winds and fair weather.**

When in about 7 fathoms water, get the Wolf Island Beacons in range, bearing about **W.** by **N.**, then at about $\frac{1}{3}$ flood, run in, leaving the Outer or Sea Buoy, painted in Black and White Perpendicular Stripes, with the letter **D.** upon it, close to on either hand; continue the course **W.** by **N.**, leaving the Outer Bar Buoy, painted in Black and White Perpendicular Stripes, close to on either hand, and the Red Buoys which lie between the North and South Breakers close to on the Starboard hand; when up with the North Breaker Buoy, which is Red No. $2\frac{1}{2}$, Sapelo Beacon (before described) will range with the Main Lighthouse; then haul up about **NW.** $\frac{1}{2}$ **W.**, and run for them in range, leaving the Middle and Turning Buoys (both of which are Black) on the Port hand; when past the last-named Buoy, steer about **W.NW.**, carrying deep water, and leaving the Red Buoy off Chimney Spit on the Starboard hand; continue the course **W.NW.** until Sapelo Main Lighthouse bears North, then steer about **NW.** until it bears **E.NE.**, then anchor in from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water.

Sailing Directions for Doboy Sound at Night-time.

Vessels of not more than 11 feet draught may, in cases of emergency, enter Doboy Sound at night by the following directions: Wait, if possible, until about $\frac{3}{4}$ flood, then bring the Beacons on Wolf Island (before described) in range, bearing about **W.** by **N.**, and run for them in range until Sapelo Beacon is in range of the Main Lighthouse; then run for these last-named Lights in range, bearing about **NW.** $\frac{1}{2}$ **W.**, until over the Bar, or the water deepens to about 5 fathoms; then steer about **W.NW.** until the Main Lighthouse bears North; then haul up **NW.**, and anchor when it bears **E.NE.** in from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water. Strangers should not attempt to enter Doboy Sound at night, except in cases of necessity.

High Water.

It is high water in Doboy Sound 4 hours before it is at Boston ; common tides rise about $7\frac{1}{4}$ feet. Strong winds from seaward increase the tides.

ALTAMAHA SOUND, GA.

The entrance to this Sound is about $3\frac{1}{4}$ miles Southwesterly from the Sea Buoy off the entrance to Doboy Sound ; at this date (1881), about 10 feet water can be taken across the Bar at low tide, and from this about 14 feet water, at low tide, can be carried through a narrow channel inside of Egg Island, which is a little more than 5 miles from the Outer Bar at the entrance ; at this time there are no Buoys to mark the channel leading in ; no practical sailing directions can therefore be given for this Sound. Vessels bound in should take pilots off the Bar.

ST. SIMON'S SOUND, GA.

The entrance to this Sound, which is between St. Simon's Island on the Northeast and Jekyll Island on the Southwest, is about 1 mile wide, and lies 72 miles Southwesterly from Martin's Industry Light-ship, Southwesterly 17 miles from the Outer or Sea Buoy off the entrance to Doboy Sound, and North nearly 9 miles from Little Cumberland Island Lighthouse, South side of St. Andrew's Sound.

St. Simon's Lighthouse.

Upon the Southwest end of St. Simon's Island, Northeast side of entrance to St. Simon's Sound, is a Lighthouse, the Tower of which at this date (1882), is painted White, with Black Lantern. At this time this Lighthouse shows a fixed White Light, varied by Flashes alternately Red and White, at intervals of one minute.

Remarks.

The entrance to St. Simon's Sound is across a Sand Bar, which is liable to change in depth with every gale from seaward ; Buoys are used to show the deepest water leading in ; these are changed

with the shifting of the channel ; at this date (1881), there is about 15 feet water, at low tide, in the channel across the bar. From the Sea Buoy at the entrance to Brunswick, the distance is about 14 miles

Sailing Directions for St. Simon's Sound in Day-time, with favorable winds and fair weather.

When in 7 fathoms water, bring St. Simon's Lighthouse (before described) to bear **NW.** by **W.** $\frac{3}{4}$ **W.**, and run for it on this course, keeping a sharp lookout for the Sea Buoy painted in Black and White Perpendicular Stripes, with letters St. S. upon it; when this Buoy is made, wait, if possible, until about $\frac{1}{4}$ flood, then run in, leaving the Sea Buoy close to on either Land, the Black Buoy off the South Breaker on the Port; when past the last-named Buoy steer more Northerly, leaving the Wreck Buoy painted in Red and Black Horizontal Stripes about $\frac{1}{2}$ mile on the Port, and the Red Buoy off the Outer North Breaker on the Starboard hand; from this last Buoy steer more Westerly, leaving the two Red Buoys off the Middle North Breaker and Inner North Breaker both on the Starboard, and Black Buoy off the Inner South Breaker on the Port hand; when past the last-named Buoy, the course is about **W.NW.**, leaving the Black Buoy nearly opposite the Lighthouse on the Port hand; from this Buoy steer about **W.** by **N.**, and anchor when the Lighthouse bears **E.** by **N.**, in from 5 to 7 fathoms water. Vessels bound to Brunswick may, when past the Black Buoy which lies nearly opposite the Light, run **W.** by **N.**, until this Light bears **NE.** by **E.** $\frac{1}{2}$ **E.**, then make good the course **SW.** by **W.** $\frac{1}{2}$ **W.**; as you sail in, you will see the Red Buoy off Brunswick Flats; when this Buoy bears **SW.** $\frac{1}{2}$ **S.** run for it on this course, carrying from 6 to 9 fathoms water through the narrow channel, and leaving Jekyl Point close to on the Port, and the last-named Buoy a short distance on the Starboard hand; when about $\frac{1}{3}$ mile past this Buoy, haul gradually to the Westward, carrying from 4 to 6 fathoms water; when abreast Brunswick Point, which is the first on the Starboard hand, keep the Starboard side best aboard; as you sail up, you will see the Buoy painted in Red and Black Horizontal Stripes off the Eastern end of Buzzard's Island Flats; leave this Buoy about 300 yards on the Port hand, and keep not more than 250 yards from the Starboard shore to Brunswick.

High Water.

It is high water in St. Simon's Sound 3h. 46m. before it is at Boston; common tides rise about 7 feet. Strong winds from seaward increase the tides.

ST. ANDREW'S SOUND, GA.

The entrance to this Sound, which is between Jekyl Island on the North and Little Cumberland Island on the South, is about $2\frac{1}{2}$ miles wide, and lies about 79 miles Southwesterly from Martin's Industry Light-ship, and 8 miles South from the entrance to St. Simon's Sound.

Little Cumberland Island Lighthouse.

Upon the North end of Little Cumberland Island, South side of entrance to St. Andrew's Sound and Saltila River, is a Lighthouse, the Tower of which at this date (1882), is painted White, and shows a fixed White Light.

Remarks.

The entrance to St. Andrew's Sound is across a Sand Bar, which is liable to change in depth with every gale from seaward; Buoys are used to show the deepest water leading in; these are changed with the shifting of the channel. At this date (1881), there is about 15 feet water at low tide, in the channel across the bar.

From the Outer or Sea Buoy, with the letters St. A. upon it, to the Lighthouse on Little Cumberland Island, the distance is $7\frac{3}{4}$ miles.

Sailing Directions for St. Andrew's Sound in Day-time, with favorable winds and fair weather.

Bring the Lighthouse on the North end of Little Cumberland Island to bear **W.NW.**, and run for it on this course, keeping a sharp lookout for the Outer or Sea Buoy which lies off the entrance to St. Andrew's Sound; this Buoy is painted in Black and White Perpendicular Stripes, with the letters St. A. upon it; when this Buoy is made, then at about $\frac{1}{3}$ flood run in, leaving it close to on either hand, and run about **W. $\frac{1}{2}$ N.**, leaving the Outer Bar Buoy,

painted in Black and White Perpendicular Stripes, close to on the Starboard hand; when past the last-named Buoy, run **NW. ½ W.**, leaving the Red Buoy off the North Breaker and Mid-channel Buoy painted in Black and White Perpendicular Stripes, both close to on the Starboard, and the Black Buoy which lies about 1½ miles Northeast from the Lighthouse on the Port hand; when past the last-named Buoy, steer about **W. by N.**, leaving the Buoy painted in Red and Black Horizontal Stripes, off East Point of Horseshoe Shoal, well on the Starboard hand; when the Lighthouse bears **SE.** by **S. ½ S.**, the entrance to the Cumberland River will then be open, and you may then run in about **S.SW.**, until the Lighthouse bears **E.SE.**, then keep not more than 250 yards from the Port side, and anchor, when the Lighthouse bears **NE.** about 300 yards from the Port shore, in from 4 to 6 fathoms water. If bound to Saltilla River, a pilot is necessary at this anchorage; these directions were good for 1881.

High Water.

It is high water in St. Andrew's Sound 3h. 48m. before it is at Boston; common tides rise about 6¾ feet. Strong winds from seaward increase the tides.

CUMBERLAND SOUND, FLA.

The entrance to this Sound, which is between Cumberland Island on the North and Amelia Island on the South, is about 1 mile wide, and lies about 94 miles Southwesterly from Martin's Industry Light-ship, and nearly South 17½ miles from St. Andrew's Sound.

Amelia Island Main Lighthouse.

Upon the Northern part of Amelia Island, South side of entrance to St. Mary's River and Fernandina, is a Lighthouse, the Tower of which at this date (1882), is painted White, and shows a fixed White Light, which Flashes every 90 seconds.

Amelia Island Range Beacons.

Upon the North end of Amelia Island, South side of entrance to Cumberland Sound, are two Beacons, which at this date (1882),

show fixed White Lights. The Front Light is shown from a Brown Skeleton Tower, pyramidal in form; the Rear Light is shown from a Black and White Skeleton Tower, which is also pyramidal in form.

Remarks.

The entrance to Cumberland Sound is across a Sand Bar, the channel of which, like all other Barred Harbors on the coast, is liable to change in depth with every heavy gale from seaward. At this date (1882), Buoys are used in daytime, and Range Lights at night, to show the deepest water leading in; these are changed with the shifting of the channel. At this time there are about 11 feet water, at low tide, in the channel across the bar. From the Outer or Sea Buoy, which lies off the bar at the entrance of Cumberland Sound, to the Front Beacon, the distance is 3 miles; from this Buoy to Fernandina the distance is about 6 miles, and from the entrance of this Sound to St. Mary's, which is on the Northern side of St. Mary's River, the distance is about $6\frac{1}{4}$ miles.

Sailing Directions for Cumberland Sound in Daytime, with favorable winds and fair weather.

North Channel.

Bring the Beacons on the North end of Amelia Island in range, and run for them in range, bearing about **W.S.W.**, keeping a sharp lookout for the Outer or Sea Buoy, which is painted in White and Black Perpendicular Stripes; when this Buoy is made, then, with a commanding breeze, at about $\frac{1}{2}$ flood, run in on this range, leaving it close to on either hand, the Bell Buoy and the Black Buoys off the Outer and Inner Bars all on the Port hand; continue the range, leaving the Red Buoy off the North Breaker on the Starboard hand; when past this last Buoy, make good the course **W. $\frac{1}{4}$ N.**, leaving the Black Buoy off Kingsley's Bank well on the Port hand. If bound to Fernandina, haul gradually around Fort Clinch, leaving it about $\frac{1}{4}$ mile on the Port hand, and the Buoy painted in Red and Black Horizontal Stripes, off Tiger Island Spit, a short distance on the Starboard hand; Fort Clinch bears from this last-named Buoy **E. $\frac{3}{4}$ S.**, distance about $\frac{1}{2}$ mile; when past this Buoy, run to the Southward, keeping about in the middle of the River and carrying from 6 to 8 fathoms water to Fernandina, which lies on the Eastern side of Amelia River.

These directions were good for 1881. During the last few years great changes have taken place in both the depth and location of the channels leading across the bar into Cumberland Sound. Strangers, in entering, must therefore be governed entirely by the Buoys.

If bound to St. Mary's, when abreast Fort Clinch, bring it to bear **SE.** by **E.** $\frac{1}{2}$ **E.**, and make good the course **NW.** by **W.** $\frac{1}{2}$ **W.** about 2 miles, leaving the Buoy painted in Red and Black Horizontal Stripes on the Port hand, and anchor at the mouth of St. Mary's River in from $3\frac{1}{2}$ to 6 fathoms water. A pilot is necessary at this anchorage.

High Water.

It is high water in Cumberland Sound 3h. 41m. before it is at Boston; common tides rise about 6 feet. Strong winds from seaward increase the tides.

NASSAU SOUND, FLA.

The entrance to this Sound lies Southeasterly about 13 miles from the entrance to Cumberland Sound, and Northwesterly about 7 miles from St. John's River Lighthouse.

Remarks.

A Sea Buoy, painted in Black and White Perpendicular Stripes, with the letter N. upon it, is placed outside the Bar. Strangers wishing to enter this Sound should get a pilot off the entrance to St. John's River, as there are no pilots, at this date (1881), living at Nassau Sound. This Inlet should not be attempted by strangers without a pilot, as the channel across the Bar is constantly changing in both depth and location.

ST. JOHN'S RIVER, FLA.

The entrance to this River is 111 miles Southwesterly from Martin's Industry Light-ship, 19 miles Southeasterly from entrance to Cumberland Sound, and 32 miles Northwesterly from St. Augustine Lighthouse.

St. John's River Lighthouse.

Near the mouth of St. John's River, South side of entrance to Jacksonville, is a Lighthouse, the Tower of which, at this date (1882), is Red Brick color, and shows a fixed White Light.

Remarks.

The entrance to St. John's River is across a Sand Bar, the channels of which, like all other Barred Harbors on the coast, are liable to change in depth and location with every heavy gale from seaward. At this date (1881), Buoys are used to show the deepest water across the bars, but the channel leading in changes so often that these cannot always be depended on; it is therefore advisable for strangers, bound into this River, to take pilots. Should the Bar be too rough for the pilot to cross, he will station himself inside the Breakers, and direct the steering of the vessel by pointing with a flag on a pole to the side of the channel he wishes you to go, and by holding it upright when he wishes you to keep her steady. There are usually from 7 to 8 feet water, at low tide, in the channel across the Bar. From St John's River Lighthouse to Jacksonville the distance is about 20 miles.

A Buoy, painted in Black and White Perpendicular Stripes, with the letters St. J. upon it, is placed off the bar at the entrance of St. John's River.

High Water.

It is high water at the entrance of St. John's River 3h. 53m. before it is at Boston; common tides rise about $4\frac{2}{3}$ feet. Strong winds from seaward increase the tides.

Coast from St. John's River Lighthouse to Georgetown Lighthouse.

Between the entrance to St. John's River and Georgetown Lighthouse, a distance of more than 200 miles, shoal water extends off in many places a long distance from shore. Heavy draught vessels should not, especially in thick weather, approach this part of the coast nearer than 8 fathoms water.

ST. AUGUSTINE HARBOR, FLA.

The entrance to this Harbor is Southeasterly about 31 miles from the entrance to St. John's River, and Northwesterly about 96 miles from Cape Canaveral.

St. Augustine Lighthouse.

Upon the North end of Anastasia Island, South side of entrance to St. Augustine Harbor, is a Lighthouse, the Tower of which, at this date (1882), is painted in Black and White Spiral Bands, and shows a fixed White Light, which Flashes White every 3 minutes. St. John's River Lighthouse bears from St. Augustine Lighthouse **N** by **W.** $\frac{1}{4}$ **W.**, distance 31 miles; Cape Canaveral Lighthouse **SE.** by **S.** $\frac{1}{2}$ **S.** 96 miles.

Remarks.

The entrance to St. Augustine Harbor is across a Sand Bar, the channels of which, like all other Barred Harbors on the coast, are liable to change in depth and location with every gale from seaward. At this date (1881), Buoys are used to show the deepest water across the bars, but the channel leading in changes so often that these cannot be depended upon; it is therefore advisable for strangers, bound into this place, to take pilots. Should the bar be too rough for the pilot to cross, he will station himself inside the Breakers, and direct the steering of the vessel by pointing with a flag on a pole to the side of the channel he wishes you to go, and by holding it upright when he wishes you to keep her steady. A Buoy painted in Black and White Perpendicular Stripes, with the letters St. A. upon it, marks the entrance to St. Augustine Harbor.

High Water.

It is high water in St. Augustine Harbor, 3h. 8m. before it is at Boston; common tides rise about $4\frac{1}{4}$ feet. Strong winds from seaward increase the tides.

MUSQUITO INLET, FLA.

The entrance to this Inlet lies about 55 miles Southeasterly from the entrance to St. Augustine Harbor, and Northwesterly 41 miles from Cape Canaveral Lighthouse.

Remarks.

At this date (1881), a Sea Buoy painted in Black and White Perpendicular Stripes, with the letter M. upon it, marks the entrance to this Inlet; at this time Buoys are used to mark the deepest water across the bar, but the channel leading in changes so often that these cannot always be depended upon. Strangers should therefore always take pilots off the bar.

High Water.

It is high water in Musquito Inlet 3h. 46m. before it is at Boston; common tides rise about $2\frac{1}{2}$ feet. Strong winds from seaward increase the tides.

Cape Canaveral Lighthouse (Fla.)

Upon the Northeast pitch of the Cape is a Lighthouse, the Tower of which at this date (1882), is painted in alternate Black and White Horizontal Bands, three of each color, commencing with White at the top; at this time this Lighthouse shows a fixed White Light, which flashes once a minute.

Bearings and Distances from Cape Canaveral Lighthouse.

	Distance.
Frying Pan Shoals Light-ship, N. by E. $\frac{7}{8}$ E.	340 miles.
Rattlesnake Shoal Light-ship, N. $\frac{1}{2}$ E.	260 "
Martin's Industry Light-ship, N. $\frac{1}{4}$ W.	214 "
St. Augustine Lighthouse, NW. by N. $\frac{1}{2}$ N.	95 "
Jupiter Inlet Lighthouse, S. by E. $\frac{3}{4}$ E.	94 "
Great Isaac Lighthouse (Revolving), SE. by S.	
$\frac{1}{8}$ S.	164
Gun Cay Lighthouse (Revolving Red), SE. by S.	
$\frac{3}{4}$ S.	185 "
Whistling Buoy outside Hetzel Shoal, NE. $\frac{3}{4}$ N.	12 $\frac{3}{4}$ "

Dangers in the Vicinity of Cape Canaveral.

To the Northeastward of Cape Canaveral there are numerous shoals, some of which have but little water upon them; the most prominent of these are the Hetzel Shoal, Ohio Shoal, and Bull Shoal; these dangers, which bear from N.NE. to NE. by E. $\frac{1}{2}$ E. from Cape Canaveral Lighthouse, lie from $6\frac{1}{4}$ to 12 miles from

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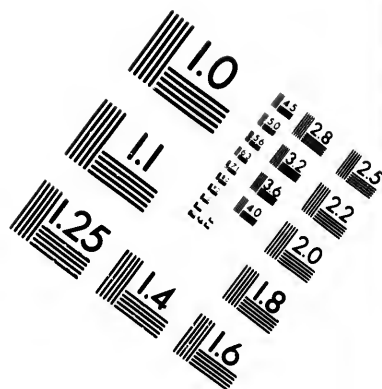
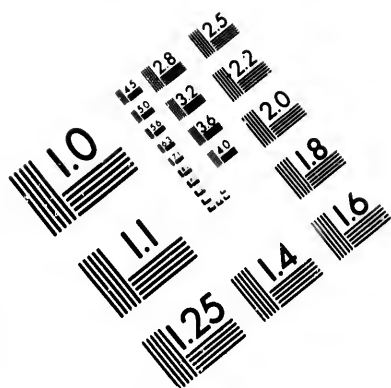
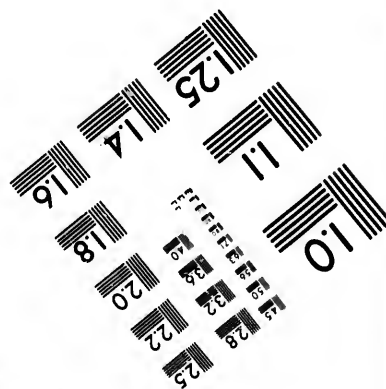
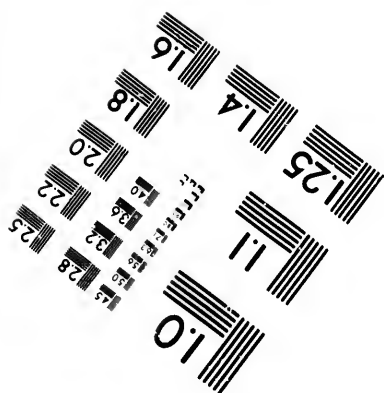
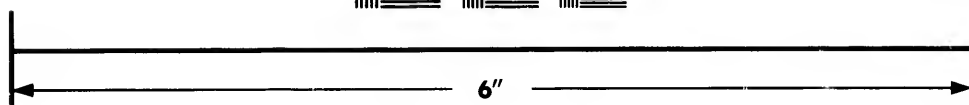
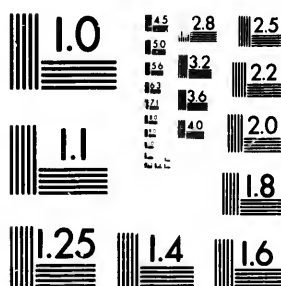


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it; at this date (1882), a Whistling Buoy is placed without these shoals; Cape Canaveral Lighthouse bears from it **SW. $\frac{3}{4}$ S.**, distance $12\frac{3}{4}$ miles. Vessels from the Northeastward may leave this Buoy from 1 to 2 miles on the Starboard hand, and make good the course **S. by E. $\frac{1}{2}$ E.**, which will clear the shoals lying between Cape Canaveral and Jupiter Inlet. In thick weather, it is advisable for heavy draught vessels to not approach Cape Canaveral nearer than 12 fathoms water.

CAPE CANAVERAL SLUE.

Between the Inner and Outer Shoals, off Cape Canaveral, there is a passage for vessels, which is called Cape Canaveral Slue; at this date (1882), a Can Buoy painted in Black and White Perpendicular Stripes marks this channel. Cape Canaveral Lighthouse bears from this Buoy **NW. by W.**

Anchorage Buoy.

About **SW. by S.** from Cape Canaveral Lighthouse, in about 3 fathoms water, is a Buoy painted in Black and White Perpendicular Stripes; this is called the Anchorage Buoy. When to the Southward of Cape Canaveral Shoal, get this Buoy and Lighthouse in range, and run for them in range, until about $\frac{1}{2}$ mile from the Buoy; then anchor in from 3 to 4 fathoms water. Vessels of less than 10 feet draught may anchor about 150 yards inside the Buoy in line with the Lighthouse, in from 15 to 17 feet water.

High Water.

It is high water at Cape Canaveral 3h. 19m. before it is at Boston; common tides rise about $3\frac{1}{2}$ feet. Strong winds from seaward increase the tides.

Jupiter Inlet Lighthouse (Fla.)

Between Jupiter Inlet and Gilbert's Bar is a Lighthouse, the Tower of which at this date (1882), is painted Red, and shows a fixed White Light, which flashes every 90 seconds.

Bearings and Distances from Jupiter Inlet Lighthouse.

	Distance.
Cape Canaveral Lighthouse, N. by W. $\frac{3}{4}$ W. . . .	94 miles.
Great Isaac Lighthouse (Revolving), SE. $\frac{1}{4}$ S. . . .	75 "
Gun Cay Lighthouse (Revolving Red), SE. by S. $\frac{1}{4}$ S. 92	"

The Lighthouse on Fowey Rocks, Northern extremity of Florida Reefs, lies nearly South 80 miles from Jupiter Inlet Lighthouse.

INDIAN RIVER INLET.

About 60 miles Southeasterly from Cape Canaveral and Northwesterly 34 miles from Jupiter Inlet Lighthouse, is the entrance to Indian River Inlet; at this date (1881), the Channel leading into this Inlet is not buoyed, and we have no reliable information in relation to the depth of water across the Bar.

INDIAN RIVER SHOALS.

Between Indian River Inlet and Jupiter Inlet Lighthouse there are several shoal spots, having from 12 to 15 feet water upon them. These shoals lie from 2 to 7 miles from shore, and break in ordinary weather. It is therefore advisable for vessels of more than 10 feet draught navigating this part of the coast in thick weather, or night time, to give these dangers a wide berth.

JUPITER INLET.

The entrance to this Inlet is near Jupiter Inlet Lighthouse. At this date (1881), this Inlet is not buoyed, and we have no reliable information in relation to the depth of water across the Bar.

ST. LUCIA SHOAL.

About 25 miles **N.** by **W.** $\frac{1}{4}$ **W.** from Jupiter Inlet Lighthouse, and about 5 miles from shore, is St. Lucia Shoal, which has about 15 feet water upon it at low tide. Large or heavy draught vessels should not, in thick weather or night time, approach this danger in less than 15 fathoms water.

HILLSBORO INLET.

The entrance to this Inlet lies about South from Jupiter Inlet, distance 42 miles, and nearly North 39 from the Lighthouse on Fowey Rocks; at this date (1881), there are no Buoys to mark the Channel leading in, and we have no reliable information in relation to the depth of water in the Channel across the Bar.

NEW RIVER INLET.

The entrance to this Inlet is about South 54 miles from Jupiter Inlet, and nearly North 26 miles from the Lighthouse on Fowey Rocks; at this date (1881), this Inlet is not Buoyed, and we have no reliable information in relation to the depth of water in the Channel across the Bar.

NEW RIVER INLET SHOAL.

About 4 miles from shore, and nearly opposite New River Inlet, is a shoal spot having but 15 feet water upon it; heavy draught vessels navigating this part of the coast in night time, or thick weather, should beware of this danger.

Coast from New River Inlet to Red Buoy on the North End of Florida Reefs.

From New River Inlet to the Red Buoy on the North part of Florida Reefs, a distance of 22 miles, there are no dangers excepting the Bars which extend from the shore; large or heavy draught vessels may therefore approach this part of the coast within 2 miles without danger.

Florida Reefs from Fowey Rocks Lighthouse to Sand Key Lighthouse.

Lighthouses upon these Reefs at this date (1882).

Fowey Rocks Lighthouse.

Upon Fowey Rocks, near the Northern extremity of Florida Reefs, in about 5 feet water, is a Lighthouse, the Tower of which

at this date (1882), is a Dark Brown Pyramidal Framework, on a pile foundation, enclosing a White Dwelling, and shows a fixed White Light.

Bearings and Distances from Fowey Rocks Lighthouse.

	Distance.
Great Isaac Lighthouse (Revolving), NE. by E. $\frac{1}{4}$	
E.	60 miles.
Carysfort Reef Lighthouse, S. by W. $\frac{1}{4}$ W.	23 "
Gun Cay Lighthouse (Revolving Red), E. $\frac{1}{8}$ N.	43 "
Red Buoy off Northern part of Florida Reefs, N. $\frac{1}{2}$	
W.	8 $\frac{1}{2}$ "
Old Lighthouse Tower on Cape Florida, NW. $\frac{1}{2}$ N.	6 "
Beacon O, on Triumph Reef, S. $\frac{1}{2}$ W.	7 "

NE. 1 mile from the Lighthouse on Fowey Rocks, 16 fathoms water was found; **E.** by **S.** $1\frac{1}{4}$ miles, 56 fathoms; and **SE.** $1\frac{1}{2}$ miles from it, 47 fathoms.

Carysfort Reef Lighthouse.

Upon the Eastern edge of Carysfort Reef, close to the edge of the Gulf Stream is a Lighthouse, the Tower of which at this date (1882), is a Dark Brown Pyramidal Framework, on a pile foundation, enclosing a Round Low Dwelling, and shows a fixed White Light, which Flashes White every 30 seconds.

Bearings and Distances from Carysfort Reef Lighthouse.

	Distance.
Fowey Rocks Lighthouse, N. by E. $\frac{1}{4}$ E.	23 miles.
Gun Cay Lighthouse (Revolving Red), NE. by E. $\frac{1}{2}$ E.	52 "
Beacon J, on Elbow Reef, SW. by S. $\frac{1}{2}$ S.	6 "
Beacon K, on Northern part Turtle Reef, N. $\frac{1}{4}$ W.	3 $\frac{3}{4}$ "

E. $\frac{1}{4}$ **N.** $1\frac{3}{4}$ miles from Carysfort Reef Lighthouse, 45 fathoms water was found; and **S.E.** 1 mile from it, 28 fathoms.

Alligator Reef Lighthouse.

Upon the Northeast point of Alligator Reef, close to the edge of the deep water of the Gulf Stream, is a Lighthouse, the Tower of which at this date (1882), is a Brown Pyramidal Framework, on Black pile foundation, enclosing a Square Dwelling, and shows every 5 seconds a Flashing Red and White Light, every third Flash being Red.

Bearings and Distances from Alligator Reef Lighthouse.

	Distance.
Carysfort Reef Lighthouse, NE. $\frac{1}{4}$ N.	32 miles.
Sombrero Key Lighthouse, SW. by W. $\frac{1}{4}$ W.	30 "
Elbow Key Lighthouse, on Northwest part Salt Key Bank, S. by E. $\frac{1}{4}$ E.	55 "
Beacon D, on Crocker's Reef, NE. $\frac{1}{2}$ E.	6 "
Beacon No. 7, on Tennessee Reef, SW. $\frac{3}{4}$ W.	9 "

SE. by E. $\frac{1}{2}$ E., 1 mile from Alligator Reef Lighthouse, 21 fathoms was found, and 16 fathoms South, 1 mile from it.

Sombrero Key Lighthouse.

Upon Sombrero Key, one of the Florida Reefs, is a Lighthouse, the Tower of which at this date (1882), is a Brown Pyramidal Framework, on pile foundation, enclosing Square Dwelling and shows a fixed White Light.

Bearings and Distances from Sombrero Lighthouse.

	Distance.
Alligator Reef Lighthouse, NE. by E. $\frac{1}{4}$ E.	30 miles.
American Shoal Lighthouse, W. by S. $\frac{3}{4}$ S.	23 "
Elbow Key Lighthouse (Salt Key Bank), SE.	54 "
Beacon C, upon Coffin's Patches, NE. by E. $\frac{1}{2}$ E. . .	8 $\frac{1}{2}$ "

E. SE. 1 $\frac{1}{2}$ miles from Sombrero Key Lighthouse, 25 fathoms water was found, and 20 fathoms **S. SW. $\frac{3}{4}$** mile from it.

American Shoal Lighthouse.

Upon American Shoal, Florida Reefs, in about 6 feet water, is a Lighthouse, the Tower of which at this date (1882), is a Brown Pyramidal Framework, on pile foundation, enclosing Keeper's Dwelling, and shows a fixed White Light, which Flashes every 5 seconds.

Bearings and Distances from American Shoal Lighthouse.

	Distance.
Alligator Reef Lighthouse, E. by N. $\frac{3}{4}$ N.	23 miles.
Elbow Key Lighthouse (Salt Key Bank), SE. by E. $\frac{3}{4}$ E.	68 "
Sand Key Lighthouse, W. by S. $\frac{1}{2}$ S.	19 $\frac{1}{2}$ "
Beacon 6, on Loo Key, E. by N. $\frac{1}{2}$ N.	6 $\frac{1}{2}$ "
Beacon A, on Eastern Sambo, W. by S. $\frac{1}{2}$ S.	8 "

E. SE. $1\frac{1}{2}$ miles from American Shoal Lighthouse, 18 fathoms water was found, and 17 fathoms **SW.** by **S** $\frac{1}{2}$ **S.** 1 mile from it.

Sand Key Lighthouse.

Upon a small Island of Sand and Shells, about 7 miles Southwesterly from entrance to Key West Harbor, is a Lighthouse, the Tower of which at this date (1882), is a Brown Pyramidal Framework, on pile foundation, enclosing a Square Dwelling; this Lighthouse at this time shows a fixed White Light for 1 minute, then a White Flash of 10 seconds' duration, followed by a partial eclipse of 25 seconds' duration.

Bearings and Distances from Sand Key Lighthouse.

	Distance.
American Shoal Lighthouse, E. by N. $\frac{1}{2}$ N. . . .	$19\frac{1}{2}$ miles.
Key West Lighthouse, NE. by N. $\frac{1}{4}$ N. . . .	$7\frac{1}{4}$ "
Elbow Key Lighthouse (Salt Key Bank), E. by S. $\frac{1}{2}$ S. . . .	83 "
Key Piedras Lighthouse (entrance to Cardenas Bay), SE. by S. . . .	84 "
Moro Castle, or Havana Lighthouse (Cuba), S. by W. $\frac{1}{2}$ W. . . .	82 . "
Beacon 4, on Eastern Dry Rocks, NE. by E. $\frac{3}{4}$ E. . . .	2 "
Beacon 2, on Western Dry Rocks, W. by S. . . .	$2\frac{3}{4}$ "

SE. $\frac{1}{3}$ mile from Sand Key Lighthouse, 20 fathoms water was found, and 19 fathoms $\frac{3}{4}$ mile **SW.** from it.

Warning Beacons or Day Marks on Florida Reefs.

In order to warn the mariner and also to ascertain his true position, the United States Government have erected upon some of the outer and most dangerous Reefs from Western Dry Rocks (near Sand Key Lighthouse) to Fowey Rocks Lighthouse, Beacons or Day marks; these Beacons are composed of an Iron Shaft 36 feet high, distinguished by a vane upon which one of the letters of the alphabet or a figure is painted, and above it a Lattice-work Hoop Iron Cylinder or Barrel; if the letter or number upon the vane can be distinguished, masters of vessels can ascertain their position with certainty.

These Beacons are usually near deep water, but should not be approached close to in heavy weather.

*Position of Beacons on Florida Reefs.***Beacon 2, on Western Dry Rocks.**

This Beacon, which is in Lat. $24^{\circ} 27'$ North and Lon. $81^{\circ} 56'$ West, lies $2\frac{3}{4}$ miles **W.** by **S.** from Sand Key Lighthouse, and **SW.** $\frac{1}{2}$ **S.** 3 miles from Beacon 3, on Middle Ground; Beacon No. 2 marks the entrance to the Southwest Channel into Key West.

Beacon 3, on Middle Ground.

This Beacon, which is in Lat. $24^{\circ} 29'$ North and Lon. $81^{\circ} 53'$ West, lies $1\frac{3}{4}$ miles **N.** by **W.** $\frac{3}{4}$ **W.** from Sand Key Lighthouse, and **SW.** $\frac{1}{2}$ **S.** 6 miles from Key West Lighthouse; Beacon 3 is a guide to the Southwest Channel leading into Key West.

Beacon 4, on Eastern Dry Rocks.

This Beacon, which is in Lat. $24^{\circ} 28'$ North and Lon. $81^{\circ} 50'$ West, lies $2\frac{1}{4}$ miles **E.NE.** from Sand Key Lighthouse, and **S.** by **W.** $\frac{1}{2}$ **W.** $5\frac{3}{4}$ miles from Key West Lighthouse; Beacon 4 is placed on the Eastern end of the Rocks, which are awash.

Beacon 5, Ship Channel Shoal.

This Beacon, which is in Lat. $24^{\circ} 28'$ North and Lon. $81^{\circ} 46'$ West, lies 6 miles **E.** by **N.** $\frac{1}{4}$ **N.** from Sand Key Lighthouse, **SE.** by **S.** $\frac{1}{2}$ **S.** $5\frac{1}{4}$ miles from Key West Lighthouse, and **W.** by **S.** $\frac{1}{2}$ **S.** $13\frac{1}{2}$ miles from American Shoal Lighthouse.

Beacon A, on Eastern Sambo.

This Beacon, which is in Lat. $24^{\circ} 30'$ North and Lon. $81^{\circ} 40'$ West, lies $11\frac{1}{2}$ miles **E.** by **N.** $\frac{1}{2}$ **N.** from Sand Key Lighthouse, $8\frac{1}{4}$ miles **E.** by **S.** $\frac{3}{4}$ **S.** from Key West Lighthouse, and **W.** by **S.** $\frac{1}{2}$ **S.** 8 miles from American Shoal Lighthouse; this Beacon is placed close to the seaward side of the Reef.

Beacon B, on American Shoal.

This Beacon, which is in Lat. $24^{\circ} 31'$ North and Lon. $81^{\circ} 31'$ West, lies close to the seaward side of the American Shoal, and a short distance from the Lighthouse on this danger.

Beacon 6, on Loo Key.

This Beacon, which is in Lat. $24^{\circ} 33'$ North and Lon. $81^{\circ} 24'$ West, lies $6\frac{1}{2}$ miles **E.** by **N.** $\frac{1}{2}$ **N.** from American Shoal Lighthouse, and **W.** by **S.** $\frac{3}{4}$ **S.** $16\frac{1}{2}$ miles from Sombrero Lighthouse; this Beacon is placed close to the seaward edge of Loo Key.

Beacon C, on Coffin's Patches.

This Beacon, which is in Lat. $24^{\circ} 41'$ and Lon. $80^{\circ} 58'$ West, lies $8\frac{1}{2}$ miles **NE.** by **E.** $\frac{1}{2}$ **E.** from Sombrero Lighthouse, and **SW.** by **W.** $\frac{1}{4}$ **W.** 21 miles from Alligator Reef Lighthouse; Beacon C is placed near the Western edge of the Reef; Shoul ground extends about $\frac{3}{4}$ mile to the seaward from it.

Beacon 7, on Tennessee Reef.

This Beacon, which is in Lat. $24^{\circ} 46'$ North and Lon. $80^{\circ} 46'$ West, lies 9 miles **SW.** $\frac{3}{4}$ **W.** from Alligator Reef Lighthouse, and **NE.** by **E.** $\frac{1}{4}$ **E.** $20\frac{1}{2}$ miles from Sombrero Lighthouse; Tennessee Reef has not less than 10 feet water on it; there is a spot with 13 feet water upon it about **SW.** by **S.** about 2 miles from the Beacon.

Beacon D, Crocker's Reef.

This Beacon, which is in Lat. $24^{\circ} 55'$ North and Lon. $80^{\circ} 32'$ West, lies 6 miles **NE.** $\frac{1}{2}$ **E.** from Alligator Reef Lighthouse, and **SW.** $\frac{1}{2}$ **S.** 25 miles from Carysfort Reef Lighthouse; Beacon D is placed close to the outer part of the Reef, with deep water close to it.

Beacon E, on Conch Reef.

This Beacon, which is in Lat. $24^{\circ} 57'$ North and Lon. $80^{\circ} 28'$ West, lies $10\frac{1}{2}$ miles **NE.** $\frac{1}{2}$ **E.** from Alligator Reef Lighthouse, **NE.** $\frac{1}{2}$ **E.** $4\frac{1}{2}$ miles from Beacon D, on Crocker's Reef, and **SW.** $\frac{3}{4}$ **S.** 21 miles from Carysfort Reef Lighthouse; Beacon E is placed close to the seaward side of the Reef, which is bold.

Beacon F, on Pickle's Reef.

This Beacon, which is in Lat. $24^{\circ} 59'$ North and Lon. $80^{\circ} 25'$ West, lies 14 miles **NE.** $\frac{1}{4}$ **E.** from Alligator Reef Lighthouse, **NE.** $\frac{1}{4}$ **E.** $3\frac{1}{2}$ miles from Beacon E, upon Conch Reef, **SW.** $4\frac{1}{4}$

miles from Beacon G, on French Reef, and 18 miles **SW.** by **S.** from Carysfort Reef Lighthouse; Beacon F is placed on the seaward side of Pickle's Reef, which has bold water close to it.

Beacon G, on French Reef.

This Beacon, which is in Lat. $25^{\circ} 2'$ North and Lon. $80^{\circ} 21'$ West, lies 18 miles **NE.** $\frac{1}{4}$ **E.** from Alligator Reef Lighthouse, **NE.** $4\frac{1}{4}$ miles from Beacon F on Pickle's Reef, **S.SW.** 6 miles from Beacon H, on Grecian Shoals, and **SW.** by **S.** $\frac{1}{4}$ **S.** $13\frac{1}{2}$ miles from Carysfort Reef Lighthouse; Beacon G is placed near the Southwest part of the Reef, with deep water close to it.

Beacon H, on Grecian Shoals.

This Beacon, which is in Lat. $25^{\circ} 7'$ North and Lon. $80^{\circ} 18'$ West, lies 6 miles **N.NE.** from Beacon G, on French Reef, **SW.** by **W.** $\frac{1}{2}$ **W.** 2 miles from Beacon J, on the Elbow Reef, and **SW.** by **S.** $7\frac{1}{2}$ miles from Lighthouse on Carysfort Reef. This Beacon is placed on the seaward edge of Grecian Shoals, which are inside Elbow Reef; there is foul ground more than a mile Northeasterly from Beacon H; large vessels should therefore give it a wide berth.

Beacon J, on Elbow Reef.

This Beacon, which is in Lat. $25^{\circ} 9'$ North and Lon. $80^{\circ} 16'$ West, lies 2 miles **NE.** by **E.** $\frac{1}{2}$ **E.** from Beacon H, on Grecian Shoals, and **SW.** by **S.** $\frac{1}{2}$ **S.** 6 miles from Carysfort Reef Lighthouse; Beacon J is placed on the seaward edge of the Reef, which is small, it being about 1 mile long, with an average width of about $\frac{1}{4}$ mile; Elbow Reef lies more than a mile outside of the general line of the Reefs, with deep water between it and Grecian Shoal.

Beacon K, on Turtle Reef.

This Beacon, which is in Lat. $25^{\circ} 17'$ North and Lon. $80^{\circ} 13'$ West, lies $3\frac{3}{4}$ miles **N.** $\frac{1}{4}$ **W.** from Carysfort Reef Lighthouse, and **SW.** by **S.** $\frac{1}{4}$ **S.** $6\frac{3}{4}$ miles from Beacon L, on the Pacific Reef; Beacon K is placed near the Northern extremity of Turtle Reef, and on Port side of entrance to Turtle Harbor.

Turtle Harbor Beacon.

This Beacon, which has a Red Cross upon it, with lattice-work underneath, is placed on the Starboard side of the entrance to Turtle Harbor, and bears **W.** by **N.**, distance about 1 mile from Turtle Reef, Beacon K; the entrance, therefore, to Turtle Harbor, is between these two last-named Beacons.

Beacon L, on Pacific Reef.

This Beacon, which is in Lat. $25^{\circ} 22'$ North and Lon. $80^{\circ} 9'$ West, lies $9\frac{3}{4}$ miles **N.** by **E.** $\frac{3}{4}$ **E.** from Carysfort Reef Lighthouse, **NE.** by **N.** $\frac{1}{4}$ **N.** $6\frac{3}{4}$ miles from Beacon K, on Turtle Reef, **S.** by **W.** 2 miles from Beacon M, on Ajax Reef, and **S.** $\frac{3}{4}$ **W.** 13 miles from Lighthouse on Fowey Rocks. Beacon L is placed on the seaward side of the Reef.

Beacon M, on Ajax Reef.

This Beacon, which is in Lat. $25^{\circ} 24'$ North and Lon. $80^{\circ} 8'$ West, lies $11\frac{3}{4}$ miles **N.** by **E.** $\frac{3}{4}$ **E.** from Carysfort Reef Lighthouse, **N.** by **E.** 2 miles from Beacon L, on Pacific Reef, **S.** $\frac{3}{4}$ **W.** $2\frac{3}{4}$ miles from Beacon N, on Long Reef, and **S.** $\frac{3}{4}$ **W.** 11 miles from Lighthouse on Fowey Rocks. Beacon M is placed on the seaward side of the Reef.

Beacon N, on Long Reef.*

This Reef, which is in Lat. $25^{\circ} 27'$ North and Lon. $80^{\circ} 7'$ West, lies $2\frac{3}{4}$ miles **N.** $\frac{3}{4}$ **E.** from Beacon M, on Ajax Reef, **S.** by **W.** $1\frac{3}{4}$ miles from Beacon O, on Triumph Reef, and **S.** $\frac{1}{2}$ **W.** $8\frac{3}{4}$ miles from Lighthouse on Fowey Rocks. Beacon N is placed on the Northern end of Long Reef.

Beacon O, on Triumph Reef.

This Beacon, which is in Lat. $25^{\circ} 29'$ North and Lon. $80^{\circ} 7'$ West, lies $1\frac{3}{4}$ miles **N.** by **E.** from Beacon N, on Long Reef, and **S.** $\frac{1}{2}$ **W.** 7 miles from Lighthouse on Fowey Rocks. Beacon O is placed on the seaward side of the Reef.

Beacon P, on Fowey Rocks.

This Beacon, which is in Lat. $25^{\circ} 35'$ North and Lon. $80^{\circ} 6'$ West, is placed near the edge of the Gulf Stream, and about 150 feet North of the Lighthouse on Fowey Rocks.

* Beacon N was down October, 1881.

Remarks in Navigating the Straits of Florida.

The Gulf Stream runs strong to the Northeastward through the Straits of Florida, and at times has been found to set directly across the Reefs, especially a short time before and during strong Easterly winds. In order to avoid this strong current, sailing vessels of not more than 12 feet draught, from the Northeastward bound to Havana or the Gulf of Mexico, usually pass to the Southward of Great Abaco Island (or the Hole-in-the-Wall) and haul round Great Stirrup Key, steering Southwesterly across the Great Bahama Bank; while vessels of more than 12 feet draught, after passing the Hole-in-the-Wall, steer West-Northerly, and haul round the Lighthouse on the Great Isaac, using the utmost care with the Lead to keep on soundings near the Western edge of the Bank. Steamers only from the Northeastward, bound to Havana or the Gulf of Mexico, pass through the Straits of Florida. On account of the strength and velocity of the Gulf Stream, vessels navigating these Straits cannot for their position rely upon courses, temperature or color of the water. The only sure guide to avoid Florida Reefs is a sharp lookout by day for the Beacons, and the Lights at night.

Hawk Channel, inside Florida Reefs.

The channel inside the Florida Reefs has been buoyed, and the Lighthouse Board have published the following directions.
(Eleven feet is the least water in this channel.)

Sailing Directions from Cape Florida to Key West by the Channel inside the Reefs, in Daytime, with favorable winds and fair weather.

From the Northeastward, as soon as the Old Lighthouse Tower on Cape Florida is made, bring it to bear **SW.** by **S.**, and run for it on this course, keeping a sharp lookout for the Red Nun Buoy No. 2, which lies on the Northeast side of a 16-foot spot, bearing about **NE.** by **N.** $\frac{1}{4}$ **N.** 5 miles from the Lighthouse Tower on Cape Florida; leave this Buoy about 100 yards on the Port hand, and steer **S.** by **W.** $\frac{1}{4}$ **W.** $2\frac{1}{2}$ miles, carrying not less than 20 feet water to the first Mid-channel Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer South $3\frac{1}{2}$ miles, carrying not less than 18 feet water to the

second Mid-channel Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and still continue the course South $2\frac{3}{4}$ miles, carrying not less than 17 feet to the Black Buoy No. 1; Fowey Rocks Lighthouse bears **E.** $\frac{1}{2}$ **S.** from this last-named Buoy, distance about 1 mile; leave this Buoy about 100 yards on the Port hand, and steer **S.** by **W.** about 5 miles, carrying about 15 feet water to Mid-channel Buoy, which is painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer **S.** $\frac{3}{4}$ **E.** about $\frac{3}{4}$ mile, carrying not less than 14 feet water to Black Buoy No. 3; leave this last Buoy close to on the Port hand, and steer **SW.** by **S.** $\frac{1}{2}$ **S.** $1\frac{1}{2}$ miles, carrying not less than 15 feet water to the next Mid-channel Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer **S.** $\frac{3}{4}$ **W.** $2\frac{1}{2}$ miles, carrying not less than 15 feet water to Margot Fish Shoal Buoy, which is Red No. 4; leave this Buoy about 200 yards on the Starboard hand, and steer **S.** $\frac{3}{4}$ **W.** $1\frac{1}{4}$ miles further, carrying not less than 14 feet water to the next Mid-channel Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer **S.** by **W.** $\frac{1}{2}$ **W.** $2\frac{1}{2}$ miles, carrying not less than 14 feet water to Red Buoy No. 6 off Caesar's Creek Bank; leave this Buoy about 100 yards on the Starboard hand, and continue the course **S.** by **W.** $\frac{1}{2}$ **W.** $2\frac{5}{8}$ miles, carrying not less than 13 feet water to Red Buoy No. 8 off Old Rhodes Bank; leave this Buoy about 100 yards on the Starboard hand, and steer **SW.** by **S.** $\frac{1}{4}$ **S.** $4\frac{3}{4}$ miles, carrying not less than 14 feet water to Key Largo Buoy, in mid-channel, painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and continue the course **SW.** by **S.** $\frac{1}{4}$ **S.** $4\frac{1}{4}$ miles further, carrying not less than 11 feet water to Basin Hill Buoy, in mid-channel, painted in Black and White Perpendicular Stripes; Carysfort Reef Lighthouse bears **E.** $\frac{1}{2}$ **N.** $4\frac{3}{4}$ miles from this last-mentioned Buoy. For the deepest water, leave Basin Hill Buoy close to on the Port hand, and steer **SW.** $5\frac{1}{4}$ miles, carrying not less than 11 feet water, until the Black Buoy No. 5 is square on the Port beam, distant about $\frac{1}{2}$ mile; then steer **SW.** by **S.** about 5 miles, carrying not less than 12 feet water to Black Buoy No. 7; leave this Buoy about 200 yards on the Port hand, and steer **SW.** $\frac{1}{2}$ **S.** $5\frac{1}{4}$ miles, carrying not less than 11 feet water to the Black Buoy No. 9 off the Triangle Shoal; Pickle's Reef, Beacon F bears from this

last-named Buoy **E.** by **S.** $\frac{3}{4}$ **S.** $2\frac{5}{8}$ miles; and Conch Reef Beacon **S.** $\frac{1}{4}$ **E.** about $3\frac{1}{2}$ miles; leave the Black Buoy of the Triangles about 100 yards on the Port hand, and steer **SW.** $\frac{1}{2}$ **S.** $6\frac{3}{4}$ miles, carrying not less than 11 feet water to Red Buoy No. 10 off Southern side of Hen and Chickens; on this last course (**SW.** $\frac{1}{2}$ **S.**), Alligator Reef Lighthouse will be directly ahead; Beacon D, on Crocker's Reef, bears from this last-named Buoy **SE.** $\frac{1}{4}$ **E.** $1\frac{1}{2}$ miles; leave the Red Buoy No. 10, off Hen and Chickens, close to on the Starboard hand, and steer **SW.** $\frac{1}{2}$ **W.** $6\frac{5}{8}$ miles, carrying not less than 12 feet water until the Black Buoy No. 11, on the Western part of Alligator Shoal, is square on the Port beam, distant about $\frac{1}{3}$ mile; Alligator Reef Lighthouse (before described) bears from Buoy No. 11 about **E.SE.**, distance $1\frac{3}{4}$ miles. (Now let us take a new departure.)

Sailing Directions from Black Buoy No. 11, off the Western part of Alligator Shoal, to Key West.

Leave the Black Buoy No. 11, off the Western part of Alligator Shoal, about $\frac{1}{3}$ mile on the Port hand, and steer **SW.** $\frac{7}{8}$ **W.** 9 miles, carrying not less than 15 feet water to the Red Buoy No. 12 off the South Point of Long Key Shoal; leave this Buoy about 200 yards on the Starboard hand, and steer **SW.** by **W.** $\frac{1}{2}$ **W.** $5\frac{1}{4}$ miles, carrying not less than 16 feet water to Mid-channel Buoy painted in Black and White Perpendicular Stripes, off Duck Key; leave this Buoy close to on either hand, and steer **SW.** by **W.** $8\frac{1}{4}$ miles, carrying not less than 15 feet water to East Turtle Shoal Buoy, painted in Red and Black Horizontal Stripes; (on this last course, Sombbrero Lighthouse will be open about $\frac{1}{4}$ point on the Port bow); leave East Turtle Shoal Buoy about $\frac{3}{4}$ mile on the Port, and the Buoy painted in Red and Black Horizontal Stripes, off West Turtle Shoal, about $\frac{1}{4}$ mile on the same hand, and continue the course **SW.** by **W.**, carrying not less than 15 feet water, until the Red Buoy No. 14, off Jacob's Head Shoal, is about 200 yards on the Starboard beam; then steer **W.SW.** about $3\frac{1}{4}$ miles, carrying not less than 27 feet water to the Buoy painted in Red and Black Horizontal Stripes, off the Pea Patch; leave this Buoy about 200 yards on the Port hand, and steer **W.** by **S.** $\frac{3}{4}$ **S.** $4\frac{1}{4}$ miles, carrying not less than 18 feet water to Mid-channel Buoy, painted in Black and White Perpendicular Stripes, off Pigeon Key Bank; leave this Buoy close to on either hand, and continue the

course **W.** by **S.** $\frac{3}{4}$ **S.** 7 miles further, carrying not less than 26 feet water to the Mid-channel Buoy painted in Black and White Perpendicular Stripes, which lies $1\frac{1}{2}$ miles from the Western end of Bahia Honda Key; leave this Buoy close to on either hand, and steer **W.** by **S.** $\frac{1}{2}$ **S.** 10 miles, carrying not less than 20 feet water, until the Red Buoy No. 16, off Loggerhead Key Bank, bears **N.NW.** about $\frac{1}{2}$ mile; then steer **W.** by **S.** $\frac{1}{2}$ **S.** $6\frac{1}{4}$ miles, carrying not less than 16 feet water and leaving the Black Buoy on Northern side of Delaware Heads about $\frac{1}{2}$ mile on the Port hand; continue the course **W.** by **S.** $\frac{1}{2}$ **S.** $1\frac{1}{2}$ miles further, carrying not less than 18 feet water, leaving the Black Buoy No. 17, on the Northeast part of Washerwoman Shoal, about $\frac{1}{4}$ mile on the Port hand; still continue the course **W.** by **S.** $\frac{1}{2}$ **S.** $1\frac{3}{4}$ miles further, carrying not less than 16 feet water, to the Buoy painted in Red and Black Horizontal Stripes, on Eleven Foot Shoal; leave this Buoy about 100 yards on either hand, and continue the course **W.** by **S.** $\frac{1}{2}$ **S.** $8\frac{5}{8}$ miles further, carrying not less than 18 feet water, until Key West Lighthouse bears **NW.**, distant about 2 miles; then steer **W.** by **N.** about $2\frac{1}{4}$ miles, carrying not less than 27 feet water, to the Red Buoy No. 6 (Beehive-shaped), off White Head Spit; Key West Lighthouse bears from this Buoy **NE.** $\frac{1}{2}$ **N.**, distance about $1\frac{1}{4}$ miles; leave the last-named Buoy on the Starboard hand, and steer about **N.** $\frac{1}{4}$ **E.**, leaving Fort Taylor on the Starboard and the Black Buoys on the Port hand. If intending to anchor above the town, leave the Wharves about 100 yards on the Starboard, and run up about **N.NE.** and anchor in from 3 to 4 fathoms water.

By the Hawk, or Channel inside the Florida Reefs, 11 feet is the least water from Cape Florida to Key West.

KEY BISCAIYNE BAY ANCHORAGE.

This Anchorage lies about 5 miles Northwesterly from the Old Tower on Cape Florida. At low tide about $6\frac{1}{2}$ feet water can be carried to the Anchorage off Miami River.

Sailing Directions for Key Biscayne Bay Anchorage in Daytime, with favorable winds and fair weather.

Small or light draught vessels, bound to this Anchorage, must first make the Red Buoy No. 2, off the North end of Florida Reefs; Cape Florida Old Lighthouse Tower bears from this Buoy about **SW.** by **S.** $\frac{1}{4}$ **S.**, distance about 5 miles; when this Buoy is made, leave it about 100 yards on the Port hand, and steer **S.** by **W.** $\frac{1}{4}$ **W.** $2\frac{1}{2}$ miles, to the first Mid-channel Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer South $3\frac{1}{2}$ miles to the second Mid-channel Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and continue the course South $2\frac{3}{4}$ miles further to the Black Buoy No. 1 off Fowey Rocks; the Lighthouse on these Rocks bears **E.** $\frac{1}{2}$ **S.** from this Buoy, distance about 1 mile; leave the Black Buoy No. 1, off Fowey Rocks, about 100 yards on the Port hand, and steer **W.SW.** about 1 mile to the Buoy painted in Black and White Perpendicular Stripes, off Soldier Key; leave this Buoy close to on either hand, and steer **W.** $\frac{1}{2}$ **S.** about 1 mile, to Black Buoy No. 1, off the Coral Bunches; leave this Buoy close to on the Port hand, and haul up North, with the Old Lighthouse Tower on Cape Florida about one point on the Port bow, until up with a Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and continue the course North until up with Cape Florida Shoal Buoy (Red No. 2); leave this Buoy close to on the Starboard hand, and steer **NW.**, with Cape Florida Old Tower on the Starboard bow, taking care to keep the White Sand Beach * near the Lighthouse open with the farthest Green Mangroves Point to the Northwest, but as you approach the Old Tower, gradually open them until this Tower is on the Starboard beam; then steer for the Red Buoy No. 4, off the Point of Middle Ground, and leave it about 60 feet on the Starboard hand, and steer about **W.** $\frac{1}{2}$ **S.** for the Black Buoy No. 3, off South Bank; leave this Buoy about 100 feet on the Port hand, and steer about West for the Red Buoy No. 6, off Key Biscayne Bar; leave the last-named Buoy close to on the Starboard hand, and run **NW.** by **W.** about 1 mile, then

* The Lighthouse Anchorage is abreast this Sand Beach.

N. $\frac{1}{2}$ **E.** about $4\frac{1}{2}$ miles, until the mouth of the Miami River bears **N.** by **W.** $\frac{1}{2}$ **W.**, distant $1\frac{1}{2}$ miles, and anchor in about 8 feet water.

High Water.

It is high water at Key Biscayne Bay Anchorage 1h. 53m. before it is at Boston, or 6 minutes after it is at Key West; common tides rise about 1 foot.

LEGARE ANCHORAGE (FLORIDA REEFS).

This Anchorage, which is between the Florida Reefs, lies Southeasterly 11 miles from the Old Lighthouse Tower on Cape Florida, **S.** by **W.** $6\frac{1}{2}$ miles from the Lighthouse on Fowey Rocks, Northeasterly $16\frac{1}{2}$ miles from the Lighthouse on Carysfort Reef, and Northwest about 1 mile from Beacon O, on Triumph Reef.

Remarks.

There are two channels leading to this Anchorage, one of which lies a little more than a mile to the Northwestward of the Beacon on Triumph Reef, the other about $\frac{1}{2}$ mile Southwest from this Beacon. At this date (1882), there are no Buoys to mark the Northwestern Channel; no directions will therefore be given for it. The Southwestern Channel, which is about $\frac{1}{2}$ mile wide, has a depth of not less than 21 feet water, and lies Southwest about $\frac{1}{2}$ mile from Beacon O, on Triumph Reef.

Sailing Directions for Legare Anchorage in Daytime, with favorable winds and fair weather.

From the Northeastward, leave the Lighthouse on Fowey Rocks about 1 mile to the Westward, and make good the course **S.** $\frac{1}{2}$ **W.**, taking care not to approach the Reefs in less than 10 fathoms water; when Beacon O, on Triumph Reef, is made, bring it to bear **S.S.W.**, and steer for it on this course, leaving it about $\frac{1}{2}$ mile to the Westward, and haul round it at a distance of $\frac{1}{2}$ mile, leaving it on the Starboard hand, and carrying not less than 4 fathoms water; when this Beacon bears East $\frac{1}{2}$ mile, run up **N.W.** by **N.** about $\frac{3}{4}$ mile, and anchor in from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water, Beacon O, on Triumph Reef, bearing about **SE.** by **E.**, distance about 1 mile.

From the Southward, as soon as Beacon O, on Triumph Reef, is made, bring it to bear **N.NW.**, and run for it on this course and leave it about $\frac{1}{2}$ mile on the Starboard hand, carrying from $3\frac{1}{2}$ to 4 fathoms water; when the Beacon bears East, haul up **NW.** by **N.** and run about $\frac{3}{4}$ mile, and anchor in from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water.

High Water.

It is high water at Legare Anchorage 3h. 3m. before it is at Boston, or about 1h. 6m. before it is at Key West; common tides rise about $1\frac{3}{4}$ feet.

TURTLE HARBOR (FLORIDA REEFS).

The entrance to this Harbor, which is among the Florida Reefs, lies Southwesterly 23 miles from the Old Lighthouse Tower on Cape Florida, $19\frac{1}{2}$ miles Southwesterly from the Lighthouse on Fowey Rocks, Northwesterly 4 miles from the Lighthouse on Carysfort Reef, and Northwest about $\frac{1}{2}$ mile from Beacon K on Turtle Reef.

Remarks.

The entrance to this Harbor, which is between Beacon K on Turtle Reef and Beacon with Red Cross on Top, is about $\frac{1}{3}$ mile wide. About 30 feet water can be taken to the Anchorage at low tide. At this date (1882), there are no Buoys in entering this Harbor.

Sailing Directions for Turtle Harbor in Daytime, with favorable winds and fair weather.

From the Northeastward, keep a sharp lookout for Beacon K on Turtle Reef; Carysfort Reef Lighthouse bears from this Beacon **S. $\frac{1}{4}$ E.**, distance about $3\frac{1}{2}$ miles; when Beacon K is made, bring it to bear **SW. $\frac{1}{2}$ W.**, and run for it on this course until about a mile from it; then, in about 5 fathoms water, steer for the Beacon with Cross on Top, bearing about **W.** by **S. $\frac{1}{2}$ S.**, carrying not less than 5 fathoms water, until Beacon K bears **SE. $\frac{1}{4}$ E.**; then haul up **SW. $\frac{1}{2}$ S.** and run about $\frac{1}{2}$ mile, and anchor in about 5 fathoms water; Beacon K bears from this anchorage about **E.** by **N.**, distance $\frac{3}{4}$ mile.

From the Southwestward, leave Carysfort Reef Lighthouse about $\frac{1}{2}$ mile on the Port hand, and steer **N.NE.**, until Beacon K bears **NW.**; then gradually haul round it, leaving it about $\frac{1}{2}$ mile on the Port hand, and anchor as before directed; about $\frac{1}{2}$ mile **W.** by **S.** $\frac{3}{4}$ **S.** from Beacon K, there is a shoal spot of 10 feet, with deep water around it

High Water.

It is high water in Turtle Harbor 3h. 37m. before it is at Boston, or 1h. 52m. before it is at Key West; common tides rise about $2\frac{1}{2}$ feet.

KEY WEST HARBOR, FLA.

The entrance to this Harbor, which is to the Westward of Key West Island, lies Southwesterly 130 miles from the Old Lighthouse Tower on Cape Florida, West-Southerly 69 miles from Alligator Reef Lighthouse, West-Southerly 40 miles from Sombrero Lighthouse, Northeasterly $6\frac{1}{2}$ miles from Sand Key Lighthouse, Northeasterly 89 miles from the entrance to Havana Harbor, and East-Southerly 61 miles from Loggerhead Lighthouse, the Southwesternmost Key of the Tortugas Group.

Key West Lighthouse.

On Key West Island, East side of entrance to Key West Harbor, near the Southern edge of the town, is a Lighthouse, the Tower of which at this date (1882), is painted White, and shows a fixed White Light. Key West Lighthouse bears from

	Distance.
American Shoal Lighthouse, West , nearly . . .	15 miles.
Sand Key Lighthouse, NE. by N.	$7\frac{1}{4}$ "
Ship Channel Shoal Beacon, No. 5, NW. by N. $\frac{1}{2}$ N.	5 "
Beacon 4, on Eastern Dry Rocks, N. by E. $\frac{1}{2}$ E.	$5\frac{1}{2}$ "
Beacon 3, on Middle Ground, NE. $\frac{1}{8}$ N.	6 "
Beacon 2, on Western Dry Rocks, NE. $\frac{1}{2}$ N.	$9\frac{1}{4}$ "
Bell Buoy at entrance of Main Ship Channel, N. $\frac{1}{4}$ W.	$4\frac{3}{4}$ "

Remarks.

In entering Key West Harbor there are several channels, most of which at this time are well marked with Buoys and Beacons.

Sailing Directions for Key West Harbor in Day-time, with favorable winds and fair weather.

By Ship Channel,

Which may be used by sailing vessels, with winds from **E.NE.** to **W.NW.** by way of South.

From the Northeastward, as soon as Sand Key Lighthouse (before described) is made, bring it to bear **W. ½ S.**, and run for it on this course until Key West Lighthouse bears **N. ¼ W.**, then run for it on this course, keeping a sharp lookout for the Bell Buoy painted in Black and White Perpendicular Stripes, which lies in Mid-channel; when this Buoy is made, leave it close to on either hand, and steer about **N. ½ W.** about $1\frac{3}{4}$ miles, leaving the Black Buoy off Western Head Shoal about 200 yards on the Port, and the next Buoy (Red) off Mississippi Shoal about 200 yards on the Starboard hand; when past this last Buoy, continue the course **N. ½ W.** ½ mile, passing about midway between the Black Buoy and Red Buoy on the East and West Triangles; when about $\frac{1}{3}$ mile past the last-named Buoys, steer **NW.** by **N.**, leaving the Red Buoy No. 6 (Beehive Shaped) off White Head Spit (Key West Lighthouse bears from this Buoy **NE. ½ N.**, distance about $1\frac{1}{4}$ miles) about 100 yards on the Starboard hand, and steer about **N. ¼ E.**, leaving Fort Taylor on the Starboard, and the Black Buoys at the entrance of the harbor on the Port hand; if intending to anchor above the town, leave the wharves about 100 yards on the Starboard hand, and run up about **N. NE.** $\frac{1}{3}$ mile, and anchor in from 3 to 4 fathoms water.

By the Ship Channel, about 26 feet water can be carried in as far as the Red Buoy off White Head Spit, and from thence about 22 feet into the harbor.

Eastern Channel,

Which may be used by sailing vessels of not more than 12 feet draught, with winds from **N.NE.** to **W.SW.** by way of South.

From the Northeastward, bring Key West Lighthouse to bear

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5 "

$5\frac{1}{2}$ "

6 "

$9\frac{1}{4}$ "

$4\frac{3}{4}$ "

NW. and run for it on this course, passing about midway between the Reef called the Western Sambo and the Ten Foot Lamp; continue the course **NW.** for the Lighthouse, until about $2\frac{1}{2}$ miles from it, or the Red Buoy off White Head Spit bears **W.** by **N.** $\frac{1}{2}$ **N.** $2\frac{1}{4}$ miles; then run for this last-named Buoy, bearing **W.** by **N.** $\frac{1}{2}$ **N.** and haul round it at a distance of 100 yards, leaving it on the Starboard hand, and follow the directions before given.

Southwest Channel,

Which may be used by sailing vessels, with winds from **SE.** by **E.** to **N.NW.** by way of South.

Coming from the Westward, get Sand Key Lighthouse to bear **E.** by **N.** and run for it on this course until Key West Lighthouse bears **NE.** $\frac{1}{2}$ **E.**, then with Beacon No. 2, on Western Dry Rocks, in range with Sand Key Lighthouse, distant $2\frac{3}{4}$ miles, run for Key West Lighthouse, bearing **NE.** $\frac{1}{2}$ **E.**, leaving the Red Buoys Nos. 2, 4 and 6, and Beacon on the Middle Ground, all on the Starboard hand, and 2 Black Buoys, Nos. 1 and 3, on the Port hand; when the Red Buoy No. 6 is in range with the Beacon on the Middle Ground, bearing **S.SE.** $\frac{1}{3}$ mile, steer **NE.** by **E.** for the Red Buoy No. 6 off White Head Spit; Key West Lighthouse bears from this Buoy **NE.** $\frac{1}{2}$ **N.**, distance $1\frac{1}{4}$ miles; leave this Red Buoy off White Head Spit a short distance on the Starboard hand, and proceed as before directed.

By the Southwest Channel, about 22 feet water can be carried in to the harbor.

High Water.

It is high water in Key West Harbor 2 hours before it is at Boston; common tides rise about $1\frac{1}{3}$ feet.

NORTHWEST CHANNEL, FLA.

This Channel, which leads from the entrance of Key West Harbor to the Gulf of Mexico, is about 7 miles long.

Northwest Channel Lighthouse.

Upon the Southwest side of the channel which leads from entrance of Key West Harbor to the Gulf of Mexico, in about 5 feet water, is a White Screw Pile Structure, which at this date (1882), shows a fixed White Light.

Remarks.

The least water through this passage is 11 feet, which is found upon the Bar about **N.** by **E.** $\frac{1}{2}$ **E.** $1\frac{1}{4}$ miles from Northwest Channel Lighthouse; at this time this passage is well marked with Buoys.

Sailing Directions for Northwest Channel in Day-time, with favorable winds and fair weather.

From the Straits of Florida, bound through this channel, follow the directions before given for Key West Harbor by either channel, until up with the Red Buoy off White Head Spit; Key West Lighthouse bears from this Buoy **NE.** $\frac{1}{2}$ **N.** $1\frac{1}{4}$ miles; leave the Red Buoy off White Head Spit about 100 yards on the Starboard hand, and steer **N.** by **W.** $\frac{1}{2}$ **W.** about $\frac{1}{2}$ mile; then in about 4 fathoms water, with Key West Lighthouse bearing **E. NE.**, make good the course **NW.** $\frac{3}{4}$ **N.**, leaving the Black Buoy No. 9 on Middle Ground about 300 yards on the Starboard hand, and Black Buoy No. 7 off Kingfish Shoals well on the Port hand, carrying not less than $2\frac{1}{2}$ fathoms water; continue the course **NW.** $\frac{3}{4}$ **N.**, leaving the Mid-channel Buoy painted in Black and White Perpendicular Stripes close to on either hand, and the Black Buoy No. 7 about $\frac{1}{4}$ mile on the Starboard, and Black Buoy No. 5 off Northwest part of Middle Ground close to on the Starboard hand; when past this Buoy, steer **NW.** $\frac{1}{2}$ **W.**, leaving the Mid-channel Buoy painted in White and Black Perpendicular Stripes close to on either hand, and continue the course **NW.** $\frac{1}{2}$ **W.** to Red Buoy No. 2; this Buoy, which lies **N.** by **E.** $\frac{1}{2}$ **E.** $\frac{3}{4}$ mile from Northwest Channel Lighthouse, marks the turning point to cross the bar; leave the last-named Buoy close to on the Port hand, and steer Northeasterly, leaving the Black Buoy No. 3 about 200 yards on the Starboard, the Black Buoy No. 1 about 40 feet on the Starboard, and the Bar Buoy painted in Black and White Perpendicular Stripes close to on either hand. It is advisable for strangers in vessels of 12 feet draught, to anchor about $\frac{3}{4}$ mile East from Northwest Channel Lighthouse, and wait until about $\frac{1}{2}$ flood before attempting to cross the bar.

From the Gulf of Mexico, bound through the Northwest Channel, it is only necessary for the mariner to reverse the above directions, but for convenience we shall reverse them.

Sailing Directions for Northwest Channel in Daytime.

From the Gulf of Mexico, bound through the Northwest Channel, as soon as the Northwest Channel Lighthouse is made, bring it to bear **S.** by **W.** $\frac{1}{2}$ **W.** and run for it on this course, keeping a sharp lookout for the Outer or Sea Buoy, which is painted in Black and White Perpendicular Stripes, and lies in 4 fathoms water; when this Buoy is made,* leave it close to on either hand, and steer Southwesterly, leaving the Bar Buoy painted in Black and White Perpendicular Stripes close to on either hand, the Black Buoy No. 1 about 40 feet on the Port, the Black Buoy No. 3 about 200 yards on the same hand, and the Turning Buoy (Red) No. 2 close to on the Starboard hand; the Lighthouse bears from this last-named Buoy **S.** by **W.** $\frac{1}{2}$ **W.**, distance $\frac{3}{4}$ mile; when past the Turning Buoy, which is Red No. 2, steer **SE.** $\frac{1}{2}$ **E.**, or directly for Key West Lighthouse, leaving the Mid-channel Buoy painted in Black and White Perpendicular Stripes close to on either hand; continue the course **SE.** $\frac{1}{2}$ **E.** until up with Black Buoy No. 5 off Northwest part of Middle Ground; leave this Buoy close to on the Port hand, and steer **SE.** $\frac{3}{4}$ **S.**, leaving the Black Buoy No. 7 about $\frac{1}{4}$ mile on the Port, and continue the course **SE.** $\frac{3}{4}$ **S.**, leaving the Mid-channel Buoy painted in Black and White Perpendicular Stripes close to on either hand. If bound to Key West Harbor, still continue the course **SE.** $\frac{3}{4}$ **S.**, until Key West Lighthouse bears **E. SE.**, then run for it until past the Black Buoys Nos. 11 and 13, then run in for the wharves, or anchor above or below the town.

High Water.

It is high water on the Bar, at the entrance of the Northwest Channel, from the Gulf of Mexico, 19 minutes before it is at Boston, or 1h. 48m. after it is at Key West; common tides rise about $2\frac{1}{2}$ feet.

Dangers.

A dangerous Bank (dotted here and there with Islets or Keys), having but little water upon it, extends about 36 miles to the Westward of Key West Lighthouse; broken ground with shoal

* It is advisable for strangers, in vessels of 12 feet draught, to wait until about $\frac{1}{4}$ flood before attempting to cross the bar.

spots lies off to the Southward of this Bank ; and about 18 miles **W.** $\frac{1}{4}$ **S.** from Sand Key Lighthouse, and 6 miles from the Marquesas Keys, there is said to be a dangerous rock ; it is therefore advisable for large or heavy draught vessels navigating this part of the coast to give it a wide berth.

REBECCA SHOAL.

Upon the Southeastern end of this Shoal, which lies about 18 miles to the Eastward of Dry Tortugas Reef, is placed a Beacon 75 feet high, which at this date (1882), is a Framework painted Brown, supported by four iron piles, and surmounted by a Lozenge-shaped Cage with ladder leading to the top.

Bearings and Distances from Beacon on Rebecca Shoal.

	Distance.
West end of Quicksand Breakers, E. $\frac{1}{2}$ S.	7 miles.
Isaac Shoal, E. by S. $\frac{1}{2}$ S.	2 "
Dry Tortugas Lighthouse, W. $\frac{1}{2}$ N.	18 $\frac{1}{2}$ "

Channel between Rebecca Shoal and Dry Tortugas Group.

This Channel is about 10 miles wide, with a depth of from 10 to 15 fathoms water ; the current of Flood sets strong to the Northward through this Channel, and that of the Ebb, to the Southward.

Channel between Rebecca Shoal and West End of Quicksand Breakers.

This Channel is about 6 miles wide, with a depth of from 5 to 10 fathoms water, with a strong current ; at this time, the Isaac Shoal is not buoyed ; it is therefore not advisable for large or heavy draught vessels to attempt this last-named passage.

DRY TORTUGAS ISLANDS.

About 60 miles to the Westward of Key West Harbor, off the Western Coast of the peninsula of East Florida, are several small Keys or Islets called the Dry Tortugas, which are the Westernmost land which terminates the Florida Reefs.

Dry Tortugas Lighthouse.

In Lat. $24^{\circ} 38'$ North and Lon. $82^{\circ} 55\frac{3}{4}'$ West, upon Loggerhead Key, the Southwesternmost of the Tortugas Group, there has been erected a lofty Tower, the lower half of which at this date (1882), is painted White, the upper half with Lantern and Dome Black; at this time this Lighthouse shows a fixed White Light, which in clear weather is visible from the deck of a common vessel about 19 miles.

Bearings and Distances from Dry Tortugas Lighthouse.

	Distance.
Lighthouse on Double Headed Shot Keys, E. by S. nearly	141 miles.
Key Piedras Lighthouse, entrance to Cardenas Bay, SE. $\frac{7}{8}$ E.	129 "
Moro Castle Lighthouse, entrance to Havana, SE. by S. $\frac{7}{8}$ S.	94 "
Egmont Key Lighthouse, entrance to Tampa Bay, North nearly	178 "
Cedar Keys Lighthouse, N $\frac{1}{2}$ W.	268 "
St. Mark's Lighthouse, N. by W. $\frac{1}{2}$ W.	334 "
Cape St. George Lighthouse, near entrance to Apalachicola Bay, NW. by N. $\frac{3}{4}$ N.	316 "
Pensacola Lighthouse, NW. $\frac{1}{2}$ N.	416 "
Mobile Point Lighthouse, NW. nearly	432 "
South Pass Lighthouse, entrance to Mississippi River, NW. by W. $\frac{1}{8}$ W.	425 "
Tortugas Harbor Lighthouse, E. $\frac{1}{4}$ S.	256 "

Remarks.

The Dry Tortugas Group, of which there are 8 Keys, extends Northeasterly and Southwesterly nearly 10 miles, and Northwest-erly and Southeasterly more than 6 miles; they are very low and are surrounded by shoal water. About 7 miles to the Westward of the Dry Tortugas Lighthouse is a bank of Coral Rocks intermixed with White Patches of Sand; the least water found upon this Bank is 6 fathoms; Dry Tortugas Lighthouse bears from this last-named depth East, distance 7 miles. In thick weather the Dry Tortugas Islands may be approached on their Northern, Northeastern, South-ern and Southwestern sides by the Lead, but in approaching them

on their Eastern and Western sides, the Lead gives little or no warning. There is anchorage in from 5 to 7 fathoms water in strong Easterly winds under Loggerhead Key, with the Lighthouse bearing from East to **E. SE.**; there is also good anchorage in several other places, particularly in Tortugas Harbor, of which we shall give directions for entering.

TORTUGAS HARBOR.

This Harbor, which is among the Dry Tortugas Islands, lies West-Northerly about 60 miles from Key West Lighthouse, and East about $2\frac{3}{4}$ miles from the Dry Tortugas Lighthouse.

Tortugas Harbor Lighthouse.

Upon Fort Jefferson (Garden Key), one of the Tortugas Group, is a Lighthouse, the lower half of which at this date (1882), is painted White, the upper half with Lantern and Dome, Black; at this time, this Lighthouse shows a fixed White Light, which in clear weather can be seen from the deck of a common vessel about 13 miles.

Remarks.

By the Southeast Channel, about 7 fathoms water can be carried into the Outer Harbor, and from this about 21 feet can be taken into the Inner Harbor; from the Black Buoy which lies about $\frac{1}{2}$ mile to the Northward of the Lighthouse, the Channel leading into the Inner Harbor is very narrow.

Sailing Directions for Tortugas Harbor in Day-time, with favorable winds and fair weather.

Southeast Channel.

From the Northeastward, intending to enter this Harbor by the Southeast Channel, leave the Beacon on Rebecca Shoal about 3 miles on the Starboard hand, and make good the course **W.** by **N.** $\frac{1}{2}$ **N.**; as soon as Tortugas Harbor Lighthouse (before described) is made, bring it to bear **W.** $\frac{1}{4}$ **N.**, and run for it on this course with the Main Lighthouse on Loggerhead Key open about a hand-spike's length to the South of it; as you approach Tortugas Harbor Lighthouse, keep a sharp lookout for the Red Buoy off the South-

west point of the Shoal, making off from the East and Middle Keys; the Dry Tortugas Harbor Light bears from this Buoy **W.** $\frac{1}{4}$ **N.** distance $2\frac{1}{2}$ miles; when the last-named Buoy is made, leave it about 200 yards on the Starboard hand, and make good the course **NW.** by **W.** $\frac{1}{2}$ **W.** about 2 miles to the Black Buoy off Northeast end of Long Shoal, carrying from 6 to 10 fathoms water; Tortugas Harbor Lighthouse bears from this Buoy **SW.** $\frac{1}{2}$ **S.** $\frac{7}{8}$ mile; leave the last-named Buoy about 100 yards on the Port hand, and steer for Tortugas Main Lighthouse, bearing about **W.** by **S.**, and carrying from 4 to 8 fathoms water, until the Harbor Lighthouse bears **S.** $\frac{1}{2}$ **E.**, then run for it on this course, leaving the Black Buoy No. 5 at the entrance to the Inner Harbor, close to on Port hand, and steer about **SE.** by **S.**, carrying from 4 to 7 fathoms water through the narrow channel; when about half way from the last Buoy to the Lighthouse, haul gradually to the Southwestward, and anchor about 150 yards Southeast from the wharf, in from $3\frac{1}{2}$ to 4 fathoms water. Large or heavy draught vessels should anchor when abreast the Black Buoy No. 5 and take pilots, as the channel leading in is very narrow, and a rock having about 15 feet water upon it, lies nearly in Mid-channel.

Southwest Channel.

From the Westward, leave the Lighthouse on Loggerhead Key about 4 miles on the Port hand; when Tortugas Harbor Lighthouse, on Fort Jefferson, bears **NE.** by **E.**, run for it on this course, carrying from 8 to 10 fathoms water, until Tortugas Lighthouse, on Loggerhead Key, bears North; then haul up **NE.** by **N.**, carrying from 10 to 11 fathoms water, until up with the Channel Buoy painted in Black and White Perpendicular Stripes; Tortugas Harbor Lighthouse bears from this Buoy **E.** by **N.** $\frac{1}{8}$ **N.**, distance $1\frac{3}{4}$ miles; leave the last-named Buoy* close to on either hand, and steer **NE.** $\frac{1}{2}$ **N.** about 1 mile, or until Tortugas Lighthouse, on Loggerhead Key, bears **W.** by **S.**; then make good the course **E.** by **N.** $\frac{1}{2}$ **N.** until Tortugas Harbor Lighthouse bears **S.** $\frac{1}{2}$ **E.**; then follow the directions before given. Large or heavy draught vessels should anchor near the Black Buoy No. 5, at the entrance of the Inner Harbor, and take pilots.

* An eight-foot shoal lies E. by N. 200 yards from this Buoy, and a thirteen-foot shoal W.N.W. 150 yards from it.

From the Eastward, intending to enter the Harbor by the Southwest Channel, leave Tortugas Harbor Lighthouse, on Fort Jefferson, at least 4 miles on the Starboard hand; when Tortugas Lighthouse, on Loggerhead Key, bears North, then run for it on this course, carrying not less than $5\frac{1}{2}$ fathoms water, until the Harbor Lighthouse bears **NE.** by **E.**; then haul up **NE.** by **N.**, and follow the directions before given. Seven fathoms water can be carried through the Southwest Channel as far as Black Buoy No. 5, and 21 feet can be taken from this into the Inner Harbor.

Northwest Channel.

From the Northwestward, intending to enter Tortugas Harbor by this Channel, as soon as the Harbor Lighthouse is made, bring it to bear **S.** by **E.**, and run for it on this course, keeping a sharp lookout for the Northwest Channel (entrance) Buoy, which is painted in White and Black Perpendicular Stripes; Tortugas Main Lighthouse bears from this Buoy **SW.** by **S.** $\frac{3}{4}$ **S.** $4\frac{1}{2}$ miles; the Easternmost Key of the group, **SE.** by **E.** $\frac{1}{4}$ **E.** 5 miles; when this last-named Buoy is made, bring it to bear **S.SE.**, and run for it, leaving it close to on either hand; when past it, make good the course **S.SE.** $3\frac{1}{2}$ miles, leaving Sand Key about $\frac{1}{2}$ mile on the Port hand and the Buoy painted in Red and Black Horizontal Stripes, on the Middle Ground, well on the Starboard hand; when about midway between Sand Key and the last-named Buoy, on the Middle Ground, steer about **SW.** for the Black Buoy No. 5, at the entrance of the Inner Harbor; on the last course the Black Buoy No. 3 will be left well on the Port hand; when up with the Black Buoy No. 5, which lies at the entrance to the Inner Harbor, leave it about 20 feet on the Port hand, and steer **SE.** by **S.**, as before directed, and anchor abreast the Sally-port in about 21 feet water. The channel leading into the Inner Harbor is so narrow that it is advisable for strangers to anchor at the entrance, and take a pilot. — one can always be obtained by making the usual signal. In entering Tortugas Harbor by the Northwest Channel from the Entrance Buoy painted in Black and White Perpendicular Stripes, to the entrance of Inner Harbor, there are several spots of from 8 to 18 feet, which, at this time, are not buoyed; the course, however, made good **S.SE.**, from the Entrance Buoy, clears them.

Beating into Tortugas Harbor.

In entering Tortugas Harbor, the shoals in many places are so abrupt that it is advisable for strangers not to attempt to beat in without a pilot.

High Water.

It is high water in Tortugas Harbor 1h. 47m. before it is at Boston, or about the same time it is at Key West Harbor; common tides rise about $1\frac{1}{3}$ feet.

SAN CARLOS BAY, SOUTHWEST COAST OF FLORIDA.

The entrance to this Bay is **N. $\frac{3}{4}$ W.** 111 miles from Northwest Passage Lighthouse (Key West); **N. by E. $\frac{3}{4}$ E.** 120 miles from Tortugas Main Lighthouse; Southeastery 78 miles from Egmont Key Lighthouse (entrance to Tampa Bay), and Southeastery 22 miles from the entrance to Charlotte Harbor.

Remarks.

At this date (1881), the channel leading into San Carlos Bay is marked with Buoys and Stakes. About $7\frac{1}{2}$ feet water, at low tide, can be carried to the Cattle Wharf at the entrance of the Caloosa River.

Sailing Directions for San Carlos Bay in Daytime, with favorable winds and fair weather.

When in 3 fathoms water, bring the Telegraph Station, which stands on Punta Rosa, North side of San Carlos Bay, to bear **NW. $\frac{1}{4}$ N.**, and run for it on this course, leaving the Black Buoy at the entrance about $\frac{3}{4}$ mile on the Port hand, and carrying from $2\frac{1}{4}$ to $2\frac{1}{2}$ fathoms water. As you sail in, keep a sharp lookout for the Red Buoy on the Eastern side of entrance; the Telegraph Station on Punta Rosa bears about **NW.** from this Buoy, distance $2\frac{1}{4}$ miles; when the last-named Buoy is made, leave it about 100 yards on the Starboard hand, and steer **NW. $\frac{1}{2}$ W.**, carrying from 10 to 11 feet water, and leaving the first Stake Board (Red) 100 yards on the Starboard and carrying about $7\frac{1}{2}$ feet, at low

tide, to the second Stake and Red Cross, which leave about 100 yards on the Starboard hand, and follow the Eastern Bank, which is bold, carrying about 8 feet water to the third Stake, which leave about 50 yards on the same hand, and gradually haul to the Northward, carrying from 15 to 20 feet water, leaving the Telegraph Station a short distance on the Starboard hand, and anchor abreast the Cattle Wharf. These directions were good for 1881.

High Water.

It is high water in San Carlo Bay 50 minutes after it is at Boston; common tides rise about $1\frac{3}{4}$ feet.

CHARLOTTE HARBOR, FLORIDA.

The entrance to this Harbor, which is on the Southwest coast of Florida, lies **N.** by **W.** $\frac{3}{4}$ **W.** 128 miles from Northwest Passage Lighthouse (Key West), **N.** by **E.** 130 miles from the Main Lighthouse at the Dry Tortugas Islands, and Southeasterly 57 miles from the Lighthouse on Egmont Key, entrance to Tampa Bay.

Remarks.

At this date (1881), in entering Charlotte Harbor, there are but two Buoys, both of which are Channel Buoys painted in Black and White Perpendicular Stripes. At this time there are 18 feet water, at low tide, in the channel over the Bar, and 14 feet can be taken into the Bay about 2 miles above the entrance. In stormy weather the channel is well marked with breakers on each side. Once the Entrance Buoy is made, any stranger, with a favorable wind, can easily enter this Harbor. There are no pilots here.

Sailing Directions for Charlotte Harbor in Daytime, with favorable winds and fair weather.

When in 7 fathoms water, bring the South Point of Gasparilla Island, which is on the Northern side of entrance, to bear **NE** $\frac{3}{4}$ **E.**, and run for it on this course, keeping a sharp lookout for the Bar Buoy, which is painted in Black and White Perpendicular Stripes: Gasparilla Point bears from this Buoy **NE** $\frac{3}{4}$ **E.** 3 miles; when this Buoy is made, leave it close to on either hand and steer **NE** $\frac{3}{4}$ **E.** As you sail in, you will see the Channel

Buoy, painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer about **NE.** by **E.** $\frac{3}{4}$ **E.**, and enter about midway between the Points; when once in the Bay, select your anchorage according to draught. These directions were good for 1881.

High Water.

It is high water at Charlotte Harbor 1h. 40m. after it is at Boston; common tides rise about $1\frac{1}{4}$ feet.

TAMPA BAY, FLA.

The entrance to this Bay, which is on the Southwest coast of Florida, lies Northwesterly 57 miles from the entrance to Charlotte Harbor, North (nearly) 178 miles from the Dry Tortugas Lighthouse, and Southeasterly 92 miles from Cedar Keys Lighthouse.

Egmont Key Lighthouse.

Upon the North end of Egmont Key, entrance to Tampa Bay, is a Lighthouse, the Tower of which, at this date (1882), is painted White, and shows, at this time, a fixed White Light. Dry Tortugas Lighthouse bears from Egmont Key Lighthouse South (nearly) 178 miles.

Remarks.

In entering Tampa Bay there are three channels, which are called North Channel, Southwest Channel and Passage Key Channel. The North Channel, which leads in to the Northwest of the Lighthouse, has 21 feet water across the Bar, and at this date (1881), is buoyed. The Southwest Channel, which leads in to the Southward of the Lighthouse, has 16 feet water across the Bar, and, at this time, is also buoyed. Passage Key Channel, which leads in between Passage Key and the Southern Point of Palm Key, lies about $3\frac{1}{2}$ miles to the Southward of the Lighthouse and has about 9 feet water over the Bar, and, at this time, is not buoyed. At this time, 16 feet water can be carried up Tampa Bay as far as the Black Buoy off Gadsden's Point, which is about 20 miles above the Lighthouse, and from this, about 8 feet can be carried within 2 miles of Tampa, and only 5 feet, at low tide, can be carried up to this last-named place.

Sailing Directions for Tampa Bay in Daytime, with favorable winds and fair weather.

By the North Channel.

As soon as Egmont Key Lighthouse entrance to Tampa Bay is made, keep in not less than 5 fathoms water, until it bears **E.** $\frac{1}{2}$ **S.**; then, with a commanding breeze, run for it on this course, keeping a sharp lookout for the Bar Buoy painted in Black and White Perpendicular Stripes; the Lighthouse bears **W.** $\frac{1}{2}$ **N.** $1\frac{3}{4}$ miles from it; when the Buoy is made, leave it close to on either hand, and steer East about 3 miles, carrying not less than 21 feet water, until up with the Middle Buoy, painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer **E.** $\frac{1}{4}$ **S.**, leaving the Red Buoy off Egmont Shoal and the Lighthouse about $\frac{1}{4}$ mile on the Starboard hand; continue the course **E.** $\frac{1}{4}$ **S.** until the Lighthouse bears **W.** by **S.** $\frac{1}{2}$ **S.**, then make good the course **E.** by **N.** $\frac{1}{2}$ **N.** about $3\frac{1}{2}$ miles, carrying not less than 4 fathoms water and keeping a sharp lookout for the Black Buoy off Mullet Key; when this Buoy is made, leave it about $\frac{1}{4}$ mile on the Port hand, and steer **NE.** $\frac{3}{4}$ **E.** $6\frac{1}{2}$ miles, carrying not less than 22 feet water, to Red Buoy off Piney Point; leave the last-named Buoy about $\frac{1}{2}$ mile on the Starboard hand, and make good the course **NE.** by **N.** $9\frac{1}{2}$ miles, to Black Buoy off Gadsden's Point, carrying not less than 16 feet water; on this last course the Black Buoy on the Middle Ground will be left well on the Port, and the Red Buoy, off Mangrove Bank, on the Starboard hand; when the Black Buoy off Gadsden's Point is made, leave it about $\frac{1}{4}$ mile on the Port, and the next Black Buoy about 100 yards on the same hand, and haul up about North and run about $1\frac{3}{4}$ miles, carrying not less than 11 feet water, to the Channel Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and steer **N.** by **W.** $2\frac{1}{8}$ miles, carrying not less than 11 feet, to Black Buoy off Long Shoal; leave this Buoy about 100 feet on the Port hand, and run **WNW.** about $1\frac{1}{4}$ miles, carrying not less than 10 feet; when about $\frac{1}{4}$ mile from Ballast Point, which is on the Western side, gradually haul to the Northward, and steer **N.** by **W.** $1\frac{1}{2}$ miles, carrying not less than 9 feet, until the North end of a small Island, called Depot Key, bears **NE.** by **E.**; then anchor in about 8 feet water, soft bottom, about 2 miles below Tampa. Above this a pilot is necessary. These directions were good for 1881.

By the South Channel.

Keep in 5 fathoms water until Egmont Key Lighthouse bears **NE.** by **N.** $\frac{1}{4}$ **N.**, then run for it on this course, keeping a sharp lookout for the Bar Buoy painted in Black and White Perpendicular Stripes; the Lighthouse bears from this Buoy **NE.** by **N.** $\frac{1}{2}$ **N.** $3\frac{3}{4}$ miles; leave this Buoy close to on either hand and steer **NE.** $\frac{1}{2}$ **E.**, carrying at this date (1882), about 16 feet water across the bar, and leaving the Red Buoy off the Sand Bar about $\frac{1}{4}$ mile on the Starboard hand; when past the South point of Egmont Island, which is bold, continue the course **NE.** $\frac{1}{2}$ **E.** about 5 miles to Black Buoy No. 1, off Mullet Key Bank, carrying from 14 to 30 feet water; this last-named Buoy bears from Egmont Key Lighthouse **E.NE.**, distance $4\frac{1}{2}$ miles; leave this Buoy about $\frac{1}{4}$ mile on the Port hand, and if bound to Tampa, follow the directions before given. These directions were good for 1881.

High Water.

It is high water at Tampa 2h. 15m. after it is at Boston, or 4h. 15m. after it is at Key West; common tides rise about $2\frac{1}{3}$ feet.

MANATEE RIVER.

The entrance to this River, which is on the Southeastern side of Tampa Bay near its entrance, lies **SE.** by **E.** $7\frac{3}{4}$ miles from Egmont Key Lighthouse.

Remarks.

From the Bar Buoy at the entrance of Manatee River to the Steamboat Wharf at Braden town, the distance is about $6\frac{1}{4}$ miles; at this date (1882), the channel leading up is well marked with Buoys and Stakes; there is about $7\frac{1}{2}$ feet water on the bar.

Sailing Directions for Manatee River in Day-time, with favorable winds and fair weather.

Small or light draught vessels, bound to Manatee River, may follow the directions before given for Tampa Bay by either channel until past Egmont Key; then bring the Lighthouse on this Key to bear **NW.** by **W.**, and make good the course **SE.** by **E.** to the

Bar Buoy painted in Black and White Perpendicular Stripes, which lies off the entrance to Manatee River; this Buoy bears from the Lighthouse on Egmont Key **SE.** by **E.** about 6 miles; as soon as this Buoy is made, bring it to bear **SE.** by **E.** and run for it on this course, leaving it close to on either hand, and steer **SE. ¾ E.** until the next Buoy (Black) is nearly on with Snead's Point (which is the first on the Port side in entering); then haul up about **E. ½ S.**, leaving the last-named Buoy about 50 feet on the Port, and follow the Port or Northern Bank, which can be clearly seen and is bold, to Snead's Point, keeping the next Buoy (Red) a little open on the Starboard bow, passing through the narrow channel and leaving the last-named Buoy about 40 feet on the Starboard hand; when past this Buoy steer **SE.** by **E. ½ E.**, leaving the next Buoy (Black) about 50 feet on the Port, and the next Buoy (Red) 50 feet on the Starboard, and next Buoy (Black) 50 feet on the Port hand; when past the last Buoy steer about East, keeping Point Ogden, which is the first on the Port side, about ½ point on the Port bow, until up with the first stake, which leave close to on the Starboard hand; then gradually haul for the second stake, which is also left close to on the same hand, and steer about **SE. ¼ S.** for the Steamboat Wharf at Braden town.

High Water.

It is high water at Egmont Key, entrance to Tampa Bay, 9 minutes before it is at Boston, or 1h. 51m. after it is at Key West Harbor; common tides rise about 1½ feet.

ANCLOTE KEYS ANCHORAGE, FLA.

This Anchorage, which is on the Southwest Coast of Florida, lies about 34 miles Northwesterly from Egmont Key Lighthouse, entrance to Tampa Bay, and Southeasterly about 56 miles from Cedar Keys Lighthouse; in entering about 8 feet water can be taken over the bar at low tide.

Sailing Directions for Anclote Keys Anchorage in Daytime, with favorable winds and fair weather.

Vessels of not more than 7 feet draught, from the Northwestward or Seaward, may, when in 2½ fathoms water, bring the North An-

clote Key to bear **S.** by **E.** $\frac{1}{2}$ **E.** and run for it on this course, keeping a sharp lookout for the North Bank Buoy (Red) ; when this Buoy is made, leave it about 100 yards on the Starboard hand, and steer East for the Bar Buoy painted in Black and White Perpendicular Stripes ; leave this Buoy close to on either hand and steer **S.SE.** about 1 mile ; then steer South and anchor with any of the Anclole Keys bearing West, in from 12 to 18 feet water, soft bottom.

Coming from the Southeastward or Seaward, bring the North Anclole Key to bear **N.NE.** and run for it on this course until the water shoals to $2\frac{1}{2}$ fathoms ; then steer North until up with the North Bank Buoy (Red) ; leave this Buoy about 100 feet on the Starboard hand, and steer East until up with the Bar Buoy painted in Black and White Perpendicular Stripes ; leave this Buoy close to on either hand, and steer **S.SE.** about 1 mile ; then steer South and anchor with any of the Anclole Keys bearing West, in from 12 to 15 feet water, good holding ground.

ANCLOLE KEYS OUTSIDE ANCHORAGE.

Vessels of from 12 to 15 feet draught may find good anchorage by the following directions : Bring the centre of the Anclole Keys to bear from **NE.** to **SE.** and run for them, and anchor according to draught. It is said that vessels lie here in heavy blows from the Northwestward, Westward, and even Southwestward.

High Water.

It is high water at the Anclole Keys Anchorage 49 minutes after it is at Boston, or about 2h. 48m. after it is at Key West ; common tides rise about $1\frac{3}{4}$ feet.

CEDAR KEYS HARBOR, FLA.

The entrance to these Keys, which is on the Southwest Coast of Florida, lies 92 miles Northwesterly from Egmont Key Light-

housc, entrance to Tampa Bay; Northwesterly about 54 miles from the Anclote Keys anchorage; **N. $\frac{1}{2}$ W.** 268 miles from the Dry Tortugas Lighthouse; Northeasterly 82 miles from St. Mark's Lighthouse, and East-Southerly 108 miles from Cape St. George Lighthouse, near entrance to Apalachicola Bay.

Cedar Keys Lighthouse.

Upon the Eastern end of the mound on Sea Horse Key, West side of entrance to Cedar Keys Harbor, is a White Dwelling, which at this date (1882), shows from its top a fixed White Light which Flashes White every minute. This Lighthouse bears from the Dry Tortugas Lighthouse **N. $\frac{1}{2}$ W.** 268 miles.

Remarks.

At this date (1882), in entering Cedar Keys Harbor, there is at low tide, 11 feet water through the Bar Cut Channel, and 10 feet through the Middle Ground Cut Channel; at this time, the Channel leading into this harbor and up to the wharf (which is the termination of the Florida Railroad), is well buoyed.

Sea Horse Reef.

This Reef, which extends off Southwesterly about 11 miles from Cedar Keys Lighthouse, has but little water upon it in several places; strangers should not attempt to cross it without a pilot; the Lead always gives warning in approaching this danger from either side; it is therefore advisable to not approach it, especially at night-time, in less than 3 fathoms water.

Sailing Directions for Cedar Keys Harbor in Day-time, with favorable winds and fair weather.

Bound to Cedar Keys Harbor, keep in not less than $4\frac{1}{2}$ fathoms water, until the Red Nun Buoy No. 2 is made; this Buoy lies off the Southwest end of Sea Horse Reef; Cedar Keys Lighthouse bears from this Buoy **NE.** by **N. $\frac{1}{2}$ N.**, distance $10\frac{3}{4}$ miles; when the Buoy is made, leave it about $\frac{1}{2}$ mile on the Port hand, and steer **NE.**, leaving Sea Horse Reef well to the Westward, and carrying from $3\frac{1}{2}$ to 4 fathoms water; as soon as Cedar Keys Lighthouse is made (which is rather difficult to distinguish in the daytime), bring it to bear **N.** by **E.** and run for it on this course, carrying from $3\frac{1}{2}$ fathoms water to 14 feet, and keeping a sharp

lookout for the Outer Bar Buoy (Black); this Buoy, which marks the Southwest end of the Bar Cut Channel, bears **S.** by **W.** from the Lighthouse, distance $1\frac{3}{4}$ miles; leave this Buoy about 50 feet on the Port hand, and steer **N.NE.**, carrying about 11 feet water through the narrow channel to the Inner Bar Buoy (Black) which marks the Inner end of the Bar Cut Channel; leave the last Buoy also about 50 feet on the Port hand, and steer **N.** by **E.** $\frac{1}{2}$ **E.**, leaving the Black Buoy off Panama Shoal about 150 yards on the Port, and the Red Buoy off the East Bank about 100 yards on the Starboard hand; when past this Buoy steer about North, leaving three Red Buoys on the Starboard and one Black Buoy, which lies off Sea Horse Key, on the Port hand; when past the third Red Buoy steer about **NE.** $\frac{1}{2}$ **E.**, leaving the Black Buoy off the Middle Ground about 50 feet on the Port, and the Red Buoy off Depot Key Shoal about 50 feet on the Starboard hand; then haul up about North, and leave a small Islet called Grassy Key about 150 yards on the Port, and the Red Buoy off Depot Key Middle about 75 feet on the Starboard, and Black Buoy off Way Key Middle about 100 feet on the Port hand; from this last Buoy steer about **NE.** by **N.** with the next Red Buoy about one point on the Starboard bow; this last Buoy marks the Starboard side of the South end of the Middle Ground Cut Channel; leave the last-named Buoy about 50 feet on the Starboard hand, and haul up **N.** $\frac{1}{4}$ **E.** through the Cut Channel, leaving the next Buoy (Black), which marks the West side of the Channel, about 75 feet on the Port hand, and the next Red Buoy, which marks the North end of the Cut Channel, about 50 feet on the Starboard hand; when past this Buoy steer about Northeast for the Railway Wharf, or anchor a little North of a line drawn from the last Red Buoy to this wharf, in from 15 to 20 feet water, North of the Middle Ground Cut Channel.

The current of Flood sets strong to the Eastward, and that of the Ebb to the Westward across the Middle Ground Cut Channel; there is good anchorage to the Southward of this Channel, about 250 yards Southwest from the wharves at Depot Key, in from 12 to 15 feet water.

In entering Cedar Keys Harbor, both sides of the channel, between the Buoys, are well marked, at this time, with small Bush Stakes, which are placed on the edge of the banks by the local pilots.

The channel leading into Cedar Keys, in many places is so nar-

row that it is advisable for strangers, in vessels of much size, to employ pilots.

High Water.

It is high water at Cedar Keys Harbor 1h. 52m. after it is at Boston, or about 3h. 51m. after it is at Key West Harbor; common tides rise about $2\frac{1}{2}$ feet.

The Coast from Egmont Key Lighthouse (entrance to Tampa Bay) to Cedar Keys.

From Egmont Key Lighthouse to Cedar Keys, a distance of about 90 miles, shoal water extends off a long distance from shore; vessels, therefore, navigating this part of the coast, especially at night-time, or in thick weather, should not approach it in less than 6 fathoms water.

ST. MARK'S RIVER, FLA.

The entrance to this River, which is at the head of Appalachee Bay, Southwest coast of Florida, lies Northwesterly 82 miles from Cedar Keys Lighthouse, East-Northerly 53 miles from Cape St. George Lighthouse, and **N. by W. $\frac{1}{2}$ W.** 334 miles from Dry Tortugas Lighthouse.

St. Mark's Lighthouse.

Upon the East side of entrance to St. Mark's River is a Lighthouse, the Tower of which, at this date (1882), is White, and shows a fixed White Light. Dry Tortugas Lighthouse bears from St. Mark's Lighthouse **S. by E. $\frac{1}{2}$ E.** 334 miles.

Remarks.

From the Outer Bar Buoy to St. Mark's Lighthouse the distance is $2\frac{3}{4}$ miles, and from thence $5\frac{1}{4}$ miles to St. Mark's, which is situated upon the Northern side of the River. In 1856 about 10 feet water, at low tide, could be carried across the Bar and through the Spanish Hole abreast the Lighthouse, and from this point about 7 feet, at low tide, could be taken up through a narrow and crooked channel to St. Mark's. At this date (1882), the channel is well marked with Buoys and Beacons as far as the Lighthouse, and from this point, with Stakes, to St. Mark's.

**Sailing Directions for St. Mark's River in Daytime,
with favorable winds and fair weather.**

Vessels of not more than 9 or 10 feet draught may, at about $\frac{1}{2}$ flood, bring St. Mark's Lighthouse to bear **N. $\frac{3}{4}$ W.**, and run for it on this course, keeping a sharp lookout for the Outer Bar Buoy, painted in Black and White Perpendicular Stripes; the Lighthouse bears from this Buoy **N. $\frac{3}{4}$ W.**, distance $2\frac{3}{4}$ miles; when this Buoy is made, leave it close to on either hand, and steer about North, leaving the Red Buoy, off the East Bank, a short distance on the Starboard hand, and steer about **NW.** by **N. $\frac{3}{4}$ N.**, leaving the two Red Four Pile Beacons, on the East Bank, on the Starboard, and the two Black Four Pile Beacons, on the West Bank, on the Port hand; when past the second Black Beacon, keep a sharp lookout for the Red Buoy off the Western part of Middle Ground; when this is made, leave it close to on the Starboard hand, and steer more Northerly, passing through the narrow channel and leaving the Red Buoy, off the Southwestern part of Long Bar, a short distance on the Starboard hand; when past the last-named Buoy, steer about **N. $\frac{1}{2}$ E.**, and anchor in the Deep Hole, when the Lighthouse bears **SE.** by **E. $\frac{1}{2}$ E.**, in from 12 to 16 feet water. If bound up to St. Mark's, a pilot is necessary at this anchorage.

High Water.

It is high water in St. Mark's River 2h. 9m. after it is at Boston, or about 4h. 8m. after it is at Key West Harbor; common tides rise about $2\frac{1}{2}$ feet.

Southwest Cape Shoals.

Upon the Western side of entrance to Appalachee Bay, shoal water extends off Southerly a long distance from the shore. Two Red Buoys are placed off this danger,—one on the Southeastern part, the other on the Southern part. These Buoys lie on a line of bearing **SW.** by **W. $\frac{1}{2}$ W.** and **NE.** by **E. $\frac{1}{2}$ E.** and are about 10 miles apart.

**Bearings and Distances from the Eastern Red Buoy off
Southwest Cape Shoals.**

	Distance.
Cedar Keys Lighthouse, SE. by E.	72 miles.
St. Mark's Lighthouse, N. $\frac{1}{2}$ W.	14 "

**Daytime,
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Buoy off

Distance.
72 miles.
14 "

Southwest Cape (nearest land), **W.** by **N.** nearly . . . 10 miles.
Red Buoy off Southwestern part of these Shoals, **SW.**
by **W.** $\frac{1}{2}$ **W.** nearly 10 "

Vessels having made the Eastern Buoy, off Southwest Cape Shoals, must leave it a short distance on the Port hand, and make good the course **N.** $\frac{1}{2}$ **W.** $11\frac{1}{4}$ miles, which will bring them up with the Outer Buoy which lies off the entrance to St. Mark's River.

**Bearings and Distances from the Western Red Buoy off
Southwest Cape Shoals.**

	Distance.
Eastern Red Buoy, off Southeastern part of these Shoals,	
NE. by E. $\frac{1}{2}$ E.	10 miles.
Southwest Cape (nearest land), N. $\frac{1}{4}$ E.	7 "
East Pass to St. George's Sound, W. by S.	15 "
Cape St. George Lighthouse, SW. by W. $\frac{3}{4}$ W.	38 "

Vessels from the Westward, bound to St. Mark's, must leave this Buoy to the Northward, and steer **NE** by **E.** $\frac{1}{2}$ **E.** 10 miles, which will bring them up with the Red Buoy off the Eastern part of this danger.

**EAST PASS (ST. GEORGE'S SOUND),
FLA.**

The entrance to this Pass, which is on the Southwest coast of Florida, lies **W.** by **N.** $\frac{3}{4}$ **N.** 93 miles from Cedar Keys Light-house, **W.** by **S.** 15 miles from the Red Buoy off the Western part Southwest Cape Shoals, and Northeasterly about 22 miles from Cape St. George Lighthouse.

Remarks.

From the Outer Bar Buoy, which is painted in Black and White Perpendicular Stripes, to West end of Dog Island, East side of entrance to St. George's Sound, the distance is $2\frac{1}{4}$ miles. At this date (1882), the Channel leading into the anchorage is well buoyed. At this time, about 14 feet water can be taken across the Bar at low tide.

Sailing Directions for East Pass in Daytime, with favorable winds and fair weather.

Do not approach the Bar in less than 5 fathoms water until the West end of Dog Island (which is a low sand beach, bare of trees, and lies on the Eastern side of entrance) bears **N.NW.**; then, with a commanding breeze, run for it on this course, keeping a sharp lookout for the Outer Bar Buoy, which is painted in Black and White Perpendicular Stripes, and lies in about 4 fathoms water; when this Buoy is made, leave it close to on either hand, and continue the course **N.NW.**, leaving the West Bank Buoy (Black) about 50 yards on the Port hand; when past this Buoy, steer **NW.** by **N. ½ N.**, opening the West end of Dog Island about one-half point on the Starboard bow, until up with the Black Buoy off Marsh Point Shoals; leave this last Buoy about 50 yards on the Port hand; when the West end of Dog Island, which is bold, bears **NE. ¾ E.**, make good the course **SW. ¾ W.** until the Northeast end of St. George's Island, Western side of entrance, bears **ESE.**, distance about $\frac{3}{4}$ mile; then anchor about $\frac{1}{4}$ mile to the Northward of the Black Buoy, in about $3\frac{1}{4}$ fathoms water, soft mud.

Good anchorage is also found in Pilot Cove, which is about $\frac{5}{8}$ mile to the Eastward of the Western end of Dog Island. With Westerly winds, when past the Black Buoy, which bears **S.** by **W. ¼ W.** from the West end of Dog Island, steer about North, and haul round the West end of this last-named Island (which is bold) at a distance of $\frac{1}{4}$ mile, leaving it on the Starboard, and anchor in Pilot's Cove, with the end of the Point bearing from West to **W.** by **S.**, distant about $\frac{5}{8}$ mile, in about $3\frac{1}{4}$ fathoms water, soft bottom.

If bound to Crooked River, steer from the West end of Dog Island **N. ¼ E.**

High Water.

It is high water at the East Pass entrance to St. George's Sound 2h. 16m. after it is at Boston, or 4h. 15m. after it is at Key West Harbor; common tides rise about $1\frac{3}{4}$ feet.

Cape St. George Lighthouse.

Upon Cape St. George, about $3\frac{1}{2}$ miles to the Eastward of the West Pass entrance to St. George's Sound and Apalachicola Bay,

is a Lighthouse, the Tower of which, at this date (1882), is painted White, and shows a fixed White Light. A Brown Dwelling stands 80 yards North of the Lighthouse. Cedar Keys Lighthouse bears **E. $\frac{7}{8}$ S.** from Cape St. George Lighthouse, distance 108 miles; Dry Tortugas Lighthouse **SE. by S. $\frac{3}{4}$ S** 316 miles; Cape San Blas Lighthouse **W. $\frac{7}{8}$ N.** 18 miles.

Shoal water extends off a long distance from Cape St. George Lighthouse. The outer part of this danger is marked with a Red Buoy. Cape St. George Lighthouse bears from this Buoy **N. $\frac{1}{2}$ W.** about 7 miles. Vessels navigating this part of the coast should not pass to the Northward of this Buoy.

APALACHICOLA BAY and ST. GEORGE'S SOUND BY THE WEST PASS.

The entrance to this Pass is West-Northerly about $3\frac{1}{2}$ miles from Cape St. George Lighthouse, and 14 miles to the Eastward of Cape San Blas Lighthouse.

Remarks.

The Outer Bar Buoy, painted in Black and White Perpendicular Stripes, which marks the entrance to Apalachicola Bay, bears **W. $\frac{1}{2}$ N.** from Cape St. George Lighthouse, distance about 5 miles. At this date (1882), the channel leading into Apalachicola Bay is well marked with Buoys. At this time, about 13 feet water, at low tide, can be taken over the Bar up to the Lower Anchorage, which is about 8 miles from the town, and from this about 11 feet can be carried to the Upper Anchorage, which is $3\frac{1}{4}$ miles from town. In 1870, about 4 feet water could be carried up the entrance of the River to Apalachicola.

Sailing Directions for Apalachicola Bay in Day-time, with favorable winds and fair weather.

From the Eastward, having made the Red Nun Buoy off Cape George Outer Shoal (before described), make good the course **NW. $\frac{3}{4}$ N.** about 9 miles, which will bring you up with the Outer Buoy painted in Black and White Perpendicular Stripes, which marks the entrance to Apalachicola Bay; when this Buoy is made,

leave it close to on either hand, and steer about **NE.** by **N.** $\frac{1}{2}$ **N.** for the Black Buoy off Flag Island Knoll; leave this Buoy close to on the Port hand, and steer **NE.** by **E.** $\frac{1}{4}$ **E.** for the Turning Buoy, which is Black, and lies off the East side of St. Vincent's Island; leave this Buoy close to on the Port hand, and steer **E. SE.** about $3\frac{1}{4}$ miles to the Lower Anchorage Buoy (Red); on this last course Sand Island will be left about $\frac{1}{3}$ mile on the Starboard hand; leave the Lower Anchorage Buoy close to on the Starboard hand, and make good the course **NE.** $\frac{1}{2}$ **N.** about 4 miles to the Upper Anchorage Buoy, painted in Black and White Perpendicular Stripes; leave this Buoy close to on either hand, and continue the course **NE.** $\frac{1}{2}$ **N.** about $1\frac{3}{4}$ miles further, then anchor in about 11 feet water, the Eastern side of the town bearing **NW.** by **N.** $\frac{3}{4}$ **N.**, distant 3 miles. Vessels of more than 11 feet draught should anchor about $\frac{1}{2}$ mile Northeast from the Lower Anchorage Buoy (Red) in about 16 feet water.

From the Westward, leave the Red Can Buoy, which lies off Cape San Blas Shoals (the Lighthouse bears from this Buoy **N.** $\frac{3}{4}$ **W.** 6 miles) on the Port hand, and steer **E.** by **N.** $\frac{1}{2}$ **N.** 11 miles, which will bring you up with the Bar Buoy painted in Black and White Perpendicular Stripes off the entrance to Apalachicola Bay.

High Water.

The rise and fall of tides at the entrance to Apalachicola Bay is usually small, the times of high and low water are irregular, and much influenced by the force and direction of the winds; there is generally but one high and low water in 24 hours, the rise and fall being greatest when the moon's declination is greatest; the high water remains at the same height with but little change from 6 to 9 hours; when the moon's declination is small or nothing, there are for 3 or 4 days two small irregular tides in 24 hours.

Cape San Blas Lighthouse, Fla.

Near the South point of Cape San Blas, Southwest coast of Florida, is a Lighthouse, the tower of which at this date (1882), is painted White, and shows a flashing White Light every 90 seconds. Cape St. George Lighthouse bears from Cape San Blas Lighthouse **E. $\frac{7}{8}$ S.** 18 miles; Pensacola Lighthouse **W.** by **N.** $\frac{1}{4}$ **N.** 109 miles; South Pass Lighthouse entrance to the Mississippi River, **W.** by **S.** $\frac{1}{2}$ **S.** nearly 206 miles.

Cape San Blas Shoals.

Shoal water extends off to the Southward a long distance from Cape San Blas; this danger is marked on its outer part with a Red Can Buoy.

Bearings and Distances from Red Can Buoy off Cape San Blas Shoals.

	Distance.
Cape San Blas Lighthouse, N. $\frac{3}{4}$ W.	6 miles.
Red Can Buoy off Cape St. George Shoals, E. by S.	
$\frac{1}{4}$ S.	17 "
Cape St. George Lighthouse, E. $\frac{7}{8}$ N.	16 "
West Pass Bar Buoy off entrance to Apalachicola Bay,	
E. by N. $\frac{1}{2}$ N.	11 "

Between this Buoy and the Cape the ground is very broken; strangers should not therefore pass to the Northward of it.

St. Joseph's Bay, Fla.

The entrance to this Bay is about 14 miles Northwesterly from Cape San Blas Lighthouse, and Southeasterly about 14 miles from the entrance to St. Andrew's Bay.

Remarks.

St. Joseph's Bay is one of the safest harbors on the Southwest coast of Florida, and is also very easy of access. At this date (1881), there is 19 feet water at low tide in the channel across the Bar. At this time there are no Buoys to mark the channel leading into this place.

Sailing Directions for St. Joseph's Bay in Daytime, with favorable winds and fair weather.

From the Eastward, when past the Buoy off Cape San Blas Shoals, keep in not less than 5 fathoms water until the extreme Northern end of St. Joseph's Island (which is a low white sand spit without trees), bears **E. by S.**, then run for it on this course until the water shoals to about $3\frac{1}{2}$ fathoms; you will then be about 3 miles from the above point; the course is now **NE. $\frac{1}{2}$ E.** about $3\frac{1}{4}$ miles, carrying about 19 feet water across the bar; then in about 4 fathoms water and about 1 mile from the Northern shore,

steer **SE. $\frac{1}{2}$ S.** until the Northern end of St. Joseph's Island bears **W.SW.**; the course is then about **S. by E.** for the middle of the Bay, when you may anchor in from 4 to 5 fathoms water nearly opposite St. Joseph's, and lie secure from all winds.

From the Westward keep in not less than 5 fathoms water until the Northern point of St. Joseph's Island (before described) bears **E. by S.**, then follow the directions before given.

These directions were good for 1881.

When past Cape San Blas, small or light draught vessels may at this time follow the beach to the Northward, keeping about $\frac{1}{3}$ mile from it, and haul round the North end of St. Joseph's Island, leaving the Middle Ground on the Port hand, and anchor when landlocked.

St. Andrew's Bay, Fla.

The entrance to this Bay, which is on the Southwest coast of Florida, lies 26 miles Northwesterly from Cape San Blas Light-house, Northwesterly about 14 miles from the entrance to St. Joseph's Bay, and East-Southerly 90 miles from the entrance to Pensacola Bay.

Remarks.

At this date (1881), about 15 feet water, at low tide; can be carried across the bar, and about 12 feet can be taken over the Bulkhead; at this time the channel leading into St. Andrew's Bay is marked with 3 Buoys; the first two are painted in Black and White Perpendicular Stripes, the third is Black.

Sailing Directions for St. Andrew's Bay in Daytime, with favorable winds and fair weather.

Keep in not less than 7 fathoms until the 3 Buoys which mark the entrance are in range bearing **N.NE.**; then run for them, leaving the Sea Buoy and Bar Buoy, both of which are painted in Black and White Perpendicular Stripes, close to on either hand, and the Black Buoy which marks the point of Middle Ground close to on the Port hand; when past this last Buoy steer about **NW. $\frac{1}{2}$ N.**, keeping close to the Port side of the channel (which can be plainly seen) until abreast of the Northeast end of Hurricane Island (which is a low white sand spit clear of trees), which leave at a distance of about $\frac{1}{4}$ mile in passing; then haul in a little to Starboard, and follow the land on the Starboard hand at a distance of about 300

yards, until abreast the Old Wharf; then steer **SW.** by **W.** across the Bulkhead, carrying from 12 to 13 feet water; when the water deepens to 16 feet, steer **NW.** by **W.** $\frac{1}{2}$ **W.**, until Davis' Point bears North; then in about $5\frac{1}{2}$ fathoms water and about $\frac{1}{3}$ mile from the land on the Port bow, steer **N.** by **W.** until Davis' Point is fair on the Starboard beam, distant $\frac{1}{4}$ mile; then steer North to avoid a long shoal making out from Courtney's Point (1 mile to the Eastward) until past it; then steer **N.** by **W.** for St. Andrew's, and anchor about $\frac{1}{4}$ mile South of it in 18 feet water, good holding ground.

Vessels wishing to anchor inside of Hurricane Island, will haul sharp around the Northeast end of this Island about **W.SW.** and anchor in the bight in from 18 to 20 feet water, $\frac{1}{2}$ mile West of the extreme point of the Island. This is a good harbor and very easy to enter; the Shoals are plainly marked in bad weather by breakers.

St. Rosas Bay, Fla.

The entrance to this Bay, which is on the Southwest coast of Florida, lies West-Northerly about 74 miles from Cape San Blas Lighthouse, and East-Northerly 42 miles from the entrance to Pensacola Bay.

Remarks.

The entrance to St. Rosas Bay is very narrow and shallow, and at this date (1881), there are no Buoys in entering to mark the channel; no practical sailing directions will therefore be given.

Pensacola Bay, Fla.

The entrance to this Bay, which is on the Southwest coast of Florida, bears West-Northerly 109 miles from Cape San Blas Lighthouse, **NW.** $\frac{1}{2}$ **N.** about 416 miles from the Lighthouse on the Dry Tortugas, and East-Northerly 38 miles from Mobile Point Lighthouse.

Pensacola Lighthouse.

Near Fort Barrancas, North side of Pensacola Bay, about $1\frac{1}{4}$ miles Northwesterly from the Western end of Santa Rosa Island, is a Lighthouse, the tower of which at this date (1882), is painted White, and shows a Flashing White Light, which flashes once a minute.

Pensacola Bar Beacon.

About **SE.** by **S.** $\frac{7}{8}$ **S.**, 458 yards from the Main Lighthouse, is a Beacon, the front of which at this time is painted White, the sides Black, and shows a fixed White Light; these 2 Lights are intended as a range to cross the Bar.

Remarks.

At this date (1882), the Channel leading into Pensacola Bay is well marked with Buoys, and Range Lights are used at night to cross the Bar. At this time there is about 22 feet water in the Channel across the Bar.

Sailing Directions for Pensacola Bay in Daytime, with favorable winds and fair weather.

When the Lighthouse on the North side of Pensacola Bay is made, bring it to bear **N.NW.** and run for it on this course; as you draw near the Bar, keep the Beacon before described in range with the Main Lighthouse, and run for it in range, leaving the Outer Bar Buoy painted in Black and White Perpendicular Stripes close to on either hand, the Black Buoy off Caycus Shoal about $\frac{1}{3}$ mile on the Port, the Red Buoy off the East Bank about 250 yards on the Starboard, and the Inner Bar Buoy, painted in Black and White Perpendicular Stripes, about 100 yards on the Starboard hand; when past this Buoy, steer **NW.** by **W.** $\frac{1}{2}$ **W.**, leaving the Black Buoy off the Caycus Shoal about 400 yards on the Port, and the Red Buoy off Twenty-One Foot Shoal about 200 yards on the Starboard, and the next Black Buoy No. 5, off Caycus Shoal, about 200 yards on the Port hand; when past this last-named Buoy, steer **N.** $\frac{3}{4}$ **E.**, leaving 2 Red Buoys off the West side of Middle Ground, and 1 Red Buoy off the North side of this Shoal on the Starboard, and the Black Buoy off the Flats on the North side of entrance on the Port hand; when about 300 yards from the last-named Buoy steer **E.** by **N.**, until the big Derrick at the Navy Yard bears **NW.** by **W.**; then steer **NE.** by **N.** for the anchorage off the town.

High Water.

Upon the Northern coast of the Gulf of Mexico, the rise and fall of the tides is usually small, the time and height of high and low water are irregular, and much influenced by the force and direction

of the winds; winds from **SE.** to **SW.** by way of South, tend to raise the tides, while Northerly winds depress them.

Coast from Cape San Blas to Pensacola Bar.

At the entrance of St. Joseph's Bay, St. Andrew's Bay, and St. Rosas Bay, Sand Bars extend off some distance from shore; vessels navigating this part of the coast should beware of these dangers, especially in thick weather or night-time.

MOBILE BAY, ALA.

The entrance to this Bay, which is on the Northern coast of the Gulf of Mexico, lies West-Northerly about 146 miles from Cape San Blas Lighthouse, **NW.** nearly about 432 miles from the Lighthouse on the Dry Tortugas, West-Southerly about 40 miles from the entrance to Pensacola Bay, East-Northerly 24 miles from Horn Island Pass, and Northeasterly 96 miles from the South Pass entrance to the Mississippi River.

Sand Island Lighthouse.

Upon a low Sand Island, on the West side of entrance to Mobile Bay, about 3 miles Southwesterly from Mobile Point, is a Lighthouse, the tower of which at this date (1882), is painted Black, and shows a fixed White Light. The Old Tower stands **E.SE.** 700 feet from this Lighthouse.

Mobile Point Lighthouse.

Upon Mobile Point, Southwestern side of Fort Morgan, East side of entrance to Mobile Bay, is a Lighthouse, the tower of which at this date (1882), is Black, and shows a fixed Red Light. Vessels of not more than 18 feet draught, bound up or down the Bay, may approach this Lighthouse on its Western side within 300 yards.

Dog River Bar Beacon No. 1.

Upon Dog River Bar, Mobile Bay, West side of Dredged Channel, is a Black open-frame pile Beacon, surmounted by a Lens Lantern, which at this date (1882), shows a fixed White Light.

Mobile Point Lighthouse bears from this Beacon **S. $\frac{1}{2}$ E. $24\frac{1}{3}$** miles.

Dog River Bar Beacon No. 2.

Upon Dog River Bar, West side of Dredged Channel, about 600 yards Northeasterly from Beacon No. 1, is a Black open-frame pile Beacon, surmounted by a Lens Lantern, which at this date (1882), shows a fixed White Light.

Dog River Bar Beacon No. 3.

Upon Dog River Bar, East side of Channel Gap, at lower obstructions, about $1\frac{1}{8}$ mile Northeasterly from Beacon No. 2, is a Red open-frame pile Beacon, surmounted by a Lens Lantern, which at this date (1882), shows a fixed Red Light.

Dog River Bar Beacon No. 4.

Upon Dog River Bar, East side of Channel Gap, at the upper obstructions, about $\frac{7}{8}$ mile North from Beacon No. 3, is a platform on wooden piles, supporting a Red Staff and Day-mark, with Lens Lantern attached. At this date (1882), this Beacon shows a fixed White Light.

Choctaw Pass Channel Beacon No. 5.

In Choctaw Pass, on Port side of the Channel, a little more than $\frac{1}{3}$ mile Northwest from Beacon No. 4, is a platform on wooden piles supporting a Black Staff and Day-mark, with Lens Lantern attached; at this date (1882), this Beacon shows a fixed White Light.

Choctaw Pass Channel Beacon No. 6.

In Choctaw Pass, on the Port side of the Channel, about 200 yards Northwesterly from Beacon No. 5, and about $\frac{5}{8}$ mile southeasterly from the city of Mobile, is a Platform on wooden piles supporting a Black Staff and Day-mark, with Lens Lantern attached. At this date (1882), this Beacon shows a fixed White Light.

Battery Gladden Lighthouse.

Upon the ruins of Battery Gladden, which is a little more than a mile southeasterly from the city of Mobile, and North side of Choctaw Pass Channel, is a Pile Structure painted Straw Color, and at this date (1882), shows a fixed White Light.

Remarks.

At this date (1882), about 20 feet water can be carried over the Bar, and up to the Lower Fleet Anchorage; this anchorage is **NW.** by **N.** $\frac{1}{2}$ **N.**, about $4\frac{1}{2}$ miles from Mobile Point Lighthouse. From the Lower Anchorage about 12 feet of water can be taken up to Choctaw Point, which is about $\frac{3}{4}$ mile below the city. At this time dredge boats are at work deepening the Channel which leads up to the city; also, at this time, the Channel leading into Mobile Bay is well marked with Buoys.

Sailing Directions for entering Mobile Bay as far as the Lower Fleet Anchorage in Daytime, with favorable winds and fair weather.

As soon as Sand Island Lighthouse (before described) is made, bring it to bear about **NNW.**, and run for it on this course, keeping a sharp lookout for the Outer Bar Buoy, painted in Black and White Perpendicular Stripes; when this Buoy is made, leave it close to on either hand, and steer about **N.** by **W.** $\frac{1}{2}$ **W.**, leaving the Black Buoy off the end of the Spit (which extends off from Sand Island on the Port, and the Red Buoy off Revenue Point Shoal on the Starboard hand; leave Sand Island Lighthouse about $\frac{1}{3}$ mile on the Port hand, and make good the course **N.** $\frac{1}{4}$ **E.**, leaving the Black Buoy off the East side of Sand Island Channel on the Port, the Red Buoy off the East Bank on the Starboard, and the Black Buoy off the West Bank on the Port hand. Mobile Point Lighthouse bears from this last-named Buoy **NE.** by **E.** $\frac{1}{4}$ **E.**, about one mile; continue the course **N.** $\frac{1}{4}$ **E.**, until Mobile Point Lighthouse bears **E.** by **N.**, then steer **N.** by **W.** $\frac{3}{4}$ **W.**, leaving the Black Buoys off the West Bank on the Port, and the Red Buoy off the Southwest end of Middle Ground on the Starboard hand; when past this last Buoy, continue the course **N.** by **W.** $\frac{3}{4}$ **W.**, about 3 miles, leaving the Wreck Buoy a short distance on either hand, and anchor in $3\frac{1}{4}$ fathoms water, soft bottom.

Sailing Directions from Mobile Point Lighthouse to Mobile.

Light draught vessels bound to Mobile may follow the directions before given to the Lower Fleet Anchorage until Mobile Point Light-

house bears **E.** by **N.**; then steer **N. $\frac{3}{4}$ W.**, keeping a sharp lookout for the Red Buoy off the Southwest end of Middle Ground. Mobile Point Lighthouse bears from this Buoy **SE.** by **S. $\frac{1}{2}$ S.**, distance $1\frac{3}{8}$ miles; when the last-named Buoy is made, leave it close to on the Starboard hand, and make good the course **N. $\frac{1}{2}$ W.**,* $18\frac{1}{2}$ miles, which will bring them up with the Black Buoy No. 1. The Lighthouse on Battery Gladden bears from this last-named Buoy, **N. $\frac{1}{2}$ W.**, 7 miles; when this Buoy is made, leave it close to on the Port hand, and steer **N.** by **W. $4\frac{1}{4}$ miles**, leaving two more Black Buoys close to on the Port hand; then, with the first three Beacons, Nos. 1, 2 and 3, in range, run for them in range, leaving the first two Black close to on the Port, and the next (Red) close to on the Starboard hand; when past the third Beacon, run for Beacon No. 4 (Red), in range with the Lighthouse on Battery Gladden, leaving it close to on the Starboard hand, and haul into the Choctaw Pass Channel, with Beacons Nos. 5 and 6 (Black), in range; leave these last-named Beacons close to on the Port, and steer about **NW.** by **N.** through the narrow channel for the city, which having reached, keep close to the wharves.

Tides and Currents.

At the entrance of Mobile Bay, and also upon the Northern coast of the Gulf of Mexico, the rise and fall of the tides is usually small, the time and height of high and low water are irregular, and much influenced by the force and the direction of the winds; winds from **SE.** to **SW.** by way of South tend to raise the tides, while Northerly winds depress them.

At the entrance to Mobile Bay, the strength and velocity of the current is governed entirely by the winds. After strong Southeasterly winds the Ebb runs out very strong, and after strong Northerly winds the Flood sets in very strong.

The Coast from Pensacola Bar to Mobile Bar.

From Pensacola Bar to Mobile Bar, a distance of nearly 40 miles, there are no dangers excepting the Sand Bars which extend from the shore; vessels may therefore approach this part of the coast within one or two miles without fear.

* On this course the Buoy painted in Black and Red Horizontal Stripes will be left on the Port hand.

MISSISSIPPI SOUND.

This Sound, which extends West-Southerly about 68 miles from the Western side of Mobile Bay, has an average width of about 8 miles.

Remarks.

Mississippi Sound is generally very shallow; the deepest water to be found in it is but $3\frac{1}{4}$ fathoms; there are several entrances to this Sound; those which are most used by vessels are the following: 1st, Grant's Pass, which leads from Mobile Bay, has at this date (1881), a depth of 6 feet water at low tide; 2d, Horn Island Pass, which leads in between Horn and Petit Bois Islands, has at this time a depth of 16 feet; 3d, Ship Island Channel, which leads in between Ship and Cat Islands, has a depth of 20 feet; and lastly, Cat Island Channel, which leads in between the Isle-a-Pitre and Cat Island, has a depth of 9 feet.

Horn Island Pass.

The entrance to this Pass, which leads into the Mississippi Sound, is about 26 miles West-Southerly from Mobile Point Lighthouse; East-Northerly, 26 miles from Ship Island Lighthouse, and 67 miles Northeasterly from Pass-a-Loutre Lighthouse, entrance to the Mississippi River.

Horn Island Lighthouse.

In the water off the Northern Shore of Horn Island, about $\frac{1}{4}$ mile from the extreme Eastern end, is a White Screw-pile structure, the Piles and Lantern are Black. At this date (1882) this structure shows a fixed White Light, varied by a Red Flash every minute. A Fog Bell is placed near the Lighthouse, which in thick weather is struck at intervals of 15 seconds.

During the last few years, by the action of the waves, the Eastern part of Horn Island, near the Lighthouse, has been constantly changing.

Remarks.

The entrance to Mississippi Sound by Horn Island Pass is across a Sand Bar, which is liable to change in depth and location with every gale from seaward. Buoys are used to show the best water across the Bar. At this date (1881), there is a depth of about 15 feet on the Bar at low tide.

Sailing Directions for Horn Island Pass in Daytime, with favorable winds and fair weather.

Vessels from seaward may bring Horn Island Lighthouse, before described, to bear **N.NW.**, and run for it on this course, keeping a sharp lookout for the Bar Buoy painted in Black and White Perpendicular Stripes. Horn Island Lighthouse bears from this Buoy **N.NW.**, distance about $1\frac{3}{4}$ miles; when this Buoy is made, leave it close to on either hand and steer for the Lighthouse, bearing **N.NW.**; leave the West Bank Buoy (Black) on the Port, the Red Buoy off the Spit on the Starboard, and the Lighthouse on the Port hand. When past the Lighthouse there is good anchorage about $\frac{3}{4}$ mile to the Westward of it, in from $2\frac{1}{2}$ to $3\frac{1}{4}$ fathoms water, soft bottom. The depth of water on the bar changes so often that it is advisable for vessels of more than 10 feet draught to take pilots. These directions were good for 1881.

EAST PASCAGOULA, MISS.

This place, which is on the Northern side of Mississippi Sound, lies about **N.NW.**, 7 miles from Horn Island Lighthouse.

Remarks.

In 1877 about 8 feet water at low tide could be carried from Horn Island Lighthouse to the Long Wharf in front of the town.

Sailing Directions for East Pascagoula in Daytime.

Small or light draught vessels bound to East Pascagoula may follow the directions before given for Horn Island Pass until past Horn Island Lighthouse; then make good the course **N.NW.** $6\frac{3}{4}$ miles, which will bring them to the Long Wharf, which extends from the shore into the Sound. On this last course, from Horn Island Lighthouse not less than 8 feet of water will be found.

East Pascagoula River.

The entrance to this River, which is on the Northern side of Mississippi Sound, lies but a short distance to the Westward of East Pascagoula.

East Pascagoula River Lighthouse.

At the West side of entrance to this River, which is very narrow, is a White Dwelling with Lantern on top. At this date (1882), this Lighthouse shows a fixed White Light.

Remarks.

In 1877 only 5 feet water at low tide could be carried into this River, which is very narrow at the entrance, and also for more than a mile above the Lighthouse.

Sailing Directions from Mobile Bay to East Pascagoula in Daytime, by way of Grant's Pass, and through Mississippi Sound.

Vessels of not more than 6 feet draught bound to East Pascagoula may follow the directions before given for Mobile Bay until up with the Red Buoy off the Southwest end of the Middle Ground; Mobile Point Lighthouse bears from this Buoy **SE.** by **S.** $\frac{1}{2}$ **S.**, distance $1\frac{1}{3}$ miles; when this Buoy is made, leave it close to on the Starboard hand, and make good the course **NW.** by **W.** $\frac{3}{4}$ **W.**, $5\frac{1}{3}$ miles (carrying not less than 10 feet water), when there will be seen to the Westward in the passage leading into Mississippi Sound five Islets; counting from the Southward the Pass, which is very narrow, lies between the second and third of these Islets; * steer about **W.** by **S.** $\frac{1}{4}$ **S.** through the Pass, and continue the course about 16 miles, carrying from 8 to 15 feet water to Red Can Buoy, which lies off the Southern part of a Shoal which extends from the Southwest Point of Grand Batture Island; Horn Island Lighthouse bears from this Buoy **SW.** by **W.** about 4 miles; when the last-named Buoy is made, leave it close to on the Starboard hand and run **NW.** by **W.** $\frac{1}{2}$ **W.**, carrying not less than 8 feet water until the Long Wharf at East Pascagoula bears **NW.**, then run for it on this course.

Round Island Lighthouse.

Upon the South end of Round Island, about $3\frac{1}{2}$ miles to the Southward of East Pascagoula in Mississippi Sound, is a Lighthouse, the Tower of which at this date (1882) is painted White

* At this date (1881) there are Private Range Lights in Grant's Pass.

and shows a fixed White Light. This light is hidden by woods on a bearing from **NW.** by **N.** $\frac{1}{4}$ **N.** to **NE.** by **E.** $\frac{3}{4}$ **E.** by way of North; Shoal water extends off to the Southward of this Lighthouse, and vessels of 10 feet draught passing through the Sound should leave it more than 2 miles to the Northward.

Bearings and Distances from Round Island Lighthouse.

	Distance.
Horn Island Lighthouse, SE. $\frac{1}{2}$ E. ,	5 $\frac{1}{4}$ miles.
Red Buoy off Grand Batture Island Shoal, E. $\frac{1}{2}$ S. ,	7 $\frac{5}{8}$ "
Pascagoula River Lighthouse, N. $\frac{3}{4}$ E. ,	3 $\frac{1}{2}$ "
Red Buoy off Round Island Shoal, SW. by S. $\frac{3}{4}$ S. ,	2 $\frac{1}{4}$ "

Ship Island Anchorage.

This anchorage, which is to the Northward of Ship Island, lies West-Southerly 48 miles from Mobile Point Lighthouse, about 24 miles to the Westward of Horn Island Pass, and Northwesterly about 12 miles from the Lighthouse on the North end of the Northern Chandeleur Island.

Ship Island Lighthouse.

Upon the western end of Ship Island, South side of Mississippi Sound, is a Lighthouse, the Tower of which at this date (1882), is White, with a Brick Dwelling a few yards to the Eastward of it. At this time this Lighthouse shows a fixed Red Light. Ship Island Lighthouse is West-Southerly 50 miles from Mobile Point Lighthouse, West-Southerly 24 miles from Horn Island Lighthouse, and Northwesterly about 10 miles from Chandeleur Island Lighthouse.

Remarks.

Ship Island extends Northeasterly and Southwesterly about 6 $\frac{1}{2}$ miles. Shoal water extends off from its Northwest part in some places nearly $\frac{1}{2}$ mile, the deepest water being close to the Northern side of the shoal. At this date (1882), about 20 feet water at low tide can be carried over the Bar and up to the Anchorage; large vessels may anchor in about 3 $\frac{1}{2}$ fathoms water, the Lighthouse bearing **SW.** $\frac{1}{2}$ **S.**, distant about $\frac{3}{4}$ mile. Vessels of not more than 15 feet draught may go farther in, and anchor about 2

miles to the Northeastward of the Lighthouse, in about 3 fathoms water, and about $\frac{1}{2}$ mile from Shore.

Walker Shoal.

This Shoal, which is very small, has about 11 feet water upon it at low tide. Ship Island Lighthouse bears from this danger **SW. $\frac{3}{4}$ W.**, distance $2\frac{1}{3}$ miles. Vessels usually anchor to the Southward of Walker Shoal, about midway between it and Ship Island.

Sailing Directions for Ship Island Anchorage in Day-time, with favorable winds and fair weather.

Vessels of not more than 15 feet draught, bound to Ship Island Anchorage, may, as soon as Ship Island Lighthouse is made, bring it to bear **W.NW.**, and run for it on this course until about $3\frac{1}{2}$ miles from it; then, in about 4 fathoms water, steer **W. $\frac{1}{2}$ S.**, keeping a sharp lookout for the Red Buoy, which lies off the Southern part of the Knoll. Ship Island Lighthouse bears from this Buoy **N. $\frac{3}{4}$ E.**, distance $1\frac{1}{2}$ miles. When this Buoy is made, leave it close to on the Starboard hand, and steer **N. by W. $\frac{1}{2}$ W.**, crossing the Bar at this time in about 20 feet water, and leaving the Black Buoy on the West side of the channel well on the Port hand. When Ship Island Lighthouse bears East, then steer **NE.** by **E.** until it bears **S.SW.**; then haul up about **E. $\frac{1}{2}$ N.**, and anchor in about 3 fathoms water, about $\frac{1}{2}$ mile from shore. At Night or Day, vessels of not more than 12 feet draught may run for Ship Island Lighthouse, bearing **NW.** by **W. $\frac{1}{2}$ W.** When from 1 to 2 miles from it, steer more Westerly, and haul round the Lighthouse, leaving it about $\frac{3}{4}$ mile on the Starboard hand, and run up to the Northeast and anchor as before directed. Vessels of not more than 12 feet draught may beat in to Ship Island Anchorage. In entering, the Western side of the Channel may boldly be approached by the Lead.

It is advisable for vessels of more than 15 feet draught to employ pilots, as there are several Lumps of 16, 17 and 18 feet water in the Channel, none of which at this date are buoyed.

BILOXI, MISS.

This place, which is on the Northern side of Mississippi Sound, lies West-Northerly about 18 miles from Round Island Lighthouse, Northeasterly about 11 miles from Ship Island Lighthouse, and Northeasterly about 17 miles from Cat Island Lighthouse.

Biloxi Lighthouse.

Upon the Northern side of Mississippi Sound, a short distance to the Westward of the town of Biloxi, is a Lighthouse, the Tower of which at this date (1882), is White, and shows a fixed White Light. Ship Island Lighthouse bears from Biloxi Lighthouse **S. by W.** $11\frac{1}{4}$ miles. Cat Island Lighthouse, **SW.** $\frac{1}{4}$ **W.** about $16\frac{1}{2}$ miles.

Remarks.

In 1877 about 8 feet water could be carried from Mississippi Sound within $1\frac{3}{4}$ miles of the town of Biloxi, and from this about 5 feet at low tide could be taken over the Bar to the wharves, in front of which there are from 10 to 14 feet at low tide.

Sailing Directions from Ship Island Anchorage to Biloxi, in Daytime, with favorable winds and fair weather.

Small or light draught vessels bound to Biloxi, may follow the directions before given for Ship Island Anchorage, until past the Lighthouse; then bring it to bear **S. by W.** and make good the course **N. by E.**, carrying from 9 to 18 feet water. When the Lighthouse (before described) is made, bring it to bear **N. by E.** $\frac{1}{4}$ **E.**, and run for it on this course. As they approach the Lighthouse a sharp lookout must be kept for the Outer Beacon; the Lighthouse bears **N. by E.** $\frac{1}{4}$ **E.** from it, distance about $1\frac{1}{2}$ miles. When the Beacon is made, leave it a short distance on the Port hand, and run about **NE. by N.** for the next Beacon, carrying about 5 feet water at low tide. Leave the second Beacon a short distance on the Starboard hand, and run for the Lighthouse, bearing about **N.** $\frac{1}{4}$ **E.**, carrying about 5 feet water. When about half way from the last Beacon to the Lighthouse, haul up about **NE. by N.** $\frac{1}{2}$ **N.** for the wharves.

Sailing Directions from Horn Island Pass to Biloxi.

Vessels entering the Mississippi Sound, by way of Horn Island Pass, bound to Biloxi, may follow the directions before given for this Pass until past Horn Island Lighthouse; then bring it to bear **E. by S.**, and make good the course **W. by N.** until the Southern part of Round Island bears North, distant $2\frac{3}{4}$ miles; then steer **NW. by W. $\frac{1}{2}$ W.**, carrying not less than 10 feet water, and leaving the Red Nun Buoy, which lies about $2\frac{1}{4}$ miles Southwest from Round Island, a short distance on the Starboard hand; continue the course **NW. by W. $\frac{1}{2}$ W.** about 2 miles past this Buoy, then, with Round Island Lighthouse just open, clear of the woods, bearing **NE. by E. $\frac{3}{4}$ E.**, make good the course **W. $\frac{1}{4}$ N.** about 15 miles, carrying not less than 8 feet water; when Biloxi Lighthouse bears **N. by E.**, then follow the directions before given.

Sailing Directions from Mobile Bay by way of Grant's Pass and Mississippi Sound, to Biloxi in Daytime, with favorable winds and fair weather.

When through Grant's Pass, make good the course **W. by S. $\frac{1}{4}$ S.** about 16 miles, carrying from 8 to 15 feet water to Red Can Buoy, which lies off the Southern part of a Shoal which extends from the Southeast part of Grand Batture Island. Horn Island Lighthouse bears from this Buoy **SW. by W.** about 4 miles. When the last-mentioned Buoy is made, leave it close to on the Starboard hand, and continue the course **W. by S. $\frac{1}{4}$ S. $7\frac{3}{4}$ miles** further, leaving Horn Island Lighthouse well to the Southward; when the Southern point of Round Island bears North, distant $2\frac{3}{4}$ miles, then steer **NW. by W. $\frac{1}{2}$ W.**, carrying not less than 10 feet water at low tide, and leaving the Red Nun Buoy, which lies about $2\frac{1}{4}$ miles Southwest from Round Island, a short distance on the Starboard hand; continue the course **NW. by W. $\frac{1}{2}$ W.** about 2 miles past this Buoy; then with Round Island Lighthouse just open, clear of the woods, bearing about **NE. by E. $\frac{3}{4}$ E.**, make good the course **W. $\frac{1}{4}$ N.** about 15 miles, carrying not less than 8 feet water; when Biloxi Lighthouse bears **N. by E.**, then follow the directions before given.

MISSISSIPPI CITY, MISS.

This place, which is situated on the Northern shore of Mississippi Sound, lies about 5 miles to the Westward of the Lighthouse at Biloxi, Northwesterly $10\frac{1}{2}$ miles from Ship Island Lighthouse, and Northeasterly about 12 miles from Cat Island Lighthouse.

Remarks.

Shoal water extends off for more than $\frac{3}{4}$ mile from the shore at Mississippi City. In 1877 about 6 feet water at low tide could be carried to the outer end of the two long Wharves, which at that time were located near the Western end of the town.

Sailing Directions from Ship Island Anchorage to Mississippi City in Daytime, with favorable winds and fair weather.

Small or light draught vessels, bound from Ship Island Anchorage to Mississippi City, may follow the directions before given for entering Ship Island Anchorage until past the Lighthouse; then bring it to bear **SE.** by **S.** $\frac{1}{2}$ **S.**, and make good the course **NW.** by **N.** $\frac{1}{2}$ **N.**, carrying from 9 to 20 feet water across the Sound; if more than 6 feet draught when the long Wharves are made, anchor in about 8 feet and wait for high water.

Coming from the Eastward through Mississippi Sound, bound to Mississippi City, follow the directions before given from Grant's Pass to Biloxi, or from Horn Island Pass to Biloxi, until up with the Red Nun Buoy, which lies about $2\frac{1}{4}$ miles Southwest from Round Island; when this Buoy is made, leave it close to on the Starboard hand, and steer **NW.** by **W.** $\frac{1}{2}$ **W.** about 2 miles, carrying not less than 10 feet water; then make good the course **W.** $\frac{1}{4}$ **N.** about 15 miles (carrying not less than 8 feet water at low tide), or until the Lighthouse at Biloxi bears **N.** by **E.**; then haul up **W. NW.** for the long Wharves, and follow the directions before given.

Cat Island Channel.

The entrance to this Channel, which leads into Mississippi Sound between the Isle-a-Pitre on the Southwest and Cat Island on the Northeast, lies West-Southerly about 58 miles from Mobile Point Lighthouse, West-Southerly about 34 miles from Horn Island

Pass, and West-Southerly about 10 miles from Ship Island Light-house.

Cat Island Lighthouse.

Upon the Western Point of Cat Island, South side of Mississippi Sound, is a White Screw-pile Structure; the piles and Lantern are Red, and at this date (1882), shows a fixed White Light, which flashes White every 90 seconds. Biloxi Island Lighthouse bears from Cat Island Lighthouse **NE.** nearly, distance $16\frac{3}{4}$ miles; Pass Christian Lighthouse **NW.** $\frac{1}{2}$ **W.** $6\frac{3}{4}$ miles; Merrill's Shell Bank Lighthouse **W.** $\frac{3}{8}$ **S.** 5 miles; St. Joseph's Lighthouse **W.** by **S.** $\frac{5}{8}$ **S.** 14 miles.

Remarks.

At this date (1881), about 15 feet water at low tide can be carried over the Bar and up to Cat Island Anchorage, and from this point about 9 feet can be taken through Mississippi Sound as far as St. Joseph's Island Lighthouse: the Channel leading into the Anchorage, and also through the Sound, is well buoyed at this time.

Sailing Directions for Cat Island Anchorage in Daytime, with favorable winds and fair weather.

From the Eastward, bound to Cat Island Anchorage, leave the Red Can Buoy, which lies about **S.** by **W.** $1\frac{1}{3}$ miles from Ship Island Lighthouse, a short distance on the Starboard hand, and make good the course **W.SW.** $6\frac{1}{2}$ miles, carrying not less than 15 feet water across the Bar at low tide; when the Great Sand Hill on the Northeastern Point of Cat Island bears **N.** by **E.**, distant about $4\frac{1}{2}$ miles, and the Northern Point of the Isle-a-Pitre **W.** $\frac{1}{4}$ **N.** $3\frac{1}{2}$ miles, then in about 3 fathoms water haul up **W.NW.**, carrying from $3\frac{1}{2}$ to 6 fathoms water and keeping a sharp lookout for the Channel Buoy, painted in Black and White Perpendicular Stripes, which lies about midway between Fish-Tail and Potato Hills Shoals. Cat Island Lighthouse bears from this Buoy **N.** by **W.** $\frac{1}{2}$ **W.** $2\frac{1}{2}$ miles; when this Buoy is made, bring it to bear **W.NW.**, and run for it on this course, leaving it close to on the Port hand, and continue the course **W.NW.** about $\frac{1}{4}$ mile; then steer **W.SW.** about $\frac{1}{2}$ mile, leaving Fish-Tail Shoal on the Port hand, carrying about 4 fathoms water, and anchor in about 4 fathoms; the last-named Buoy bears from this anchorage **E.** $\frac{1}{2}$ **N.**, distance $\frac{3}{4}$ mile.

St. Joseph's Island Lighthouse, Miss.

On the South end of St. Joseph's Island, Mississippi Sound, and Northern side of entrance to Lake Borgne, is a White Dwelling, surmounted by a Black Lantern, and standing on Brick Piers. At this date (1882), this Lighthouse shows a fixed White Light. Cat Island Lighthouse bears from St. Joseph's Island Lighthouse **E.** by **N. $\frac{5}{8}$ N.**, distance about 14 miles; Merrill's Shell Bank Lighthouse **NE.** by **E. $\frac{1}{2}$ E. $9\frac{1}{4}$ miles**; Pass Christian Lighthouse **NE. $\frac{1}{4}$ N.** 12 miles.

Sailing Directions from Cat Island Anchorage by the South Pass to St. Joseph's Island Entrance to Lake Borgne in Daytime, with favorable winds and fair weather.

Vessels of not more than 8 feet draught, bound to Lake Borgne by the South Pass, may follow the directions before given for Cat Island Anchorage until up with the East Buoy, which is painted in Black and White Perpendicular Stripes, and lies midway between the Cat-Fish and Potato Hills Shoals. Cat Island Lighthouse bears from this Buoy **N.** by **W. $\frac{1}{2}$ W.**, distance $2\frac{1}{2}$ miles; when this Buoy is made, leave it close to on either hand, and steer **NW.** by **W. $\frac{3}{4}$ W.** about 2 miles, leaving the Turn Buoy, painted in Black and White Perpendicular Stripes, close to on either hand, and steer **SW.** by **W. $\frac{1}{4}$ W.**, leaving the first and second Channel Buoys, painted in Black and White Perpendicular Stripes, close to on the Starboard hand, and the West Buoy (Red), close to on the same hand, and carrying about 10 feet water at low tide; continue the course **SW.** by **W. $\frac{1}{4}$ W.** about one mile past the last-named Buoy; then make good the course **W. $\frac{3}{4}$ S. $8\frac{1}{2}$ miles**, carrying not less than 9 feet water to St. Joseph's Lighthouse, which may be left about $\frac{1}{2}$ mile to the Northward; if bound further to the Westward, a pilot is necessary at this last-named Lighthouse, as at this time we have no information relative to the navigation through Lake Borgne, the Rigolets, or Lake Pontchartrain.

MARIANNE PASS, MISSISSIPPI SOUND.

This Pass, which is nearly in the middle of Mississippi Sound, between Merrill's Coquille on the South and Merrill's Shell Bank Lighthouse on the North, lies about 5 miles to the Westward of Cat Island Lighthouse, East-Northerly 9 miles from St. Joseph's Lighthouse, and about 5 miles to the Southward of Pass Christian Lighthouse.

Merrill's Shell Bank Lighthouse.

Nearly in the middle of Mississippi Sound, in about 6 feet water, on the Northern side of the Channel leading through the Marianne Pass, is a White Screw-pile Structure, Lantern Black. At this date (1882), this Lighthouse shows a fixed White Light, and has a Fog Bell, which in thick weather is struck one blow at intervals of 20 seconds.

Bearings and Distances from Merrill's Shell Bank Lighthouse.

	Distance.
Biloxi Lighthouse, NE. by E.	20 $\frac{3}{4}$ miles.
Cat Island Lighthouse, E. $\frac{3}{8}$ N.	5 "
Pass Christian Lighthouse, N. $\frac{1}{4}$ W.	4 $\frac{1}{2}$ "
St. Joseph's Lighthouse, SW. by W. $\frac{1}{2}$ W.	9 $\frac{1}{4}$ "
Black Buoy off Northern side of Cat Island Shoal, NE. by E. $\frac{3}{4}$ E.	4 $\frac{1}{4}$ "

Remarks.

At this date (1882), there is about 8 feet water through this channel.

Sailing Directions for the Marianne Pass in Day-time, with favorable winds and fair weather.

From Ship Island Anchorage bound through this Pass, bring Ship Island Lighthouse to bear **SE.** $\frac{1}{2}$ **E.**, and make good the course **NW.** $\frac{1}{2}$ **W.**, keeping a sharp lookout for the Black Buoy which lies off the Northeast part of Spade Fish Shoal; Ship Island Lighthouse bears from this Buoy **SE.** by **E.** about 3 $\frac{3}{4}$ miles; when the Buoy is made, leave it a short distance on the Port hand,

and steer **NW.** about $\frac{3}{4}$ mile; then make good the course **W.** $\frac{3}{4}$ **S.**, carrying not less than 9 feet water, and leaving the Black Buoy off Cat Island Shoal about $\frac{1}{2}$ mile on the Port hand; when Merrill's Shell Bank Lighthouse bears **SW.** by **W.**, then steer about **SW.** $\frac{3}{4}$ **W.**, leaving the Black Buoy on a Wreck on the Port hand, the Lighthouse about $\frac{1}{4}$ mile on the Starboard, and the Black Buoy which lies about 1 mile **W.SW.** from it close to on the Port hand; when past the last-named Buoy, steer **W.** $\frac{1}{2}$ **S.**, carrying not less than 9 feet water, until St. Joseph's Lighthouse bears **SW.** $\frac{1}{2}$ **S.**; then steer about **SW.** by **S.**, carrying not less than 8 feet water at low tide, and leaving the Lighthouse about $\frac{1}{2}$ mile to the Northward; if bound farther to the Westward, it is advisable to take a pilot at this anchorage.

Coming through Grant's Pass, or Horn Island Pass, bound to St. Joseph's Island, follow the directions before given for Biloxi, until up with the Red Buoy which lies South-west about $2\frac{1}{4}$ miles from Round Island Lighthouse; leave this Buoy about $\frac{1}{4}$ mile on the Starboard hand, and steer **NW.** by **W.** $\frac{1}{2}$ **W.** about 2 miles, carrying not less than 10 feet water; then with Round Island Lighthouse just open, clear of the woods, bearing **NE.** by **E.** $\frac{3}{4}$ **E.**, make good the course **W.** $\frac{3}{4}$ **S.** $19\frac{1}{2}$ miles, carrying not less than 14 feet water, until abreast the Black Buoy which lies off the Northeast part of Spade Fish Shoal; Ship Island Lighthouse bears from this Buoy **SE.** by **E.**, distance $3\frac{3}{4}$ miles; leave the last-named Buoy about $\frac{5}{8}$ mile on the Port hand, and continue the course **W.** $\frac{3}{4}$ **S.**, and follow the directions before given for the Marianne Pass from Ship Island Anchorage to St. Joseph's Lighthouse.

PASS CHRISTIAN, MISS.

This place, which is situated on the Northern side of Mississippi Sound, near the Eastern entrance to St. Louis Bay, lies West-Southerly about 18 miles from Biloxi Lighthouse, West-Southerly about 12 miles from Mississippi City, Northwesterly about $6\frac{1}{2}$ miles from Cat Island Lighthouse, North about 5 miles from Merrill's Shell Bank Lighthouse, Northeasterly about 12 miles from St. Joseph's Lighthouse, and East-Northerly about 6 miles from Shieldsboro.

Pass Christian Lighthouse.

Upon the North side of Mississippi Sound, on the main land, is a Lighthouse, the Tower of which at this date (1882), is White and shows a fixed White Light; Cat Island Lighthouse bears from Pass Christian Lighthouse **SE. $\frac{1}{2}$ E.**, distance about $6\frac{3}{4}$ miles; Merrill's Shell Bank Lighthouse **S. $\frac{1}{4}$ E.** $4\frac{1}{2}$ miles, St. Joseph's Island Lighthouse **SW. $\frac{1}{4}$ S.** about 12 miles.

Remarks.

At Pass Christian there are 2 channels leading to the Long Wharves, which are nearly abreast the Lighthouse; vessels coming from the Eastern part of the Sound use the Eastern channel, while those coming from the Westward or Southwestward, use the Western. In 1877, about $6\frac{1}{2}$ feet water, at low tide, could be carried through these narrow channels to the Long Wharves.

Sailing Directions for Pass Christian in Daytime, with favorable winds and fair weather.

Vessels of not more than 6 or 7 feet draught from Ship Island Anchorage, bound to Pass Christian, may bring Ship Island Lighthouse to bear **SE. $\frac{1}{2}$ E.** and make good the course **NW. $\frac{1}{2}$ W.**, leaving the Black Buoy off the Northeast part of Spade Fish Shoal (Ship Island Lighthouse bears from this Buoy **SE** by **E.**, distance $3\frac{3}{4}$ miles). About $\frac{1}{4}$ mile on the Port hand and make good the course **W. $\frac{1}{2}$ N.**, carrying not less than 10 feet water at low tide, when Pass Christian Lighthouse is made, bring it to bear **W.** by **N.** and run for it on this course, and anchor outside the Stakes and Beacons in from 7 to 8 feet water; between the Beacons and Long Wharves the channel leading in is very narrow; it is therefore advisable to take a pilot at this anchorage.

From the Eastward, coming through Grant's Pass, or Horn Island Pass, bound to Pass Christian, follow the directions before given for Biloxi, until up with the Red Buoy which lies Southwest about $2\frac{1}{4}$ miles from Round Island Lighthouse; leave this Buoy about $\frac{1}{4}$ mile on the Starboard hand, and steer **NW.** by **W. $\frac{1}{2}$ W.** about 2 miles, carrying not less than 10 feet water; then with Round Island Lighthouse just open, clear of the woods, bearing **NE.** by **E. $\frac{3}{4}$ E.**, make good the course **W. $\frac{3}{4}$ S.** $19\frac{1}{2}$ miles,

carrying not less than 14 feet water, until abreast the Black Buoy off the Northeast part of Spade Fish Shoal; Ship Island Lighthouse bears from this Buoy **SE.** by **E.**, distance $3\frac{3}{4}$ miles; leave the last-named Buoy about $\frac{1}{4}$ mile on the Port hand, and make good the course **W. $\frac{1}{2}$ N.**, and follow the directions before given.

Coming from the Southwestward, leave the Lighthouse at St. Joseph's Island about $\frac{1}{3}$ mile on the Port hand, and make good the course **NE.** by **N. $\frac{1}{2}$ N.**, carrying not less than 8 feet water at low tide, and leaving the Square Handkerchief Shoal, which is nearly dry at low tide, well on the Starboard hand; when Pass Christian Lighthouse bears **NE.** by **E.**, steer **E.NE.** until it bears **NE.** by **N. $\frac{1}{2}$ N.**, then run for it on this course and anchor a short distance to the Eastward of the first Beacon in about 7 feet water, and take a pilot to the long Wharves.

SHIELDSBORO, MISS.

This place, which is situated on the Northern side of Mississippi Sound and West side of entrance to St. Louis Bay, lies West-Southerly about $5\frac{1}{4}$ miles from Pass Christian Lighthouse, Northwesterly about $5\frac{1}{2}$ miles from Merrill's Shell Bank Lighthouse, and Northeasterly about $7\frac{1}{2}$ miles from St. Joseph's Lighthouse.

Remarks.

In 1877, about 6 feet water, at low tide, could be carried to some of the long Wharves.

Sailing Directions for Shieldsboro in Daytime, with favorable winds and fair weather.

Vessels of not more than 7 or 8 feet draught bound to Shieldsboro, may follow the directions before given for Cat Island Anchorage, until up with the East Buoy which is painted in Black and White Perpendicular Stripes, and lies about midway between the Cat-Fish and Potato Hills Shoals; Cat Island Lighthouse bears from this Buoy **N.** by **W. $\frac{1}{2}$ W.**, distance $2\frac{1}{4}$ miles; when the last-named Buoy is made, leave it close to on either hand, and steer **NW.** by **W. $\frac{3}{4}$ W.** about 2 miles, leaving the Turn Buoy painted in Black and White Perpendicular Stripes close to on either hand, and steer **SW.** by **W. $\frac{1}{4}$ W.**, leaving the First and Second

Channel Buoys painted in Black and White Perpendicular Stripes close to on the Starboard hand, and the West Buoy (Red) close to on the same hand, continue the course **SW.** by **W.** $\frac{1}{4}$ **W.** about 1 mile past the last-named Buoy, then make good the course **NW.** by **W.** $\frac{1}{2}$ **W.** 5 miles, leaving Merrill's Coquille Shoal well on the Starboard hand; when St. Joseph's Lighthouse bears **SW.** $\frac{1}{2}$ **S.**, steer **NNW.** for the town and anchor off the Wharves in about 8 feet water at low tide.

Coming from the Eastward through Grant's Pass or Horn Island Pass, bound to Shieldsboro, follow the directions before given for the Marianne Pass until past the Black Buoy, which lies about 1 mile Southwest from Merrill's Shell Bank Lighthouse, then make good the course **WNW.** $5\frac{1}{4}$ miles, carrying not less than 8 feet water at low tide, and anchor off the long Wharves in about 8 feet water. On this last course, **WNW.**, the Square Handkerchief Shoal will be left well on the Starboard hand.

Coming from the Southwestward, bound to Shieldsboro, leave the Lighthouse on St. Joseph's Island about $\frac{1}{3}$ mile on the Port hand, and make good the course **NNE.**, carrying not less than 8 feet water at low tide, and anchor off the long Wharves.

The Coast from Mobile Bar to Ship Island Lighthouse.

From Mobile Bar to Ship Island Lighthouse, a distance of nearly 70 miles, shoal water extends off in some places more than a mile from shore; it is therefore advisable for vessels, in thick weather or night-time, to not approach this part of the coast in less than 6 fathoms water until abreast the Eastern part of Ship Island, then gradually work into 5 fathoms, and from this into 4 fathoms near the Western part of this last-named Island.

Tides and Currents in Mississippi Sound.

At the entrances of the Mississippi Sound the rise and fall of the tides is usually small, the time and height of high and low water are irregular and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

At the entrances of the Sound the strength and velocity of the current is governed entirely by the winds. After strong Southeasterly winds, the Ebb runs out very strong; and after strong Northerly winds the Flood sets in very strong.

CHANDELEUR ISLAND ANCHORAGE.

This Anchorage, which is about $1\frac{1}{2}$ miles to the Southwest of Chandeleur Lighthouse, lies Southeasterly about 12 miles from Ship Island Lighthouse.

Chandeleur Lighthouse.

Upon the Northern extremity of Chandeleur Island, South side of the Channel leading to Ship Island Anchorage, and also into Cat Island Channel, is a White Tower, which at this date (1882), shows a fixed White Light.

Remarks.

The Anchorage to the Southwest of Chandeleur Island Lighthouse is safe for large vessels in all winds and weathers, and is also easy of access by night or by day, there being neither bars nor other obstructions, excepting a Shoal, which extends off Northwest about $\frac{3}{4}$ mile from the Lighthouse. It is said that the English men-of-war found shelter in these Roads during the siege of New Orleans.

Sailing Directions for Chandeleur Island Anchorage.

From the Eastward, when the Lighthouse on the Northern end of Chandeleur Island is made, leave it about $1\frac{1}{2}$ miles on the Port hand; and when it bears **E.S.E.**, then gradually haul in, and anchor with the Lighthouse bearing about **N.E.** by **N.**, distant about $1\frac{1}{2}$ miles, in about 4 fathoms water.

In beating in, vessels may stand to the Westward until the water shoals to $3\frac{1}{2}$ fathoms without danger. These directions will answer for night or day.

The Coast from Chandeleur Island Lighthouse to the Grand Grosier Isle.

From Chandeleur Island Lighthouse to the Grand Grosier Isle, a distance of nearly 35 miles, the coast which runs to the Southward consists of a group of very low Keys, called the Chandeleur Isles; from these Shoal Water extends off to the Eastward (in some places quite a distance), making their approach extremely dangerous, especially in thick weather or night-time; it is therefore

advisable in such times to not approach this part of the coast nearer than 10 fathoms water.

Grand Grosier Isle and Isle-au-Breton.

These two small Keys, which are very low, lie Northwesterly about 18 miles from Pass-a-Loutre, the Northern entrance to the Mississippi River; Shoal Water extends off a long distance Southeasterly from these isles, and vessels, even in daytime, falling to the Northward, bound to the Mississippi River, should beware of this danger. In fair weather, it is said that in 12 feet water these isles cannot be seen from the deck of a common vessel.

PASS-A-LOUTRE, LA.

This Pass, which is the Northernmost that leads into the Mississippi River, lies Southwesterly 82 miles from Mobile Point Lighthouse.

Pass-a-Loutre Lighthouse.

On the North side of entrance to Pass-a-Loutre, on Middle Ground Island, at this date (1882), is a Black Tower, with White Dwelling about 30 yards to the Southward of it; at this time this Lighthouse shows a fixed White Light, which flashes White every 45 seconds. A Black Day Beacon, of open Iron Framework surmounted by a Ball, bears **E. ½ S.** from it.

Remarks.

In entering the Mississippi River by way of Pass-a-Loutre, there is usually from 10 to 11 feet water upon the Bar, but as the channel is liable to sudden changes it is therefore advisable for strangers in vessels of more than 8 feet draught to not attempt this passage, as at this time there are no pilots in attendance. From the Bar Buoy off the entrance to the Lighthouse at the Head of the Passes, the distance is $13\frac{1}{2}$ miles, thence about 68 miles to the city of New Orleans.

Sailing Directions for Pass-a-Loutre in Daytime, with favorable winds and fair weather.

When the Lighthouse at Pass-a-Loutre is made, bring it to bear about **W.** by **N.** and run for it on this course, keeping a sharp

lookout for the Outer or Bar Buoy painted in Black and White Perpendicular Stripes; when this is made, leave it close to on either hand, and run for the Black Buoy off the South Lamp, leaving it on the Port hand; when past this Buoy, you will see the 2 Red Buoys which lie off the North Lamp and Middle Ground, both of which are left on the Starboard hand; when past these, run up with the Lighthouse a little on the Starboard bow, and leave it about 200 yards on the Starboard hand, and make good the course West, leaving the Buoy painted in Red and Black Horizontal Stripes, which lies about a mile to the Westward of the Lighthouse, well on the Port hand; when past the last-named Buoy, keep in the middle of the river, carrying deep water to the Head of the Pass.

SOUTH PASS, LA.

The entrance to this Pass, which leads into the Mississippi River, lies Southwesterly about 14 miles from Pass-a-Loutre, and East-Northerly about 15 miles from the entrance to the Southwest Pass.

South Pass Lighthouse.

Upon the West side of the South Pass in Lat. $29^{\circ} 01'$ North, and Lon. $89^{\circ} 10'$ West, is a Red Framework Pyramid, enclosing a Dwelling and a Stairway Cylinder; at this date (1882), this Lighthouse shows a fixed White Light which flashes White every 5 seconds; the Old Tower stands about 100 feet to the Westward of this Lighthouse; Dry Tortugas Lighthouse bears from the Lighthouse at the South Pass **SE.** by **E.** $\frac{1}{4}$ **E.** 4.25 miles, and Lights on the Jetties at the entrance of the South Pass **SE.** $\frac{1}{2}$ **E.** $2\frac{1}{4}$ miles.

Head of the Passes Lighthouse.

Upon Deer Isle, at the junction of the Southwest and South Passes is a White Dwelling, which at this date (1882), shows a fixed White Light; at this time a Fog Bell is placed near this Lighthouse, which in thick weather is struck Two Blows and One Blow at alternate intervals of 10 and 20 seconds; from the Bar Buoy at entrance of this Pass to the Lighthouse, the distance is $11\frac{1}{4}$ miles, thence about 68 miles to the city of New Orleans.

South Pass Jetty (East) Lighthouse.

At the mouth of the South Pass, about 200 yards inside the end of the Eastern Jetty, is a Framework Structure 25 feet high, of unpainted Scantling resting on Piles, and supporting a Staff on which hangs a Lantern, which at this date (1882), shows a Red Fixed Light.

South Pass Jetty (West) Lighthouse.

At the mouth of the South Pass, about 200 yards inside the end of the Western Jetty, is a Framework Structure 25 feet high, of unpainted Scantling resting on Piles, and supporting a Staff on which hangs a Lantern, which at this date (1882), shows a White Fixed Light.

These Lights upon the Jetties at the entrance of the South Pass are about 350 yards apart, and are intended to guide vessels both in and out of the South Pass.

Head of the Passes Jetty (East) Lighthouse.

Upon the Northern end of the upper entrance to the South Pass, is a Framework Structure 25 feet high, of unpainted Scantling resting on Piles, and supporting a Staff on which hangs a Lantern, which at this date (1882), shows a fixed Red Light.

Head of the Passes Jetty (West) Lighthouse.

Upon the Northern end of the Upper Jetty entrance to the South Pass, is a Framework Structure 25 feet high, of unpainted Scantling resting on Piles, and supporting a Staff on which hangs a Lantern, which at this date (1882), shows a fixed White Light.

These Lights, which are about 350 yards apart, are intended to guide vessels both out and in to the upper part of the South Pass.

Remarks.

At this date (1881), there is said to be a depth of about 30 feet water between the Jetties and also over the Bar; but as the channel is narrow, and there may be mud lumps at the mouth, it is advisable for vessels of more than 14 feet draught to take pilots,

which are always at hand. The Whistling Buoy, which lies in about 10 fathoms water, is not in position during the months of June, July, August and September; in thick weather, during this time, it is therefore necessary when in less than 10 fathoms water, to approach the entrance to the South Pass with caution; **NE.** $1\frac{1}{4}$ miles from the entrance to this Pass, 10 fathoms water was found; East $\frac{5}{8}$ mile, 11 fathoms; **SE.** $\frac{5}{8}$ mile, 10 fathoms; South $\frac{3}{4}$ mile, 10 fathoms; and **SW.** $1\frac{1}{2}$ miles, 10 fathoms.

Sailing Directions for the South Pass in Day-time, with favorable winds and fair weather.

Vessels of not more than 14 or 15 feet draught, bound into the Mississippi River by the South Pass, should keep in not less than 10 fathoms water until the Whistling Buoy is made; then leave it close to on either hand, and steer about **NW.** by **N.**, entering about midway between the Jetties, and keep midway between them, carrying about 30 feet water in the channel; when abreast the South Pass Lighthouse keep in the middle, and pass through between the Upper Jetties into the Mississippi River; if the Whistling Buoy is not in position, bring the outer ends of the Jetties to bear about **NW.** by **N.** and run for them, and enter as before directed.

Tides at the Lower Entrance of the South Pass.

At the lower entrance to this Pass, the rise and fall of the tides is usually small, the time and height of high and low water are irregular, and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

Tides at the Upper Entrance of the South Pass.

At the upper entrances of the Passes, the tides are much influenced by the freshets, especially during the spring months, when there is but little rise and fall at the above places.

The following regulations relating to the navigation of the South Pass entrance to the Mississippi River, are hereby established for the protection of said Pass, and the works for its improvement:

WAR DEPARTMENT,
WASHINGTON CITY, December 14, 1881.

1st. Steam vessels navigating the South Pass, are required to reduce their speed to not exceeding 6 miles per hour, between a point 500 yards above the South Pass Lighthouse and the Headquarters Building; and a similar reduction shall be made in other parts of the Pass, when passing the boats, barges, floating-matresses, &c., that are being used in the construction of the jetties or the improvement of the channel, or in passing any other vessel; and after dark all vessels must slow down to 6 miles per hour throughout the entire Pass.

The South Pass is considered as embracing the entire extent of channel between the upper ends of the works at the head of the Pass, and the outer or sea end of the jetties at the entrance from the Gulf of Mexico.

The point referred to at 500 yards above the lighthouse, between which and the Headquarters Building, vessels are required to reduce their speed, is marked by a post painted white on the western bank of the Pass.

2d. All vessels anchoring in the Pass shall take position near the eastern bank of the Pass, not less than 500 yards above the Lighthouse and below the Island at the head of the Pass; and vessels so anchoring shall put out extra moorings as may be necessary to prevent their being blown athwart the channel, and thus endangering the navigation of the Pass, whenever required to do so by the United States Inspecting Officer of the works for the improvement of the Pass.

3d. No master or other person in command of a vessel drawing more than 12 feet water shall enter the Jetty Channel from sea with such vessel until after a descending vessel which has previously entered said channel from above has passed to sea; and likewise no such vessel descending the river shall enter the channel at the head of the Pass until after an ascending vessel which shall have passed the head of Goat Island, has passed through the entrance at the head of the Pass.

4th. All upward-bound vessels must keep to the right or nearest the east bank of the Pass, giving the right of way to those bound in the opposite direction.

5th. All vessels discharging or waiting to discharge ballast at Port Eads* must be moored to the Bank by lines, and no vessel shall discharge ballast into the Gulf of Mexico within a distance of 5 miles from the sea ends of the jetties; nor shall ashes or other refuse matter, which may be liable to cause a shoaling or filling up of South Pass, be dumped therein.

6th. The dredge-boat, G. W. R. Bayley, shall have the exclusive right of way over all vessels navigating the South Pass while she is at work therein, and all vessels in passing her must be governed by her signals; she shall give the usual steam-whistle signal for passing to her Port or Starboard, and this shall be responded to and obeyed by the passing vessel on the order of its master or pilot.

7th. Tow-boats with tows are not permitted to go down the Pass after dark, but must anchor above the head of the Pass till after daylight.

ROBERT T. LINCOLN,
Secretary of War.

SOUTHWEST PASS, LA.

The entrance to this Pass, which leads into the Mississippi River, lies West-Southerly about 15 miles from the entrance to the South Pass, and East-Southerly about 36 miles from the Lighthouse at the entrance to Barataria Bay.

Southwest Pass Lighthouse.

Upon a low, marshy Island, West side of Southwest Pass, is a Skeleton Tower, painted Black. This Tower is a truncated pyramid, having eight sides, with the keeper's dwelling in the lower part. A low frame-building stands about 20 yards Southeast of the Tower. At this date (1882), this Lighthouse shows a fixed White Light. The old Tower stands **N.** by **E.** $\frac{1}{4}$ **E.** about $\frac{1}{2}$ mile from this Lighthouse.

* Port Eads is situated nearly opposite the South Pass Lighthouse, or about $2\frac{1}{4}$ miles above the outer end of the jetties.

Remarks.

In entering the Southwest Pass strangers should exercise caution, as the Channel across the Bar is liable to sudden changes; the usual depth of water is from 11 to 12 feet at low tide. Pilots can usually be obtained, although at this time but few vessels use this Pass. At this date (1882), the Channel leading in is well buoyed. From the outer Bar Buoy to the head of the Passes (entrance to the Mississippi River), the distance is about 15½ miles, thence about 68 miles to the city of New Orleans.

Sailing Directions for the Southwest Pass in Day-time, with favorable winds and fair weather.

Small or light draught vessels should keep in not less than 10 fathoms water until the Lighthouse at the Southwest Pass is made; then bring it to bear **N.** by **E.** ¼ **E.**, and run for it on this course, keeping a sharp lookout for the outer Bar Buoy (Red); leave this Buoy close to on the Starboard hand, and when past it you will see the two Buoys, Red and Black, off the East and West Lumps, and also the two Buoys, Red and Black, off the East and West Banks; pass midway between these Buoys, and steer about **NE.** by **N.** ½ **N.**, leaving Stake Island Beacon about ¼ mile on the Port hand, and the Lighthouse about ½ mile on the same hand; when past the Lighthouse, keep in the middle of the Pass, and enter the River.

In Thick Weather.

In order to avoid danger, vessels bound to the Mississippi River should not, in thick weather, approach the Passes in less than 10 fathoms water.

Remarks in Approaching the Passes from Sea.

The land at the entrances of the Passes which leads into the Mississippi River is nothing more than mud banks, with reeds and rushes growing upon them at a height of from 10 to 12 feet above the water; the Lighthouses, vessels or steamers near the entrances to the Passes are generally the first thing made by vessels from sea. Captains not acquainted on the coast are frequently alarmed when they come near the River by the appearance of the water, especially

during the first summer months, when the River is high, for at that time the fresh water rushes out with great force, and, being lighter than the ocean water, floats on top, making an appearance altogether singular and alarming; for when the fresh water has not entirely covered the salt water, but leaving spots, it has the appearance of rocks, the River water being of a milky color, while the other is quite dark and changes suddenly. When the River is high, the muddy water has been found to extend off 15 miles from the Passes, and before entering it ripples like shoal water. In order to find its level, it must be obvious to every intelligent mariner that so large a quantity of water as that of the Mississippi River, rushing as it does through the Passes to the ocean, produces currents; vessels, therefore, from the Southwestward approaching the Passes will, when the River is high, have a Southerly current, while those approaching from the Northeastward will find a Northerly current.

BARATARIA BAY, LA.

The entrance to this Bay lies West-Northerly about 36 miles from the Lighthouse at the Southwest Pass, and about 23 miles Northeasterly from the entrance to Timbalier Bay.

Barataria Bay Lighthouse.

Upon the West end of Grand Terre Island, East side of Grand Pass, entrance to Barataria Bay, and a short distance to the Westward of Fort Livingston, is a White Octagonal Tower, which at this date (1882), shows a fixed White Light.

Remarks.

There are three entrances to this Bay, the Northeasternmost of which is called Quatre Pass, the middle East Pass, and the Southwesternmost Grand Pass. In 1857, by the Grand Pass, about 8 feet water, at low tide, could be carried across the Bar into Barataria Bay. At this date (1882), there are no Buoys to mark the Channel leading into this Bay; it is, therefore, advisable for strangers bound in to take pilots. There is good anchorage on the Starboard side of entrance about $\frac{1}{4}$ mile inside the Lighthouse in from 5 to 7 fathoms water.

TIMEALIER BAY, LA.

The entrance to this Bay lies West-Southerly about 50 miles from the Lighthouse at the Southwest Pass, Southwesterly 23 miles from the entrance to Barataria Bay, and East-Northerly about 42 miles from the Lighthouse on Ship Island Shoal.

Timbalier Lighthouse.

Upon the West side of the Grand Pass in about 7 feet water, off Timbalier Island is a Black Pyramidal Framework on pile foundation, enclosing a Dwelling and a Stairway Cylinder. At this date (1882), this Lighthouse shows a fixed White Light varied by a Red Flash every minute.

Remarks.

Vessels passing the entrance of Timbalier Bay should not approach the Bar in less than 5 fathoms water. In 1857 there was at low tide about 10 feet water in the Channel across the Bar; at this date (1882), it is said that only 7 feet water at low tide can be carried into this place; at this time there are no Buoys to mark the Channel leading in; it is therefore advisable for strangers bound to Timbalier Bay to take pilots off the Bar. There is good anchorage in about $3\frac{1}{2}$ fathoms water inside the entrance, a short distance to the Eastward of the Lighthouse.

SHIP ISLAND SHOAL.

The centre of this Shoal, which is off the coast of Louisiana, lies West-Southerly about 38 miles from the entrance to Timbalier Bay.

Ship Island Shoal Lighthouse.

Upon the Northwestern side of Ship Island Shoal, in about 10 feet water, is a Black Pyramidal Framework on pile foundation, enclosing a Dwelling. At this date (1882), this Lighthouse shows a fixed White Light, which flashes White every 30 seconds; there is also at this time a Bell attached to this Lighthouse, which is struck in thick weather.

Bearings and Distances from Ship Island Shoal Lighthouse.

	Distance.
Lighthouse at S.W. Pass entrance to the Mississippi, E.	
by N. , nearly	95 miles.
Timbalier Lighthouse, E. by N. ½ N. ,	42 "
Raccoon Point (the nearest land), NE. by N. ,	11 "
Southwest Reef Lighthouse, entrance to Atchafalaya Bay,	
NW. ,	37 "
Trinity Shoal Light Ship, W. ¾ N. , about	63 "
Outer Shoal Spot of 15 feet, W. by N. ¼ N. ,	30 "

Remarks.

Ship Island Shoal extends **E.** by **N. ½ N.** and **W.** by **S. ½ S.** about 19 miles, with a width of from 1 to 3 miles; the least water is near its Northern part, where there is from 5 to 10 feet; between this Shoal and the shore there is a Channel nearly 4 miles wide, with a depth of from 4 to 5 fathoms water. Vessels at night-time beating through this Channel may boldly stand into 3 fathoms on the Northern or shore side, but should beware of the Northern side of this Shoal, which is very bold. Large vessels passing without this danger should not approach the Lighthouse nearer than 5 or 6 miles, or in less than 5 fathoms water; small vessels passing without this Shoal, bound in, may leave the Lighthouse from 2 to 3 miles on the Starboard hand without danger.

Shoal Spots.

About 30 miles West-Northerly from Ship Island Shoal Lighthouse, are two Shoal Spots, having a depth of about 15 feet water; the last-named Lighthouse bears from the outer spot **E.** by **S. ¼ S.**, distance 30 miles; Southwest Reef Lighthouse **N.** by **E.** 21 miles. In order to avoid these dangers vessels of more than 14 feet draught, bound East or West, should not approach the coast in less than 5 or 6 fathoms water.

TRINITY SHOAL.

This Shoal, which lies more than 20 miles from the coast, extends about **E.NE.** and **W.SW.** 14 miles, and has a width in some places of more than 4 miles; the least water found upon it is

Lighthouse.

	Distance.
E.	95 miles.
. 42 "	
. 11 "	
by,	
. 37 "	
. 63 "	
. 30 "	

. by S. $\frac{1}{2}$ S.
 e least water
 feet; between
 les wide, with
 at night-time
 3 fathoms on
 Northern side
 ssing without
 er than 5 or 6
 ssels passing
 e from 2 to 3

Shoal Light-
 5 feet water;
 E. by S. $\frac{1}{4}$
 N. by E. 21
 more than 14
 ch the coast

om the coast,
 as a width in
 and upon it is

8 feet, which is near its Southwestern part. Large vessels passing outside of this danger should not approach nearer to it than 7 fathoms water.

Trinity Shoal Light-ship.

This Light-ship, which lies in about $3\frac{1}{2}$ fathoms water off to the the Northward of Trinity Shoal, has two masts, is schooner rigged, and has the words Trinity Shoal in large white letters on each side. At this date (1882), this Light-ship shows one fixed White Light, and has a Steam Whistle, which in thick weather gives blasts of 4 seconds' duration each minute. This Light-ship is intended to guide vessels through in about 3 fathoms water between Tiger and Trinity Shoals.

Bearings and Distances from Trinity Shoal Light-ship.

	Distance.
Ship Shoal Lighthouse, E. $\frac{3}{4}$ S.,	63 miles.
Southwest Reef Lighthouse, entrance to Atchafalaya	
Bay, NE. by E. $\frac{3}{4}$ E.,	42 "
Caleasien Pass Lighthouse, W.NW.,	64 "
Centre of Tiger Shoal, N. by E. about	15 "

ATCHAFALAYA BAY, LA.

The entrance to this Bay lies Northwesterly 36 miles from Ship Island Shoal Lighthouse, and Northeasterly about 40 miles from Trinity Shoal Light-ship.

Southwest Reef Lighthouse.

Upon the West side of the entrance to Atchafalaya Bay, in about 3 feet water, is a Black Screw-pile Structure, which at this date (1882), shows a fixed White Light. At this time a Steam Whistle is attached to this Lighthouse, which in thick weather gives blasts of 10 seconds at intervals of 30 seconds.

Bearings and Distances from Southwest Reef Lighthouse.

	Distance.
Ship Island Shoal Lighthouse, SE.,	37 miles.
Trinity Shoal Light-ship, SW. by W. $\frac{3}{4}$ W.,	42 "
Turn Stake, N.NW.,	2 "

Remarks.

In 1878, by the old Channel, about 10 feet water at low tide could be taken across the Bar as far as the Turn Stake, and from this point about $6\frac{1}{2}$ feet water could be carried up to the mouth of Atchafalaya River. This is the old Channel, which is now only used by sailing vessels. From the Southwest Reef Lighthouse (by the old Channel) the distance to the mouth of the Atchafalaya River is about 18 miles.

Since the above was written we learn that Morgan's Steam Ship Company has cut a private Channel, which has a depth of 10 feet water at low tide, and is comparatively straight and well staked out.

Sailing Directions for Atchafalaya Bay (by the old Channel) in Daytime, with favorable winds and fair weather.

Small or light draught vessels of not more than 6 feet draught, coming from the Eastward inside of Ship Island Shoal, may leave the Lighthouse on the Northwestern part of this danger, about 2 miles on the Port hand, and when it bears **SE. $\frac{1}{2}$ E.** make good the course **NW. $\frac{1}{2}$ W.** about 30 miles, carrying from 4 fathoms to 12 feet water; when the Lighthouse on Southwest Reef is made, bring it to bear **NW. $\frac{3}{4}$ N.**, and run for it on this course, leaving it about $\frac{1}{4}$ mile on the Port hand, and the Red Stake, with Barrel on top, well on the Starboard hand; when past the Lighthouse, steer about **NW. $\frac{3}{4}$ N.**, leaving the first Red Buoy 400 yards on the Starboard, and the Turn Buoy (Red), close to on the same hand; from this Buoy the Lighthouse bears **S.SE.** 2 miles; when past the Turn Buoy, steer **E. by N. $\frac{1}{2}$ N.** about $2\frac{1}{3}$ miles, until up with the Cut-off-Channel Buoy, painted in Black and White Perpendicular Stripes; leave this Buoy on either hand, and steer **E SE.**, leaving the first and second Channel Buoys close to on either hand; when past the second Channel Buoy, make good the course **SE. by E. $\frac{1}{2}$ E.**, carrying not less than 7 feet water, and leaving the Black Beacon off Grecian Shoal about 400 yards on the Port, and South Stake (Red), well on the Starboard hand; continue the course **SE. by E. $\frac{1}{2}$ E.**, and as you enter the Bay there will be seen two Red Beacons; the first is called Southeast Beacon; the second, Narrows Beacon; leave the former about 400

yards on the Starboard hand, and run for the latter, bearing **E.** by **N.**; when about 300 yards from it, steer **NE. ½ N.**, leaving it about 200 yards on the Starboard, and the Black Stake, with Barrel on top, about 200 yards on the Port hand, and carrying about 7 feet water at low tide through the Narrows; continue the course **NE. ½ N.**, until the Bulkhead Buoy, painted in Black and White Perpendicular Stripes, bears **NE.** by **N.**; then run for it on this course, and leave it close to on either hand; when past this Buoy, steer **NE. ¾ E.** $1\frac{1}{2}$ miles; then, in from 3 to 5 fathoms water, with the mouth of the River fairly open, bearing **NE.** by **N. ½ N.**, run in and anchor at the entrance.

Coming from the Eastward, outside Ship Island Shoal, leave the Lighthouse on this danger from 2 to 3 miles on the Starboard hand, and steer **NW. ¼ N.**, until the Lighthouse on Southwest Reef entrance to Atchafalaya Bay is made; then follow the directions before given.

Coming from the Westward, inside Trinity Shoal, leave the Light-ship which lies to the Northward of this danger, close to on either hand, and make good the course **E.** by **N. ½ N.**, leaving the Buoy off Shell Keys well on the Port hand; when the Lighthouse at the entrance to Atchafalaya Bay is made, follow the directions before given.

Good Anchorage.

Vessels of not more than 7 or 8 feet draught, wishing to anchor in Atchafalaya Bay, may follow the directions before given until the Lighthouse on the Southwest Reef is made; then bring it to bear **NW. ¾ N.**, and run for it on this course, leaving it about $\frac{1}{4}$ mile on the Port, and the Red Stake with Barrel on top well on the Starboard hand; when past the Lighthouse, steer about **NW. ¾ N.**, leaving the first Red Buoy about 400 yards on the Starboard, and the Turn Buoy (Red) close to on the same hand; from this Buoy the Lighthouse bears **S.SE.** 2 miles; when past the Turn Buoy, run about **E.NE.** about a mile, and anchor to the Westward of the Cut-off-Channel Buoy, painted in Black and White Perpendicular Stripes, in about 9 feet water.

High Water.

At the entrance of Atchafalaya Bay, the rise and fall of tides is usually small, the time and height of high and low water are

irregular and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

Shell Keys.

These Keys lie about 4 miles to the Southward of Marsh Island. Shoal water extends off from them about 2 miles; at this date (1881), this danger is marked off its Southern part with a Red Can Buoy.

Bearings and Distances from Shell Key Shoal Buoy.

	Distance.
Raccoon Point, E. by S. $\frac{1}{4}$ S.	50 miles.
Ship Island Shoal Lighthouse, SE. by E. $\frac{1}{2}$ E.	48 "
Southwest Reef Lighthouse (entrance to Atchafalaya Bay), E. by N. $\frac{1}{2}$ N.	18 "
Black Buoy off Southeast part Tiger Shoal, about West,	9 "
Trinity Shoal Light-ship, about SW. by W. $\frac{1}{4}$ W.	22 "

Tiger Shoal.

This Shoal, which extends off Southeasterly about 14 miles from Tiger Point (main land), has as little as 4 feet water upon it in some places; at this date (1882), this Shoal is marked off its Southeast part with a Black Can Buoy, which is intended to guide vessels into Southwest Pass (Vernillion Bay.)

Bearings and Distances from Tiger Shoal Buoy.

	Distance.
Ship Island Shoal Lighthouse, ESE.	56 miles.
Shell Key Buoy, about East,	9 "
Trinity Shoal Light-ship, SW. nearly	16 "
East Shoal Buoy at the entrance to Southwest Pass, N. by W.	7 "

Tiger Shoal Slue.

About $2\frac{3}{4}$ miles Southeast from Tiger Point, in Mid-channel, is placed a Nun Buoy painted in Black and White Perpendicular Stripes, which is intended to guide vessels through this channel.

Good Anchorage.

Light draught vessels can find good anchorage in Tiger Shoal Slue, near the Buoy.

Southwest Pass (Vermillion Bay), La.

The entrance to this Pass, which is between the West point of Marsh Island and the Main Land, lies Northwesterly 62 miles from Ship Island Shoal Lighthouse; Northwesterly, 14 miles from Shell Keys Shoal Buoy; Northeasterly, 23 miles from Trinity Shoal Light-ship; and nearly North 11 miles from Black Buoy off Southeast end of Tiger Shoal.

Remarks.

All vessels bound to the Salt Mines must use this Pass; vessels from the Eastward bound to Vermillion Bay by the Grand Pass, should either make the Buoys off Shell Keys Shoal or Tiger Shoal, both of which have before been described; about 7 feet water, at low tide, can be carried into this Bay by the passage to the Eastward of Tiger Shoal; at this date (1882), the channel leading into Vermillion Bay by the Grand Pass is well Buoyed. A very strong current sets in and out of this Pass.

Sailing Directions for Grand Pass (Vermillion Bay) in Daytime, with favorable winds and fair weather.

Vessels of not more than 7 feet draught, coming from the Eastward inside Ship Island Shoal, bound to Vermillion Bay by the Grand Pass, may bring the Lighthouse on Ship Island Shoal to bear **SE.** by **E** $\frac{3}{4}$ **E.** and make good the course **NW.** by **W.** $\frac{3}{4}$ **W.** 48 miles, which will bring them up with the Red Can Buoy off to the Southward of Shell Keys Shoal; leave this Buoy close to on the Starboard hand, and steer about **NW.** by **W.** $\frac{1}{2}$ **W.** about 12 miles, keeping a sharp lookout for the Red Nun Buoy off East Shoal; when this is made, then with a commanding breeze leave it close to on the Starboard hand, and steer for the ruins of the Old Lighthouse bearing **N.** $\frac{3}{4}$ **E.** on the West end of Marsh Island, and run through the Pass, leaving the Black Nun Buoy off the West Bank close to on the Port, and the Red Can Buoy which bears about **N.** $\frac{1}{2}$ **W.** from the Old Lighthouse site on the Starboard hand; when past this last Buoy anchor in the Bay.

Coming from the Westward, outside of Tiger Shoal, leave the Light-ship off Trinity Shoal close to on either hand, and make good the course **NE.** about 16 miles, keeping a sharp lookout for the Black Can Buoy which lies off the Southeast end of Tiger

Shoal; when this Buoy is made, leave it close to on the Port hand, and make good the course **N.** by **W.** 7 miles, keeping a sharp lookout for the Red Nun Buoy off the East Shoal; when this Buoy is made, leave it close to on the Starboard hand, and steer for the ruins of the Old Lighthouse bearing **N. $\frac{3}{4}$ E.** on the West end of Marsh Island, and follow the directions before given.

Coming from the Westward, through Tiger Shoal Slue, bound to Vermillion Bay by the Grand Pass, keep in not less than $2\frac{1}{2}$ fathoms water until Tiger Point is made; then bring it to bear **NE.** and run for it on this course, keeping a sharp lookout for the Nun Buoy painted in Black and White Perpendicular Stripes, which lies in Mid-channel about $2\frac{3}{4}$ miles Southeast from this point: when this Buoy is made, bring it to bear about **E.NE.** and run for it on this course, leaving it close to on either hand, and carrying about 9 feet water; when past this Buoy steer about **E. $\frac{1}{2}$ N.** 10 miles, keeping a sharp lookout for the Red Nun Buoy off East Shoal; when this is made, leave it close to on the Starboard hand, and steer for the ruins of the Old Lighthouse, bearing **N. $\frac{3}{4}$ E.** on the West end of Marsh Island, and follow the directions before given.

High Water.

At the entrance of Vermillion Bay, the rise and fall of tides is usually small, the time and height of high and low water is irregular, and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

CALCASIEU PASS, LA.

This Pass, which leads into Calcasieu Lake, lies West-Northerly about 125 miles from Ship Island Shoal Lighthouse, West-Northerly about 63 miles from Trinity Shoal Light-ship, West-Northerly 57 miles from Tiger Point, and East-Northerly 29 miles from Sabine Pass.

Calcasieu Pass Lighthouse.

Upon the West Bank of Calcasieu Pass is a Black Pyramidal Tower on a Screw-Pile Foundation, which at this date (1882), shows a fixed White Light. Trinity Shoal Light-ship bears from Calcasieu Pass Lighthouse **E.SE.** 64 miles; Light-ship off entrance to Galveston Bay, **SW.** by **W. $\frac{1}{2}$ W.** about 80 miles.

Remarks.

At this date (1882), a Nun Buoy, painted in Black and White Perpendicular Stripes, is placed in soft bottom off the Bar; the Channel in entering is liable to change with every gale from seaward; at this time there are Ranges on shore to guide vessels over the Bar, but they are kept at private expense; there are usually at low tide from 4 to 6 feet water on the Bar; it is therefore advisable for light-draught vessels bound to this place to take pilots. Calcasieu Lighthouse at this time bears from the Bar Buoy **N.** $\frac{3}{4}$ **W.**

The Coast from Tiger Point to Calcasieu Pass.

From Tiger Point to Calcasieu Pass, a distance of 56 miles, there are no dangers except the Bars, which extend from the shore. Vessels from the Eastward, navigating this part of the coast in night-time or thick weather, may, when past Trinity Shoal, approach the shore in 4 fathoms water without danger.

SABINE PASS.

This Pass, which leads up to Sabine City and into Sabine Lake lies West-Northerly 83 miles from Trinity Shoal Light-ship, West-Southerly 24 miles from Calcasieu Pass, and East-Northerly about 53 miles from the entrance to Galveston Bay.

Sabine Pass Lighthouse.

Upon Brant Point, East side of entrance to Sabine Pass, is a White Octagonal Tower, with Dwelling attached; this Lighthouse at this date (1882), shows a fixed White Light, which flashes every 90 seconds. Trinity Shoal Light-ship bears from Sabine Pass Lighthouse **E.** by **S.**, distance 88 miles. Light-ship at the entrance to Galveston Bay **SW.** by **W.**, distance 53 miles.

Remarks.

At this date (1881), a straight Channel across the Bar is in course of construction by the United States Government, and when completed will, it is said, have a depth of from 10 to 17 feet water; at this time vessels of 7 feet draught have difficulty in crossing this Bar. In consequence of the above, no practical sailing directions at this time can be given.

The Coast from Calcasieu Pass to Sabine Pass.

From Calcasieu Pass to Sabine Pass, a distance of 29 miles, there are no dangers, except the Bars which extend from the shore. Vessels navigating this part of the coast in night-time or thick weather may therefore approach the shore in 4 fathoms water without danger.

High Water.

At Sabine Pass the rise and fall of tides is usually small, the time and height of high and low water is irregular and much influenced by the winds; wind, that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

GALVESTON BAY, TEXAS.

The entrance to this Bay lies West, nearly, about 194 miles from Ship Island Shoal Lighthouse, West-Southerly about 80 miles from Calcasieu Pass, and Northeasterly about 104 miles from the entrance to Matagorda Bay.

Galveston Light-ship.

Inside Galveston Bar, in about 4 fathoms water, at this date (1882), is moored a Light-ship, which is schooner rigged, with the word Galveston in large letters on each side. At this time this Light-ship shows one fixed Red Light, and has a Bell and Horn, one of which is used in thick weather. This Light-ship is intended to guide vessels in the best water across the Bar.

Bearings and Distances from Galveston Light-ship.

	Distance.
Ship Island Shoal Lighthouse, East nearly . . .	194 miles.
Trinity Shoal Light-ship, E. $\frac{3}{4}$ N. ,	132 "
Bolivar Point Lighthouse, NW. by W. $\frac{1}{4}$ W. , . .	17 $\frac{1}{2}$ "
Half-Moon Shoal Lighthouse in Galveston Bay, W. by N. $\frac{3}{4}$ N. ,	6 $\frac{1}{2}$ "
Buoy painted in Red and Black Horizontal Stripes on wreck of C. W. Corcoran, NE. $\frac{3}{4}$ E. , . .	2 $\frac{3}{4}$ "
Buoy painted in Red and Black Horizontal Stripes on wreck of City of Waco, E. SE. , nearly . .	4 $\frac{1}{4}$ "

	Distance.
Whistling Buoy* off the Bar, E. ¼ S. ,	3½ miles.
Outer Bar Buoy, painted in Black and White Perpendicular Stripes, E. ¼ S. ,	2½ "
Skeleton Pyramid, surmounted by Black Ball on North Breakers, SE. ¼ S. ,	2 "

Bolivar Point Lighthouse.

In latitude 29° 22' North, and longitude 94° 46' West, on the North side of entrance to Galveston Bay, is a White Tower, which at this date (1882), is painted in Black and White Horizontal Bands; at this time this Lighthouse shows a fixed White Light.

Bearings and Distances from Bolivar Point Lighthouse.

	Distance.
Galveston Light-ship, SE. by E. ¼ E. ,	1¾ miles.
Whistling Buoy off the Bar, E. by S. ,	5¼ "
Outer Bar Buoy, painted in Black and White Perpendicular Stripes, E. by S. ¼ S. ,	4¼ "

Fort Point Lighthouse.

Off Northeast Point, Galveston Island, is a White Hexagonal Screw-pile Structure, which at this date (1882), shows a fixed White Light, with two Red Cuts, one to show the Turn Buoy, the other on Galveston Wharves.

In entering Galveston Harbor at night, the Fort Point Light will not be seen until abreast of the Light-ship, when it will appear as a fixed White Light, and continue as such until near the Turn Buoy (Black), when it will change to fixed Red; after making the turn it will show again as fixed White, and continue as such until near the Wharves.

Remarks.

The entrance to Galveston Bay is across Bars, which is liable to change in depth and location with every gale from seaward. At this date (1881), the channel leading in is well marked with Buoys, and a Light-ship, the former of which are shifted with the changing of the channel. At this time there is a depth of from 10 to 12 feet water in the Channel on the Bar.

* The Whistling Buoy is not in position during the months of June, July, August and September.

**Sailing Directions for Galveston Bay in Daytime,
with favorable winds and fair weather.**

Vessels of not more than 8 or 9 feet draught from the Eastward, bound to Galveston Bay, should keep in not less than 7 fathoms water until the Lighthouse on Bolivar Point is made; then if the Bar is considered smooth enough to safely cross, bring this Lighthouse to bear **W.** by **N.**, and run for it on this course, keeping a sharp lookout for the Whistling Buoy; when this is made, leave it close to on either hand, and steer about **W. ¼ N.** leaving the outer and inner Bar Buoys close to on either hand, and steer for the Light-ship, bearing about **W. ¼ N.**; leave the Light-ship a short distance on the Port hand, and make good the course West, carrying deep water. If bound to Galveston, when Bolivar Point Lighthouse bears **N.NW.**, then in about $6\frac{1}{2}$ fathoms water, steer **S.SW.**, leaving the Turn Buoy (Black), about $\frac{1}{4}$ mile on the Port hand; as you sail in you will see Quarantine Buoy (Red), which lies about $\frac{1}{2}$ mile Southwest from Fort Point Lighthouse; bring this Buoy to bear **S.SW.**, and run for it, carrying about 9 feet water; leave this last-named Buoy close to on the Starboard hand, and steer about **S. ½ W.** about $\frac{1}{2}$ mile, then gradually haul more Westerly, keeping close to the wharves. From Quarantine Buoy to the Wharves the Channel is deep, but narrow; it is therefore necessary when past this Buoy to proceed with caution. These directions were good for 1881.

If bound up Galveston Bay, through the new Dredged Channel, a pilot is necessary.

Anchorage.

There is Anchorage off Galveston Bar in from 6 to 7 fathoms water, the Lighthouse on Bolivar Point bearing from **NW.** by **W.** to **W.NW.**

High Water.

At the entrance of Galveston Bay, the rise and fall of tides are usually small, the time and height of high and low water is irregular and much influenced by winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

The Coast from Sabine Pass to Galveston Bar.

From Sabine Pass to Galveston Bar, a distance of about 50 miles, vessels of 12 feet draught may approach the shore in 5 fathoms water without danger.

Galveston Bank.

This Bank, which extends **E.** by **N.** and **W.** by **S.** about 30 miles, has, it is said, in some places as little as 17 feet water upon it; between this danger and the shore there is a good channel of 7 fathoms water. Bolivar Point Lighthouse (entrance to Galveston Harbor), bears from the Western part of this Bank **W. ½ S.**, distance about 22 miles.

SAN LUIS PASS.

This Pass, which leads into Galveston (West) Bay, to the Westward of Galveston Island, lies Southwesterly about 25 miles from Galveston Light-ship, and there is said to be from 7 to 8 feet water upon the Bar at low tide, but as there are no Buoys at this date (1881), to mark the channel leading in, it is advisable for strangers to take pilots off the Bar.

BRAZOS RIVER.

The entrance to this River is about 38 miles Southwesterly from Galveston Light-ship, and about 13 miles Southwesterly from San Luis Pass, and there is said to be about 6 feet water on the Bar at low tide, but as there are no Buoys at this date (1881), to mark the channel leading in, it is advisable for strangers to take pilots off the Bar.

MATAGORDA BAY, TEXAS.

The entrance to this Bay, which is called Cavallo Pass, lies Southwesterly about 105 miles from Galveston Light-ship, Southwesterly about 80 miles from San Luis Pass, and about 47 miles Northeasterly from Aransas Pass.

Matagorda Lighthouse.

Near the Eastern end of Matagorda Island, Southwest side of entrance to Matagorda Bay by Pass Cavallo, is a Black Conical Tower, with White Dwelling a few yards Northeast from it; at this date (1882), this Lighthouse shows a fixed White Light which flashes White every 90 seconds; Ship Island Shoal Lighthouse bears from Matagorda Lighthouse, **E.** by **N.** $\frac{1}{2}$ **N.** 280 miles; Half Moon Reef Lighthouse, **NE.** by **N.** $\frac{1}{2}$ **N.** 15 $\frac{1}{2}$ miles.

Half Moon Reef Lighthouse.

Upon the Southern extremity of Half Moon Reef, in Matagorda Bay, is a White Screw-pile Structure, Lantern and Piles Black; this Lighthouse at this date (1882), shows a fixed Red Light and has a Horn, which in thick weather is sounded at intervals of about 5 seconds.

In running along the coast at night from the Eastward, Half Moon Reef Light may be made before Matagorda Light, and in passing Sand Hills it may appear as a Revolving Light; going up the rigging a few feet, will, however, dispel the illusion.

Remarks.

The entrance to Matagorda Bay is across a Bar, which is liable to change in depth and location with every gale from Seaward; at this date (1882), about 7 feet water can be taken at low tide over the Bar; it is however advisable for none but very light draught vessels to attempt to enter this Bay without a pilot; at this time the channel leading in is well Buoyed.

Sailing Directions for Matagorda Bay in Daytime, with favorable winds and fair weather.

Keep in 6 fathoms water until Matagorda Lighthouse is made; then bring it to bear about **W.** by **S.**, and run for it on this course, keeping a sharp lookout for the Outer or Sea Buoy painted in Black and White Perpendicular Stripes, which lies about a mile outside the Bar; when this is made, leave it close to on either hand, and run to the Northwestward, leaving the Inner Bar Buoy painted in Black and White Perpendicular Stripes close to on either hand, the Red Buoy off Pelican Flats on the Starboard, and the Turn Buoy (Black) close to on the Port hand; when past this last-

named Buoy the course is about North, carrying deep water and keeping about 500 yards from the Port shore, until the Red Buoy off Pelican Spit bears **N.NE.**, then run for it on this course, leaving it close to on the Starboard hand; when past it you will see the remains of the Old Lighthouses; continue the course **N.NE.** until the first bears **N.** by **W.** $\frac{1}{2}$ **W.**; then run for it, leaving it close to on the Port, and the second on the Starboard hand; when past the remains of the second Lighthouse, steer about **N.** by **W.** $1\frac{3}{4}$ miles, which will bring you up with the Swash Buoy painted in Black and White Perpendicular Stripes; leave this Buoy close to either hand, and if bound to Indianola, steer about **NW.** $\frac{1}{2}$ **W.**, until abreast Powder Horn Wharf, or haul up **NE.** $\frac{1}{2}$ **N.** for Half Moon Reef Lighthouse.

Anchorage.

There is Anchorage off the Bar in from 7 to 8 fathoms water, with Matagorda Lighthouse bearing West to **W.NW.**

High Water.

At the entrance to Matagorda Bay, the rise and fall of tides is usually small, the time and height of high and low water is regular, and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

The Coast from Galveston Bar to the Entrance of Matagorda Bay.

From Galveston Bar to the entrance of Matagorda Bay, a distance of about 105 miles; there are no dangers excepting the Bars, which extend from the shore. Vessels navigating this part of the coast may approach it in thick weather or night-time in 7 fathoms water without danger.

ARANSAS PASS, TEXAS.

This Pass, which leads into Aransas Bay, lies Southwesterly about 151 miles from Galveston Bar, 45 miles Southwesterly from Matagorda Lighthouse, and Northwesterly 114 miles from the entrance to the Rio Grande.

Aransas Pass Lighthouse.

Upon a low Island, inside of Aransas Pass, is a Brown Octagonal Tower (dwelling attached), which at this date (1882), shows a fixed White Light. This Lighthouse, bearing **NW. $\frac{1}{2}$ W.**, will show between the two points of the Pass.

Remarks.

At this date (1881), there is a depth of about 7 feet water across the bar and the channel leading in is well marked with Buoys; but it changes so often that strangers should not attempt to enter without a pilot. At this time the Lighthouse bears **NW. $\frac{1}{2}$ W.** from the Outer Bar Buoy, which lies in about $5\frac{1}{2}$ fathoms water. There is good anchorage a short distance without this Buoy.

High Water.

At the entrance to Aransas Pass the rise and fall of tides is usually small, the time and height of high and low water is irregular, and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

CORPUS CHRISTI PASS, TEXAS.

This Pass lies Southwesterly about 17 miles from Aransas Pass, and Northwesterly about 98 miles from the entrance of the Rio Grande.

At this date (1881), there are no Buoys to mark the Channel leading into this Pass, and we have not any reliable information in relation to the depth of water upon the Bar.

BRAZOS SANTIAGO, TEXAS.

The entrance to Brazos Santiago lies Southwesterly about 233 miles from Galveston Light-ship, about 144 miles Southwesterly from the entrance to Matagorda Bay, and Northwesterly about 7 miles from the entrance to the Rio Grande.

Brazos Santiago Lighthouse.

Upon the West side of the South end of Padre Island, North side of entrance to Brazos Santiago, is a Hexagonal Screw-pile Structure, which at this date (1882), shows a fixed White Light. The latitude of this Lighthouse is $26^{\circ} 04'$ North, and longitude $97^{\circ} 10'$ West. Ship Island Shoal Lighthouse bears from Brazos Santiago Lighthouse **NE. $\frac{5}{8}$ E.** nearly, distance 365 miles.

Point Isabel Lighthouse.

At Point Isabel, Brazos Santiago, is a White Tower, which at this date (1882), shows a fixed White Light, which flashes every minute. About 5 feet water can be taken up abreast Point Isabel Lighthouse, which bears **W. $\frac{1}{2}$ N.** about $2\frac{3}{4}$ miles from the entrance.

Remarks.

At this date (1881), there is a depth at low tide of about 7 feet water in the Channel across the Bar; at this time a Buoy, painted in Black and White Perpendicular Stripes, is placed near the entrance for the use of pilots, and is changed whenever the Channel shifts, which is often; under no circumstances should strangers attempt this Bar without a pilot, which are generally in attendance when the Bar is smooth enough to safely cross. There is good anchorage off the Bar near the Buoy.

High Water.

At the entrance of Brazos Santiago the rise and fall of tides is usually small, the time and height of high and low water is irregular and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

RIO GRANDE ENTRANCE.

This entrance, which is in latitude $25^{\circ} 57\frac{1}{2}'$ North, and longitude $97^{\circ} 07\frac{1}{2}'$ West, lies **SW. $\frac{1}{2}$ W.** about 367 miles from Ship Island Shoal Lighthouse, **S.SW.** 240 miles from Galveston Light-ship, **S. $\frac{1}{2}$ W.** about 150 miles from the entrance to Matagorda Bay, and Southeasterly about 7 miles from Brazos Santiago Lighthouse.

Remarks.

The entrance to the Rio Grande is across a Bar, which is liable to change in depth and location with every gale from seaward; in 1857 about 4 feet water at low tide could be taken over this Bar into the River, where in some places near the mouth there are $3\frac{1}{2}$ fathoms water.

High Water.

At the entrance to the Rio Grande the rise and fall of tides is usually small, the time and height of high and low water is irregular and much influenced by the winds; winds that blow on the coast tend to raise the tides, while those that blow from the coast depress them.

Remarks on Currents, etc.

On the Northern coast of the Gulf of Mexico, especially from the Southwest Pass (entrance to Mississippi River) to the Rio Grande, the current appears to be governed by the winds; but in Northerly or Northeasterly winds it sets stronger to the Southward than in any other. Sailing vessels, therefore, with these winds, falling to leeward of their port, will find it very difficult to get to windward.

During the most of the time, from September to April, there is heavy sea upon this part of the coast, making the crossing of the Bars extremely dangerous; but from April to September the navigation is better, and most of the time vessels may ride without the Bars in 7 or 8 fathoms water without danger.

LATITUDES AND LONGITUDES OF LIGHT- HOUSES AND LIGHT-SHIPS.

(From United States Coast Survey.)

	Latitude.	Longitude.
	D. M.	D. M.
Absecom Lighthouse, . . .	39.22 N.	74.25 W.
Assateague Lighthouse, . .	37.55	75.21
Amelia Island Main Light- house,	30.40	81.26
Alligator Reef Lighthouse, .	24.51	80.37
American Shoal Lighthouse, .	24.31	81.31
Aransas Pass Lighthouse, .	27.52	97.03
Bass River Lighthouse, . . .	41.39	70.10
Bishop and Clerks Lighthouse,	41.34	70.15
Brant Point Lighthouse, . .	41.17	70.06
Bird Island Lighthouse, . .	41.40	70.43
Brenton's Reef Light-ship, .	41.26	71.23
Beaver Tail Lighthouse, . .	41.27	71.24
Bristol Ferry Lighthouse, . .	41.39	71.16
Borden's Flats Lighthouse, .	41.42	71.10
Bullock's Point Lighthouse, .	41.44	71.22
Block Island Northern Light- house,	41.14	71.35

	Latitude.	Longitude.
	D. M.	D. M.
Block Island Southeast Light-house,	41.09 N.	71.33 W.
Blackwell's Island Lighthouse,	40.46	73.56
Bartlett's Reef Light-ship,	41.16	72.08
Bridgeport Harbor Lighthouse,	41.09	73.11
Black Rock Harbor Light-house,	41.09	73.13
Bergen Point Lighthouse,	40.39	74.09
Barnegat Lighthouse,	39.46	74.06
Brandywine Shoal Lighthouse,	38.59	75.07
Bombay Hook Lighthouse,	39.22	75.31
Back River Lighthouse,	37.05	76.16
Bell's Rock Lighthouse,	37.29	76.45
Bowler's Rock Lighthouse,	37.49	76.44
Blakistone Island Lighthouse,	38.12	76.45
Body Island Lighthouse,	35.49	75.34
Bull's Bay Lighthouse,	32.55	79.34
Battery Gladden Lighthouse,	30.40	88.00
Biloxi Lighthouse,	30.24	88.54
Barataria Bay Lighthouse,	29.17	89.57
Bolivar Point Lighthouse,	29.22	94.46
Brazos Santiago Lighthouse,	26.04	97.10
Bayside and Wilson's Beacons (Front),	40.27	74.07
Cross Rip Light-ship,	41.27	70.17
Cape Poge Lighthouse,	41.25	70.27
Cuttyhunk Lighthouse,	41.25	70.57
Clark's Point Lighthouse,	41.36	70.54

Longitude.

D. M.

71.33 W.

73.56

72.08

73.11

73.13

74.09

74.06

75.07

75.31

76.16

76.45

76.44

76.45

75.34

79.34

88.00

88.54

89.57

94.46

97.10

74.07

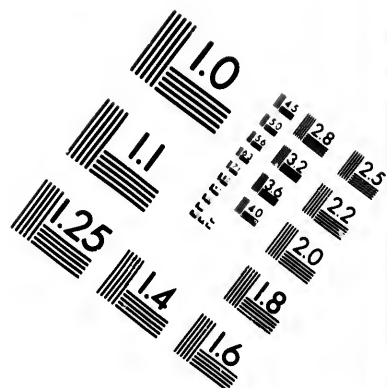
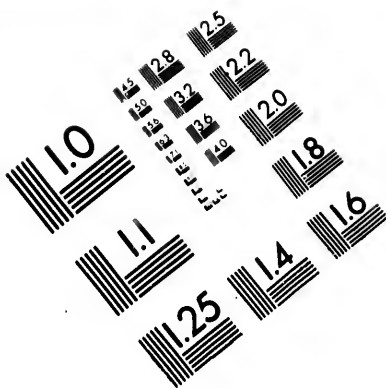
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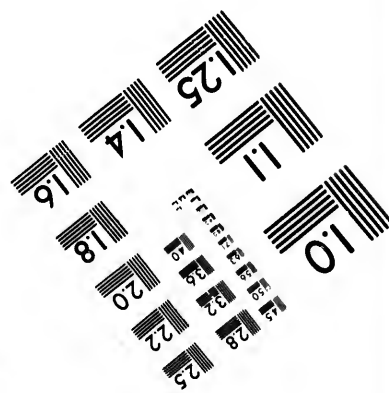
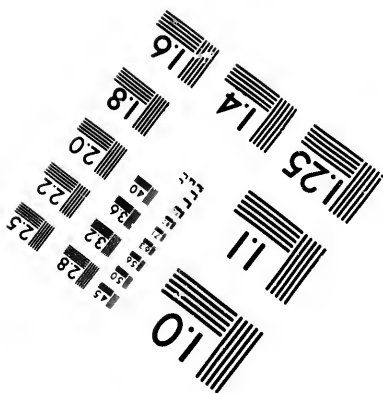
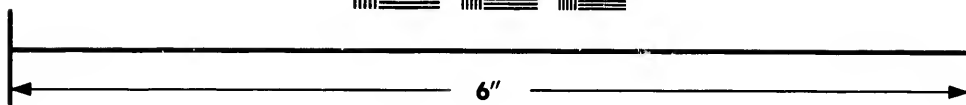
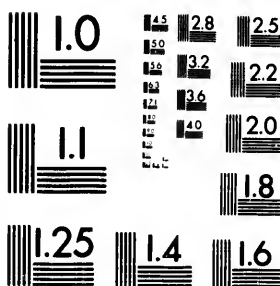
70.57

70.54





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	Latitude.	Longitude.
	D. M.	D. M.
Conimicut Point Lighthouse, .	41.43 N.	71.21 W.
Cedar Island Lighthouse, .	41.02	72.16
Cornfield Point Light-ship, .	41.14	72.23
Conover and Chapel Hill Beacons (Front), . . .	40.25	74.03
Corner Stake Lighthouse, .	40.39	74.10
Cape May Lighthouse, . . .	38.56	74.58
Cape Henlopen Main Light-house,	38.47	75.05
Cape Henlopen Beacon Light, .	38.48	75.05
Cross Ledge Lighthouse, .	39.10	75.14
Cherry Island Beacon Range (Front),	39.45	75.30
Cohansey Lighthouse, . . .	39.20	75.22
Cape Charles Lighthouse, .	37.07	75.54
Cape Henry Lighthouse, . .	36.56	76.00
Cove Point Lighthouse, . .	38.23	76.23
Craighill Channel (Front) Lighthouse,	39 11	76.24
Crane Island Lighthouse, .	36.54	76.20
Cherry Island Lighthouse, .	37.16	76.02
Crisfield Harbor Lighthouse, .	37.58	75.53
Clay Island Lighthouse, . .	38.14	75.58
Choptank River Lighthouse, .	38 39	76.11
Currituck Beach Lighthouse, .	36.23	75.50
Cape Hatteras Lighthouse, .	35.15	75.31
Cape Lookout Lighthouse, .	34.37	76.31
Cape Fear Lighthouse, . . .	33.52	78.00
Cape Roman Lighthouse, . .	33.01	79.22

	Latitude.	Longitude.
	D. M.	D. M.
Charleston Main Lighthouse, .	32.42 N.	79.53 W.
Cockspur Island Beacon, .	32.01	80.53
Cape Canaveral Lighthouse, .	28.28	80.31
Carrysfors Reef Lighthouse, .	25.13	80.13
Cedar Keys Lighthouse, .	29.06	83.04
Cape St. George Lighthouse, .	29.35	85.03
Cape San Blas Lighthouse, .	29.40	85.22
Cat Island Lighthouse, .	30.14	89.10
Chandeleur Lighthouse, .	30.03	88.53
Calcasieu Pass Lighthouse, .	29.46	93.17
Dumpling Rock Lighthouse, .	41.32	70.55
Dutch Island Lighthouse, .	41.30	71.24
Dumpling Lighthouse, .	41.17	72.01
Deepwater Point Range Beacon (Front), .	39.41	75.31
Delaware Breakwater Lighthouse, .	38.48	75.06
Deepwater Shoals Lighthouse, .	37.09	76.38
Dutch Gap Canal Lights, .	37.23	77.22
Daufuskie Range Beacons (Front), .	32.08	80.50
Dry Tortugas Lighthouse, .	24.38	82.56
Edgartown Lighthouse, .	41.23	70.30
East Chop Lighthouse, .	41.28	70.34
Eel Grass Ground Light-ship, .	41.18	71.57
Eaton's Neck Lighthouse, .	40.57	73.24
Execution Rocks Lighthouse, .	40.53	73.44

Longitude.	Latitude.	Longitude.
D. M.	D. M.	D. M.
79.53 W.	East Beacon Lighthouse (Sandy Hook),	74.00 W.
80.53	Elm Tree and New Dorp Beacons (Front),	74.06
80.31	Egg Island Lighthouse,	75.08
80.13	Egmont Key Lighthouse,	82.46
83.04	East Pascagoula River Lighthouse,	88.34
85.03	Fuller's Rock Lighthouse,	71.23
85.22	Falkner's Island Lighthouse,	72.39
89.10	Fire Island Lighthouse,	73.13
88.53	Fort Tompkins Lighthouse,	74.03
93.17	Finn's Point Beacon Range (Front),	75.32
70.55	Fenwick's Island Lighthouse,	75.03
71.24	Fort Carroll Lighthouse,	76.31
72.01	Fort Washington Lighthouse,	77.02
75.31	Fishing Battery Lighthouse,	76.05
75.06	Frying-pan Shoals Light-ship,	77.50
76.38	Fort Sumter Lighthouse,	79.52
77.22	Fort Ripley Lighthouse,	79.54
80.50	Fig Island Range Beacons (Front),	81.04
82.56	Fowey Rocks Lighthouse,	80.06
80.30	Fort Point Lighthouse (Galveston Harbor),	94.46
80.34	Fort Mifflin Bar Range Beacons,	75.16
81.57	Five Fathom Bank Light-ship,	74.36
82.24	Fourteen-foot Bank Light-ship,	75.11
83.44		

	Latitude.	Longitude.
	^{D. M.}	^{D. M.}
Gay Head Lighthouse, . . .	41.21 N.	70.50 W.
Goat Island Lighthouse, . . .	41.30	71.20
Gardiner's Island Lighthouse,	41.09	72.09
Great Captain's Island Light-		
house,	40.59	73.37
Great Beds Lighthouse, . . .	40.29	74.15
Greenbury Point Lighthouse, .	38.58	76.27
Georgetown Lighthouse, . . .	33.13	79.11
Galveston Light-ship, . . .	29.21	94.43
Handkerchief Light-ship, . .	41.30	70.04
Harding's Beach Lighthouse, .	41.40	69.59
Hyannis Harbor Lighthouse, .	47.38	70.17
Hen and Chickens Light-ship,	41.27	71.01
Horton's Point Lighthouse, . .	41.05	72.27
Highland (Navesink) Light-		
houses,	40.24	73.59
Hereford Inlet,	39.00	74.47
Hawkin's Point Lighthouse, . .	39.12	76.32
Hooper's Straits Lighthouse, .	38.14	76.04
Havre-de-Grace Lighthouse, . .	39.32	76.05
Hatteras Inlet Lighthouse, . .	35.16	75.46
Hunting Island Lighthouse, . .	32.23	80.25
Hilton Head Range Lights		
(Front),	32.10	80.43
Horn Island Lighthouse, . . .	30.14	88.31
Head of the Passes Lighthouse		
(Mississippi River),	29.09	89.15

Longitude.

D. M. W.

70.50
71.20
72.09

73.37

74.15

76.27

79.11

94.43

70.04

69.59

70.17

71.01

72.27

73.59

74.47

76.32

76.04

76.05

75.46

80.25

80.43

88.31

99.15

	Latitude.	Longitude.
	D. M.	D. M.
Half Moon Reef Lighthouse (Matagorda Bay), . . .	28.33 N.	96.15 W.
Hog Island Lighthouse, . . .	37.23	75.42
Jane's Island Lighthouse, . . .	37.58	75.55
Jordan's Point Lighthouse, . . .	37.19	77.13
Jupiter Inlet Lighthouse, . . .	26.55	80.05
Key West Lighthouse, . . .	24.33	81.48
Lime Rock Lighthouse, . . .	41.29	71.20
Long Beach Bar Lighthouse, . . .	41.07	72.18
Little Gull Island Lighthouse, . . .	41.12	72.06
Lloyd's Harbor Lighthouse, . . .	40.55	73.26
Leading Point Lighthouse, . . .	39.13	76.33
Lazaretto Point Lighthouse, . . .	39.16	76.34
Lambert's Point Lighthouse, . . .	36.53	76.20
Lower Cedar Point Lighthouse, . . .	38.20	77.00
Love Point Lighthouse, . . .	39.03	76.17
Little Cumberland Island Light- house,	30.59	81.25
Monomoy Lighthouse, . . .	41.34	70.00
Muscle Bed Shoals Lighthouse, . . .	41.38	71.16
Mystic Lighthouse, . . .	41.19	71.59
Montauk Point Lighthouse, . . .	41.04	71.51
Middle Ground Lighthouse, . . .	41.04	73.06
Maurice River Lighthouse, . . .	39.12	75.02
Mispillion Creek Lighthouse, . . .	38.57	75.19

	Latitude.	Longitude.
	D. M.	D. M.
Mahon's River Lighthouse, .	39.11 N.	75.24 W.
Mathias Point Lighthouse, .	38.24	77.02
Martin's Industry Light-ship, .	32.06	80.35
Mobile Point Lighthouse, .	30.14	88.01
Merrill's Shell Bank Light- house,	30.14	89.15
Matagorda Lighthouse, . .	28.20	96.25
Nantucket Great Point Light- house,	41.23	70.03
Nobska Point Lighthouse, .	41.31	70.39
Ned's Point Lighthouse, . .	41.39	70.48
Norwalk Lighthouse, . . .	41.03	73.25
North Brother Lighthouse, . .	40.48	73.54
New London Lighthouse, . .	41.19	72.05
Newcastle Range Beacons (Front),	39.39	75.36
New Point Comfort Light- house,	37.18	76.17
Naval Hospital Lighthouse, .	36.51	76.18
Nansemond River Lighthouse,	36.55	76.26
Northwest Channel Light- house,	24.37	81.54
Old Gay Rock Lighthouse (Wickford Harbor), . . .	41.34	71.26
Old Field Point Lighthouse, .	40.59	73.07
Old Point Comfort Lighthouse,	37.00	76.18
Ocracoke Lighthouse, . . .	35.07	75.59

Longitude.	Latitude.	Longitude.
D. M.	D. M.	D. M.
5.24 W.	Oak Island Range Beacons	
7.02	(Front),	33.53 N. 78.02 W.
80.35	Oyster Beds Beacon, . . .	32.02 80.54
88.01		
	Pollock Rip Light-ship, . .	41.32 69.55
9.15	Palmer's Island Lighthouse, .	41.38 70.55
6.25	Prudence Island Lighthouse, .	41.36 71.19
	Pomham Rocks Lighthouse, .	41.47 71.22
	Point Judith Lighthouse, .	41.22 71.29
0.03	Plum Island Lighthouse, .	41.10 72.13
0.39	Penfield Reef Lighthouse, .	41.07 73.13
0.48	Princess Bay Lighthouse, .	40.30 74.13
3.25	Passaic Lighthouse, . . .	40.42 74.08
3.54	Port Penn Beacon Range	
2.05	(Front),	39.30 75.35
	Point Lookout Lighthouse, .	38.02 76.19
5.36	Point of Shoals Lighthouse, .	37.04 76.39
	Pool's Island Lighthouse, .	39.17 76.16
6.17	Piney Point Lighthouse, .	38.08 76.32
6.18	Paris Island Range Lights	
6.26	(Front),	32.18 80.40
	Pensacola Lighthouse, . .	30.21 87.19
1.54	Pass Christian Lighthouse, .	30.19 89.15
	Pass-a-Loutre Lighthouses, .	29.11 89.02
	Point Isabel Lighthouse, .	26.05 97.12
1.26	Rose Island Lighthouse, .	41.30 71.21
3.07	Race Rock Lighthouse, .	41.15 72.03
6.18	Robbins' Reef Lighthouse, .	40.39 74.04
5.59		

	Latitude.	Longitude.
	D. M.	D. M.
Reedy Island Lighthouse, .	39.30 N.	75.34 W.
Rattlesnake Shoal Light-ship, .	32.44	79.44
Round Island Lighthouse, .	30.17	88.35
Shovelful Light-ship, .	41.32	70.00
Succunnesset Light-ship, .	41.32	70.27
South Shoal Light-ship, .	40.56	69.52
Sankaty Head Lighthouse, .	41.17	69.58
Sow and Pigs Light-ship, .	41.23	70.59
Sabine's Point Lighthouse, .	41.46	71.23
Sassafras Point Lighthouse, .	41.49	71.23
Stonington Harbor Lighthouse, .	41.20	71.54
Stratford Point Lighthouse, .	41.09	73.06
Sand's Point Lighthouse, .	40.52	73.44
Stepping Stones Lighthouse, .	40.49	73.46
Saybrook Lighthouse, .	41.16	72.21
Southwest Ledge Lighthouse, .	41.14	72.55
Stamford Lighthouse, .	41.01	73.32
Shinnicock Lighthouse, .	40.51	72.30
Sandy Hook Light-ship, .	40.27	73.52
Scotland Light-ship, .	40.27	73.56
Sandy Hook Lighthouse, .	40.28	74.00
Ship John Shoal Lighthouse, .	39.18	75.23
Schooner Ledge Range Beacons (Front), .	39.51	75.19
Schnylkill Range Beacons (Front), .	39.53	75.12
Stingray Point Lighthouse, .	37.36	76.16
Smith's Point Lighthouse, .	37.34	76.12

Longitude.

D. M. W.

75.34
79.44
88.35

70.00

70.27

79.52

79.58

70.59

71.23

71.23

71.54

73.06

73.44

73.46

72.21

72.55

73.32

72.30

73.52

73.56

74.00

75.23

75.19

75.12

76.16

76.12

	Latitude.	Longitude.
	D. M.	D. M.
Sharp's Island Lighthouse, .	38.38 N.	76.23 W.
Sandy Point Lighthouse, .	39.01	76.24
Seven Foot Knoll Lighthouse, .	39.09	76.25
Solomon's Lump Lighthouse, .	38.03	76.01
Sullivan's Island Range Beacons (Front), . . .	32.46	79.51
Sapelo Main Lighthouse, .	31.23	81.17
St. Simon's Lighthouse, .	31.08	81.23
St. John's River Lighthouse, .	30.24	81.25
St. Augustine Lighthouse, .	29.53	81.17
Sombrero Key Lighthouse, .	24.38	81.07
Sand Key Lighthouse, . .	24.27	81.53
St. Mark's Lighthouse, . .	30.04	84.11
Sand Island Lighthouse, . .	30.11	88.03
Ship Island Lighthouse, . .	30.13	88.58
St. Joseph's Island Lighthouse, .	30.11	89.26
South Pass Lighthouse, . .	29.01	89.10
Southwest Pass Lighthouse, .	28.58	89.23
Ship Shoal Lighthouse, . .	28.55	91.05
Southwest Reef Lighthouse, .	29.23	91.30
Sabine Pass Lighthouse, . .	29.44	93.50
Tarpanlin Cove Lighthouse, .	41.28	70.45
Throg's Neck Lighthouse, .	40.48	73.47
Tucker's Beach Lighthouse, .	39.30	74.17
Tinicum Island Range Beacons, (Front),	39.51	75.15
Thomas' Point Lighthouse, .	38.54	76.26
Thimble Shoal Lighthouse, .	37.01	76.14

	Latitude.	Longitude.
	D. M.	D. M.
Too's Point Lighthouse, . . .	37.14 N.	76.23 W.
Tortugas Harbor Lighthouse, .	24.38	82.53
Turkey Point Lighthouse, . . .	39.27	76.01
Tybee Lighthouse, . . .	32.01	80.51
Timbalier Lighthouse, . . .	29.01	90.18
Trinity Shoal Light-ship, . .	29.12	92.14
West Chop Lighthouse, . . .	41.29	70.36
Wing's Neck Lighthouse, . . .	41.41	70.40
Whale Rock Lighthouse, . . .	41.27	71.25
Warwick Lighthouse, . . .	41.40	71.23
Watch Hill Lighthouse, . . .	41.18	71.52
West Beacon (Sandy Hook), . .	40.28	74.00
Winter Quarter Shoal Light-ship,	37.57	75.05
Wilmington Lighthouse, . . .	39.43	75.31
Wolf Trap Lighthouse, . . .	37.23	76.12
Windmill Point Lighthouse, . .	37.36	76.14
White Shoal Lighthouse, . . .	37.01	76.32
Watt's Island Lighthouse, . . .	37.47	75.54
York Spit Lighthouse, . . .	37.13	76.15

Longitude.

D. M.
76.23 W.

82.53

76.01

80.51

90.18

92.14

70.36

70.40

71.25

71.23

71.52

74.00

5.05

5.31

6.12

6.14

6.32

5.54

3.15

