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(See Pages 56 and 57 for Tide Table.)

COGSWELL'S  
Nautical Almanac,  
1892.



CONTAINING

LISTS OF LIGHT HOUSES IN CANADA, UNITED STATES,  
WEST INDIES, &c., &c.

ALTITUDINAL TABLES,

Tide Tables, Phases of the Moon, &c.

175 BARRINGTON STREET,

HALIFAX, N. S.

(COPYRIGHT APPLIED FOR.)

NOVA SCOTIA PRINTING CO.

1892.

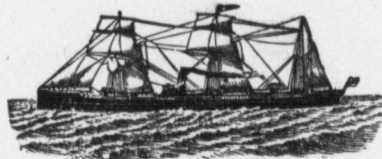
PRICE 25 CENTS.

**Wm. Stairs, Son & Morrow,**

**SHIP HANDLERS**

— AND —

**HARDWARE MERCHANTS,**



AT THEIR NEW WAREHOUSES

**174 TO 190 LOWER WATER STREET,**

(Opp. Jones' Wharf.)

**SELL AT LOWEST PRICES:**

**Cordage, Wire Rope, Anchors and Chains,**

OAKUMS,  
COPPER PAINT,  
CEMENT,  
SEAM PAINT,

SPIKES,  
NAILS,  
OILS  
Etc., Etc.

And everything found in first-class Stocks for Ships use.

— AGENTS FOR —

**Yarmouth Cotton Duck,**

**Mt. Vernon Cotton Duck,**

**Muntz Metal Sheathing.**

**CALL AND SEE OUR NEW ESTABLISHMENT.**

# H. H. FULLER & CO.,

41 to 45 Upper Water St., Halifax, N. S.

---

## Hardware,

WHOLESALE & RETAIL.

NAVAL STORES,

PAINTS, OILS,

METALS,

OF ALL KINDS.

## BUILDERS' MATERIALS,

Mill, Mining and Fishing Supplies.

---

THE LARGEST ASSORTMENT OF

## CUTLERY and SMALL HARDWARE

To be found in the City.

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—\* BEST GOODS AT LOW PRICES. \*—

---

*SIGN OF THE "CIRCULAR SAW."*

PHASES OF THE MOON—1892.

Mean Time at Greenwich.

Pickford & Black, Ship Brokers and Steamship Agents, Halifax, N. S.

January.				July.			
	d.	h.	m.		d.	h.	m.
☾ First Quarter	6	13	12.2	☾ First Quarter	1	14	13.0
☉ Full Moon	13	15	26.7	☉ Full Moon	9	13	43.8
☾ Last Quarter	21	15	42.6	☾ Last Quarter	16	13	47.6
● New Moon	29	4	38.6	● New Moon	23	11	30.6
☾ Perigee	5	5		☾ First Quarter	31	7	45.0
☾ Apogee	20	4		☾ Apogee	3	0	
☾ Perigee	31	21		☾ Perigee	17	14	
				☾ Apogee	30	18	
February.				August.			
	d.	h.	m.		d.	h.	m.
☾ First Quarter	4	21	39.0	☉ Full Moon	7	23	57.3
☉ Full Moon	12	7	38.0	☾ Last Quarter	14	18	37.3
☾ Last Quarter	20	12	14.7	● New Moon	21	22	58.9
● New Moon	27	15	47.3	☾ First Quarter	30	1	28.9
☾ Apogee	16	22		☾ Perigee	11	22	
☾ Perigee	29	0		☾ Apogee	27	13	
March.				September.			
	d.	h.	m.		d.	h.	m.
☾ First Quarter	5	7	14.6	☉ Full Moon	6	9	7.5
☉ Full Moon	13	0	55.4	☾ Last Quarter	13	0	49.6
☾ Last Quarter	21	5	16.4	● New Moon	20	13	16.3
● New Moon	28	1	17.9	☾ First Quarter	28	18	19.1
☾ Apogee	15	10		☾ Perigee	8	11	
☾ Perigee	28	10		☾ Apogee	24	6	
April.				October.			
	d.	h.	m.		d.	h.	m.
☾ First Quarter	3	18	21.2	☉ Full Moon	5	18	11.6
☉ Full Moon	11	18	26.0	☾ Last Quarter	12	9	37.4
☾ Last Quarter	19	18	0.4	● New Moon	20	6	24.0
● New Moon	26	9	46.5	☾ First Quarter	28	9	26.4
☾ Apogee	11	12		☾ Perigee	6	17	
☾ Perigee	25	21		☾ Apogee	21	15	
May.				November.			
	d.	h.	m.		d.	h.	m.
☾ First Quarter	3	7	11.6	☉ Full Moon	4	3	49.3
☉ Full Moon	11	10	59.2	☾ Last Quarter	10	22	1.9
☾ Last Quarter	19	2	52.7	● New Moon	19	1	19.0
● New Moon	25	17	49.2	☾ First Quarter	26	22	27.8
☾ Apogee	8	17		☾ Perigee	4	4	
☾ Perigee	24	5		☾ Apogee	17	16	
June.				December.			
	d.	h.	m.		d.	h.	m.
☾ First Quarter	1	21	51.3	☉ Full Moon	3	14	17.2
☉ Full Moon	10	1	32.3	☾ Last Quarter	10	14	29.7
☾ Last Quarter	17	9	0.8	● New Moon	18	20	13.0
● New Moon	24	2	6.6	☾ First Quarter	26	9	22.4
☾ Apogee	5	7		☾ Perigee	2	17	
☾ Perigee	21	3		☾ Apogee	15	1	
				☾ Perigee	31	0	

Vessels fitted with Plumbing Fixtures by Macdonald & Co., Halifax.—See adv. p. 3, cover.

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes Halifax

SUN'S SEMI-DIAMETER.

Mean Noon, Greenwich.

Day of Month	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	16 18	16 15	16 10	16 1	15 53	15 48	15 45	15 47	15 53	16 0	16 9	16 15
2	16 18	16 15	16 9	16 1	15 53	15 47	15 45	15 48	15 53	16 1	16 10	16 16
3	16 18	16 15	16 9	16 1	15 53	15 47	15 45	15 48	15 54	16 2	16 10	16 16
4	16 18	16 15	16 9	16 1	15 53	15 47	15 45	15 48	15 54	16 2	16 10	16 16
5	16 18	16 15	16 9	16 0	15 53	15 47	15 45	15 48	15 54	16 2	16 10	16 16
6	16 18	16 15	16 8	16 0	15 52	15 47	15 45	15 48	15 54	16 2	16 11	16 16
7	16 18	16 14	16 8	16 0	15 52	15 47	15 46	15 49	15 55	16 3	16 11	16 16
8	16 18	16 14	16 8	15 59	15 52	15 47	15 46	15 48	15 55	16 3	16 11	16 16
9	16 18	16 14	16 8	15 59	15 52	15 47	15 46	15 48	15 55	16 3	16 11	16 16
10	16 18	16 14	16 7	15 59	15 51	15 47	15 46	15 49	15 55	16 3	16 11	16 17
11	16 18	16 14	16 7	15 59	15 51	15 47	15 46	15 49	15 56	16 4	16 12	16 17
12	16 18	16 14	16 7	15 58	15 51	15 46	15 46	15 49	15 56	16 4	16 12	16 17
13	16 17	16 13	16 7	15 58	15 51	15 46	15 46	15 49	15 56	16 4	16 12	16 17
14	16 17	16 13	16 6	15 58	15 51	15 46	15 46	15 49	15 56	16 5	16 12	16 17
15	16 17	16 13	16 6	15 58	15 50	15 46	15 46	15 50	15 57	16 5	16 13	16 17
16	16 17	16 13	16 6	15 57	15 50	15 46	15 46	15 50	15 57	16 5	16 13	16 17
17	16 17	16 13	16 6	15 57	15 50	15 46	15 46	15 50	15 57	16 5	16 13	16 17
18	16 17	16 12	16 5	15 57	15 50	15 46	15 46	15 50	15 57	16 6	16 13	16 17
19	16 17	16 12	16 5	15 56	15 50	15 46	15 46	15 50	15 58	16 6	16 13	16 17
20	16 17	16 12	16 5	15 56	15 50	15 46	15 46	15 51	15 58	16 6	16 13	16 17
21	16 17	16 12	16 4	15 56	15 49	15 46	15 46	15 51	15 58	16 6	16 14	16 17
22	16 17	16 12	16 4	15 56	15 49	15 46	15 47	15 51	15 58	16 7	16 14	16 17
23	16 17	16 11	16 4	15 55	15 49	15 46	15 47	15 51	15 59	16 7	16 14	16 18
24	16 17	16 11	16 4	15 55	15 49	15 46	15 47	15 51	15 59	16 7	16 14	16 18
25	16 16	16 11	16 3	15 55	15 49	15 46	15 47	15 52	15 59	16 7	16 14	16 18
26	16 16	16 10	16 3	15 55	15 49	15 46	15 47	15 52	16 0	8	15 15	16 18
27	16 16	16 10	16 3	15 54	15 48	15 46	15 47	15 52	16 0	8	16 15	16 18
28	16 16	16 10	16 2	15 54	15 48	15 46	15 47	15 52	16 0	8	16 15	16 18
29	16 16	16 10	16 2	15 54	15 48	15 46	15 47	15 52	16 0	8	16 15	16 18
30	16 16	...	16 2	15 54	15 48	15 45	15 47	15 53	16 1	9	16 15	16 18
31	16 16	...	16 1	15 53	15 48	15 45	15 47	15 53	16 1	9	16 15	16 18

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

Pickford & Black, Agents Donaldson Line between Glasgow and Halifax.

Pickford & Black, Agents Halifax and Newfoundland Steamship Company, Limited.

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. p. 3, cover.

TIDE TABLE.

The time of High Water at the undermentioned places will be found by adding to or subtracting from the time of High Water at Halifax—as follows:

H. M.		H. M.	
Argyle, Jones' Anchorage	..add 1 38	Mud Island,	..add 1 15
Arichat Harbour,	..add 0 21	Noel Bay,	..add 4 52
Amet Sound,	..add 2 41	Negro Harbour	..add 0 23
Avon River,	..add 4 41	North Minimegash,	..sub 4 19
Blind Bay,	..subtract 0 3	Port George,	..add 3 28
Beaver Harbour,	..sub 0 9	Passamaquoddy,	..add 3 41
Bedeque Bay, Green's Wf.	..add 2 26	Pope Harbour,	..sub 0 9
Bay Verte,	..add 1 11	Placentia,	..add 1 26
Boughton Harbour,	..add 0 46	Prospect Harbour,	..sub 0 6
Boston Light, U. S.	..add 3 22	Port Medway,	..add 0 1
Chester Harbour,	..sub 0 5	Petit Passage,	..add 2 52
Chezetcook, Petpisawick, and Musquodoboit Inlets }	add 0 19	Pubnico Harbour,	..add 1 36
Cumberland Basin,	..add 4 6	Port Mouton,	..add 0 5
Country Harbour,	..sub 0 9	Port Ebert,	..add 0 20
Cape Sable Island, N. side.	..sub 0 19	Pugwash Harbour,	..add 2 41
Cape Sable Island, S. side.	..sub 1 19	Port Hood,	..add 1 11
Cape Sable,	..add 0 38	Quaco Bay,	..add 3 46
Clarke Harbour,	..add 1 9	Ragged Island Harbour,	..add 0 10
Clam Point,	..add 0 38	Richibucto River,	..sub 4 19
Cheticamp,	..add 0 26	Richmond Harbour,	..sub 1 49
Cape North,	..add 0 11	Stoddart Cove,	..add 1 9
Cardigan Bay,	..add 0 51	Sandy Cove, E.	..add 2 44
Cape Bear,	..add 1 11	Sandy Cove, W.	..add 2 58
Charlottetown,	..add 2 56	Shut-in Island,	..sub 0 2
Cape George,	..add 2 26	St. Mary's River,	..add 0 11
Digby Gut,	..add 3 11	Ship Harbour,	..add 0 5
Egmont Bay,	..sub 4 49	Spicer Cove,	..add 3 46
East Point,	..add 0 41	Sheet Harbour,	..add 0 17
Folly Point,	..add 4 0	St. Andrew,	..add 3 1
Gut of Canso,	..add 1 26	Seal Cove,	..add 3 5
Guysboro' Harbour,	..add 0 31	Shelburne,	..add 0 15
Gloucester, U. S.	..add 3 12	Spencer Island,	..add 3 53
Horton Bluff,	..add 4 41	Scotsman's Bay, Black Rock Point, }	..add 3 40
Island Harbour,	..sub 0 9	St. Ann's Bay,	..add 0 45
Isle Haute,	..add 3 32	St. Peter's Bay,	..add 0 11
Jebogue River,	..add 2 15	Seal Island,	..add 1 13
Jedore Harbour,	..sub 0 4	Sydney Harbor, C. B.	..add 1 11
Jourimain I,	..add 1 42	Tusket River, Pinch-gut Island, }	..add 1 44
Liscomb Harbour,	..add 0 11	Tracadie Harbour,	..sub 0 49
LaHave,	..add 0 2	Trinity Bay, Newfld,	..sub 0 27
Lunenburg,	..add 0 5	Vin Bay,	..sub 2 4
Liverpool Bay,	..add 0 1	West Bay,	..add 4 15
L'Etang Harbour,	..add 3 30	Westport,	..add 2 54
Lepreau Bay,	..add 3 29	Whitehaven,	..add 0 11
Louisburg Harbor, C. B.	..add 0 11	West Quoddy Head,	..add 3 23
Martin River,	..sub 0 6	Welchpool, Campobello Is.	..add 3 32
Machias, Seal Island,	..add 3 16	Watering Cove, Sheet Harbour, }	..add 0 17
Mabou River,	..add 1 11	Wallace Harbour,	..add 2 41
Magdalen Islands,	..add 0 31	Yarmouth Harbour,	..add 2 20
Menadiou Bay,	..add 0 26		
Merigomish Harbour,	..add 2 17		

For Parrsboro', Cornwallis, Horton, Hantsport, Windsor, Newport, Truro, &c., subtract 7 hours 32 minutes from the time of High Water at Halifax.

Residences fitted with Hot Water Heating Apparatus by Macdonald & Co.

1892]

NAUTICAL ALMANAC.

5

Residences fitted with Hot Water Heating Apparatus by Macdonald & Co., Halifax.

# Tow Boats,

✻ SALVAGE ✻

— AND —

## WRECKING STEAMERS.

“GOLIAH,”

“A. C. WHITNEY,”

“HENRY HOOVER.”

**\*VESSELS TOWED IN HARBOR,\***

To and from Sea, and Coastwise.

SALVAGE of VESSELS and CARGO on favourable Terms.

# Lawson, Harrington AND Co.

PROPRIETORS,

COMMERCIAL WHARF, - HALIFAX, N. S.

Pickford & Black, Agents Furness Line between London and Halifax.

JANUARY.

Chronometer of G. M. T.

Pickford & Black, owners Steamers between P. E. Island and Halifax.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax—See also page 3, cover.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of Time, to be added to Apparent Time.	Var. in 1 h'r.	Chronometer of G. M. T.					
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.			H.	MIN.	SEC.	THS.		
		<i>h. m. s.</i>	<i>"</i>	<i>o' "</i>	<i>"</i>	<i>m. s. s.</i>							
F	1	18 46 5.36	11.050	S. 23 1 54.8	12.16	3 37.91	1.190	1					
S	2	18 50 30.39	11.035	22 56 49.1	13.31	4 6.30	1.175	2					
S	3	18 54 55.05	11.019	22 51 15.9	14.45	4 34.32	1.159	3					
M	4	18 59 19.31	11.002	22 45 15.5	15.58	5 1.95	1.142	4					
T	5	19 3 43.14	10.983	22 38 47.9	16.71	5 29.15	1.124	5					
W	6	19 8 6.51	10.964	22 31 53.4	17.83	5 55.88	1.104	6					
T	7	19 12 29.39	10.943	22 24 32.2	18.94	6 22.13	1.083	7					
F	8	19 16 51.75	10.921	22 16 44.5	20.04	6 47.87	1.061	8					
S	9	19 21 13.58	10.898	22 8 30.5	21.12	7 13.07	1.038	9					
S	10	19 25 34.85	10.874	21 59 50.6	22.20	7 37.71	1.015	10					
M	11	19 29 55.53	10.849	21 50 45.0	23.26	8 1.77	0.990	11					
T	12	19 34 15.62	10.824	21 41 13.9	24.32	8 25.23	0.965	12					
W	13	19 38 35.08	10.798	21 31 17.7	25.36	8 48.07	0.939	13					
T	14	19 42 53.90	10.770	21 20 56.6	26.39	9 10.28	0.912	14					
F	15	19 47 12.06	10.743	21 10 10.9	27.41	9 31.83	0.884	15					
S	16	19 51 29.55	10.715	20 59 0.9	28.42	9 52.71	0.856	16					
S	17	19 55 46.37	10.686	20 47 26.9	29.41	10 12.90	0.827	17					
M	18	20 0 2.48	10.656	20 35 29.2	30.39	10 32.40	0.798	18					
T	19	20 4 17.88	10.627	20 23 8.1	31.36	10 51.20	0.768	19					
W	20	20 8 32.56	10.596	20 10 23.9	32.31	11 9.27	0.738	20					
T	21	20 12 46.51	10.566	19 57 17.0	33.25	11 26.61	0.707	21					
F	22	20 16 59.71	10.534	19 43 47.7	34.18	11 43.21	0.676	22					
S	23	20 21 12.15	10.502	19 29 56.4	35.09	11 59.05	0.644	23					
S	24	20 25 23.83	10.470	19 15 43.4	35.99	12 14.13	0.612	24					
M	25	20 29 34.73	10.438	19 1 9.1	36.87	12 28.43	0.580	25					
T	26	20 33 44.85	10.405	18 46 13.8	37.73	12 41.96	0.547	26					
W	27	20 37 54.18	10.372	18 30 58.0	38.58	12 54.69	0.514	27					
T	28	20 42 2.70	10.338	18 15 22.0	39.41	13 6.62	0.480	28					
F	29	20 46 10.40	10.304	17 59 26.3	40.22	13 17.74	0.446	29					
S	30	20 50 17.28	10.270	17 43 11.3	41.02	13 28.04	0.412	30					
S	31	20 54 23.34	10.235	17 26 37.3	41.80	13 37.51	0.377	31					
M	32	20 58 28.55	10.200	S. 17 9 44.8	42.56	13 46.14	0.342						

Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See also page 3, cover.



PICKFORD & BLACK'S W. I. S. S. Lines between Halifax and Demerara.

1892]

NAUTICAL ALMANAC.

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ISAAC H. MATHERS,

Ship Agent

— AND —

COMMISSION MERCHANT.

VICE-CONSUL FOR SWEDEN <sup>and</sup> NORWAY.

HALIFAX, - - NOVA SCOTIA.

**BLACK BROS. & CO.**

— IMPORTERS OF —

American and Canadian Dncks,  
English Sail and Repairing Hemp,  
Manilla and Hemp Cordage,  
Wire Ropes, Anchors, Chains,

PAINTS, OILS, NAVAL STORES,

Patent Logs, Compasses, Lights.

CALL AND GET OUR PRICES.

Agents for Lunenburg Packets "Lunenburg" and "Electra."

**HALIFAX, N. S.**

MACDONALD & CO., Importers of Engineers' Rubber Goods.

Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See adv. page 3, cover.

Pickford & Black, Agents Halifax and Newfoundland Steamship Company, Limited.

Macdonald & Co., Manufacturers

FEBRUARY.

Chronometer of G. M. T.

Pickford & Black's West India S. S. Lines between Halifax, Bermuda, Turk's Island & Jamaica.

Day of the Week.		Day of the Month.		THE SUN'S		Equation of Time, to be added to Apparent Time.		Var.
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour	m.	s.	in 1 h'r
M	1	20 58 28.55	10.200					
T	2	21 2 32.92	10.165	S. 17 9 44.8	42.56	13 46.14	0.342	
W	3	21 6 36.45	10.130	16 52 34.3	43.31	13 53.93	0.307	
T	4	21 10 39.14	10.095	16 35 6.0	44.04	14 0.89	0.273	
F	5	21 14 40.99	10.060	16 17 20.5	44.75	14 7.01	0.238	
S	6	21 18 42.01	10.025	15 59 18.2	45.44	14 12.29	0.203	
S	7	21 22 42.20	9.991	15 40 59.6	46.11	14 16.74	0.168	
M	8	21 26 41.57	9.957	15 22 25.0	46.77	14 20.36	0.134	
T	9	21 30 40.13	9.923	15 3 34.8	47.41	14 23.17	0.100	
W	10	21 34 37.89	9.890	14 44 29.5	48.03	14 25.17	0.067	
T	11	21 38 34.86	9.857	14 25 9.5	48.63	14 26.37	0.034	
F	12	21 42 31.04	9.825	14 5 35.2	49.22	14 26.78	0.001	
S	13	21 46 26.46	9.794	13 45 47.1	49.79	14 26.41	0.031	
S	14	21 50 21.13	9.763	13 25 45.5	50.34	14 25.28	0.063	
M	15	21 54 15.06	9.732	13 5 30.7	50.88	14 23.40	0.094	
T	16	21 58 8.27	9.702	12 45 3.3	51.40	14 20.78	0.124	
W	17	22 2 0.77	9.673	12 24 23.5	51.91	14 17.44	0.154	
T	18	22 5 52.58	9.645	12 3 31.7	52.40	14 13.40	0.183	
F	19	22 9 43.72	9.617	11 42 28.4	52.87	14 8.67	0.211	
S	20	22 13 34.19	9.590	11 21 14.0	53.32	14 3 27	0.239	
S	21	22 17 24.02	9.563	10 59 48.9	53.76	13 57.21	0.266	
M	22	22 21 13.22	9.537	10 38 13.4	54.19	13 50.50	0.292	
T	23	22 25 1.81	9.512	10 16 28.0	54.59	13 43.17	0.318	
W	24	22 28 49.80	9.487	9 54 33.1	54.98	13 35.22	0.344	
T	25	22 32 37.19	9.463	9 32 29.0	55.35	13 26.67	0.368	
F	26	22 36 24.01	9.439	9 10 16.2	55.70	13 17.54	0.393	
S	27	22 40 10.26	9.416	8 47 55.2	56.04	13 7.83	0.416	
S	28	22 43 55.96	9.393	8 25 26.3	56.36	12 57.56	0.439	
M	29	22 47 41.13	9.371	8 2 49.9	56.66	12 46.74	0.562	
T	30	22 51 25.77	9.349	7 40 6.6	56.94	12 35.38	0.484	
				S. 7 17 16.6	57.21	12 23.50	0.506	

H.	MIN.	SEC.	THS.
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MACDONALD & CO., Brass Founders.—See adv. page 3 cover.

—See adv. p. 3, cover.

Macdonald & Co., Manufacturers of Brass Binnacles and Stands, Halifax, N. S.

Macdonald & Co., Manufacturers of Patent Roller Bushings, Halifax.

N. S.  
2  
HS.  
Macdonald & Co., Manufacturers of Brass Binnacles and Stands, Halifax, N. S.

PICKFORD & BLACK, owners Steamers between P. E. Island and Halifax.

1892]

NAUTICAL ALMANAC.

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# Boston Marine Insurance Co.

CAPITAL PAID IN	\$1,000,000.00
NET SURPLUS ABOVE ALL LIABILITIES	1,845,725.48

**INSURES HULLS, FREIGHTS, AND CARGOES.**

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70 Bedford Row, - HALIFAX, N. S.

→\* LEITH HOUSE.\*←

## KELLY & GLASSEY,

(Successors to ALEX. McLEOD & Co.)

ESTABLISHED IN 1818.

196, 200 and 204 Hollis Street, Halifax, N. S.

— IMPORTERS OF —

### ALES, WINES and BRANDIES,

Royal Islay Blend a Specialty.

IN WOOD AND BOTTLES.

Brass Hinges, Hasps and Locks, at MACDONALD & CO'S. — See cover

Pickford & Black's West India Steamship Lines between Halifax and Havana, Cuba.

Macdonald & Co., Manufacturers of Patent Roller Bushings, Halifax.

MARCH.

Chronometer of G. M. T.

Pickford & Black's West India Steamship Lines between Halifax and Demerara.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of Time, to be added to Apparent Time.	Var. in 1 hr.
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour		
T	1	22 51 25.77	9.349	S. 7 17 16.6	57.21	12 23.50	0.506
W	2	22 55 9.90	9.329	6 54 20.4	57.46	12 11.11	0.526
T	3	22 58 53.54	9.309	6 31 18.5	57.69	11 58.24	0.546
F	4	23 2 36.71	9.289	6 8 11.3	57.90	11 44.89	0.566
S	5	23 6 19.43	9.271	5 44 59.2	58.10	11 31.08	0.584
S	6	23 10 1.70	9.253	5 21 42.5	58.28	11 16.84	0.602
M	7	23 13 43.56	9.236	4 58 21.6	58.45	11 2.19	0.619
T	8	23 17 25.02	9.220	4 34 57.1	58.59	10 47.14	0.635
W	9	23 21 6.10	9.204	4 11 29.2	58.72	10 31.71	0.650
T	10	23 24 46.83	9.190	3 47 58.3	58.84	10 15.92	0.665
F	11	23 28 27.22	9.177	3 24 24.8	58.95	9 59.81	0.678
S	12	23 32 7.31	9.164	3 0 48.9	59.04	9 43.39	0.690
S	13	23 35 47.11	9.153	2 37 11.1	59.11	9 26.68	0.702
M	14	23 39 26.65	9.143	2 13 31.7	59.17	9 9.71	0.712
T	15	23 43 5 95	9.133	1 49 51.1	59.21	8 52.51	0.721
W	16	23 46 45.05	9.125	1 26 9.6	59.24	8 35.10	0.729
T	17	23 50 23.95	9.118	1 2 27.5	59.26	8 17.50	0.737
F	18	23 54 2.69	9.111	0 38 45.2	59.26	7 59.73	0.743
S	19	23 57 41.29	9.106	S. 0 15 3.0	59.25	7 41.82	0.749
S	20	0 1 19.76	9.101	N. 0 8 38.8	59.22	7 23.79	0.753
M	21	0 4 58.14	9.097	0 32 19.7	59.18	7 5.67	0.757
T	22	0 8 36.44	9.094	0 55 59.5	59.12	6 47.46	0.760
W	23	0 12 14.67	9.092	1 19 37.7	59.05	6 29.20	0.762
T	24	0 15 52.87	9.091	1 43 14.0	58.97	6 10.89	0.763
F	25	0 19 31.05	9.091	2 6 48.1	58.88	5 52.56	0.764
S	26	0 23 9.22	9.091	2 30 19.6	58.75	5 34.23	0.764
S	27	0 26 47.40	9.091	2 53 48.0	58.61	5 15.90	0.763
M	28	0 30 25.61	9.093	3 17 13.1	58.47	4 57.61	0.761
T	29	0 34 3.86	9.095	3 40 34.4	58.30	4 39.36	0.759
W	30	0 37 42.17	9.098	4 3 51.6	58.12	4 21.17	0.756
T	31	0 41 20.56	9.102	4 27 4.3	57.93	4 3.06	0.753
F	32	0 44 59.05	9.106	N. 4 50 12.1	57.71	3 45.04	0.749

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MACDONALD & CO., Importers Engineers' Rubber Goods.—See cover.

Residences and Public Buildings fitted with Plumbing Fixtures by Macdonald & Co.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

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PICKFORD & BLACK, Ship Brokers and Steamship Agents, Halifax, N. S.

1892]

NAUTICAL ALMANAC.

11

# CLAYTON & SONS, Custom Tailors,

MANUFACTURING CLOTHIERS.

— IMPORTERS OF —

❖ Cloths and Tailor's Trimmings, ❖

11 JACOB STREET, HALIFAX, N. S.



Children's, Boy's and Men's  
**CLOTHING.**

Splendid assortment

Children's Suits and Overcoats.

Our leading Overcoat this Season,

**THE RAJAH,**

PRICE \$8.75.

**CUSTOM DEPARTMENT,**

We are now making to order

A Fine Tweed Suit for \$12.

PANTS \$3.

## CLAYTON & SONS,

Jacob Street, - HALIFAX, N. S.

MACDONALD & CO., Makers of Tumbler Racks, &c.—See p. 3, cover.

Pickford & Black, Agents Funch, Edye & Co., New York.

Residences and Public Buildings fitted with Plumbing Fixtures by Macdonald & Co.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

APRIL.

Chronometer of G. M. T.

Pickford & Black, Agents Halifax and Newfoundland Steamship Company, Limited.

		THE SUN'S				Equation of Time, to be added to subtracted from Apparent Time.		Var. in 1 h'r.
Day of the Week.	Day of the Month.	Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour	m. s.	s.	
F	1	0 44 59.05	9.106	N. 4 50 12.1	"			
S	2	0 48 37.65	9.111	5 13 14.6	57.71	3 45.04	0.749	
S	3	0 52 16.37	9.116	5 36 11.5	57.49	3 27.13	0.744	
M	4	0 55 55.23	9.123	5 59 2.3	57.24	3 9.35	0.738	
T	5	0 59 34.25	9.130	6 21 46.8	56.99	2 51.71	0.732	
W	6	1 3 13.45	9.138	6 44 24.6	56.71	2 34.22	0.725	
T	7	1 6 52.85	9.146	7 6 55.4	56.43	2 16.91	0.717	
F	8	1 10 32.46	9.156	7 29 18.9	56.13	1 59.80	0.708	
S	9	1 14 12.32	9.166	7 51 34.7	55.82	1 42.91	0.699	
S	10	1 17 52.43	9.177	8 13 42.5	55.49	1 26.26	0.689	
M	11	1 21 32.83	9.189	8 35 42.0	55.15	1 9.86	0.677	
T	12	1 25 13.52	9.202	8 57 32.9	54.80	0 53.75	0.665	
W	13	1 28 54.53	9.216	9 19 14.9	54.44	0 37.93	0.652	
T	14	1 32 35.88	9.230	9 40 47.7	54.06	0 22.43	0.639	
F	15	1 36 17.59	9.246	10 2 10.9	53.67	0 7.27	0.624	
S	16	1 39 59.68	9.262	10 23 24.3	53.26	0 7.53	0.609	
S	17	1 43 42.16	9.279	10 44 27.5	52.85	0 21.96	0.593	
M	18	1 47 25.05	9.296	11 5 20.2	52.41	0 36.00	0.576	
T	19	1 51 8.36	9.314	11 26 2.1	51.97	0 49.63	0.559	
W	20	1 54 52.11	9.332	11 46 32.9	51.51	1 2.83	0.541	
T	21	1 58 36.31	9.351	12 6 52.2	51.04	1 15.60	0.523	
F	22	2 2 20.97	9.371	12 26 59.8	50.56	1 27.92	0.504	
S	23	2 6 6.11	9.391	12 46 55.2	50.06	1 39.78	0.484	
S	24	2 9 51.73	9.411	13 6 38.0	49.55	1 51.17	0.464	
M	25	2 13 37.85	9.432	13 26 8.1	49.02	2 2.08	0.444	
T	26	2 17 24.47	9.453	13 45 25.0	48.48	2 12.49	0.423	
W	27	2 21 11.59	9.474	14 4 28.3	47.92	2 22.40	0.402	
T	28	2 24 59.23	9.496	14 23 17.8	47.35	2 31.80	0.381	
F	29	2 28 47.39	9.517	14 41 53.0	46.76	2 40.69	0.360	
S	30	2 32 36.06	9.539	15 0 13.7	46.16	2 49.07	0.338	
S	31	2 36 25.26	9.561	N. 15 18 19.5	45.55	2 56.93	0.317	
					44.92	3 4.27	0.295	

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See adv. page 3, cover.

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

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PICKFORD & BLACK, owners Steamers between P. E. Island and Halifax.

1892]

NAUTICAL ALMANAC.

13

# British American Hotel, HALIFAX, N. S.

DUNCAN BROUSSARD, Proprietor.


— THIS WELL-KNOWN HOTEL HAS BEEN —

## REFURNISHED THROUGHOUT,

— AND —

## TEN NEW ROOMS ADDED.

— IT IS —

Within 30 yds. of the Post Office  Dartmouth Ferry,

— AND ALL THE —

### PRINCIPAL STEAMSHIP LINES BETWEEN NEW YORK AND BOSTON.

Rates - - \$1.00 per day.

Brass Ventilators Made by MACDONALD & CO.—See adv p. 3, cover.

Pickford & Black, Agents Donaldson Line between Glasgow and Halifax.

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax. — See adv. page 3, cover.

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

MAY.

Chronometer of G. M. T.

Pickford & Black, Ship Brokers and Steamship Agents, Halifax, N. S.

		THE SUN'S				Equation of Time, to be subtracted from Apparent Time.		Var. in 1 h'r.
Day of the Week.	Day of the Month.	Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour	m. s.	s.	Var. in 1 h'r.
		<i>h. m. s.</i>	"	<i>° ' "</i>	"			
S	1	2 36 25.26	9.561	N. 15 18 19.5	44.92	3	4.27	0.295
M	2	2 40 14.98	9.583	15 36 10.0	44.28	3	11.08	0.273
T	3	2 44 5.23	9.605	15 53 44.9	43.62	3	17.37	0.251
W	4	2 47 56.02	9.628	16 11 3.9	42.95	3	23.12	0.228
T	5	2 51 47.35	9.650	16 28 6.7	42.27	3	28.33	0.206
F	6	2 55 39.23	9.673	16 44 53.1	41.58	3	32.99	0.183
S	7	2 59 31.66	9.696	17 1 22.6	40.88	3	37.11	0.160
S	8	3 3 24.65	9.720	17 17 35.1	40.16	3	40.67	0.137
M	9	3 7 18.20	9.743	17 33 30.3	39.43	3	43.67	0.113
T	10	3 11 12.32	9.767	17 49 7.8	38.69	3	46.09	0.089
W	11	3 15 7.02	9.791	18 4 27.4	37.94	3	47.95	0.065
T	12	3 19 2.29	9.815	18 19 28.9	37.18	3	49.23	0.041
F	13	3 22 58.14	9.839	18 34 11.9	36.40	3	49.93	0.017
S	14	3 26 54.57	9.863	18 48 36.3	35.62	3	50.06	0.007
S	15	3 30 51.58	9.888	19 2 41.7	34.83	3	49.61	0.031
M	16	3 34 49.17	9.912	19 16 27.9	34.02	3	48.58	0.055
T	17	3 38 47.34	9.936	19 29 54.6	33.20	3	46.97	0.079
W	18	3 42 46.08	9.959	19 43 1.6	32.37	3	44.80	0.103
T	19	3 46 45.39	9.983	19 55 48.6	31.54	3	42.05	0.126
F	20	3 50 45.27	10.006	20 8 15.3	30.69	3	38.74	0.149
S	21	3 54 45.70	10.029	20 20 21.5	29.83	3	34.88	0.172
S	22	3 58 46.68	10.052	20 32 6.9	28.95	3	30.46	0.195
M	23	4 2 48.21	10.075	20 43 31.3	28.07	3	25.50	0.217
T	24	4 6 50.27	10.096	20 54 34.3	27.18	3	20.02	0.239
W	25	4 10 52.84	10.117	21 5 15.8	26.28	3	14.02	0.260
T	26	4 14 55.91	10.138	21 15 35.6	25.36	3	7.52	0.281
F	27	4 18 59.47	10.158	21 25 33.3	24.44	3	0.55	0.300
S	28	4 23 3.48	10.176	21 35 8.8	23.51	2	53.11	0.319
S	29	4 27 7.93	10.194	21 44 21.8	22.57	2	45.24	0.337
M	30	4 31 12.81	10.212	21 53 12.1	21.62	2	36.94	0.354
T	31	4 35 18.09	10.228	22 1 39.5	20.66	2	28.24	0.370
W	32	4 39 23.75	10.244	N. 22 9 43.8	19.70	2	19.16	0.386

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Macdonald & Co., Manufacturers of Brass Sliding Door Rollers, Halifax.

Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax. See adv. page 3 cover.

Lead Scupper Pipes, all sizes, MACDONALD & CO'S.—See page 3, cover.





JUNE.

Chronometer of G. M. T.

Pickford & Black, owners Steamers between P. E. Island and Halifax.

Day of the Week.		Day of the Month.		THE SUN'S				Equation of Time, to be subtracted from added to Apparent Time.		Var.
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour			in	l h'r.	
		<i>h. m. s.</i>	"	" ' "	"	<i>m. s.</i>	<i>s.</i>			
W	1	4 39 23.75	10.244	N.22 9 43.8	"					
T	2	4 43 29.79	10.259	22 17 25.0	19.70	2 19.16	0.386			
F	3	4 47 36.17	10.273	22 24 42.7	18.73	2 9.71	0.401			
S	4	4 51 42.89	10.287	22 31 36.9	17.75	1 59.91	0.415			
S	5	4 55 49.94	10.300	22 38 7.4	16.76	1 49.78	0.429			
M	6	4 59 57.28	10.312	22 44 14.0	15.77	1 39.32	0.442			
T	7	5 4 4.91	10.324	22 49 56.7	14.78	1 28.56	0.454			
W	8	5 8 12.81	10.334	22 55 15.4	13.78	1 17.52	0.466			
T	9	5 12 20.96	10.345	23 0 10.0	12.78	1 6.21	0.476			
F	10	5 16 29.35	10.354	23 4 40.4	11.77	0 54.65	0.487			
S	11	5 20 37.95	10.363	23 8 46.4	10.76	0 42.85	0.496			
S	12	5 24 46.75	10.370	23 12 28.0	9.74	0 30.84	0.504			
M	13	5 28 55.73	10.377	23 15 45.2	8.72	0 18.64	0.512			
T	14	5 33 4 4.86	10.383	23 18 37.7	7.70	0 6.25	0.519			
W	15	5 37 14.13	10.389	23 21 5.7	6.68	0 6.29	0.525			
T	16	5 41 23.52	10.393	23 23 9.1	5.65	0 18.97	0.531			
F	17	5 45 33.00	10.397	23 24 47.8	4.63	0 31.76	0.535			
S	18	5 49 42.56	10.399	23 26 1.6	3.59	0 44.65	0.539			
S	19	5 53 52.17	10.401	23 26 50.7	2.56	0 57.62	0.541			
M	20	5 58 1.82	10.402	23 27 15.0	1.53	1 10.64	0.543			
T	21	6 2 11.48	10.402	23 27 14.4	0.49	1 23.69	0.544			
W	22	6 6 21.11	10.400	23 26 49.0	0.54	1 36.75	0.544			
T	23	6 10 30.69	10.398	23 25 58.9	1.57	1 49.79	0.542			
F	24	6 14 40.19	10.394	23 24 43.9	2.61	2 2.77	0.539			
S	25	6 18 49.58	10.388	23 23 4.2	3.64	2 15.68	0.536			
S	26	6 22 58.83	10.382	23 20 59.8	4.67	2 28.48	0.531			
M	27	6 27 7.91	10.374	23 18 30.7	5.70	2 41.13	0.524			
T	28	6 31 16.80	10.366	23 15 37.0	6.73	2 53.62	0.516			
W	29	6 35 25.46	10.356	23 12 18.9	7.75	3 5.91	0.508			
T	30	6 39 33.87	10.345	23 8 36.3	8.76	3 17.98	0.498			
F	31	6 43 42.02	10.334	N.23 4 29.4	9.78	3 29.91	0.487			
					10.79	3 41.37	0.476			

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Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

Residences fitted with Hot Water Heating Apparatus by Macdonald & Co., Halifax

PICKFORD & BLACK, Agts. Donaldson Line between Glasgow & Halifax.

1892]

NAUTICAL ALMANAC.

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1892.

1892.

# Hats, Caps and Furs,

— AT —

## JOHN H. PHILP'S,

82 Upper Water Street, - HALIFAX, N. S.

OPPOSITE TOBIN'S SOUTH WHARF.

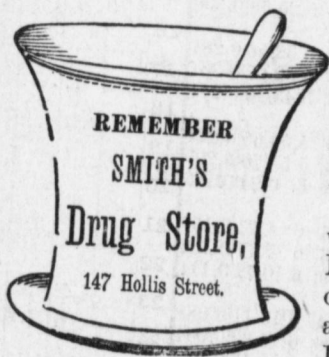
— SIGN OF BIG BLUE HAT. —

BE SURE AND MAKE NO MISTAKE OF STORE.

Stock of Hats, Caps and Furs now complete, consisting of all the most fashionable colours and styles. Ladies' and Gentlemen's Kid Gloves and Mitts, lined and trimmed with Fur. Gentlemen's Fur Gauntlets, &c. Also,

### TRUNKS, VALISES, CARPET BAGS, HAT CASES, &c. WOLF AND OTHER ROBES.

☞ These Goods are offered at lowest prices for Cash. Do not fail to call and get Bargains.



### MEDICINE CHESTS

Furnished and Fitted at the LONDON DRUG STORE, 147 Hollis Street, J. GODFREY SMITH, Dispensing Chemist, Proprietor.

Captains and Masters of vessels will please note that the only Diploma for excellence in Fitting out Medicine Chests, was awarded at the Dominion Exhibition of 1881 to

## J. GODFREY SMITH,

— AGENT FOR —

### B. LAURANCE, The English Optician,

Whose Glasses or spectacles will enable Captains and the man at the wheel descry more clearly objects at sea.

ALSO IN STOCK,

→ LeMaire's Marine Glasses. ←

Iron Pipe, all sizes, at MACDONALD & CO'S.— See adv. page 3 cover.

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Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

Residences fitted with Hot Water Heating Apparatus by Macdonald & Co., Halifax.

Pickford & Black, Agents Furness Line between London and Halifax.

Pickford & Black's West India Steamship Lines between Halifax and Demerara.

Day of the Week.		Day of the Month.		THE SUN'S				Equation of Time, to be added to Apparent Time.		Var. in 1 h'r.	Chronometer of G. M. T.			
		Apparent Right Ascension	Var. in 1 hour	Apparent Declination.	Var. in 1 hour					H.	MIN.	SEC.	THS.	
		<i>h. m. s.</i>	"	<i>° ' "</i>	"	<i>m. s.</i>	<i>s.</i>			1				
F	1	6 43 42.02	10.334	N.23 4 29.4	10.79	3 41.37	0.476			2				
S	2	6 47 49.88	10.321	22 59 58.3	11.80	3 52.64	0.463			3				
S	3	6 51 57.43	10.308	22 55 3.2	12.80	4 3.60	0.450			4				
M	4	6 56 4.66	10.294	22 49 44.1	13.79	4 14.24	0.436			5				
T	5	7 0 11.54	10.279	22 44 1.2	14.78	4 24.53	0.421			6				
W	6	7 4 18.06	10.264	22 37 54.6	15.76	4 34.46	0.406			7				
T	7	7 8 24.20	10.248	22 31 24.6	16.74	4 44.02	0.390			8				
F	8	7 12 29.94	10.231	22 24 31.3	17.70	4 53.18	0.373			9				
S	9	7 16 35.27	10.213	22 17 14.8	18.67	5 1.93	0.356			10				
S	10	7 20 40.18	10.195	22 9 35.3	19.62	5 10.25	0.338			11				
M	11	7 24 44.64	10.177	22 1 33.0	20.57	5 18.14	0.319			12				
T	12	7 28 48.66	10.158	21 53 8.1	21.51	5 25.58	0.300			13				
W	13	7 32 52.22	10.139	21 44 20.7	22.44	5 32.56	0.281			14				
T	14	7 36 55.31	10.119	21 35 11.1	23.36	5 39.07	0.261			15				
F	15	7 40 57.91	10.098	21 25 39.3	24.28	5 45.10	0.241			16				
S	16	7 45 0.03	10.078	21 15 45.6	25.19	5 50.65	0.221			17				
S	17	7 49 1.65	10.057	21 5 30.3	26.09	5 55.70	0.200			18				
M	18	7 53 2.77	10.036	20 54 53.4	26.98	6 0.24	0.179			19				
T	19	7 57 3.36	10.014	20 43 55.3	27.86	6 4.27	0.157			20				
W	20	8 1 3.42	9.991	20 32 36.2	28.73	6 7.77	0.134			21				
T	21	8 5 2.94	9.968	20 20 56.3	29.59	6 10.72	0.111			22				
F	22	8 9 1.90	9.945	20 8 55.9	30.44	6 13.11	0.088			23				
S	23	8 13 0.29	9.921	19 56 35.2	31.28	6 14.93	0.064			24				
S	24	8 16 58.09	9.896	19 43 54.6	32.10	6 16.17	0.039			25				
M	25	8 20 55.29	9.871	19 30 54.2	32.92	6 16.82	0.015			26				
T	26	8 24 51.89	9.846	19 17 34.4	33.73	6 16.87	0.011			27				
W	27	8 28 47.88	9.820	19 3 55.4	34.52	6 16.30	0.036			28				
T	28	8 32 43.26	9.794	18 49 57.5	35.30	6 15.12	0.062			29				
F	29	8 36 38.01	9.768	18 35 41.1	36.06	6 13.32	0.088			30				
S	30	8 40 32.14	9.743	18 21 6.4	36.82	6 10.90	0.114			31				
S	31	8 44 25.65	9.717	18 6 13.7	37.57	6 7.87	0.139			32				
M	32	8 48 18.54	9.691	N.17 51 3.2	38.30	6 4.21	0.165			33				

Residences and Public Buildings fitted with Plumbing Fixtures by Macdonald & Co.

Macdonald & Co., Manufacturers of Patent Roller Bushings, Halifax.

PICKFORD & BLACK, owners Steamers between P. E. Island and Halifax.

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Brass Hinges, Hasps and Locks, at MACDONALD & CO'S. —See cover.

Pickford & Black's West India Steamship Lines between Halifax and Havana, Cuba.

Macdonald & Co., Manufacturers of Patent Roller Bushings, Halifax.

Residences and Public Buildings fitted with Plumbing Fixtures by Macdonald & Co.

**AUGUST.**

**Chronometer of G. M. T.**

Pickford & Black, owners Steamers between P. E. Island and Halifax.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of Time, to be subtracted from Apparent Time.	Var. in 1 h'r.	Chronometer of G. M. T.			
		Apparent Right Ascension	Var. in 1 hour	Apparent Declination.	Var. in 1 h'r.			H.	MIN.	SEC.	THS.
		<i>h. m. s.</i>	<i>"</i>	<i>° ' "</i>	<i>"</i>	<i>m. s. s.</i>					
M	1	8 48 18.54	9.691	N.17 51 3.2	38.30	6 4.21	0.165	1			
T	2	8 52 10.80	9.665	17 35 35.4	39.01	5 59.92	0.191	2			
W	3	8 56 2.45	9.639	17 19 50.5	39.72	5 55.03	0.217	3			
T	4	8 59 53.48	9.614	17 3 48.8	40.41	5 49.52	0.242	4			
F	5	9 3 43 90	9.588	16 47 30.7	41.09	5 43.40	0.268	5			
S	6	9 7 33.71	9.563	16 30 56.3	41.76	5 36.67	0.293	6			
S	7	9 11 22.92	9.538	16 14 6.0	42.42	5 29.34	0.318	7			
M	8	9 15 11.54	9.514	15 57 0.2	43.06	5 21.42	0.342	8			
T	9	9 18 59.57	9.489	15 39 39.0	43.70	5 12.93	0.366	9			
W	10	9 22 47.03	9.466	15 22 2.8	44.32	5 3.86	0.389	10			
T	11	9 26 33.94	9.443	15 4 11.8	44.93	4 54.24	0.412	11			
F	12	9 30 20.30	9.420	14 46 6.4	45.52	4 44.07	0.435	12			
S	13	9 34 6.12	9.399	14 27 46.7	46.11	4 33.37	0.457	13			
S	14	9 37 51.43	9.377	14 9 13.1	46.69	4 22.14	0.478	14			
M	15	9 41 36.22	9.356	13 50 25.8	47.25	4 10.41	0.499	15			
T	16	9 45 20.51	9.335	13 31 25.3	47.79	3 58.19	0.520	16			
W	17	9 49 4.31	9.315	13 12 11.8	48.33	3 45.47	0.540	17			
T	18	9 52 47.63	9.295	12 52 45.5	48.85	3 32.26	0.560	18			
F	19	9 56 30.47	9.275	12 33 6.9	49.36	3 18.58	0.580	19			
S	20	10 0 12.84	9.256	12 13 16.3	49.85	3 4.43	0.599	20			
S	21	10 3 54.74	9.236	11 53 14.0	50.33	2 49.82	0.618	21			
M	22	10 7 36.19	9.218	11 33 0.4	50.80	2 34.76	0.637	22			
T	23	10 11 17.20	9.200	11 12 35.7	51.25	2 19.26	0.655	23			
W	24	10 14 57.78	9.182	10 52 0.4	51.69	2 3.32	0.673	24			
T	25	10 18 37.93	9.165	10 31 14 8	52.11	1 46.97	0.690	25			
F	26	10 22 17.68	9.148	10 10 19.1	52.52	1 30.21	0.707	26			
S	27	10 25 57.03	9.132	9 49 13.8	52.91	1 13.05	0.723	27			
S	28	10 29 36.01	9.116	9 27 59.2	53.30	0 55.52	0.738	28			
M	29	10 33 14.62	9.101	9 6 35.6	53.66	0 37.63	0.753	29			
T	30	10 36 52.88	9.087	8 45 3.4	54.02	0 19.38	0.767	30			
W	31	10 40 30.80	9.074	8 23 22.8	54.36	0 0.80	0.781	31			
T	32	10 44 8.41	9.061	N. 8 1 34.3	54.68	0 18.09	0.793				

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

PICKFORD & BLACK, owners Steamers between P. E. Island and Halifax.

1892]

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Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

Pickford & Black, Agents Halifax and Newfoundland Steamship Company, Limited.

		THE SUN'S						Chronometer of G. M. T.			
Day of the Week.	Day of the Month.	Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour	Equation of Time, to be subtracted from Apparent Time.	Var. in 1 h'r.	H.	MIN.	SEC.	THS.
		<i>h. m. s.</i>	"	<i>° ' "</i>	"	<i>m. s.</i>	<i>s.</i>				
	1	10 44 8.41	9.061	N. 8 1 34.3	54.68	0 18.09	0.793				
F	2	10 47 45.72	9.049	7 39 38.1	54.99	0 37.28	0.806				
S	3	10 51 22.75	9.037	7 17 34.6	55.29	0 56.76	0.817				
	4										
S	5	10 54 59.51	9.027	6 55 24.1	55.58	1 16.50	0.827				
M	6	10 58 36.03	9.017	6 33 6.9	55.85	1 36.48	0.837				
T	7	11 2 12.32	9.008	6 10 43.3	56.11	1 56.68	0.846				
	8										
W	9	11 5 48.42	9.000	5 48 13.7	56.36	2 17.08	0.854				
T	10	11 9 24.34	8.994	5 25 38.2	56.59	2 37.66	0.860				
F	11	11 13 0.11	8.988	5 2 57.2	56.82	2 58.38	0.866				
	12										
S	13	11 16 35.76	8.983	4 40 10.9	57.03	3 19.23	0.871				
S	14	11 20 11.31	8.980	4 17 19.7	57.23	3 40.18	0.875				
M	15	11 23 46.78	8.977	3 54 23.9	57.42	4 1.21	0.878				
	16										
T	17	11 27 22.19	8.974	3 31 23.7	57.59	4 22.30	0.880				
W	18	11 30 57.55	8.973	3 8 19.5	57.75	4 43.43	0.881				
T	19	11 34 32.89	8.972	2 45 11.7	57.90	5 4.58	0.881				
	20										
F	21	11 38 8.22	8.972	2 22 0.5	58.03	5 25.74	0.882				
S	22	11 41 43.56	8.973	1 58 46.4	58.14	5 46.90	0.881				
S	23	11 45 18.93	8.975	1 35 29.7	58.24	6 8.03	0.879				
	24										
M	25	11 48 54.34	8.977	1 12 10.8	58.33	6 29.11	0.877				
T	26	11 52 29.82	8.980	0 48 50.0	58.40	6 50.13	0.874				
W	27	11 56 5.37	8.983	0 25 27.6	58.46	7 11.08	0.871				
	28										
T	29	11 59 41.02	8.988	N. 0 2 4.1	58.50	7 31.92	0.866				
F	30	12 3 16.79	8.993	S. 0 21 20.3	58.53	7 52.64	0.861				
S	31	12 6 52.70	8.999	0 44 45.1	58.54	8 13.24	0.855				
	32										
S	33	12 10 28.76	9.006	1 8 10.0	58.53	8 33.68	0.848				
M	34	12 14 4.99	9.014	1 31 34.6	58.51	8 53.94	0.840				
T	35	12 17 41.41	9.022	1 54 58.6	58.48	9 14.02	0.832				
	36										
W	37	12 21 18.04	9.031	2 18 21.5	58.43	9 33.89	0.823				
T	38	12 24 54.90	9.041	2 41 43.1	58.36	9 53.53	0.813				
F	39	12 28 32.01	9.052	3 5 3.0	58.28	10 12.92	0.802				
	40										
S	41	12 32 9.38	9.063	S. 3 28 20.7	58.19	10 32.05	0.791				
	42										
	43										
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Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. page 3, cover.

Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See adv. page 3, cover.



## LIGHT HOUSES

## OF NOVA SCOTIA, NEW BRUNSWICK, ETC.

Arranged from the Dominion Official list.

[All bearings are *magnetic*, and are given from seaward; height of light from high water; and of building from base to vane on lantern.]

GEORGE'S ISLAND, west side of Island, Halifax Harbor, lat  $44^{\circ} 38' 30''$  N., lon  $63^{\circ} 33' 20''$  W., two fixed white catoptric lights, vertical, 20 feet apart, 50 and 30 feet high, drab square building, 21 feet high. Lights show seaward on the S., and into harbor on N. side; on W. side the upper light only can be seen. Vessels going into Halifax Harbor, passing Meagher's Beach, will keep the light on starboard bow. The light is for the purpose of guiding vessels in and out of the Harbor, through the channel west of the Island. These lights open to westward of Meagher's Beach, clear the westward of Thrum Cap Shoal. A fog bell on western side lighthouse tower, strikes 7 strokes every minute.

MEAGHER'S BEACH, Sherbrook Tower, east side of entrance to Halifax Harbor, lat  $44^{\circ} 36' N.$ , lon  $63^{\circ} 31' 50'' W.$ , fixed white catoptric light, visible 12 miles, 58 feet high, building white with red roof, granite, height 48 feet. When Sambro light bears W. S. W., this light should not be brought to the westward of north, which clears the Thrum Cap Shoal. A fog trumpet sounds blasts of 5 seconds, with intervals of 25 seconds between the blasts.

DEVIL'S ISLAND, on south point of Island, at the eastern entrance to Halifax harbor, two fixed white catoptric lights, horizontally, E.  $\frac{3}{4}$  N., and W.  $\frac{3}{4}$  S., 175 yards apart, visible 13 miles, the light E. 59 feet high, W. light 52 feet, both buildings white, octagonal, wood, height E. 53 feet, W. 45 feet, lat  $44^{\circ} 34' 50'' N.$ , lon  $63^{\circ} 27' 15'' W.$  The eastern light opens to southward of western, clears to the southward of the Thrum Cap Shoal. Lifeboat stationed here.

JEDDORE ROCK, on summit of rocks about 22 miles east of Halifax, lat  $44^{\circ} 39' 45''$ , lon  $63^{\circ} 0' 22''$  one fixed red light, visible 12 miles, white, square, wood, dwelling attached, 86 feet high.

EGG ISLAND, centre of island, lat  $44^{\circ} 39' 50'' N.$ , lon  $62^{\circ} 51' 32'' W.$  catoptric light, a group flashing white or bright light, showing three flashes with intervals of 15 seconds between, followed by intervals of 30 seconds, visible 15 miles, 80 feet high, octagonal building, black and white vertical stripes on seaward side, height 45 feet. Visible around horizon. An iron can buoy, painted red, about 200 yards south of the Brig Rock, W. by S. from the light house, about 2 miles.

POPE'S HARBOR, on west point of Harbour Island, lat  $44^{\circ} 47' 40'' N.$ , lon  $62^{\circ} 38' 50'' W.$ , fixed red light, catoptric, visible 9 miles, 45 feet high, tower white, square, wood, with dwelling attached, height 37 feet.

SHEET ROCK, at the entrance to Sheet Harbor, lat  $44^{\circ} 49' 55'' N.$ , lon  $62^{\circ} 29' 40'' W.$ , revolving red light every 40 seconds, visible 10 miles. White, square, wood, with dwelling attached. 75 feet above high water mark. Automatic whistling buoy in 24 fathoms water S by W  $\frac{1}{2}$  W 5 and one-sixth miles from Sheet Rock light house.

MACDONALD &amp; CO., Importers of Engineers' Rubber Goods.

Pickford &amp; Black, Agents Halifax and Newfoundland Steamship Company, Limited.

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See *adv.* page 3, cover.Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See *adv.* page 3, cover.

OCTOBER.

Chronometer of  
G. M. T.

Pickford & Black, Ship Brokers and Steamship Agents, Halifax, N. S.

Day of the Week. Day of the Month.		THE SUN'S				Equation of Time, to be subtract- ed from Apparent Time.	Var. in 1 hr.	Chronometer of G. M. T.			
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour			H.	MIN.	SEC.	THS.
		<i>h. m. s.</i>	<i>"</i>	<i>o ' "</i>	<i>"</i>	<i>m. s.</i>	<i>s.</i>				
S	1	12 32 9.38	9.063	S. 3 28 20.7	58.19	10 32.05	0.791	1			
S	2	12 35 47.04	9.075	3 51 36.0	58.08	10 50.90	0.779	2			
M	3	12 39 25.60	9.089	4 14 48.5	57.96	11 9.44	0.765	3			
T	4	12 43 3.30	9.103	4 37 57.9	57.82	11 27.64	0.751	4			
W	5	12 46 41.95	9.119	5 1 3.7	57.66	11 45.49	0.736	5			
T	6	12 50 20.99	9.135	5 24 5.8	57.50	12 2.96	0.719	6			
F	7	12 54 0.43	9.153	5 47 3.8	57.32	12 20.02	0.702	7			
S	8	12 57 40.31	9.171	6 9 57.3	57.13	12 36.65	0.684	8			
S	9	13 1 20.65	9.191	6 32 46.0	56.93	12 52.83	0.664	9			
M	10	13 5 1.47	9.211	6 55 29.7	56.71	13 8.52	0.643	10			
T	11	13 8 42.78	9.232	7 18 8.0	56.47	13 23.71	0.622	11			
W	12	13 12 24.62	9.254	7 40 40.4	56.22	13 38.39	0.600	12			
T	13	13 16 6.99	9.277	8 3 6.6	55.95	13 52.53	0.578	13			
F	14	13 19 49.92	9.301	8 25 26.2	55.67	14 6.12	0.554	14			
S	15	13 23 33.42	9.325	8 47 38.8	55.37	14 19.14	0.530	15			
S	16	13 27 17.51	9.350	9 9 44.0	55.06	14 31.57	0.506	16			
M	17	13 31 2.20	9.375	9 31 41.5	54.72	14 43.41	0.480	17			
T	18	13 34 47.50	9.401	9 53 30.7	54.37	14 54.63	0.454	18			
W	19	13 38 33.44	9.428	10 15 11.4	54.01	15 5.21	0.427	19			
T	20	13 42 20.03	9.455	10 36 43.1	53.62	15 15.15	0.400	20			
F	21	13 46 7.28	9.483	10 58 5.2	53.22	15 24.43	0.373	21			
S	22	13 49 55.20	9.511	11 19 17.5	52.80	15 33.04	0.344	22			
S	23	13 53 43.81	9.540	11 40 19.6	52.36	15 40.96	0.316	23			
M	24	13 57 33.11	9.569	12 1 11.0	51.91	15 48.19	0.287	24			
T	25	14 1 23.13	9.599	12 21 51.4	51.44	15 54.72	0.257	25			
W	26	14 5 13.86	9.629	12 42 20.2	50.95	16 0.53	0.227	26			
T	27	14 9 5.32	9.660	13 2 37.1	50.45	16 5.61	0.196	27			
F	28	14 12 57.52	9.690	13 22 41.6	49.92	16 9.96	0.166	28			
S	29	14 16 50.46	9.722	13 42 33.4	49.38	16 13.56	0.134	29			
S	30	14 20 44.16	9.754	14 2 11.9	48.82	16 16.40	0.102	30			
M	31	14 24 38.63	9.786	14 21 36.9	48.25	16 18.48	0.070	31			
T	32	14 28 33.88	9.819	S.14 40 48.0	47.66	16 19.78	0.038				

Macdonald & Co., Manufacturers of Brass Sliding Door Rollers, Halifax.

**SHEET HARBOUR PASSAGE**, on mainland near eastern end of Sober Island, lat  $44^{\circ} 51' 30''$  N, lon  $62^{\circ} 26' 35''$  W, fixed red catoptric, visible 5 miles. Light shown from window in keeper's dwelling elevated 42 feet above high water. For benefit of vessels navigating Sheet Harbour Passage.

**BEAVER ISLAND**, S. E. part of East Beaver, or William Island, lat  $44^{\circ} 48' 10''$  N, lon  $62^{\circ} 20' 30''$  W, a bright white light showing a flash every 45 seconds, visible 12 miles, 70 feet high, white building with two black balls to seaward, S. S. W., 35 feet high.

**BEAVER HARBOUR**, on eastern end of Beaver Point, lat  $44^{\circ} 52' 23''$  N, lon  $62^{\circ} 23' 40''$  W. A pole light red, visible 6 miles.

**LISCOMB**, on island, lat  $44^{\circ} 59' 20''$  N, lon  $61^{\circ} 57' 50''$  W., red and white catoptric light, alternating every two minutes, visible 15 miles, 64 feet high, white square wooden tower, with dwelling attached.

**WEDGE ISLAND**, mouth of St Mary's River, lat  $45^{\circ} 0' 35''$ , lon  $61^{\circ} 52' 35''$ , one revolving red light, shows 1 minute in 3 minutes, visible 12 miles, white, square, wood, with dwelling attached, catoptric.

Automatic whistling buoy off Isaac's Harbor as a fairway buoy. From the buoy Country Harbor Light, on Green Island N. E. by N.  $\frac{1}{2}$  N. Distance  $3\frac{1}{2}$  miles. A N. by W. course will lead from the buoy to Ragged Point, distance 9 miles. The buoy is moored in 25 fathoms water, and is painted red, with Isaac Harbor in white letters on the side.

**HOLY POINT**, west side of entrance to Isaac's Harbor, lat  $45^{\circ} 10' 0''$  N., lon  $61^{\circ} 39' 12''$  W., two fixed white catoptric lights vertically, 20 feet apart, visible 9 miles, 80 feet high, square white building, 20 feet high, with dwelling attached.

**COUNTRY HARBOUR**, on Green Island, Guysboro' County, lat  $45^{\circ} 6' 15''$  N., lon  $61^{\circ} 32' 30''$  W., fixed white catoptric light, visible 14 to 16 miles, 51 feet high, white square wooden building, with dwelling attached, height 23 feet. Coast light, and to guide vessels frequenting Country and Fisherman's Harbors.

**TOR BAY**, on eastern point of Berry Head, W. side of entrance to Bay, Guysboro' County, lat  $45^{\circ} 11' 37''$  N., lon  $61^{\circ} 18' 35''$  W., fixed catoptric light, red to seaward, white northward into Bay and towards Molasses Harbor, visible 10 miles, square wooden building, with dwelling attached, white with vertical red stripes, top of lantern painted black. Height of lantern 51 feet, tower 36 feet.

**THREE TOP ISLAND**, on the south-east point of Three Top Island, Whitehaven, Guysborough County, Nova Scotia, lat  $45^{\circ} 12' 40''$  N., lon  $61^{\circ} 9' 40''$  W. The light is fixed white catoptric, elevated 48 feet above high water mark, and in clear weather should be seen 11 miles. The building is a wooden one painted white, and consists of a square tower 32 feet high from base of building to vane on lantern, with keeper's dwelling attached. This light is for the purpose of guiding vessels into Whitehaven, and in order to point out the dangers on the northern side of the Western Passage is obscured when bearing to the eastward of N. E. by E. It is visible from all other points of approach except when intercepted by the high land of Whitehead Island.

**WHITEHEAD ISLAND**, S. W. extremity of Island, Guysboro' County, lat  $45^{\circ} 12' 15''$  N., lon  $61^{\circ} 8' 15''$  W., white catoptric light, revolving every 20 seconds, visible 11 miles, 55 feet high, pyramidal wooden building, 35 feet high, with dwelling attached, octagonal lantern. Light not totally obscured during the eclipses; 10 seconds duration of flash, and 10 seconds eclipse.

Life boat stationed at Deming Point.

**CANSO CAPE**, north part of Cranberry Island, lat  $45^{\circ} 19' 50''$  N., lon  $60^{\circ} 55' 25''$  W., two fixed white lights in one tower, vertically, 35 feet

NOVEMBER.

THE SUN'S

Day of the Week.	Day of the Month.	Apparent Right Ascension.		Var. in 1 hour	Apparent Declination.		Var. in 1 hour	Equation of Time, to be subtracted from Apparent Time.		Var. in 1 h'r.
		<i>h. m. s.</i>	"		"	"		<i>m. s.</i>	<i>s.</i>	
T	1	14 28 33.88	9.819	S.	14 40 48 0	47.66	16 19.78	0.038		
W	2	14 32 29.92	9.852		14 59 44.6	47.05	16 20.30	0.005		
T	3	14 36 26.77	9.886		15 18 26.5	46.43	16 20.01	0.029		
F	4	14 40 24.43	9.920		15 36 53.4	45.80	16 18.90	0.064		
S	5	14 44 22.93	9.955		15 55 4.7	45.14	16 16.96	0.098		
S	6	14 48 22.28	9.990		16 13 0.2	44.48	16 14.18	0.134		
M	7	14 52 22.47	10.026		16 30 39.6	43.79	16 10.55	0.169		
T	8	14 56 23.52	10.062		16 48 2.3	43.09	16 6.07	0.205		
W	9	15 0 25.44	10.098		17 5 8.1	42.38	16 0.73	0.241		
T	10	15 4 28.22	10.134		17 21 56.4	41.64	15 54.52	0.277		
F	11	15 8 31.87	10.170		17 38 26.9	40.89	15 47.44	0.313		
S	12	15 12 36.39	10.206		17 54 39.3	40.13	15 39.50	0.349		
S	13	15 16 41.78	10.243		18 10 33.0	39.34	15 30.70	0.385		
M	14	15 20 48.03	10.279		18 26 7.6	38.54	15 21.03	0.421		
T	15	15 24 55.15	10.314		18 41 22.8	37.72	15 10.50	0.457		
W	16	15 29 3.12	10.350		18 56 18.2	36.89	14 59.11	0.492		
T	17	15 33 11.95	10.385		19 10 53.3	36.03	14 46.88	0.527		
F	18	15 37 21.61	10.420		19 25 7.8	35.17	14 33.80	0.562		
S	19	15 41 32.11	10.454		19 39 1.3	34.28	14 19.90	0.596		
S	20	15 45 43.43	10.489		19 52 33.4	33.38	14 5.18	0.630		
M	21	15 49 55.56	10.522		20 5 43.7	32.47	13 49.65	0.663		
T	22	15 54 8.47	10.554		20 18 31.8	31.54	13 33.34	0.696		
W	23	15 58 22.16	10.586		20 30 57.4	30.59	13 16.25	0.728		
T	24	16 2 36.62	10.618		20 43 0.1	29.63	12 58.41	0.759		
F	25	16 6 51.81	10.648		20 54 39.6	28.65	12 39.82	0.789		
S	26	16 11 7.72	10.678		21 5 55.4	27.66	12 20.52	0.819		
S	27	16 15 24.34	10.707		21 16 47.4	26.66	12 0.51	0.848		
M	28	16 19 41.65	10.735		21 27 15.1	25.64	11 39.82	0.876		
T	29	16 23 59.63	10.762		21 37 18.3	24.62	11 18.46	0.904		
W	30	16 28 18.25	10.789		21 46 56.7	23.58	10 56.45	0.930		
T	31	16 32 37.51	10.815	S.	21 56 10.0	22.53	10 33.81	0.956		

Chronometer of G. M. T.

	H.	MIN.	SEC.	THS.
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Pickford & Black, owners Steamers between P. E. Island and Halifax.

Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax

apart, upper visible 12, lower 5 miles, 89 and 54 feet respectively, high, octagonal wooden building, horizontally striped red and white, with dwelling house attached. A steam fog whistle, near the light-house, in thick weather sounds a blast of 8 seconds in each minute.

An automatic signal buoy in 20 fathoms,  $1\frac{1}{2}$  miles E. S. E. of Grimes Rock, taken up about December.

CANSO HARBOR, on Hart or Cutler Island, lat  $45^{\circ} 21' N.$ , lon  $60^{\circ} 58' 30'' W.$ , fixed red catoptric light, visible 12 miles, 42 feet high, white square wooden building, with dwelling attached, height 28 ft.

CROW HARBOR, on Rock Island, Chedabucto Bay, lat  $45^{\circ} 21' 5'' N.$ , lon  $61^{\circ} 16' W.$ , fixed white dioptric light, visible 8 miles. Square wooden tower with dwelling attached, painted white.

GUYSBORO' HARBOR, W. side of entrance, near Peart Point, Chedabucto Bay, lat  $45^{\circ} 22' 50'' N.$ , lon  $61^{\circ} 29' 10'' W.$ , fixed white catoptric light, visible 8 miles, 30 feet high, white square wooden building, height 20 feet.

SAND POINT, or Eddy Point, south entrance, lat  $45^{\circ} 31' 30'' N.$ , lon  $61^{\circ} 14' 40'' W.$ , two fixed white catoptric lights, horizontal, 24 feet apart, visible 8 miles, each 25 feet high, white square wooden building, with a black diamond. Lights in window at each end of building.

A black can buoy is moored off the extreme end of Sand Spit.

POINT TUPPER, Ship Harbor or Port Hawkesbury, lat  $45^{\circ} 36' 40'' N.$ , lon  $61^{\circ} 22' W.$ , fixed red catoptric light, visible 7 miles, 44 feet high, white square building, height 24 feet. In consequence of the intervention of the land on the south side, can only be seen three miles in that direction.

CREIGHTON'S HEAD, on the north extremity, lat  $45^{\circ} 30' 40'' N.$ , lon  $61^{\circ} 6' W.$ , white catoptric light, revolving every 40 seconds, visible 10 miles, 29 feet high, square white wooden building, height 20 feet. For guiding vessels into Little or West Arichat. Three buoys placed to mark the dangers off the harbor.

JERSEYMAN ISLAND, Arichat Harbor, lat  $45^{\circ} 30' 20'' N.$ , lon  $61^{\circ} 3' W.$ , fixed red catoptric light, visible 11 miles, 39 feet high, white square wooden building, height 28 feet. This light is for the purpose of guiding vessels through Crid Passage, in and out of Arichat Harbor. There is also a Range Beacon on the S. E. Point of Jerseyman's Island, that marks Hautfond Shoal, off the entrance to Arichat Harbor. When the beacon and spire of the Roman Catholic Chapel in Arichat are in range, it leads over the West Part of the shoal in 10 feet of water. Vessels bound into Arichat, Cape Breton, should pass to the west of the shoal, or bring the beacon in range of the cupola on the Convent, which stands 130 yards east of the R. C. Church, which will lead in clear of the shoal. Only those well acquainted should pass to the eastward of the shoal, or bring the beacon to bear to the N. of N. E. An Iron Can Buoy painted red has been placed about one cable's length S. W. of the Hautfond Shoal in six fathoms of water. The buoy will be placed on or about the 1st of May in each year, and taken up about the 10th December.

ARICHAT, Marache Point, south entrance to Madame Island, lat  $45^{\circ} 29' N.$ , lon  $61^{\circ} 1' 50'' W.$ , fixed white catoptric light, visible 8 miles, 34 feet high, square white wooden building, height 25 feet.

PETITDEGRAT, on Big Arrow Rock, south-east of Madame Island, lat  $44^{\circ} 29' 54'' N.$ , lon  $60^{\circ} 57' 30'' W.$ , fixed red catoptric light, visible 10 miles, 38 feet high, white square tower, with dwelling attached, height 31 feet.

GREEN ISLAND, summit of Island, lat  $45^{\circ} 28' 50'' N.$ , lon  $60^{\circ} 53' 40'' W.$ , red and white catoptric light, revolving alternately every 45 seconds, visible 14 miles, 70 feet high, white square wooden building, height 31 feet. Light, centre of keeper's dwelling. Visible around horizon.

Pickford & Black's West India S. S. Lines between Halifax, Bermuda, Turk's Island & Jamaica.

PICKFORD & BLACK. Ship Brokers and Steamship Agents, Halifax, N. S.

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ROBERT H. COGSWELL'S

[1892

DECEMBER.

Chronometer of G. M. T.

Day of the Week.	Day of the Month.	THE SUN'S				Equation of Time, to be subtracted from added to Apparent Time.	Var. in 1 hr	Chronometer of G. M. T.					
		Apparent Right Ascension.	Var. in 1 hour	Apparent Declination.	Var. in 1 hour			H.	MIN.	SEC.	THS.		
		<i>h. m. s.</i>	<i>"</i>	<i>° ' "</i>	<i>"</i>	<i>m. s.</i>	<i>s.</i>						
T	1	16 32 37.51	10.815	S. 21 56 10.0	22.53	10 33.81	0.956	1					
F	2	16 36 57.39	10.841	22 4 57.9	21.46	10 10.56	0.981	2					
S	3	16 41 17.87	10.865	22 13 20.3	20.40	9 46.70	1.006	3					
S	4	16 45 38.93	10.889	22 21 16.9	19.32	9 22.26	1.030	4					
M	5	16 50 0.55	10.912	22 28 47.5	18.23	8 57.27	1.053	5					
T	6	16 54 22.71	10.934	22 35 51.8	17.13	8 31.74	1.074	6					
W	7	16 58 45.38	10.955	22 42 29.6	16.02	8 5.70	1.095	7					
T	8	17 3 8.54	10.975	22 48 40.7	14.90	7 39.17	1.115	8					
F	9	17 7 32.17	10.994	22 54 25.0	13.78	7 12.17	1.134	9					
S	10	17 11 56.23	11.011	22 59 42.1	12.65	6 44.74	1.151	10					
S	11	17 16 20.70	11.027	23 4 32.0	11.50	6 16.91	1.168	11					
M	12	17 20 45.55	11.043	23 8 54.3	10.35	5 48.69	1.183	12					
T	13	17 25 10.75	11.057	23 12 49.0	9.20	5 20.13	1.197	13					
W	14	17 29 36.27	11.069	23 16 16.0	8.04	4 51.25	1.209	14					
T	15	17 34 2.06	11.080	23 19 15.1	6.88	4 22.10	1.220	15					
F	16	17 38 28.10	11.089	23 21 46.1	5.71	3 52.70	1.229	16					
S	17	17 42 54.35	11.097	23 23 49.1	4.54	3 23.09	1.237	17					
S	18	17 47 20.77	11.104	23 25 23.9	3.36	2 53.31	1.244	18					
M	19	17 51 47.32	11.108	23 26 30.4	2.18	2 23 40	1.248	19					
T	20	17 56 13.96	11.111	23 27 8.6	1.00	1 53.40	1.251	20					
W	21	18 0 40.66	11.113	23 27 18.5	0.18	1 23.34	1.253	21					
T	22	18 5 7.37	11.113	23 27 0.1	1.36	0 53.27	1.253	22					
F	23	18 9 34.06	11.111	23 26 13.3	2.54	0 23 22	1.251	23					
S	24	18 14 0.69	11.107	23 24 58.2	3.72	0 6.76	1.247	24					
S	25	18 18 27.21	11.102	23 23 14.8	4.90	0 36.65	1.242	25					
M	26	18 22 53.60	11.096	23 21 3.1	6.08	1 6.40	1.236	26					
T	27	18 27 19.82	11.088	23 18 23.2	7.25	1 35.97	1.228	27					
W	28	18 31 45.84	11.079	23 15 15.3	8.41	2 5.35	1.219	28					
T	29	18 36 11.62	11.069	23 11 39.3	9.58	2 34.50	1.209	29					
F	30	18 40 37.14	11.057	23 7 35.5	10.74	3 3.38	1.197	30					
S	31	18 45 2.37	11.044	23 3 3.9	11.89	3 31.97	1.185	31					
S	32	18 49 27.27	11.030	S. 22 58 4.9	13.03	4 0.24	1.171						

Macdonald & Co., Manufacturers of Brass Binnacles and Stands, Halifax, N. S.—See adv. p. 3, cover.

Vessels fitted with Plumbing Fixtures by Macdonald & Co.

MACDONALD & CO., Brass Founders.—See adv. page 3 cover

CAPE LA RONDE, west side of entrance to St. Peter's Bay, lat 45° 34' 45" N., lon 60° 53' W., fixed white catoptric light, visible 14 miles, 92 feet high, white square wooden building, with dwelling attached, height 28 feet. For guiding vessels into St. Peter's Bay.

OUETIQUE ISLAND, on south point, lat 45° 36' 40" N., lon 60° 57' 15" W., fixed red catoptric light, visible 9 miles, 78 feet high, white square wooden building, with dwelling attached, height 28 feet. For guiding vessels through Lennox Passage.

Three Pole Lights in Lennox Passage. One on Glasgow Point, one on Seal Island, or Dog Island, and one on Grand Dique. Red light shown from lantern hoisted on a mast 25 feet high, with shed painted white at its base. Visible 5 miles.

NOTE.—The Pole Lights in St. Peter's Inlet are the same as above.

JEROME POINT, east side of St. Peter's Bay, lat 45° 39' 5" N., lon 60° 52' W., a fixed red light, visible 8 miles. Square wooden tower, with dwelling attached, painted white.

SAINT ESPRIT ISLAND, east end, lat 45° 37' 36" N., lon 60° 29' 20" W., one revolving white catoptric light, flash at intervals of 30 seconds' building white, with two red bands, square, wood, with dwelling attached. Height of building 55 feet, of light 78 feet. Bad Neighbor Shoal, S. W.  $\frac{3}{4}$  W.  $\frac{1}{2}$  mile from this light is not more than 12 feet below water.

A Bell Buoy off Fourche Head.

GUION ISLAND, about 230 yards from west end of Island, lat 45° 46' 10" N., lon 60° 6' 20" W., red revolving light, catoptric, attains its greatest brilliancy every 30 seconds, visible 12 miles, 74 feet high, tower white, square, with dwelling attached, height 54 feet.

GABARUS, on Harbour Point, northern shore of Gabarus Bay, Lat N., 45° 59' 47", Lon W 60° 8' 40", fixed red. dioptric, 47 ft. above water, visible 8 miles. Wooden hexagonal tower white, iron lantern red. Base to vane, 32 feet.

LOUISBURG, north side of entrance to harbor, 120 yards inshore of point, lat 45° 54' 30" N., lon 59° 57' 15" W., fixed white catoptric light, visible 16 miles, 85 feet high, building white, with a black vertical stripe on dwelling, height 35 feet.

An Automatic Signal Buoy in 30 fathoms  $1\frac{1}{2}$  miles S. E.  $\frac{1}{4}$  E. from light-house.

From this buoy a course N. W. by W. will clear the Broad Shoal, and lead to the fairway of Louisburg Harbor. Taken up about December.

MAINADIEU, on south side of west point of Scatterie Island, lat 46° 0' 30" N., lon 59° 47' 30" W., fixed red catoptric light, 90 feet high, white square wooden building, height 40 feet.

SCATTERIE, north-east point on Trap Rock, lat 46° 2' 15" N., lon 59° 40' 15" W., white catoptric revolving light, visible a minute, eclipsed half a minute, visible 15 miles, 90 feet high, white octagonal building, height 70 feet. The light should never be brought to bear to eastward of N. N. E., or to southward of S. S. W., nor approached nearer than  $\frac{1}{2}$  mile. Life boat is stationed here.

Fog Whistle near the light-house. Sounds two blasts of 5 seconds, with intervals of 10 seconds, in every minute.

COW BAY, on outer end of breakwater. Lantern on frame. Fixed red.

FLINT ISLAND, on island, lat 46° 11' N., lon 59° 46' 50" W., white catoptric light, revolving every 15 seconds, visible 12 miles, 65 feet high, white octagonal building, height 43 feet. Visible around horizon.

Vessels fitted with Plumbing Fixtures by Macdonald & Co., Halifax.—See adv. p. 3, cover.

Pickford & Black, Ship Brokers and Steamship Agents, Halifax, N. S.

Pickford & Black, Agents Furness Line between London and Halifax.

LINGAN HEAD, north side of entrance to Bridgeport Harbor, lat 46° 14' 10" N., lon 60° 2' 40" W., fixed red catoptric light, visible 10 miles, 50 feet high, white square wooden building, height 20 feet. For guiding vessels into Bridgeport Harbor.

LITTLE GLACE BAY, two range lights, one red and one white, to be erected respectively in the Glace Bay Co. and Caledonia Co's piers, to guide through the dredged channel.

LOW POINT, Flat Point, east side of Spanish Bay, lat 46° 16' 30" N., lon 60° 7' 30" W., fixed white catoptric light, visible 14 miles, 70 feet high, building octagonal, red and white vertical stripes, height 51 feet. Marine Telegraph and Signal Station.

SYDNEY BAR, on west end of South Bar, lat 46° 12' 40" N., lon 60° 12' 40" W., fixed red catoptric light, visible 10 miles, 30 feet high, white square wooden building, height 20 feet.

CRANBERRY HEAD, on northern side of Spanish Bay, entrance to Sydney Harbour, lat 46° 16' 0" N., lon 60° 12' 20" W. A steam fog trumpet sounds a blast of ten seconds duration every minute.

POINT ACONI, on high cape, north side of entrance to Little Bras d'Or, lat 46° 20' 30" N., lon 60° 17' 10" W., fixed red catoptric light, visible 11 miles, 91 feet high, square white wooden building, height 20 feet. For guiding vessels into Little Bras d'Or.

BLACK ROCK POINT, south side of entrance to Big Bras d'Or, lat 46° 18' 30" N., lon 60° 23' 30" W., fixed white catoptric light, 45 feet high, white square building, height 23 feet. White cross on red ground.

Three Pole Lights in St. Peter's Inlet. One on Marjorie's Isle, west of Sandy's Point, one on the S. E. point Beaver Island, and one on Gregory Island. Red light shown from lantern hoisted on a mast 25 feet high, with shed painted white at its base. Visible 5 miles.

CAPE GEORGE, south side of Bras d'Or Lake, west side of entrance to St. Peter's Inlet, lat 45° 44' 28" N., lon 60° 48' 20" W., fixed white catoptric light, visible 12 miles, 50 feet high, white square wooden building, height 20 feet. To guide vessels through St. Peter's Inlet. A hand fog-horn answers signals from vessels.

CLARKE'S COVE, N. side Bras d'Or Lake. Red pole light on mainland facing entrance to channel. The light run for in a N. W. course leads clear of three outlying shoals, which are marked by spar buoys.

McKINNON'S HARBOUR, a pole light, white on Campbell's Island, western side entrance to McKinnon's Harbor.

Railway bridge with swing has been erected. Suitable light will be placed on swing and advertised.

GRAND NARROWS, on Uniacke Point, N. side of channel, Barra Straits, lat 45° 58' N., lon 60° 48' W., fixed white catoptric light, visible 10 miles, 29 feet high, white square wooden building, height 20 feet. For guiding vessels through Barra Straits, and navigating the Little and Great Bras d'Or Lakes.

PIPER'S COVE, on the western bend of Derby Point, near Piper's Cove in the Grand Narrows, lat 45° 56' 30" N., lon 60° 48' W., light, fixed red, dioptric, visible 9 miles. White, square, wooden building.

LITTLE NARROWS, eastern entrance, lat 46° 0' 0" lon 60° 58' 25" One fixed white light, visible 10 miles, white, square, wood, 35 feet high. Catoptric.

"WHYCOCOMAGH," on FRASER'S POINT, north side of St Patrick's Channel, lat 45° 57' 45" N., lon 61° 4' 30" W., fixed red light, shown from a dioptric lantern, hoisted on a mast 25 feet high, with a shed painted white at its base, visible 5 miles.

Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See adv. page 3, cover.

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. p. 3 cover.



KIDSTON ISLAND, on N. E. Point, at entrance to Baddeck Harbor, N. side of Bras d'Or Lake, lat 46° 5' 58" N., lon 60° 44' 20" W., fixed red catoptric light, visible 7 miles, 31 feet high, square, wooden building, white.

MCNEIL BEACH, Big Bras d'Or, a pole light. Red.

McKENZIE'S POINT, N. side of Bras d'Or Lake, about 2 miles S. W. of Port Bevis, lat 46° 7' 15" N., lon 60° 39' W., fixed white catoptric light, visible 11 miles, 95 feet high, square white wooden tower. For guiding vessels through Bras d'Or Lake.

CAREY'S BEACH, N side of entrance to Big Bras d'Or. Pole light red.

BIRD ISLAND, Ciboux Island, 1-3 miles from N. end, lat 46° 23' 1" N., lon 60° 22' 30" W., red catoptric light, revolving every minute, visible 16 miles, 77 feet high, white octagonal building, height 33 feet.

ST. ANN'S HARBOR, on north point of Beech, lat 46° 17' 30" N., lon 60° 32' 15" W., fixed white catoptric light, visible 8 miles, 25 feet high, white building, height 30 feet. The light exhibited to find entrance through on a dark night.

INGONISH HARBOUR, on beach southern side of entrance to harbour, lat 46° 38' 15" N, lon 60° 23' 10" W. Light fixed red dioptric, visible 9 miles, elevated 45 feet above high water. Building square tower, white, 38 feet from base to vane.

INGONISH, on Island, lat 46° 41' 20" N., lon 60° 20' W., fixed white light, visible 20 miles, 237 feet high, white square building, height 40 feet.

CAPE NORTH, on Money Point,  $\frac{3}{4}$  mile S. E. from Money Point, lat 47° 1' 25" N., lon 60° 23' 15" W., red and white catoptric light, revolving every 45 seconds, visible 15 miles, 74 feet high, square white wooden building, height 26 feet. Coast light makes a complete revolution every  $1\frac{1}{2}$  minute.

CAPE ST. LAWRENCE—Lat N 47° 2' 55 Long W 60° 35' 10", 2 fixed white dioptric lights vertical, 42 feet apart. Upper light in lantern 137 feet above high water, visible 17 miles. Lower light on lower floor of tower, 95 feet above high water, visible 15 miles. Building square wooden tower, with dwelling attached, painted white. 56 feet from base to vane on lantern.

CHETICAMP, near south of Island, lat 46° 36' 30" N lon 61., ° 3' 10" W. white catoptric light, revolving every 45 seconds, visible 20 miles, 149 feet high, white square wooden building, height 24 feet.

CHETICAMP, Eastern Harbor, Range light. Front light, red, 45 feet above high water. 60 feet back from edge of land. Back light, 330 yards S by W,  $\frac{3}{4}$  W from front light, 90 feet above high water; colour white. Both lights shown from lanterns hoisted on masts, and kept in range, will lead through dredged channel.

ST. PAUL'S ISLAND, on rock off N. E. point of island, lat 47° 13' 50" N. lon 60° 8' 20" W., fixed white light, dioptric, third order, visible 20 miles, 140 feet high, white octagonal building, height 40 feet. Obscured between N. by E.  $\frac{1}{2}$  and E. N. E.

ST. PAUL'S ISLAND, S. W. point of island, lat 47° 11' 20" N., lon 60° 9' 40" W., white dioptric light, third order, revolving every minute, visible 20 miles, 140 feet high, white octagonal building, 40 feet high. Obscured when bearing from S. S. E. to W.  $\frac{1}{4}$  N. A fog whistle on the S. E. side of the island, S. W. of Atlantic Cove, about half a mile from the Humane Establishment, sounds once for five seconds in each minute during thick weather and storms.

MARGAREE HARBOUR, on outer end of breakwater pier, lat 46° 26' 35", N., lon 61° 6' 50" W., seaward light fixed red, white light eastern and western sides lantern, visible 7 miles, 29 feet high, square white building.

Pickford & Black, owners Steamers between P. E. Island and Halifax.

MARGAREE, summit or middle of Sea Wolf Island, lat 46° 21' 30" N., lon 61° 15' 30" W., fixed white catoptric light, visible 21 miles, 298 feet high, square white building. To vessels in dangerous proximity to the island the light may become obscured by the abrupt cliffs on the sides of the island.

MABOU, two range lights, lat 46° 5' 40", lon 61° 28' 10", each, small dioptric lantern, hoisted on mast, the outer, fixed, white, 25 feet high, visible 9 miles; the inner, fixed, red, visible 7 miles; lead into harbour, through dredged channel past breakwater.

PORT HOOD, S. E. side of entrance to harbor, lat 46° N., lon 61° 31' 40" W., fixed catoptric light, red N., white S., visible 10 miles, 55 feet high. Square white building.

IRON CAN BUOYS have been placed at the following Shoals:—Port Hood Harbor, C. B., Portsmouth Point, Spithead, Smith Spit, Dean Shoal, also one at Judique Shoal. Judique Shoal and Dean Shoal Buoys are painted red, the other three are painted black. These Buoys will be placed on or about the 1st May in each year, and taken up about the 10th November.

NORTH CANSO, north entrance, west side, 120 yards inshore, lat 45° 41' 40" N., lon 61° 29' 10" W., fixed white catoptric light, visible 18 miles, 110 feet high, white square wooden building, height 35 feet high. There is good anchorage under the light when the wind is off shore. Lantern on dwelling.

HARBOR AU BOUCHE, two lights in separate towers, lat 45° 41' 0" N., lon 61° 31' 15" W., fixed white catoptric light, visible 9 miles, 36 feet high, white square wooden building, 32 feet high, 473 yards S. W.  $\frac{3}{4}$  S. from front light, one fixed red catoptric light, 107 feet high. Range lights to lead through dredged channel over the bar.

POMQUET ISLAND, north east end of island in St. George's Bay, lat 45° 39' 40" N., lon 61° 44' 30" W., fixed red catoptric light, visible 9 miles, 50 feet high, square white building, height 23 feet. Obscured on easterly bearings.

CAPE ST. GEORGE, north side of Cape, lat 45° 52' 30" N., lon 61° 54' 40" W., white catoptric light, revolving every half minute, visible 25 miles, 350 feet high, white square building, height 39 feet.

MERIGOMISH, on King Head, entrance to harbor, lat 45° 39' 20" N., lon 62° 28' 30" W., red, fixed, catoptric light, visible 10 miles, 105 feet high, white, square wooden building, 40 feet high.

PICTOU ISLAND, south-east point, lat 45° 49' 10" N., lon 62° 30' 30" W., fixed white catoptric light, visible 12 miles, 52 feet high, square white building. Life boat stationed at eastern end of Island.

PICTOU HARBOR, south point of entrance, lat 45° 41' 30" N., lon 62° 39' 30" W., fixed catoptric lights vertical, 25 feet apart, upper white, lower red, visible 11 miles, lantern 65 feet high, building octagonal, striped red and white vertically, height 55 feet. Lighted when navigation is open. A small red light is seen below lantern. By keeping light W. S. W. vessels clear the east reefs off Pictou Island.

In tower of new Custom House a fixed white light, in range with lights at the entrance to harbor, leads through the channel up to the bar.

PICTOU HARBOUR RANGE—Two range lights, red, erected on northern side of entrance to harbour, inside of western end of London Beach, to guide vessels through the channel clear of the bar shoals.

CARIBOU ISLAND, north-east part of Island, lat 45° 46' N., lon 62° 42' 20" W., white catoptric light, revolving every minute, visible 10 miles, 35 feet high, white square building, height 26 feet.

AMET ISLAND, centre of island, Northumberland Straits, lat 45° 50' 15" N., lon 63° 10' 10" W., fixed white catoptric light, visible 10 miles, 44 feet high, white square wooden building, height 26 feet. Visible around horizon.

Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See adv. page 3, cover.

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**MULLIN POINT**, north side of entrance to Wallace Harbor, Cumberland County, lat  $45^{\circ} 49' 45''$  N., lon  $63^{\circ} 25' 15''$  W., fixed catoptric light, visible 11 miles, 39 feet high, white square wooden building, height 25 feet. Red light, shown from window in keeper's dwelling. Two lights in one, form a range to lead across bar, and in channel up to Mullin's Point.

A red can buoy marks entrance to channel, and two fairway buoys.

**PUGWASH**, in harbor, lat  $45^{\circ} 52' 30''$  N., lon  $63^{\circ} 40' 20''$  W., fixed catoptric light, red seaward, white towards harbor, visible 8 miles, 48 feet high, white square building, height 44 feet. Black buoys to be left on port hand, and red on starboard when entering the harbor.

**COLD SPRING HEAD**—Lat N  $45^{\circ} 58' 5''$  Long  $93^{\circ} 52' 0''$  white square tower, iron lantern red, height base to vane, 36 feet. Light fixed white, 60 feet, visible 13 miles, dioptric.

**WEST FROM HALIFAX.**

**CHEBUCTO HEAD**, west side of entrance to Halifax Harbor, lat  $44^{\circ} 30' 20''$  N., lon  $63^{\circ} 30' 50''$  W., white light, revolving every minute, visible 18 miles, 132 feet high, white square wooden building, height 22 feet.

A steam fog whistle in course of construction, will probably go into operation about February.

An Automatic Signal Buoy, painted red, placed in lat  $44^{\circ} 31' 42''$  N., lon  $63^{\circ} 29' 28''$  W., in 21 fathoms of water, N. E.  $\frac{1}{2}$  E.,  $1\frac{1}{2}$  miles from Chebucto Head, sounds a ten inch whistle. From the buoy Chebucto Head bears S. W.  $\frac{1}{2}$  W., magnetic  $1\frac{1}{2}$  mile. Sandwich Point, N. by W., 4 miles. Passing to the westward of the buoy at the distance of half a cable and steering a N.  $\frac{1}{4}$  W. course magnetic, will lead up the harbor to the eastward of the Neverfail Shoal, and at a distance of two cables to the westward of Meagher's Beach light-house.

A similar buoy, painted black, in lat  $44^{\circ} 28' 25''$  N., lon  $63^{\circ} 22' 10''$  W., in 36 fathoms, from this buoy Sambro Island light W.  $\frac{1}{2}$ , N.  $8\frac{1}{2}$  miles. Devil's Island light N.  $\frac{3}{4}$  W.  $7\frac{1}{2}$  miles, and the inner signal buoy N. W.  $\frac{1}{2}$  N. 6 miles.

**SAMBRO AUTOMATIC WHISTLING BUOY**, in 25 fathoms, near S. end of Sambro Outer Bank. Painted black, and white vertical stripes. From the buoy Pennant Point bears N. W. by N.  $\frac{1}{4}$  N.,  $7\frac{1}{2}$  miles. Sambro Light, N.  $\frac{1}{2}$  W.,  $5\frac{1}{2}$  miles. Chebucto Light, N. by E.,  $\frac{5}{8}$  E.,  $8\frac{1}{2}$  miles.

The Portuguese Buoy is colored red and black horizontally; the Rockhead Buoy black and white vertically. The other buoys of Halifax Harbor are colored red on the starboard hand and black on the port hand, entering the harbor.

**DUNCAN'S COVE** Life boat station.

**HERRING COVE**, Western Head, lat N.  $44^{\circ} 33' 57''$ , lon W.  $63^{\circ} 33' 0''$ , fixed red, on mast, elevated 52 feet above water. Visible 8 miles.

**HERRING COVE**, Life boat stationed.

**SAMBRO**, middle of Island, lat  $44^{\circ} 26' 10''$  N., lon  $63^{\circ} 33' 30''$  W., fixed white dioptric 2nd order light, visible 20 or 21 miles, 115 feet high, building white, octagonal, 60 feet high. The steam fog whistle has been replaced since the 10th June, 1891, by explosive bombs, fired every 20 minutes.

A Bell Buoy, painted black, placed S. E. of the Blind Sister.

Iron Spar Buoy has been placed off the S. W. Breaker, Sambro, wooden spars on the Pollock, and another on the Whippley Shoal, near Sambro.

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Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See adv. page 3, cover.

Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

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SHIPLEY HEAD, Terrance Bay, lat 44° 27' 40", lon 63° 42' 8", fixed red, on mast, 55 feet high, visible 7 miles.

BETTY'S ISLAND, on Brig Point, near Prospect, lat 44° 26' 22" N., lon 63° 45' 54" W., revolving red catoptric light, greatest brilliancy every two minutes, 75 feet high, visible 14 miles, building white, with two horizontal red bands, square, wood, height 54 feet, dwelling attached. Coast light.

DOVER—A lighthouse to be erected on S. end Callaghan's Island.

PEGGY POINT, east side of entrance to St. Margaret's Bay, lat 44° 29' 30" N., lon 63° 55' W., fixed red catoptric light, 65 feet high, building white, square, 26 feet high. Lantern on dwelling.

CROUCHER'S ISLAND, on south point of island, lat 44° 38' 24", lon 63° 57' 20", fixed white light, visible 15 miles, square tower, 40 feet high, with dwelling attached, painted white.

MARGARET'S BAY, on Green Island, Lunenburg County, lat 44° 23' N., lon 64° 2' 45" W., red and white catoptric light revolving alternately every one and a-half minutes, building white, square, wood, 28 feet high, with dwelling attached. Coast light.

HUBBARD'S COVE, on Green Point, W. side of entrance, lat N. 44° 37' 14", lon W. 64° 3' 8". Fixed red dioptric, 60 feet high. Building white, square, wood, with dwelling attached.

CHESTER, E., Ironbound Island, a little to the eastward of centre of island, in Mahone Bay, lat 44° 26' 10" N., lon 64° 4' 50" W., fixed white dioptric light, visible 16 miles, 150 feet high, white oblong tower on dwelling, 46 feet high, wood, lantern. Seen from all points of approach. The lantern alone is visible, building hidden by trees.

QUAKER ISLAND, on highest part of island, lat 44° 30' 55", lon 64° 13' 50", fixed red light, visible 11 miles. Square tower, 35 feet high, with dwelling attached, painted white. To guide into Chester Basin.

HOBSON'S NOSE, Mahone Bay, lat 44° 25' N., lon 64° 13' 46" W., red fixed catoptric light, visible 11 miles, 68 feet high, building white, square, wood, 29 feet high.

WESTHAVER'S ISLAND, Mahone Bay, lat 44° 26' 12", lon 64° 20' 5", has been destroyed by fire. A temporary light is displayed from a lantern hoisted on a pole on the site of lighthouse.

CROSS ISLAND, east point Lunenburg Bay, lat 44° 18' 45" N., lon 64° 10' W., 2 white catoptric lights vertical, 35 feet apart, upper intermittent revolving every minute, and visible 14 miles, 100 feet high, lower fixed, visible 6 miles, and 65 feet high, building red, octagonal base, height 53 feet. Pilots resort here, and vessels may take refuge in case of necessity. Upper bright 45 seconds, dark 15 seconds. A fog trumpet has been erected here, sounding blasts of 10 seconds duration every 1½ minutes.

BATTERY POINT, Lunenburg, lat 44° 21' 45" N., lon 64° 17' 30" W., fixed red catoptric light, visible 8 miles, 50 feet high, white, square tower on dwelling, height 24 feet. This harbor is easy of access, buoys are placed in the bay and entrance to harbor on Ovens Reef, Sculpin Rock, Haddock Shoal, Battery Point Shoal, and Head Shoal. In approaching the harbor from seaward, the buoy on Sculpin Rock, painted red and black, in horizontal stripes, may be left on either hand, giving it a berth of two cable's length. The other buoys are painted black and must be left on the port hand going in.

LUNENBURG FAIRWAY AUTOMATIC WHISTLING BUOY, off western entrance to Lunenburg Bay. Red and black horizontal stripes. From the buoy Battery Point Light bears N. N. W. 6½ miles; Cross Island Light N. E. ½ E., 2 miles; West Ironbound Light, W. S. W. 4½ miles; and Rose Point N. W. ½ W., 1½ miles.

WEST IRONBOUND ISLAND, near Cape LaHave, mouth of LaHave River, lat 44° 13' 45" N., lon 64° 16' 20" W., white catoptric light, revolving every 30 seconds, visible 13 miles, 72 feet high, building white square, height 29 feet. Near edge of cliff 40 feet high.

LAHAVE BELL BUOY, painted red, off LaHave River, in 22 fathoms water. 3 miles E. by S. from Moser's Island Light, and 2½ miles S. S. W. from Ironbound Light

LAHAVE, on Fort Point, lat 44° 17' 20" N., lon 64° 21' W., fixed red catoptric light, visible 8 miles, 48 feet high, building white, square, wood, height 35 feet.

MOSHER'S ISLAND, on island, west side of entrance to LaHave River, lat 44° 14' 15" N., lon 64° 18' 50" W., fixed red catoptric light, visible 8 miles, 55 feet high, building white, square, height 26 feet.

MEDWAY HEAD, Port Medway, west side of entrance, lat 44° 6' 10" N., lon 64° 32' 15" W., fixed white catoptric light, visible 10 miles, 44 feet high, building white, square, with black square seaward, height 23 feet. Like a dwelling house. Spar Buoys are placed in the channel to Port Medway Harbor, on the breaking ledges, Nautilus Rock, corner ground and edge of flats off Bang's Point. In passing in from seaward the red buoys must be left on the starboard, and the black buoys on the port hand.

A Bell Buoy, ¼ mile S. W. of the S. W. Breaker, to be left on starboard hand entering. A N. ¼ E. course leads up to Can Buoy off eastern point of flats inside McNeil's Point, distant 2½ miles.

COFFIN ISLAND, south point Liverpool Bay, lat 44° 2' N., lon 64° 37' 30" W., white catoptric light, revolving every two minutes, light 30 seconds, dark 90 seconds, visible 16 miles, 65 feet high, building octagonal, horizontal stripes, red and white, eight in number, height 50 feet.

An Automatic Buoy, striped vertically black and white, S. ¼ W., 1 11-16 miles from Coffin's Island light-house.

BROOKLYN PIER, Pole light, green on outer end of wrecked pier, 30 feet above high water, visible 4 miles, 220 feet from shore and 500 feet from submerged extremity of pier.

An iron can buoy, red, has been moved outside of submerged end of pier.

FORT POINT, Liverpool Bay, south entrance, lat 44° 2' 30" N., lon. 64° 42' 20" W., fixed red catoptric light, visible 7 miles, 30 feet high, building white, square, height 17 feet. Left on port side when entering the harbor.



PORT MOUTON, north-east point of Spectacle Island, Queen's County, lat 43° 55' N., lon 64° 48' W., fixed red catoptric light, visible 11 miles, 47 feet high, square wooden building, height 20 feet. For guiding vessels into harbor.

PORT MOUTON ISLAND, Life boat stationed at eastern end.

LITTLE HOPE, nearly on centre of island, lat 43° 48' 30" N., lon 64° 47' 15" W., white catoptric light, showing three flashes with intervals of 10 seconds between their points of greatest brilliancy, followed by an interval of 30 seconds, complete revolution in 50 seconds, visible 12 miles, 40 feet high, square white building, height 26 feet. Centre of keeper's dwelling, visible around horizon. A mechanical hand fog trumpet will be sounded in answer to a steamer's whistle or vessel's fog trumpet in thick weather.

SHINGLE POINT, east side of Port L'Hebert Harbor, lat 43° 48' 40" N., lon 64° 55' 30" W., fixed red catoptric light, visible 10 miles, 33 feet high, white square wooden building, height 29 feet.

CARTER'S ISLAND, Ragged Island Harbor, lat 43° 42' 15" N., lon 65° 5' 30" W., fixed red light, visible 11 miles, 66 feet high, white square wooden building, height 29 feet.

 **COGSWELL.—Aneroid Barometers.** 

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**RAGGED ISLAND**, Gull Rock, lat 43° 39' 15" N., lon 65° 5' 50" W., fixed white catoptric light, visible 10 miles, 56 feet high, white square wooden building, height 31 feet.

An Automatic Whistling Buoy, as a Fairway Buoy, is moored off the approach to Ragged Island harbor, lat. N. 43° 37' 28", lon. W 65° 1' 44". From the buoy a N. N. W. course will lead about midway between the 4½ fathom patch and the Blow Breaker up to the southern end of Cranberry Island. The buoy is painted red with letter I in white.

**BULL ROCK**, an Iron Can Buoy with cage, painted black, has been placed in 10 fathoms water S. S. W. ½ W., about 150 yards from the Bull Rock, off Western Head, Shelburne County.

**FARM LEDGE**, Iron can buoy, red, 200 yards S of Ledge.

**EASTERN BULL**, red spar buoy.

**BLACK POINT BREAKWATER**, red spar buoy.

**SAND SPIT**, at east side of entrance to Shelburne Harbor, lat 43° 41' 25" N., lon 65° 19' 28" W., fixed red catoptric light, visible 11 miles, 47 feet high, white square wooden building, height 44 feet. Built on a pier

**SHELburne HARBOR**.—A red Iron Can Buoy has been placed in 4½ fathoms, on west side of Middle Rock Shoal; a red Can Buoy off extreme of Sand Spit, in four fathoms, and a black Spar Buoy on east end of Adamant Shoal.

**CAPE ROSEWAY**, near south-east point of MacNutt's Island, Shelburne harbor, lat 43° 37' 15" N., lon 65° 15' 45" W., two white catoptric lights, vertical, 55 feet apart, upper light visible 18 miles, and 120 feet high, lower 65 feet and visible 10 miles, octagonal building, vertical black and white stripes, height 77 feet.

**CAPE ROSEWAY**, fog trumpet near the light house sounds a blast of 10 seconds duration with an interval of 110 seconds between the blasts. A black Can Buoy S. S. E. from the Jig Rocks, in 9 fathoms water.

**NEGRO ISLAND**, on north side, lat 43° 30' 54" N., lon 65° 28' 58" W., red and white catoptric light, revolving every minute, visible 12 miles, 48 feet high, white square wooden tower with keeper's dwelling attached, height 29 feet. For guiding vessels in and out of Clyde River or Negro Harbor.

**BLANCHE**, Life boat station.

**PORT LA TOUR**, eastern end Page's Island, Lat N 43° 29' 27" Long W 65° 27' 04" Fixed white light, 46 feet high, visible 9 miles. Tower square, wood, with kitchen, all white, iron lantern, red. Tower, base to vane, 34 feet.

**BACCARO**, on west side of entrance to Barrington Harbor, lat 43° 26' 54" N., lon 65° 28' 12" W., fixed red catoptric light, visible 10 miles, 49 feet high, white square building, with black ball seaward, height 35 feet. An automatic Whistling Buoy is placed off the "Bantam."

**BARRINGTON E. BAY LIGHTSHIP**, lat 43° 31' 5" N., lon 65° 34' 25" W., fixed white light, hull and spars painted red, with word "Barrington" in white letters on both sides. Height 30 feet above deck. Moored in 6 fathoms at low water. Wesses' Ledge bearing S. W. by W. ½ W., distant ¾ mile, Baccaro Light bearing S. S. E. ¾ E., distant 6 and 3-16 miles, and Bantam Rocks, bearing S. by E. ½ E., distant 6½ miles. To guide vessels into Barrington East Bay, and through Barrington Passage. A hand fog trumpet sounded in answer to signals.

In passing through Barrington Pass to the westward, the dangers to be left on starboard hand are marked by red buoys, those to be left on port hand by black buoys.

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**MACDONALD & CO., Brass Founders.—See adv. p. 3, cover.**

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. p. 3, cover.

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CAPE SABLE, on Cape, lat  $43^{\circ} 23' 19''$  N., lon.  $65^{\circ} 37' 11''$  W., white catoptric revolving light, bright 15 seconds, dark 25 seconds, visible 12 miles, 53 feet high, white octagonal building, 50 feet high. A steam fog whistle on Cape, elevated about 40 feet above high water, sounds in thick weather, fogs and snow storms, a blast of ten seconds' duration each minute, with an interval of 50 seconds between each blast.

BRAZIL ROCK.—A Bell Buoy has been placed here to mark this danger instead of the Can Buoy, painted red and black horizontal stripes, moored in about 18 fathoms to southward of Rock.

WEST HEAD, Cape Sable Island, lat N.  $43^{\circ} 27' 17''$ , lon. W.  $65^{\circ} 39' 10''$ . Fixed white, dioptric, visible 10 miles. White square tower 36 feet high. Light 42 feet above high water.

STODDART ISLAND, on N. W. point of island, lat  $43^{\circ} 28' 30''$  N., lon  $65^{\circ} 43' 10''$  W., fixed red catoptric light, visible 9 miles, 22 feet high, white small square tower. To guide vessels into the anchorage of Stoddart Harbor and Shag Harbor Sound.

BON PORTAGE ISLAND, on south point, lat  $43^{\circ} 27' 16''$  N., lon  $65^{\circ} 44' 39''$  W., red catoptric light, revolving every minute, visible 12 miles, 46 feet high, white square wooden building, height 28 feet. For guiding vessels into Barrington West Bay and Shag Harbor.

PUBNICO HARBOR, Beach Point, east side of entrance, 120 yards from low water mark, lat  $43^{\circ} 35' 45''$  N., lon  $65^{\circ} 46' 54''$  W., fixed white catoptric light, visible 8 miles, 28 feet high, square white building, with dwelling attached, wooden building, surmounted by iron lantern 40 feet high. Light 41 feet above water, visible 11 miles. Open westward of St. John's Island, bearing N. E. by N., clears the ledge; in making harbor from any other direction, the light must be brought to the northward of E. N. E. before it can be steered for to avoid shoal spot off St. Ann's Point. Spar buoys mark the channel. Black left on port hand, red on starboard in approaching the harbor. A bell buoy has been placed near John's Ledge.

ABBOTT HARBOR—Lantern on mast, with white shed at base, on S. extremity of Abbott Island, shows a white light. In operation from 1st April to 1st October each year.

PEASE'S ISLAND, on the south point of Pease's Island, one of the Tusket Islands, Yarmouth County, Nova Scotia, lat  $43^{\circ} 37' 35''$  N., lon  $66^{\circ} 1' 40''$  W. The main or sea light will be revolving catoptric, showing alternately red and white, each color visible for 15 seconds, with intervals of 45 seconds between the flashes. It is elevated 56 feet above high water mark, and in clear weather should be seen 12 miles from all points of approach from the southward, and also through the Schooner and Ellenwood Passages. A fixed red catoptric light will also be shown from a window in the tower, 16 feet below the main light. It is intended to mark the channel between the two dangers known as the Old Man and Old Woman Rocks, and is, therefore, visible between the bearings W. by N.  $\frac{1}{2}$  N., and N. W. by N., N. W. by W., and in no other directions. It should be visible 4 miles. The tower is a wooden building, painted white, and consists of a square tower 42 feet high from base to vane on lantern, with a keeper's dwelling attached.

ARGYLE, on south point of Whitehead Island, Yarmouth County, lat  $43^{\circ} 39' 30''$  N., lon  $65^{\circ} 52' 4''$  W., fixed red catoptric light, visible 12 miles, 115 feet high, building white, square, wood, with dwelling attached, height 28 feet. For guiding vessels into Argyle Harbor.

TUSKET RIVER, Big Fish Island, south-west point, lat  $43^{\circ} 42' 10''$  N., lon  $65^{\circ} 57' 15''$  W., two fixed white catoptric lights, horizontal, 8 yards apart, visible 12 miles, 50 feet high, white square wooden building, height 23 feet. Visible seaward; in windows each end of a dwelling house.

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. p. 3, cover.

Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

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SEAL ISLAND, south point,  $\frac{1}{2}$  mile inland, lat  $43^{\circ} 23' 34''$  N., lon  $66^{\circ} 0' 52''$  W., fixed white light, dioptric, 2nd order, visible 18 miles, 98 feet high, white octagonal building, height 60 feet. The Blonde Rock lies S. by W.  $3\frac{1}{2}$  miles from light house. Between this Rock and the Island there are some dangers, the ground is rocky throughout, and large vessels ought not to attempt passing between them. A fog whistle near light house, during fogs and snow storms, sounds in each minute a blast of 5 seconds duration, and after an interval of 5 seconds gives another blast of 5 seconds, with an interval of 45 seconds.

BLONDE ROCK, an automatic buoy has been placed in 16 fathoms water about  $\frac{1}{2}$  mile S  $\frac{1}{2}$  E from the Rock.

YARMOUTH OR CAPE FORCHU, east cape, south point, lat  $43^{\circ} 47' 28''$  N., lon  $66^{\circ} 9' 20''$  W., white catoptric light, intermittent—light  $1\frac{1}{2}$  minute, dark  $\frac{1}{2}$  minute, visible 18 miles, 117 feet high, octagonal tower, vertical stripes, red and white, height 59 feet. Fog whistle on west side, sounds in fogs and snow storms, 10 seconds in every minute.

YARMOUTH Bell Buoy, moored in 10 fathoms water, off Yarmouth Sound. From the buoy the Roaring Bull bears E N E, distant  $1\frac{1}{2}$  miles, and Cape Forchu light bears N E by N, distant  $3\frac{1}{2}$  miles.

An Automatic Buoy, painted red with letter L, has been placed in 18 fathoms of water, about  $\frac{1}{2}$  mile W. by N. from the Lurcher shoal, which lies 15 miles W. N. W. from this light.

BAKER'S COVE, Life boat stationed.

BUNKER'S ISLAND, on end of reef, off S. W. point of Island, east side of entrance to Yarmouth Harbor, lat  $43^{\circ} 48' 30''$  N., lon  $66^{\circ} 8' 45''$  W., fixed red catoptric light, visible 10 miles, 27 feet high, the lantern on a dwelling house, built on a wooden pier. A red beacon light for the purpose of guiding vessels into the harbor. Visible from the southward between the bearings of N. E. by N. and N.  $\frac{3}{4}$  E. It can also be seen over Stanwood's Beech, when bearing from S.  $\frac{1}{2}$  E. to S. E.  $\frac{1}{2}$  E., but cannot be run for on these bearings, the only entrance to the harbor being through Yarmouth Sound and round East Cape. Fog Bell sounds at intervals of 15 seconds.

GREEN COVE, or Maitland, Lat N  $43^{\circ} 59' 5''$  Long W  $66^{\circ} 9' 30''$ , a red pole light, on outer end of westerly breakwater.

TRINITY LEDGE, an Iron Bell Buoy, painted red, has been moored to the westward of Trinity Ledge, off Cape St. Mary.

CAPE ST. MARY, east side of Bay, lat  $44^{\circ} 5' 20''$  N., lon  $66^{\circ} 12' 40''$  W., red and white catoptric light, revolving alternately every 30 seconds, visible 17 miles, 103 feet high, octagonal white building, height 43 feet.

METEGHAN RIVER, at entrance end of Breakwater, lat  $44^{\circ} 13' 43''$  N., lon  $66^{\circ} 8' 12''$  W., fixed green catoptric light, visible 6 miles, 23 feet high, building vertical, red stripes on seaward side, 21 feet high, lantern painted black. Beacon for guiding vessels into river. Must be left on starboard hand and passed close aboard. Tide leaves breakwater one hour before low water.

CHURCH POINT, east side of St. Mary's Bay, Digby County, lat  $44^{\circ} 19' 55''$  N., lon  $66^{\circ} 7' 35''$  W., fixed red catoptric light, visible ten miles, 36 feet high, square white wooden building, height 20 feet. For guiding against dangers in vicinity of Church Point.

BELLIVEAU COVE, lat N  $44^{\circ} 24' 20''$ , long W  $66^{\circ} 3' 10''$ . Fixed green light, shown from a square tower painted white, 22 feet high, in outer end of eastern pier. Light is elevated 24 feet above high water mark, visible 4 miles.

SISSIBOO, south side of entrance to river, lat  $44^{\circ} 26' 30''$  N., lon  $66^{\circ} 1' 15''$  W., fixed white dioptric light, visible 8 miles, 36 feet high, white wooden building, pyramidal, height 33 feet.



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WESTPORT, Peter's Island, entrance to Grand Passage, lat 44° 15' 30" N., lon 66° 20' 20" W., 2 fixed white catoptric lights, horizontal, 24 feet apart visible 10 miles, each 46 feet high, square white building, height 15 feet. Visible from the northward between the bearings of S. by W. and S. S. W., and from the southward between the bearings, of N. E., by E., and N. N. W.  $\frac{1}{4}$  W.

A red and black Can on Passage Shoal, and a black Can Buoy off Cow Ledge, and a red can buoy off Dartmouth Point.

A red beacon on Cow Ledge.

BRIER ISLAND, north-west Point, lat 44° 14' 57" N., lon 66° 23' 30" W., fixed white catoptric light, visible 13 miles, 92 feet high, white octagonal building, height 55 feet. A steam fog whistle on N. W. of Brier Island, south side of light house, sounds during thick and foggy weather and snow storms as follows:—Blast of four seconds, interval four seconds, blast of four seconds, interval of four seconds, blast of four seconds, interval of forty seconds—making sixty seconds.

BOAR'S HEAD, 17 yards from edge of cliff, lat 44° 24' 16" N., lon 66° 13' W., red and white catoptric light, revolving alternately every minute, visible 14 miles, 70 feet high, white square building. On south entrance to Petit Passage.

POINT PRIM, south point of entrance to Annapolis Basin, lat 44° 41' 34" N., lon 65° 47' 20" W., fixed white catoptric light, visible 13 miles, 76 feet high, square tower, vertical red and white stripes, height 22 feet. Fog whistle on Prim Point sounds in snow storms and in thick or foggy weather 8 seconds in each minute, making an interval of 52 seconds between each blast.

DIGBY PIER, Red Pole Light on outer end of pier.

SHAFNEP'S POINT, on N. side of Annapolis River, lat 44° 42' 40", lon W. 65° 37' 8". Fixed white dioptric, 55 feet high, visible 8 miles. Building white, square, wood. Indicates Goat Island Shoals.

ANNAPOLIS, on "Engineer's Lot" in Annapolis town, lat N 44° 44' 51", long 65° 31' 06". Fixed white light, dioptric, visible 8 miles. Square tower, painted white. After passing the black spar buoy off Marsh Point, this light affords a direct course E by N  $\frac{1}{4}$  N clear of shoal ground. It must not be shut in to the southward.

MARSHALL COVE or PORT WILLIAMS, south shore, lat 44° 56' 52" N., lon 65° 16' W., 2 fixed white catoptric lights, vertical, 22 feet apart, upper 92 feet high, visible 10 miles, white square building, height 22 feet. Lantern on top of dwelling; lower light in bow window, visible from W. S. W. round N. to E. N. E.

PORT GEORGE, on outer end of Eastern Pier, lat. N. 45° 0' 25", lon. W. 65° 9' 25". Fixed green catoptric, 25 feet high, visible 4 miles, square white tower, 21 feet high.

MARGARETVILLE, on extremity of point, south shore, lat 45° 2' 57" N., lon 65° 4' W., two fixed red catoptric lights, 30 and 27 feet high, visible 8 miles, square building, horizontal white and black stripes, height 22 feet. Visible from W. S. W. round N. to E. N. E.

ISLE HAUTE, on highest point, lat 45° 14' 55" N., lon 65° 0' 45" W., white intermittent catoptric light, 365 feet high, shows 40 seconds in every minute, visible 20 miles, white square wooden building, dwelling attached, almost hidden by trees; height 53 feet.

BLACK ROCK, south shore, lat 45° 10' 10" N., lon 64° 46' W., fixed white catoptric light, visible 12 miles, 45 feet high, square white building, height 35 feet. Light on top of dwelling, visible from all points of approach. A fog whistle on the extreme point of Cape d'Or, on the opposite side of the channel from Black Rock, sounds during thick weather, fogs and snow storms, twice in each minute, each blast

MACDONALD & CO., Makers of Tumbler Racks, &c.—See p. 3, cover.

Vessels fitted with Plumbing Fixtures by Macdonald & Co., Halifax.—See adv. p. 3, cover.

Macdonald & Co., Manufacturers of Brass Sliding Door Rollers, Halifax.

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being of six seconds duration, with intervals of 24 seconds between. The whistle will probably be heard in calm weather, or with the wind, at a distance of 20 miles, and in stormy weather, or against the wind, from 5 to 8 miles, according to the state of the atmosphere.

ADVOCATE HARBOR, southern side of entrance, lat 45° 19' 25" N., lon 64° 47' 30" W., fixed red dioptric light, 36 feet high, visible 7 miles, square white tower with dwelling attached, 27 feet high. Coast light, and to indicate entrance to harbor, over the bar.

KINGSFORT, on Oak Point Pier, lat 45° 9' 30" N., lon 64° 21' 45" W., fixed white catoptric light, height, 30 feet. White tower, visible 8 miles from S. W.  $\frac{1}{2}$  W. round by E. to N. W. by W.  $\frac{3}{4}$  W.

HORTON, on bluff, west side of Avon River, lat 45° 6' 15" N., lon 64° 13' 30" W., fixed white catoptric light, visible 20 miles. Square tower with dwelling attached.

WALTON HARBOR, Basin of Minas, Hants County, lat 45° 14' N., lon 64° 0' 45" W., fixed red catoptric light, visible 10 miles, 60 feet high, square white wooden building, height 20 feet. For guiding vessels into Walton harbor.

BURNTCOAT, Basin of Minas, north-west extremity of head, south shore lat 45° 18' 40" N., lon 63° 48' 30" W., fixed white catoptric light, visible 13 miles, 75 feet high, square white building, height 35 feet, On dwelling. Visible from all points of approach.

SALTER'S HEAD, lat. N. 45° 20' 10", lon. W. 63° 32' 10". Pole light fixed, red, shown from lantern hoisted on mast 20 feet high, with small shed at its base. Light 60 feet above high water, visible 5 miles.

CAPE D'OR. A steam whistle has been erected at Cape d'Or, Cumberland County. Sounds 6 seconds in every 30 seconds.

CAPE SHARP, on southern extremity of Cape, lat N. 45° 21' 55", lon W. 64° 23' 40". Fixed red dioptric light, 60 feet high, visible 10 miles. Square white tower, with dwelling attached.

PARRSBORO', or Partridge Island, west side of river, lat 45° 23' N., lon 64° 19' W., fixed white catoptric light, visible 9 miles, 37 feet high, white square building, height 32 feet. Lantern on dwelling.

SPENCER POINT, on north shore, Cobequid Bay, lat 45° 23' 30" N., lon 63° 37' W., fixed white catoptric light, visible 6 miles, 35 feet high, window in building 20 feet high.

APPLE RIVER, on Cape Capston or Hetty Point, north entrance, lat 45° 28' 20" N., lon 64° 51' 30" W., fixed white catoptric light, visible 12 miles, 64 feet high, building white, oblong, with tower, height 45 feet. Rebuilt about 33 yards S S E. from old one. A fog trumpet sounds blasts of 14 seconds, with intervals of 46 seconds.

**NEW BRUNSWICK—BAY OF FUNDY.**

HILLSBORO' WHARF, Petitecodiac River, lat 45° 55' 15" N., lon 64° 37' 45" W., fixed white catoptric light, visible 5 miles, 14 feet high, structure open frame, height 22 feet. To guide vessels going up the river and to the coal and plaster wharves.

FORT FOLLY POINT, on extreme point, lat 45° 52' 5" N., lon 64° 33' 32" W. Fixed white catoptric light, visible 14 miles, 77 feet high. White, with iron lantern red, square wood, with dwelling attached. At junction of Petitecodiac and Memramcook Rivers.

GRINDSTONE, west point of island, lat 45° 43' 13" N, lon 64° 37' 25" W., fixed white catoptric light, visible 12 miles, 60 feet high, octagonal white tower. Visible from N. E. by E., round by N. to E. by S., or 315°. In thick weather a trumpet sounds 4 blasts in every minute.

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Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax—See adv. page 3, cover.

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

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**WARD'S POINT, ROCKPORT.**—Lat  $45^{\circ} 43' 45''$  N., lon  $64^{\circ} 29' 40''$  W. Fixed white dioptric light, visible 10 miles, 72 feet high. Building white square wood. Visible from E. N. E. through N. to S. W.  $\frac{1}{2}$  W.

**CAPE ENRAGE**, pitch of Cape, lat  $45^{\circ} 35' 40''$  N., lon  $64^{\circ} 47' 0''$  W. one fixed white light, visible 15 miles, 120 feet high. Visible between bearings N. W. round S. to N. E. A steam fog horn, 130 feet S. W. from the light house, at an elevation of 100 feet, sounds blast of 8 seconds with intervals of 20 seconds.

**ANDERSON'S HOLLOW**, on eastern end Government breakwater, lat  $45^{\circ} 37' 30''$  N., long  $64^{\circ} 49' 45''$  W. Fixed red dioptric light 25 feet high, square white wood, with red roof, 20 feet. Visible 6 miles over an arc of  $56\frac{1}{2}^{\circ}$  between bearings of N. E.  $\frac{1}{2}$  E., and N. by W.  $\frac{1}{2}$  W. Vessels may run for harbor one hour before high water, giving the light 50 feet of a berth on port hand.

**QUACO PIER**, on outer end of E. breakwater pier, lat  $45^{\circ} 21' 20''$  N. long  $65^{\circ} 31' 55''$  W. Fixed red dioptric light, 20 feet high, white square wood structure, visible 6 miles, between W. by N.  $\frac{1}{2}$  W. and N. W., and between N.  $\frac{1}{2}$  E. and N. E. by E. The deepest water on entering the harbor is close to the light. Obscured from N.  $\frac{1}{2}$  W. to N.  $\frac{1}{2}$  E.

**QUACO WEST HEAD**, on pitch of Cape St. Martin's, lat  $45^{\circ} 19' 30''$  N., long  $65^{\circ} 32' 10''$  W. Revolving white catoptric light, 20 seconds interval, visible 16 miles, 110 feet high, building white square wood with dwelling attached. General coast light to guide to St. Martin's Harbor. Steam fog horn, 70 feet from lighthouse, gives blasts of 9 seconds with intervals of 30 seconds.

**QUACO BELL BUOY**, black iron bouy, surmounted by bell, off reef at west head, in 14 fathoms,  $\frac{1}{2}$  mile S. S. E. from light.

**QUACO LEDGE BELL BUOY**, red iron buoy, surmounted by bell, in 10 fathoms, N. W. of ledge. Lat  $45^{\circ} 14' 35''$  N., long  $65^{\circ} 22' 40''$  W.

**CAPE SPENCER**, pitch of Cape, lat  $45^{\circ} 12' 30''$  N., lon  $65^{\circ} 54' W.$ , red and white catoptric light, alternating every 45 seconds, visible 20 miles, 207 feet high, white square building, with tower, height 35 feet. Visible between the bearings from E. S. E. round by S. to W. N. W., Partridge Island light bearing by compass N. W. by W.  $\frac{1}{2}$  W. northerly, distant  $6\frac{1}{2}$  miles.

**BLACK POINT WHISTLING BUOY**, black iron buoy, surmounted by a 10 inch whistle, in 16 fathoms, outside entrance of St John harbor. Lat  $45^{\circ} 11' 30''$  N., long  $66^{\circ} 1' 0''$  W. From the buoy Partridge Island light bears N. by W.  $3\frac{3}{4}$  miles; Mispick Point N. E. by E.  $\frac{1}{2}$  E.,  $1\frac{1}{2}$  miles; west end of Meogenes Island N. W. by W.  $\frac{1}{4}$  W.,  $4\frac{1}{2}$  miles; and bell boat N.  $\frac{1}{2}$  W.

**PARTRIDGE ISLAND**, St. John harbor, lat  $45^{\circ} 14' 20''$  N. lon  $66^{\circ} 3' 20''$  W., fixed white dioptric light, visible 17 miles, 119 feet high, building red and white in vertical stripes, height 40 feet. In foggy weather a steam whistle sounds for 10 seconds every minute. A bell boat near E. side of Partridge Island Reef.

**NEGRO POINT**, on end of Government breakwater W. entrance to port of St. John, lat  $45^{\circ} 14' 25''$  N., long  $66^{\circ} 4' 0''$  W. Fixed red dioptric light, 40 feet high, visible 8 miles, white with red lantern, open framed hexagonal tower on circular stone foundation, 35 feet high.

**ST. JOHN HARBOR**, on pier on W. side of channel, lat  $45^{\circ} 15' 10''$  N., lon  $66^{\circ} 3' 40''$  W. Fixed white dioptric light, 35 feet high, visible 10 miles, building 15 feet, vertical black and white stripes.

**REID'S POINT**, on Prince William Street foot of St. James Street, St. John city. Lat  $45^{\circ} 15' 45''$  N., long  $66^{\circ} 3' 40''$  W. Fixed red and white gas light on a three branched lamp post, 42 feet high above high water, shows red to seaward, over an arc of  $67\frac{1}{2}^{\circ}$  from N. E. to N. N. W., white on other bearings.

Pickford & Black, Agents Funch, Edge & Co., New York.

**MACDONALD & CO.**, Manufacturers of Hand and Power Pumps.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

MUSQUASH LIGHT, lat 45° 8' 35" N., long 66° 14' 30" W., fixed green towards seaward, white towards harbor, visible 10 miles. White, square, wood, dwelling attached, catoptric.

SPLIT ROCK WHISTLING BUOY, in 30 fathoms, off Split Rock. Lat 45° 7' 10" N., long 66° 14' 50" W. Iron buoy, surmounted by a 10 inch whistle. Location S. W. by S.  $\frac{3}{4}$  S. from Musquash light, S.  $\frac{1}{4}$  W. from western head of Musquash, and W. S. W. from Partridge Island.

DIPPER HARBOR, on S. point of Campbell's Island. Lat 45° 5' 30" N., long 66° 25' 0" W. Fixed red light, 30 feet high, visible 6 miles. Building white square wood with red roof. Visible seaward and in the harbor when bearing from S by W to S. E.

LEPREAU, on point, lat 45° 3' 40", long 66° 27' 39" W. Fixed white catoptric light, 80 feet high, visible 14 miles from all points seaward. Octagonal wooden building, 48 feet, striped horizontally red and white, lantern roof red. Steam fog horn gives blasts of 5 seconds duration, with intervals of 25 seconds. Should the horn get out of order a whistle will sound two blasts of 5 seconds duration, with an interval of 5 seconds duration between, in every minute.

LEPREAU WHISTLING BUOY, in 23 fathoms, 1 mile S. S. W. from light.

DREW'S HEAD, on W. side of Beaver Harbor, Charlotte County, lat 45° 3' 45" N., lon 66° 44' W., fixed white catoptric light, visible 10 miles, 45 feet high, white, square, wooden building, height 36 feet. Seen at all points between eastern and western heads of harbor.

PEA POINT, lat 45° 2' 20" N., lon 66° 48' 40" W., east side of entrance to LeEtang Harbor, fixed green light, visible 10 miles. White, square, wood building, dwelling attached. Visible from seaward from W. through N. to S. An iron spindle painted black on the Grey Mare Ledge, marks the W side of entrance.

BLISS ISLAND, W. end of Island, S. side of western entrance to Bliss Harbor, lat 45° 1' 15" N., lon 66° 51' W., fixed red catoptric light, visible 12 miles, 45 feet high, white, square, wooden building, height 30 feet.

LATITE PASSAGE, on Mascatin Point, lat 45° 2' 20" N., lon 66° 53' 30" W. A fog trumpet has been erected on Mascatin Point, south entrance to Latite Passage, sounds blasts of 7 seconds, with an interval of 30 seconds between each.

MIDJIC BLUFF, Passamaquoddy Bay, Charlotte County, lat 45° 6' 53" N., lon 66° 54' 30" W., fixed white catoptric light, visible 15 miles, 130 feet high, building white, square, wood, height 29 feet, lantern brown. A bar extends E. N. E. from light house, and vessels require to keep off a distance of 260 yards to clear it at low water.

PORT ST. ANDREW'S, on sand reef at E. entrance, lat 45° 3' 45" N., lon 67° 0' 50" W., fixed white catoptric light, visible 10 miles, 40 feet high, structure white, square, wood, on a framed pier, height 10 feet. To guide to all ports in inner bay, and to vessels going up the River St. Croix from Letete Passage or West Quoddy. N. point of entrance, lat. 45° 4' 10" N., long 67° 2' 50" W. Fixed white catoptric light, 42 feet high, visible 10 miles between the bearings of N. W. by N. and S. E. by S. There is only a depth of 4 feet of water on the N. W. extension of the reef towards mainland.

PORT ST. ANDREWS, N. point of entrance, lat 45° 4' 10" N., lon 67° 2' 50" W., fixed white catoptric light, 42 feet high, visible 10 miles, white octagonal building, height 22 feet. Visible between the bearings of N. W. by N. and S. E. by S.

SPRUCE POINT, St Croix River, Charlotte County, lat 45° 10' N., lon 67° 11' W., fixed white catoptric light, 32 feet high, white square building, height 28 feet. The course from Spruce Point to ballast

ground is E. by S.  $\frac{1}{2}$  S., distance 2 miles. From Spruce Point to Mark Point W. N. W., distance 2 miles. A vessel after leaving Doucet Island, to clear the reef, should steer N. until the Spruce Point light bears N. W. by W., and thence take a W. N. W. course.

**MARK POINT,** St Croix River, Charlotte County, lat  $45^{\circ} 10' 10''$  N., lon  $67^{\circ} 12' 30''$  W., fixed white catoptric light 32 feet high, square white building, height 23 feet.

**HEAD HARBOR,** E. Quoddy Head, N point of Campobello Island, lat  $44^{\circ} 57' 30''$  N., lon  $66^{\circ} 53' 52''$ . Fixed white light, dioptric, 64 feet high, visible 13 miles. Octagonal building, 34 feet, white with red cross, dwelling attached, iron lantern red. Fog trumpet sounds blast of 8 seconds duration, with intervals of 35 seconds between them.

**MULHOLLAND POINT,** on E. side Lubec Narrows, Campobello Island, lat  $44^{\circ} 51' 47''$  N., lon  $66^{\circ} 58' 50''$  W. Fixed white light, dioptric, 60 feet high, visible 13 miles from N. N. W. through E. to S. S. W. Building white octagonal wood, 44 feet.

**SOUTH WEST WOLF ISLAND,** on S. E. point of the island, lat  $44^{\circ} 56' 30''$  N., lon  $66^{\circ} 44' 10''$  W., white catoptric light, revolving every  $1\frac{1}{2}$  minute, visible 17 miles, 111 feet high, building white, square, wood, height 35 feet. Lantern on dwelling; visible from all points of approach.

**SWALLOW TAIL,** N. E. part of Grand Manan, lat  $44^{\circ} 45' 43''$  N., lon  $66^{\circ} 44' 2''$  W., fixed white dioptric light, visible 17 miles, 148 feet high, white octagonal wooden building, height 50 feet. Visible between the bearings of S. W., round by S. to N. W.

**LONG EDDY POINT FOG WHISTLE,** extreme N. W. head of Grand Manan, 80 feet above high water, sounds blasts of 4 seconds duration, with intervals of 16 seconds between them.

**GRAND HARBOR,** Grand Manan, lat  $44^{\circ} 40' 2''$  N.,  $66^{\circ} 45' 5''$  W. fixed white catoptric light, visible 11 miles, 40 feet high, white, square wooden building, with dwelling attached, height 32 feet. Visible from all points seaward.

**BIG DUCK ISLAND FOG HORN,** S. end of Island, lat  $44^{\circ} 41' 5''$  N., lon  $66^{\circ} 41' 40''$  W. Sounds blasts of 6 seconds duration, with intervals of 35 seconds.

**SOUTH-WEST HEAD,** Grand Manan, lat  $44^{\circ} 36' 0''$  N., lon  $66^{\circ} 54' 16''$  W., revolving red and white catoptric light; three red flashes 40 seconds, eclipse 20 seconds, 3 white flashes 40 seconds, eclipse 20 seconds, 200 feet high; white, square wooden building, with dwelling attached, height 43 feet.

**GANNET ROCK,** S. of Grand Manan, lat  $44^{\circ} 30' 38''$  N., lon  $66^{\circ} 47' 0''$  W., intermittent white light, 45 seconds, eclipse  $5\frac{1}{2}$ , flash  $4\frac{1}{2}$ , eclipse  $5\frac{1}{2}$  in every 60. Visible 12 miles. Vertical black and white stripes, octagonal, wood, 41 feet high. A fog gun is fired once an hour. Dangerous rocks extend 4 miles eastward of the light house.

**MACHIAS SEAL ISLAND,** near middle of island, lat  $44^{\circ} 30' 7''$  N., lon  $67^{\circ} 6' 13''$  W. Fixed white light, dioptric, 54 feet high, visible 12 miles. Also, 64 yards S. E. from westerly light, fixed white light, dioptric, 66 feet high. Both buildings white, octagonal wood. In range N. W. will lead  $4\frac{1}{2}$  miles S. of Murr Ledges. A fog whistle sounds 5 seconds in each half minute.

**SABLE ISLAND.**

**SABLE ISLAND,** west end light house, lat  $43^{\circ} 57' 0''$  N., lon  $60^{\circ} 8' 0''$  W. A revolving white light, giving three flashes at intervals of half a minute, then a cessation of light during one and a-half minutes; visible 17 miles. White octagonal tower, 98 feet high.

**SABLE ISLAND,**  $1\frac{1}{2}$  mile from east end, lat  $43^{\circ} 58' 30''$  N., lon  $59^{\circ} 46''$  W., fixed white dioptric light, 2nd order, visible 18 miles, 123 feet high, octagonal building, white and brown alternately, height 86 feet.

**Brass Ventilators Made by MACDONALD & CO.—See adv p. 3, cover.**

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Pickford & Black, Agents Donaldson Line between Glasgow and Halifax.

Macdonald & Co., Manufacturers of Brass Binnacles and Stands, Halifax, N. S.—See adv. p. 3, cover.

**NEW BRUNSWICK.—GULF OF ST. LAWRENCE.**

- CAMPBELLTON RANGE LIGHTS**—Pier beside Railway Wharf, Restigouche River, lat 48 0 50 N, lon 66 39 40 W, fixed white light, visible 9 miles, white square wood, height 24 feet, building 22 feet. On Moffatt's wharf, fixed white light, visible 9 miles, white square wood, height 24 feet, building 22 feet.
- OAK POINT**, Restigouche River, front light, lat 48 2 40 N, lon 66 36 30 W. Fixed white light, visible 11 miles, white square wood, height 40 feet, building 22 feet. Back light, fixed white light, visible 12 miles, white square wood, height 45 feet, building 22 feet. In range guide across the Traverse.
- POINT A LA GARDE LIGHTBOAT** in 7 feet water, on Spit, S side of Main Channel, off Point, lat 48 3 10 N, lon 66 32 10 W, fixed white light, visible 3½ miles, small vessels, black hull with white spars, height 20 feet.
- HERON ISLAND**, Chaleur Bay, lat 48 N, lon 66 8 W, fixed white light, visible 15 miles, 66 feet high, building white, square, wood, height 20 feet. Visible from all points seaward.
- LITTLE BELLENDUNE**, on the point, lat 47 55 20 N, lon 65 53 20 W, fixed white light, visible 15 miles, 36 feet high, white, square, wood building, 21 feet high. Visible from all points seaward.
- PETTIT ROCHER**, on Elm Tree Point, lat 47 48 39 N, lon 65 43 13 W, fixed white light, visible 12 miles, 36 feet high, building white, square, wood, 31 feet high.
- BATHURST**, on Carron's Point, lat 47 39 10 N, lon 65 36 40 W, fixed lights, one white, visible 10 miles, building white. One red, visible 14 miles, 43 feet high, tower red and white striped, square wood. Range lights to guide vessels in the harbor.
- CLIFTON**, at head of pier, lat 47 45 30 N, lon 65 21 0 W, fixed red light, visible 15 miles, 88 feet high, white, square, wood building, 37 feet high.
- CARAQUET**, on Island, Bay of Chaleur, lat 47 49 35 N, lon 64 54 W, fixed white light, visible 14 miles, 58 feet high, white square tower on dwelling, height 48 feet.
- POKESUDIE**, N E point of Island, lat 47 49 10 N, lon 64 44 40 W, fixed white light, visible 11 miles, 41 feet high, building white, square, wood, 34 feet high.
- HARPER HEAD**, at Western entrance of Little Shippegan, lat 47 54 0 N, lon 64 35 0 W, one fixed white light, lantern on a mast, with white shed at base, standing on a crib. Visible 10 miles, 40 feet high.
- GOOSE LAKE**, W side of Miscou Island, lat 47 55 43 N, lon 64 35 40 W, white light, revolving every minute, visible 10 miles, 40 feet high, building white, square, wood, height 28 feet. Complete revolution every two minutes.
- SHIPPEGAN**, on Alexander Point, N E of entrance to gully, lat 47 43 30 N, lon 64 39 25 W, fixed white light, visible 11 miles, white, square, wood, 32 feet high, height 30 feet; also range light 484 feet S W by W from main light, fixed white light, visible 9 miles, 22 feet high, lantern on pole, height 20 feet. These lights range with buoy outside bar at entrance of gully.
- MISCOU ISLAND**, Birch Point, lat 48 1 N, lon 64 29 25 W, fixed red light, visible 12 miles, 79 feet high, building white, octagonal, wood, height 74 feet. A steam fog whistle, placed in 1875, and situated 107 yards east from the lighthouse, sounds in thick weather, fogs and storms, blasts of five seconds duration every half minute.

Pickford & Black, Agents Halifax and Newfoundland Steamship Company, Limited.

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. page 3, cover.

Residences fitted with Hot Water Heating Apparatus by Macdonald & Co., Halifax.

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**POKEMOUCHE**, on beach, N side of gully, lat 47 40 10 N, lon 64 46 0 W, fixed green light, visible eight miles, white, square, wood, dwelling attached, light 35 feet high, building 37 feet; also 270 feet S by W  $\frac{3}{4}$  W from main light, fixed red, visible five miles; lantern on a pole travelling on a tramway to suit changes in channel, 28 feet high. Range to guide to Can Buoy at passage over bar.

**NORTH TRACADIE**, one on north side of gully, the other outside of bar, lat 47 33 14 N, lon 64 51 35 W, 2 fixed white lights, visible 12 miles, 32 and 17 feet high, structures white, square, wood, one 30 feet high, and the other 14 feet high. Coast and harbor range lights.

**SOUTH TRACADIE**, N side of gully, lat 47 34 30 N, lon 64 52 10 W, 2 fixed lights, visible 8 miles, back light red, 26 feet high, 166 yards north from front one, front light white, 20 feet high, front building an open framed white tower, 19 feet high back building, height 26 feet, an enclosed square tower painted red. Vessels crossing the bar from sea should steer N, keeping the lights in range. Width of bar, 2 cable lengths.

**TABUSINTAC**, Crab Island, lat 47 18 54, lon 64 59 30 W, 1 fixed red light.

**NEGUAC**, lat 47 17 47 N, lon 63 3 30 W, fixed white light, visible 11 miles, 32 feet high, white square wooden building, height 30 feet. Coast light situated N E side of gully.

**HAY ISLAND**, 47 14 10 N, lon 65 3 40 W, two fixed white lights, front light near east end of Island, visible 10 miles, height 23 feet, lantern on mast with red shed at base, 210 feet west  $\frac{3}{4}$  N from front light, 30 feet high. Range lights to enable vessels seeking shelter to clear the point of the shoal off the east end of the Island.

**PORTAGE ISLAND**, on S point of Island, lat 47 0 50 N, lon 65 2 40 W, fixed white light, visible 12 miles, 46 feet high, building white, wood, height 42 feet.

**OAK POINT, Front**, on the Point, Miramichi, lat 47 7 10 N, lon 65 41 58 W, one fixed white light, visible 10 miles, 43 feet high, lantern hoisted on a mast, with white shed at base, all supported on trestlework, height 28 feet.

**OAK POINT, Back**, 1800 feet N E by E from front light, fixed white, visible 10 miles, 43 feet high, same as front light. In one lead to red buoy in river above.

**SHELDRAKE ISLAND**, Miramichi Bay, lat 47 5 37 N, lon 65 10 5 W, two fixed white lights, quarter of a mile apart, visible 9 miles, 48 feet high. Range lights. Mast with sheds at base.

**GRANT'S BEACH, Front**, Miramichi Bay, lat 47 5 30 N, lon 65 28 10 W, fixed white light, visible 10 miles, 120 feet high; also Grant's Beach, Back, 1300 feet N, 66 W, from front, fixed white light, visible 10 miles, 140 feet high, building same as Oak Point, height 34 feet. In one lead to Nappan black buoy.

**MIDDLE ISLAND**, Miramichi River, lat 47 3 26 N, lon 65 27 0 W, fixed white light, 45 feet high. Range light.

**NEWCASTLE**, on lime kiln bank, N side of river below the town, lat 47 0 45 N, lon 65 33 40 W, fixed red light, visible 9 miles, 87 feet high, white, square, wood, with red roof, height 23 feet.

**BAY DU VIN ISLAND**, front light on west end of Island, lat 47 5 20 N, lon 65 7 5 W, 1 fixed white light, visible 10 miles. Lantern on mast, red shade at base, 30 feet high. Back light, 1222 feet N E by E from front light, visible 11 miles, lantern on mast, red shed at base, 42 feet high. Range lights.

**Iron Pipe, all sizes, at MACDONALD & CO'S.—See adv. page 3 cover.**

**Pickford & Black, Agents Furness Line between London and Halifax.**

**Residences fitted with Hot Water Heating Apparatus by Macdonald & Co., Halifax.**

**Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. page 3, cover.**

Pickford & Black's West India Steamship Lines between Halifax and Demerara.

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- FOX ISLAND, N W Point**, lat 47 8 5 N, lon 65 2 20 W, 3 fixed white lights, visible 8 miles. No 1, 50, No 2, 46, and No 3, 36 feet high; all lanterns on masts, with white shed at base, height 40, 38 and 28 feet. No 1, 100 feet from northernmost point of Island. No 2, 1051 feet S E  $\frac{1}{2}$  E from No 1. No 3, 945 feet S W by W  $\frac{1}{4}$  W from No 1. Nos 1 and 2 in line range N W  $\frac{1}{2}$  N into Horseshoe Channel. Nos 1 and 3 in line, range N E through Portage Island Channel. Nos 2 and 3 in line, range W by N, to the upper buoy of Horseshoe Shoals.
- FOX ISLAND, East end**, lat 47 6 50 N, lon 65 0 10 W, 2 fixed white lights, visible 10 miles, 30 feet high, white wooden building. Range lights to guide vessels through the Swashway Channel.
- MIRAMICHI BAY LIGHTSHIP, Horseshoe Bar**, between Fox and Portage Islands, lat 47 8 N, lon 65 3 W, fixed red light, visible 8 miles, 35 feet high. A schooner rigged ship.
- PRESTON BEACH, Miramichi Bay**, lat 47 4 50 N, lon 65 54 40 W, 2 fixed white lights, visible 10 miles, 55 and 64 feet high. Range lights.
- ESCUMINAC on point**, lat 47 4 32 N, lon 64 47 30 W, fixed white light, visible 14 miles, 70 feet high, white wooden building, height 58 feet. A steam fog whistle situated 100 yards west of the light house, sounds in thick weather, fogs and snow storms, 6 seconds in each minute, with an interval of 35 seconds between each blast. It should be heard from 3 to 11 miles, according to the state of the weather.
- RICHIRUCTO HARBOR**, on outside of bank, S beach, lat 46 42 45 N, lon 64 46 10 W, fixed white light, visible 12 miles, 40 feet high, tower white, square, wood, dwelling attached, height 33 feet. Also, 102 yards W by S  $\frac{1}{2}$  S from front light, fixed red light, visible 12 miles, 44 feet high, white square open framed tower, height 43 feet. To replace dry beacons and lead through channel over bar at entrance to river.
- RICHIBUCTO HEAD**, on headland, lat 46 39 40 N, lon 64 42 30 W, fixed white light, visible 14 miles, 70 feet high, white square building, height 50 feet.
- BUCTOUCHE INNER LIGHTS**, 2 fixed white lights, front light close to shore road on Indian or Church Point, lat 45 20 35 N, visible 9 miles, 23 feet high, building white, square, wood, with red roof, 23 feet high. Back light, 1,980 feet N N W  $\frac{1}{4}$  W from front one, visible 12 miles, 53 feet high, building white, square, wood, with red roof, 23 feet high. Range lights, visible in direction of range replacing former day beacons. Lead into harbor through deepest channel clear of all obstructions from line range of Dixon's Point lights to where channel turns abruptly to westward to enter Buctouche River.
- BUCTOUCHE RIVER**, on Dixon's Point, lat 46 27 40 N, lon 64 38 50 W, 2 fixed white lights, N W by W, 1050 feet apart, visible 11 and 12 miles, square white towers, 36 and 41 feet high. Range lights built on line of former day beacons, to guide into Buctouche Harbor.
- CASSIA'S POINT**, on Point, lat 46 19 15 N, lon 64 30 20 W, white light revolving every half minute, visible 14 miles, 40 feet high, white, square, wooden building, height 27 feet.
- SHEDIAC ISLAND**, lat 46 15 20 N, lon 64 31 50 W, 2 fixed white lights, visible 10 miles, 48 and 56 feet high. Beacons.
- SHEDIAC HARBOR, Duchene wharf**, lat 46 14 20 N, lon 64 31 W, 2 fixed white lights, visible 6 miles, 15 feet high, on poles. Not under Marine Department.
- JOURIMAIN**, on east end of Island, lat 46 9 62 N, lon 63 48 20 W, flash white light, 10 seconds, visible 14 miles, 75 feet high, white octagonal tower, height 45 feet. Visible from S E round to N W.



GULF OF ST LAWRENCE.

ST. PAUL'S ISLAND, on rock off N E point of Island, lat 47 13 50 N, lon 60 8 20 W, fixed white, visible 20 miles, 140 feet high, white octagonal wood building, height 40 feet. Obscured between N by E  $\frac{1}{2}$  E and E N E. Not lit from Dec. 31st to April 1st, unless open water is visible.

ST. PAUL'S ISLAND, S W point of Island, lat 47 11 20 N, lon 60 9 40 W, white revolving light every minute, visible 20 miles, 140 feet high, white octagonal wood building, height 40 feet. Obscured on bearings from S S E to W  $\frac{1}{2}$  N. Not lit from 31st December to 1st April, unless open water is visible. A fog whistle on the S side of the Island, S W of Atlantic Cove, about  $\frac{1}{2}$  mile from the Humane Establishment, sounds for 5 seconds in each minute.

CARLETON POINT, Bay Chaleur, lat 48 5 15 N, lon 66 7 0 W, fixed white light, visible 12 miles, 32 feet high, white wood building, height 12 feet.

PASPELAC, near extremity of Spit, lat 48 0 54 N, lon 65 14 20 W, fixed white light, visible 13 miles, 55 feet high, white square wooden building, height 54 feet. In running into the harbor the light changes to red, covering the anchorage.

MASQUEREAU POINT, Bay Chaleur, lat 48 12 30 N, lon 64 46 12 W, alternate red and white every minute, visible 12 miles, 56 feet high, white square building, height 27 feet. Marine telegraph and signal station.

GRAND RIVER, mouth of river, coast of Gaspé, lat 48 24 15 N, lon 64 28 35 W, fixed red, visible 8 miles, 52 feet high, white, hexagonal, wood, with red iron lantern, height 43 feet.

CAPE DESPAIR, Bay Chaleur, lat 48 25 40 N, lon 64 18 20 W, revolving white light every half minute, visible 15 miles, 90 feet high, white, square, wood, with red roof, height 18 feet. Marine telegraph and signal station. Hand fog horn answer signal station.

PEARCE, on Whitehead Cape, lat 48 30 30 N, lon 64 13 0 W, fixed white light, visible 13 miles, 138 feet high, white, square, wooden building, height 20 feet.

POINT PETER, on flat rock or plateau off the point, lat 48 37 30 N, lon 64 8 45 W, revolving red light every thirty seconds, visible 10 miles, 77 feet high, white, square, wood, with dwelling attached height 50 feet, visible from all points seaward.

GASPE, O'Hara Point Wharf Basin, lat 48 49 53 N, lon 64 31 41 W, fixed red, visible 7 miles, 30 feet high, light white, with red roof, square, wood.

GASPE BAY LIGHTSHIP, at Sandy Beach Point, moored off extreme of Spit, lat 48 50 45 N, lon 64 24 30 W, two red 29, white 37 feet from deck, fixed lights, painted red, with "light ship" on her side. Red on fore, and white on mainmast. Hand fog horn answers signals from vessels.

GASPE CAPE, lat 48 45 15 N, lon 64 9 15 W, fixed red, visible 12 miles, square, wood, with dwelling attached, light 350 feet high, building 30 feet. A fog gun is fired every half hour. Hand fog horn answers signal.

CAPE ROSIER, on Cape, lat 48 51 57 N, lon 64 12 0 W, fixed white, visible 16 miles, white, circular, clapboarded, light 136 feet high, building 112 feet. A steam fog whistle sounds a blast of 10 seconds every minute. Marine telegraph and signal station. If the whistle is out of order, a horn will sound similar blasts.

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**HEATH POINT**, east end of Anticosti Island, lat 49 5 20 N, lon 61 42 30 W, fixed white light, visible 15 miles, white, with a red horizontal band, circular, faced and clapboarded, light 110 feet high, building 90 feet. The light house is always kept open to the southward of Cormorant Point; visible between the bearings S W by W to E. Depot of provisions here for shipwrecks. A fog gun is fired every half hour. Marine telegraph and signal and ice report station.

**BAGOT'S BLUFF**,  $\frac{3}{4}$  mile W from S point, Anticosti Island, lat 49 4 0 N, lon 62 15 10 W, flash white light every 20 seconds, visible 14 miles, white with a red vertical stripe, hexagonal, light 75 feet high, building 54 feet. A fog whistle 100 yards E of lighthouse, sounds for 10 seconds in every minute. Marine telegraph and signal and ice report station.

**SOUTH WEST POINT**, Anticosti Island, lat 49 23 45 N, lon 63 35 46 W, revolving white light every minute, visible 15 miles, white, with two red horizontal bands, circular, clapboarded, light 100 feet high, building 75 feet, visible between bearings of N N W, round by southward to S E by E. Marine telegraph and signal and ice report station.

**WEST POINT**, extreme W point, Anticosti Island, lat 49 52 30 N, lon 64 31 40 W, fixed white light, visible 15 miles, with two red vertical stripes, circular, clapboarded, light 112 feet high, building 109 feet. A fog gun is fired every half hour. Marine telegraph and signal and ice report station.

**FAME POINT**, County of Gaspé, South Coast, lat 49 6 48 N, lon 64 36 20 W, fixed and flash light, white, with red flashes every 20 seconds, visible 20 miles, white with a black horizontal band, square, wood, light 200 feet high, building 50 feet. Marine telegraph and signal station.

**CAPE MAGDALEN**, on Cape, lat 49 15 40 N, lon 65 19 30 W, alternating red and white light, visible every 2 minutes, visible red 15, white 30 miles, white, with a black vertical stripe, hexagonal, light 147 feet high, building 54 feet. Marine telegraph and signal station.

**MARTIN RIVER**, on S shore Gaspé County, lat 49 13 25 N, lon 66 9 0 W, fixed white light, visible 17 miles, white, with two black horizontal bands, square, wood, with dwelling attached, light 125 feet high, building 54 feet.

**SEVEN ISLANDS**, on Carousal Island, lat 50 5 40 N, lon 66 22 44 W, fixed white light, visible 20 miles, white with a red horizontal band, square, wood, with dwelling attached, light 200 feet high, building 39 feet.

**POINT ST. ANNE**, 11 miles E from Cape Chatte light, lat 49 3 20 N, lon 66 33 30 W. Fog horn sounds a blast of 8 seconds in every minute.

**CAPE CHATTE**, N E point of Cape, lat 49 5 55 N, lon 66 45 29 W, revolving white light every 30 seconds, visible 18 miles, white, with two black vertical stripes, square, wood, light 120 feet high, building 26 feet; visible from all points of approach seaward. Marine telegraph and signal station.

**EGG ISLAND**, 200 yards from S end of Island, lat 49 38 0 N, lon 67 10 0 W, revolving white light every 1½ minutes, visible 15 miles, white, with a red, vertical stripe, octagonal, surmounting dwelling, light 70 feet high, building 35 feet.

**POINT DES MONTS**, about 1¼ mile N E of Point, lat 49 19 35 N, lon 67 21 55 W, fixed white light, visible 15 miles, white, with two red horizontal bands, circular, clapboarded, light 100 feet high, building 75 feet. A fog gun is fired every half hour. Marine telegraph and signal station.

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Residences fitted with Hot Water Heating Apparatus by Macdonald & Co., Halifax.

MACDONALD & CO., Manufacturers of Lead Water Marks.—See cover.

**PRINCE EDWARD ISLAND.**

**NORTH POINT**, on Point, lat 47 3 46 N, lon 63 59 10 W, white light revolving every minute, visible 14 miles, 80 feet high, white octagonal building, height 60 feet.

**WEST POINT**, on Sand Beach, lat 46 37 30 N, lon 64 23 10 W, red and white revolving light, one red and 3 white flashes in 1½ minutes; greatest brilliancy every 22½ seconds, visible 13 miles, 66 feet high, square wooden building, broad red and white horizontal bands, height 67 feet.

**CAPE EGMONT**, on Point, lat 46 24 20 N, lon 64 7 45 W, fixed red light, 72 feet high, visible 10 miles, white, square, wood, with dwelling attached, height 45 feet.

**SUMMERSIDE**, Railway Wharf, Bedeque Bay lat 46 23 25 N, lon 63 47 30 W, fixed white light, visible 10 miles, 33 feet high, square tower on roof of railway freight shed, height 30 feet.

**INDIAN POINT**, east side of shoal on S side of Channel in Bedeque Bay, lat 46 22 40 N, lon 63 48 50 W, fixed white and green arc, visible 13 miles, building octagonal, white. Green between E by N ¼ N, E S E over Miscouche shoals only.

**SEA COW HEAD**, or Salutation Head, lat 46 19 10 N, lon 63 48 20 W, fixed white light, visible 15 miles, 88 feet high, white octagonal building, height 60 feet.

**MININEGASH**, outer light, shews red between the bearings of N E through E, and S, and white from S to S W by W.

**CRAPAUD**, west end of bridge, at head of harbor, lat 46 13 5 N, lon 63 29 10 W, 2 fixed white lights, visible 6 miles, 41 feet high, white, square, wooden building, height 38 feet. Inner range light about ¼ mile N from outer one, fixed white light, visible 6 miles, 60 feet high, shown from dormer window of a house, height 24 feet. White light in front tower shows S W over Tryon Shoals, and blue light in line of channel only. The two lights in range lead to Can Buoy on Cameron's Reef and a cask buoy on Tryon Shoal. After passing these buoys the course is north-west to sheltered anchorage. At entrance to dredged channel is another Cask Buoy whence the channel to the wharf is straight and marked by spar buoys and bushes. This last should not be attempted by strangers at night. Lights visible from all points of approach.

**ST. PETER'S ISLAND**, on S side of Island, Hillsborough Bay, lat 46 7 15 N, lon 63 10 30 W, fixed red light, visible 10 miles, 70 feet high, white, square, wood building, 38 feet high. Shows between W ½ S and S E by S over an arc of 240°.

**BLOCKHOUSE POINT**, at west side of entrance to Charlottetown Harbor, lat 46 11 36 N, lon 63 7 28 W, fixed white light, white, square, wood dwelling, and signal mast attached.

**ORWELL HARBOR**, at Brush wharf, 1 fixed red light, visible 8 miles, building white, square, wood, height 28 feet, light shews southwest.

**POINT PRIM**, S E extremity of Hillsborough Bay, 100 yards from the Point, lat 46 3 10 N, lon 63 2 W, fixed white light, visible 12 miles, 68 feet high, building white, circular, brick, height 55 feet. Bell Buoy on east side of channel, black buoy on west side, 2¼ N by E ¾ E from bell buoy harborward.

**WOOD ISLAND**, off South Point, lat 45 57 22 N, lon 62 44 30 W, fixed white light, visible 15 miles, 80 feet high, tower white, square, wood, with dwelling attached, height 40 feet

**CAPE BEAR**, on the headland, lat 46 0 35 N, lon 62 27 15 W, one revolving red, every 30 seconds, visible 12 miles, 74 feet high, building white, square, wood, with dwelling attached, 45 feet high

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**MURRAY HARBOR**, on edge of Sand Bar, S side of harbor, lat 46 1 28 N, lon 62 28 25 W, fixed white light, visible 8 miles, 33 feet high, tower 30 feet. Also on mainland, about a mile W by S from front light, fixed white, visible 10 miles, 57 feet high, tower white, square, height 40 feet. In one, these range lights show the Channel to the outer buoy.

**PANMURE HEAD**, S E extremity of Cardigan Bay, lat 46 8 55 N, lon 62 27 40 W, fixed white light, visible 16 miles, 96 feet high, white octagonal wooden building, height 50 feet. This light should be kept open off Terras Point to clear reef off Cape Bear.

**CARDIGAN RIVER**, between Ferry Wharf and Morrison's Beach, west shore of river, lat 46 12 50 N, lon 62 31 45 W, fixed light, green and white, visible 8 miles, 43 feet high, building white, square, wood, 32 feet high. Green seaward, white across river to N eastward on entering the river. Vessels can stand northward inside Broughton Island, until Panmure Island light bears S by W, and Cardigan River light N W, when they can stand in, keeping light open on port bow, when white light is opened, safe anchorage has been reached.

**GEORGETOWN**, St Andrew's Point, lat 46 9 57 N, lon 62 31 23 W, fixed light, red, visible 10 miles, 36 feet high, building white, square, wood, height 20 feet. On Westaway's farm, ½ mile N W by W ½ W from front light, fixed white, visible 12 miles, 50 feet high, lantern on mast, height 30 feet. The two in range lead in to the point clear of obstructions.

**SOURIS EAST**, Knight's Point, 300 feet S E of breakwater, lat 46 20 50 N, lon 62 14 30 W, fixed white light with red streak, visible 15 miles, 85 feet high, white, square, wood, with dwelling attached, height 45 feet. Visible from all points seaward.

**EAST POINT**, 200 feet from extreme point, lat 46 27 15 N, lon 61 55 0 W, white light, revolving every three minutes, visible 15 miles, 100 feet high, building white, octagonal, wood, height 60 feet. A fog horn operated by compressed air, sounds a blast of 8 seconds duration every half minute. It stands 100 feet eastward of lighthouse. Fog alarm building in line with tower roughly indicates range of outer point of reef.

**ST. PETER'S**, 2 lights, one on outer end of breakwater, lat 46 26 30 N, lon 62 44 30 W, fixed white light, visible 6 miles, 35 feet high, white, square, wooden tower, height 35 feet. The other light on Sand Beach, 126 yards S W by S from front light, also fixed white and visible 6 miles, 32 feet high, white, square, open frame, height 33 feet. Range lights to lead into harbor, the inner one is liable to be moved to suit shifting of the channel.

**SAVAGE HARBOR**, on McEachren's farm, on inner shore of harbor, lat 46 25 40 N, lon 62 48 30 W, fixed white light, visible 5 miles, 22 feet high, mast with brown shed at base, height 25 feet. Inner light 330 feet S ½ E from outer light, fixed white light, visible 5 miles, 30 feet high, mast with brown shed at base, height 25 feet. Lights in range lead to mid-channel buoy, outside bar. Vessels open the lights on starboard buoy after passing buoy, until inner fairway buoy is reached whence channel leaves range. Only 5 feet of water on bar at low tide, outer light liable to be moved.

**TRACADIE**, on beach, west side of channel, 233 yards N E by N from back light, lat 46 25 20 N, lon 63 2 30 W, 2 fixed red lights, visible 10 and 9 miles, height 30 and 13 feet, open square frame work, 32 and 21 feet high. In one, lead through the channel over the bar. Position of both towers liable to be changed to suit shifting of the channel. Not more than seven feet of water on the Bar.

**COVE HEAD**, range lights, 225 feet apart, 2 fixed lights, back light white, front one green, visible 3 miles. Lantern on masts 33 and 23 feet high. Back lat 46 26 10 N, lon 63 8 45 W, light liable to be moved to suit changes in the channel. Only 4 feet on bar.

**MACDONALD & CO., Brass Founders.—See adv. p. 3, cover.**

Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. p. 3, cover.

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**NEW LONDON**, west side of entrance to Granville Harbor, lat 46 31 10 N, lon 63 28 45 W, one fixed red light, visible 10 miles, building white, square, wood, with dwelling attached, height 40 feet. Range light 500 feet N E of main light, 1 fixed white, visible 3 miles, white, square, open frame, 24 feet high. The two lights in range show the entrance to the harbor. Outer range light liable to be moved to suit shifting of the channel.

**FISH ISLAND**, entrance to Malpeque or Richmond Bay, on inside of island, lat 46 34 44 N, lon 63 42 29 W, 2 fixed white lights, 400 yards apart. S E by E  $\frac{1}{2}$  from main light, visible 12 and 6 miles, 50 and 18 feet high, towers higher, white, square, wood, with dwelling attached, 46 feet high; lower, open frame work, lantern white, height 22 feet. The main light is a sea light; the smaller one in range with it shows the channel over the bar.

**LITTLE CHANNEL**, on Conway Island, N side, lat 46 40 N, lon 63 52 40 W, 2 fixed white lights, 66 yards apart, 1 visible 10 miles, 26 feet high, white, square building, height 30 feet; the other visible 8 miles, 16 feet high, building open frame work, lantern white, 20 feet high. In one, lead through channel at entrance of harbor. Outer light liable to be moved to suit changes in channel.

**CASCUMPEC**, or Alberton, on S W part of Sandy Island, lat 46 48 22 N, lon 64 2 15 W, fixed white light, visible 12 miles, 45 feet high, white, square, wood, with dwelling attached, height 41 feet, coast light, and two range fixed red lights, one near inner end of Railway wharf, lat 46 48 0 N, lon 64 3 0 W, visible 6 miles, on a mast with slatwork, day beacon, height 22 feet, also on the village square, fixed red light, visible 11 miles, 40 feet high, open frame tower, surmounted with a mast 22 feet high, back light is about 1,100 feet due west from the front light, and leads a direct course to the outer buoy up the harbor.

**BIG TIDNISH**, on beach at inner end of north Breakwater Pier, lat 46 57 35 N, lon 63 59 20 W, fixed white light, visible 11 miles, 35 feet high, white with a black horizontal band, square wood building, height 33 feet, and on outer end of north Breakwater Pier, 620 feet S E  $\frac{1}{2}$  E from main light, fixed red, visible five miles, lantern 18 feet high on mast, height 14 feet. These two lights in range guide in between the breakwater, the outer light also shows end of pier, and is for convenience of small vessels only.

**SABLE ISLAND.**

**SABLE ISLAND**, west end light house, lat 43 56 20 N, lon 60 6 0 W. A revolving white light giving three flashes at intervals of half a minute, then a cessation of light during one and a half minutes, visible 17 miles. White octagonal tower 98 feet high.

**SABLE ISLAND**,  $1\frac{1}{2}$  miles from east end, lat 43 58 30 N, lon 59 46 W, fixed white dioptric light, 2nd order, visible 18 miles, 128 feet high, octagonal building, white and brown alternately, height 86 feet.

**NEWFOUNDLAND.**

**CAPE BAULD**, on high ground near extremity, lat 51 38 50 N, lon 55 25 W, red and white, alternate 45 seconds, 141 feet high, building white, square, 60 feet high, visible 18 miles. Fog horn in thick weather sounds 10 seconds in every minute.

**CAPE NORMAN**, Straits of Belle Isle, lat 51 38 N, lon 55 58 40 W, white light, revolving every two minutes, visible 20 miles, 138 feet high, white hexagonal tower, height 40 feet. Visible from all points of approach seaward.

**POINT RICH**, Straits of Belle Isle, lat 50 41 50 N, lon 57 27 40 W, flash white light every 15 seconds, visible 18 miles, 130 feet high, white hexagonal tower, height 40 feet. Visible from all points of approach seaward. A fog horn giving a blast of 5 seconds every 35 seconds, will be established here next season.

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- CAPE RAY, on west side of Cape, lat 47 37 N, lon 59 18 W, revolving white light every 20 seconds, visible 17 miles, white octagonal building, white outbuildings, red roofs, 130 feet high.
- GULL ISLAND, on Summit, lat 50 0 N, lon 55 22 W, one white light, occulting every 20 seconds, building circular, red and white stripes, 43 feet high.
- LONG POINT, Toulingate, lat 49 41 N, lon 54 49 W, revolving white light every 30 seconds, visible 27 miles, 331 feet high, tower red, keeper's dwelling attached, white with red roof.
- CAN ISLAND, Seldom-come-by, lat 49 25 5 N, lon 44 10 35 W, fixed white light, 85 feet high, visible 10½ miles, tower and dwelling of wood attached. The light illuminates an arc of the horizon of 270°.
- OFFER WADHAM ISLAND, lat 49 16 N, lon 53 45 W, fixed white light 100 feet high, visible 10 miles, circular brick tower, dwelling white and detached
- CABOT, Stinking Island, Bonavista Bay, lat 49 10 26 N, lon 53 21 21 W, white light, making one complete revolution in a minute, appearing about 11 seconds and 9 seconds dark. Iron light tower, in centre of square wooden building. Roofs flat; sides banded horizontally red and white alternately.
- PUFFIN ISLAND, Greenspond, lat 49 3 37 N, lon 53 37 27 W, fixed red light, 85 feet high, visible 10½ miles, lighthouse granite, with dwelling attached. The light is visible N by E. through S to W by N by compass.
- CAPE BONA VISTA, lat 48 41 50 N, lon 53 5 20 W, revolving light, alternately white and red every one minute and 30 seconds, 50 feet high, visible 15 miles. By keeping this light open with Cape L'Argent, it will carry you clear of the Flower Rocks.
- GREEN ISLAND, at the entrance of Catalina Harbor, Trinity Bay, lat 48 30 16 N, lon 53 2 40 W, fixed white light, 92 feet above high water, visible from E N E seaward to S W 11 miles. Vessels bound northward by keeping this light open with the North Head of Catalina until Bonavista light opens with Cape LeJean, will give the Flower Rocks an ample berth; or when coming from northward and bound for Catalina, by giving the N head a moderate berth, will clear the Brandies Rocks by steering from Green Island light.
- FORT POINT, Trinity, lat 48 21 55 N, lon 53 20 51 W, fixed white light, visible 11 miles, upon a wooden tower painted white, 75 feet high. This light illuminates the arc of the horizon of 320°. In entering the harbor the light must be kept on the port hand.
- BACCALIEU ISLAND, northern end, lat 48 8 51 N lon 52 47 50 W, white revolving light, showing a flash every 20 seconds, height 443 feet above high water, visible 24 miles, brick tower, dwelling white with red roof, detached from the tower. When the southern end of the island bears N N E, the light will not be visible when nearer the island than 8 miles.
- CARBONEAR ISLAND, lat 47 44 24 N, lon 53 9 22 W, fixed white light, 195 feet high, visible 16 miles, tower and dwelling in one building; the whole horizon is illuminated.
- HARBOR GRACE ISLAND, lat 47 42 45 N, lon 53 8 15 W, revolving light, 2 white flashes followed by one red, each attains its greatest brilliancy every 30 seconds, visible 15 miles.
- HARBOR GRACE BEACH BEACON and LIGHT, lat 47 41 28 N, lon 53 12 35 W, fixed white light, 40 feet high, in a white tower on the point of beach at the entrance of Harbor Grace; visible 7½ miles. Entering it with a fair or leading wind, bring it to bear W or W by S, and by keeping the light or building a little on the starboard bow, it will bring you clear of the bar on which at low water there is not more than 8 feet of water.

**MACDONALD & CO., Manufacturers of Lead Water Marks.—See cover.**

**Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.**

**Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See adv. page 3, cover.**

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**GREEN POINT**, Bay Roberts, on Point, lat 47 37 N, lon 53 10 W, one white light fixed, visible 8 miles. Building circular, red and white bands. Immediately beneath the principal light is a projecting lantern from which 3 lights are exhibited. The two outer lights show white, and the centre light in line with Southern Rocks bearing on S W  $\frac{1}{2}$  W, show red.

**CAPE ST. FRANCIS**, lat 47 48 30 N, lon 52 46 50 W, fixed red light, 123 feet high, visible 12 miles.

**CAPE ST. FRANCIS FOG ALARM**.—During thick weather and snowstorms a powerful Siren Trumpet will be sounded 5 seconds—5 seconds and silent 45 seconds in each minute. The buildings are of wood, painted white; the roofs flat, lantern on higher roof elevated above it on a square block; the lower building is the fog alarm house.

**FORT AMHERST**, at the entrance of St. John's, lat 47 35 54 N, lon 52 40 18 W, fixed white light, 114 feet high, visible 12 miles. When Cape Spear is enveloped in fog, a heavy piece of ordnance is also discharged at this fort every hour during daylight to assist vessels in making the harbor.

**ST. JOHN'S**, 2 red lights intended as leading marks for vessels entering the Narrows. The lower light is on a mast on the roof of the Custom House. The upper light (400 yards in the rear) in a small tower, near the N E angle of the Congregational Church, 180 feet high. As leading marks during the day, there is a disc on the masthead of the Custom House, and another on the apex of the tower roof—the discs are painted white. By keeping these lights and disc in line, the largest vessels will clear all danger.

**CAPE SPEAR**, lat 47 31 11 N, lon 52 36 59 W, white light revolving every minute, visible 22 miles, 264 feet high.

**CAPE SPEAR ALARM**.—A trumpet, sounded by the escape of compressed air, was placed in 1878 at this station, in a wooden building on the Bill of the Cape, nearly 600 yards N N E from the lighthouse. It will be sounded for 7 seconds of each minute during thick weather or snow storms. The range of sound will probably be from  $\frac{1}{2}$  to 10, according to the direction and intensity of the wind or other atmospheric disturbance.

**FERRYLAND HEAD**, lat 47 0 58 N, lon 52 51 7 W, fixed white light, 200 feet high, visible 16 miles, red brick tower, dwelling white with red roof, detached from the tower.

**CAPE RACE**, on the Cape, lat 46 39 0 N, lon 53 4 0 W, white light revolving every 30 seconds, visible 30 miles, 180 feet high, circular, S E face striped red and white vertically, height 400 feet. Whistle sounds 10 seconds in every minute, and heard from ten to thirty miles, according to wind and weather.

**CAPE PINE**, lat 46 37 4 N, lon 53 31 48 W, fixed white light, 314 feet high, visible 20 miles, iron tower.

**LAHAVE**, on point, lat 46 54 N, lon 53 37 W, 1 fixed white light, visible 9 miles. Building circular, red and white bands.

**CAPE ST. MARY'S**, lat 46 49 40 N, lon 51 11 34 W, revolving light, producing alternately every minute a brilliant red and white light, 390 feet high, visible 23 miles, brick tower, with dwelling on each side, roof red.

**DODDING HEAD**, Great Bruin Island, lat 47 0 27 N, lon 55 8 47 W, revolving light, producing a brilliant white light every minute, 430 feet high, visible 24 miles.

**ALLAN ISLAND**, LAMSLINE, lat 46 51 0 N, lon 55 57 50 W, (both approx.), fixed white light, 64 feet high, visible 9 miles, illuminated arc 270°, wood, octagonal tower, red and white on alternate sides.

MACDONALD & CO., Importers of Engineers' Rubber Goods.

Macdonald & Co., Manufacturers of Plumbers' Brass Goods, Halifax.—See adv. page 3, cover.

Macdonald & Co., Manufacturers and Fitters of Steam Heating Apparatus.

Pickford & Black, Agents Halifax and Newfoundland Steamship Company, Limited.

**Pickford & Black, Agents Halifax and Newfoundland Steamship Company, Limited.**

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- BRUNET ISLAND**, Mercher's Head, Fortune Bay, lat 56 59 30 N, lon 47 16 W, flashing white light, greatest brilliancy every 10 seconds, 408 feet high, visible 35 miles in every direction from N round E and S to W N W.
- GARNISH, FORTUNE BAY**, lat 47 14 N, lon 55 24 W, a beacon tower of wood carrying an octagon and lantern, in which a red light is exhibited.
- BELLOROM, FORTUNE BAY**, lat 47 29 N, lon 55 27 15 W, fixed white light 25 feet high, visible 7 miles, white wooden tower. In entering the harbor the light must be kept on the port hand.
- ROCKY POINT, Harbor Breton, Fortune Bay**, lat 47 27 30 N, lon 55 47 45 W, a square wooden tower, carrying an octagon and lantern in which a fixed white light will be exhibited. The apparatus is a simple argand burner, with a red light to mark the Harbor Rock.
- PASS ISLAND**, entrance to Hermitage Bay, lat 47 29 15 N, lon 56 12 2 W, fixed white. A fixed red light is placed below the white light to distinguish the rocks and reefs extending from the Wolf Rocks bearing (from the light house) S 74 47 W, to Bessertere Point S, 61 33 E. The reef over the Wolf Rock is about 1½ miles from the island. At a distance of about 4 miles the two lights merge into one, 281 feet high, visible 19 miles, illuminated arc 360°. Wood house, sides painted white, flat roof, on which the principal lantern stands. The one showing red light is 14 feet lower and at the angle of the building.
- BEACON, Ireland's Eye**, entrance of La Poil Bay, a square white building with three black bands has been erected on this island; it is 76 feet high and supported on chains.
- BOAR ISLAND, Burges**, lat 47 36 12 N, lon 57 35 13 W, fixed red light, 240 feet high, visible 17 miles, tower wood, on dwelling.
- ROSE BIANCHE POINT** lat 47 35 48 N, lon 58 41 80 W, fixed white, 95 feet high, visible 11 miles, granite light house, upon the eastern head, dwelling and tower attached. The light illuminates the horizon from E by S through S to W by compass, Shag Island Black Rock bears W from the light, and distant about a mile. Rose Blanche Shoals W S W half a mile, and Petitas Black Rock E by S 3 miles.
- CHANNEL HEAD, Port au Basque**, lat 47 33 47 N, lon 59 7 10 W, fixed red light, 90 feet high, visible 7 miles, square light, tower and keeper's dwelling are detached wooden buildings.
- GALLANTRY HEAD, Island of St. Peter's**, lat 46 45 30 N, lon 58 27 W, flash light, one red after two white flashes, with intervals of 20 seconds, about 104 feet high, visible 18 miles. The light is hidden at the northward by the high land of St. Peter's.
- GALLANTRY HEAD Fog Signal Steam Whistle**, sounded for periods of 6 seconds at intervals of 1 minute, 1st March to 1st December.
- SOUTH ENTRANCE OF ST. PETER'S**—The entrance of the harbor of St. Peter's called South Channel, is marked by two small fixed lights—one white, illuminating ¼ of the horizon, and placed on the Battery; the other red, on the plain at the N of the town—white lights, eleven metres high, visible 3 miles, red, 19 metres high, visible 3 miles. The line connecting these two lights indicates the middle channel. As soon as the red light is seen on the left of Cape Eagle, vessels coming from Columbiar in beating into the N E entrance will have nothing to fear from the shoals of Cape Rogers.
- ISLAND OF DOGS**, called Point a Leconte—A light is exhibited on the S W point of this Island, at a place called Point a Leconte, 437 feet high, visible 7 miles; the extent of the light is circumscribed in a sector of 163° presenting two cones of light, on white, 40°, will light the passage to the S E so as to permit vessels which remain in position within this cone to avoid at the right the shoal Betaille, and to the left the rock of Cape Noir and the rock

**Macdonald & Co., Importers of Steam Pumps, &c., Barrington St., Halifax.—See adv. page 3, cover.**

**Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.**



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**PICKFORD & BLACK, Agts. Halifax & Newfoundland Steamship Co., Ltd**

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Bertrand. The second cone is red of 123°; it should be avoided by vessels entering the S E passage, and will enable them, when they have quitted the white cone, to come to anchor in the roadstead, or in the Barachois, in following the line of the white light from Point aux Canons, and of the red light from the interior of the city.

**POINT VERB**, Great Placentia, lat 47 14 11 N, lon 54 1 19 W, a fixed white light will be exhibited nightly, from sunset to sunrise, 98 feet above the level of the sea, and should be visible in clear weather 17 miles. The tower and dwelling are of wood and attached, the vertical parts of the building are painted white, the roof of the dwelling is flat. The illuminating apparatus is dioptric, of the 5th order, with a single argand burner. The whole water horizon is illuminated.

#### MAGDALEN ISLANDS.

**ENTRY ISLAND**, S E side, lat 47 16 30 N, lon 61 41 20 W, fixed white light, visible 12 miles, square, white, with dwelling attached, height 90 feet, building 28 feet. Light seen from all points, except from E S E, round to N, where it is intercepted by the high lands of the island.

**AMHERST ISLAND**, south point of Island, lat 47 13 N, lon 61 58 W, revolving red and white, alternating every half minute, visible 20 minutes, hexagonal, white. Attached to keeper's dwelling. Marine telegraph and signal and ice report station.

**GRINDSTONE ISSAND**, west side, lat 47 23 30 N, lon 61 57 W, revolving white light, every  $\frac{1}{2}$  minute, visible 20 miles, square, white, 200 feet high, building 28 feet. In thick foggy weather or snow storms a whistle will sound a blast of 8 seconds during every half minute. Also marine telegraph, &c.

**BIRD ROCK**, lat 47 50 40 N, lon 61 8 20 W, fixed white light, visible 21 miles, hexagonal white building, dwelling near tower, 140 feet high, building 50 feet. Fog guns every half hour during fogs and storms. Marine telegraph and signal and ice report station.

#### LABRADOR.

**BELLE ISLE**, Straits of Belle Isle, extreme S point of Island, lat 51 53 0 N, lon 55 22 15 W, fixed white light, visible 28 miles, 470 feet, white, circular, clap-boarded building, height 62 feet, visible from about N W by N, round by S to E. A fog gun is fired once every half hour. Also about 300 feet lower than main light, fixed white light, visible 17 miles, 128 feet high, white, square, wood building, height 31 feet. Depot of provisions for shipwrecked mariners.

**ARMOUR POINT**, S E side of Fortune Bay, lat 51 27 35 N, lon 56 50 55 W, fixed white light, visible 18 miles, 155 feet high, white, circular building, height 109 feet, fog horn on point 250 yards W of lighthouse, sounds a blast of 8 seconds every minute. If horn becomes disabled, old whistle, 700 yards N W from horn will sound similar blasts.

**GREENLY ISLAND**, on S W part of Island, Straits of Belle Isle, lat 51 22 35 N, lon 57 10 50 W, revolving red and white light, white  $\frac{1}{2}$  minute, red  $\frac{1}{2}$  minute, eclipse  $1\frac{1}{2}$  minute, visible 15 miles, 100 feet high, white, with red lantern, octagonal wooden tower, with dwelling attached, height 78 feet. Light completes a revolution every 3 minutes. Fog gun fired every half hour. To be replaced by steam fog alarm

**FLAT ISLAND**, off Great Mecattini Island, lat 50 46 0 N, lon 58 47 0 W, a square pyramidal wooden day beacon, 28 feet high, slatted horizontally, surmounted by a cone 6 feet high, point upwards with vane.

**MACDONALD & CO., Manufacturers of Hand and Power Pumps.**

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

Pickford & Black, Agents Funch, Edge & Co., New York.

See adv. page 3 cover.

**Chronometers and Watches repaired, at COGSWELL'S.**  
**PICKFORD & BLACK, Agents Furness Line between London & Halifax.**

Pickford & Black, owners Steamers between P. E. Island and Halifax.

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**TIDES—1892.**

Mean Time High Water at Halifax, N. S.

DATE.	JAN.	FEB.	MARCH.	APRIL.	MAY.	JUNE.
1	H. M. 8 46M	H. M. 9 41M	H. M. 9 17M	H. M. 10 17M	H. M. 10 56M	H. M. 0 19A
2	9 23	10 14	9 52	11 6M	11 52M	1 14
3	9 52	10 53	10 31	0 6A	0 55A	2 13
4	10 35	10 40M	11 19M	1 22	2 5	3 15
5	11 17M	0 40A	0 19A	2 46	3 16	4 13
6	0 8A	1 58	1 40	4 1	4 16	5 2
7	1 13	3 27	3 6	5 1	5 5	5 47A
8	2 22	4 46	4 26	5 47A	5 47A	6 9M
9	3 46	5 48A	5 31A	6 7M	6 6M	6 51
10	5 7	6 16M	5 58M	6 44	6 42	7 32
11	6 6A	7 3	6 40	7 16	7 16	8 12
12	6 33M	7 40	7 16	7 47	7 47	8 51
13	7 19	8 17	7 48	8 18	8 28	9 32
14	8 0	8 50	8 13	8 50	9 5	10 12
15	8 40	9 20	8 49	9 23	9 42	10 53
16	9 15	9 51	9 19	9 59	10 26	11 35M
17	9 40	10 23	9 49	10 34	11 9M	0 27A
18	10 24	10 57	10 25	11 25M	0 2A	1 33
19	10 59	11 33M	11 11	0 19A	1 1	2 55
20	11 36M	0 16A	11 55M	1 28	2 17	4 19
21	0 16A	1 12	0 40A	2 57	3 42	5 20A
22	1 2	2 29	1 58	4 23	4 57	5 58M
23	2 3	3 59	3 28	5 33A	5 58A	6 51
24	3 15	5 15A	4 53	6 0M	6 21M	7 37
25	4 31	5 48M	6 0A	6 48	7 7	8 20
26	5 36A	6 45	6 25M	7 27	7 49	9 0
27	6 5M	7 30	7 10	8 4	8 31	9 41
28	6 59	8 9	7 49	8 41	9 12	10 21
29	7 42	8 44M	8 24	9 21	9 55	11 0
30	8 26	.....	8 58	10 5M	10 41	11 40M
31	9 6M	.....	9 35M	.....	11 29M	.....

The above is Mean Time for Halifax, 15 Minutes added

MACDONALD & CO., Manufacturers of Brass Bolts and Catches.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

**TIDES—1892.**

Mean Time High Water at Halifax, N. S.

DATE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	0 23A	1 10A	2 49A	3 43A	5 27A	5 50A
2	1 12	2 4	4 12	5 0	5 57M	6 18M
3	2 9	3 29	5 24A	5 58A	6 43	7 7
4	3 12	4 41	5 56M	6 26M	7 26	7 50
5	4 15	5 45A	6 49	7 8	8 3	8 33
6	5 12	6 14M	7 32	7 47	8 43	9 16
7	6 6A	7 5	8 7	8 21	9 25	10 1
8	6 31M	7 42	8 40	8 57	10 10	10 47
9	7 17	8 26	9 14	9 35	11 2	11 34M
10	7 59	9 0	9 50	10 18	11 57M	0 24A
11	8 40	9 34	10 30	11 10M	1 0A	1 16
12	9 18	10 9	11 18M	0 13A	2 14	2 17
13	9 54	10 46	0 20A	1 29	3 22	3 22
14	10 32	11 31M	1 45	3 1	4 20	4 18
15	11 11	0 31A	2 20	4 12	5 7	5 7
17	11 56M	1 52	4 41	5 6	5 48A	5 52A
17	0 F6A	3 36	5 40A	5 50A	6 7M	6 14M
18	1 15	4 53	6 3M	6 9M	6 45	6 57
19	3 52	5 59A	6 44	6 42	7 20	7 38
20	5 12	6 24M	7 18	7 16	7 56	8 19
21	6 13A	7 8	7 50	7 48	8 35	8 59
22	6 39M	7 45	8 20	8 21	9 14	9 37
23	7 25	8 20	8 50	8 55	9 52	10 15
24	8 6	8 51	9 21	9 30	10 33	10 52
25	8 43	9 22	9 53	10 9	11 16M	11 33M
26	9 19	9 52	10 30	10 50	0 3A	0 20A
27	9 53	10 25	11 11	11 36M	0 59	1 22
28	10 27	11 0	11 59M	0 32A	2 10	2 41
29	11 1	11 39M	0 58A	1 45	3 30	4 6
30	11 48M	0 27A	2 18A	2 55	4 46A	5 24A
31	0 20A	1 30A	.....	4 19A	.....	5 59M

will give Standard Time for Nova Scotia.

Macdonald & Co., Manufacturers of Ships' Patent Water Closets, Halifax.—See adv. page 3, cover.

Pickford & Black, Agents Donaldson Line between Glasgow and Halifax.

## Lights in West India Islands and Adjacent Coasts.

[Corrected to 1888. Arranged from the Admiralty List.]

### ABBREVIATIONS AND EXPLANATIONS.

#### LIGHTS.

Fixed, or Steady.

Flashes Showing flashes at short intervals, or groups of flashes at regular intervals.

Revolving. Light gradually increasing to full effect, then decreasing to eclipse. [At short distances and in clear weather a faint continuous light may be observed.]

Fixed and flashing. Fixed light, with addition of white or colored flashes preceded and followed by short eclipse.

Intermittent or Occulting. A light suddenly and totally eclipsed. When light between eclipses visible less than 30 seconds, term *occulting* applied. When light visible less than half minute, term *intermittent* applied.

Alternating. Red and white alternately at equal intervals, without any intervening eclipse.

#### ABBREVIATIONS.

Da, Danish; Du, Dutch; E, English; Fr, French; Pan, Panama; N G, Neuva Granada; V, Venezuela.

The bearings are magnetic, and are given from seaward. The given distances from which the lights are visible are calculated from a height of fifteen feet above the sea, the elevation of the lights being in nearly all cases taken as above high water to centre of lantern; height of building from base to vane. The geographical portion of the lights must be considered as approximate.

### WEST INDIA ISLANDS, ETC

*Barbados, I., (E.)* Ragged Point, (300 yards within) east extreme of the Island, lat 13 10 N, lon 59 26 W, white light, revolving every 2 minutes. 213 feet to centre of lantern, visible in clear weather at 21 miles. Round white coral stone house 97 feet high. On account of the prevailing strong current running westward to the Cobblers, a cluster of dangerous reefs  $2\frac{1}{2}$  miles to the south-east of Ragged Point, mariners are cautioned in closing the land to keep well to the north eastward of the light.

.... South Point, 200 yards from the shore, lat 13 3 N, lon 59 31 W, red light revolving every minute, visible 18 miles, house alternate red and white, bands, centre of lantern 145 feet high, building 90 feet. Does not show until it bears to the westward of S W by S, and should be kept well open in order to clear the Cobbler Reefs.



... Carlisle Bay, Needham Point, lat 13 5 N, lon 59 36 W, fixed light, centre of lantern 31 feet high. Red when bearing north to east, and white south of east. Indifferent light. Reported to show white in all directions.

.... Lower Wharf, Corengo, Bridgetown, fixed red light. To mark entrance to Crenago.

Pickford & Black, Ship Brokers and Steamship Agents, Halifax, N. S.

Macdonald & Co., Manufacturers of Brass Sliding Door Rollers, Halifax.

Macdonald & Co., Manufacturers of Composition Butt Bolts and Spikes, Halifax.

 Silver-ware of all kinds, at **COGSWELL'S.** 

**PICKFORD & BLACK,** owners Steamers between P. E. Island and Halifax.

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Pickford & Black, Agents Donaldson Line between Glasgow and Halifax.

*Tobago, I.*, (E) Scarborough, Barcolet or Red Point, lat 11 10 N, lon 60 44 W, fixed white light, 115 feet high, visible 12 miles, pentagon tower, white, height 57 feet. Visible between the bearings of E N E and S W by W. When the mail steamer is expected two red leading lights are shown from two white beacons 83 yards apart, at the west end of the Lower Town of Scarborough.

*Trinidad, I.*, (E) Icacos Point, the S W extremity, fixed white light, visible 5 miles, white mast, centre of lantern, 35 feet high.

...Port Espano, on jetty, lat 10 30 9 N, lon 61 51 W, fixed white light, visible 10 miles. Hexagonal tower, centre of tower 50 feet high, building 43 feet. Visible between the bearings of N E by N and S E.

Hugh Ripon, 1 fixed red light, visible 3 miles, to assist in taking up anchorage.

Grenada, Fort George, lat 12 N, lon 61 45 W, fixed white light, visible 3 to 4 miles, on flag staff.

*St. Vincent, I.*, (E). Fort Charlotte, lat 13 9 N, lon 61 14 W, fixed white light, visible 6 miles, centre of lantern, 640 feet high. For mail steamers when expected.

*St. Lucia, I.*, (E), Tapion Battery, south side of entrance to Castries Harbor, lat 14 1 N, lon 61 1 W, fixed red light, visible 5 miles, centre of lantern 80 feet high. For mail steamer when expected.

...Vielle Ville Shoal, fixed red light, red perch. For mail steamer when expected.

...Cocoa Nut Shoal, fixed green light, perch. For mail steamer when expected.

*Martinique, I.*, (Fr). Point des Negroes in the Fort, lat 14 36 N, lon 61 9 W, fixed white light, red mast, centre of lantern, 62 feet high, height of mast 15 feet.

...S W part of St. Louis, fixed red light, visible 3 miles, 131 feet high. The buoy at the S E extremity, of a red light, at the arrival or departure of mails, or when required.

St. Marthe Point, St. Pierre, lat 14 44 N, lon 61 11 W, fixed white light, visible 5 miles.

Westward of former, fixed lights, visible 5 miles. Red to the northward, blue to the westward, and green to the southward. The white and blue lights in line lead to the anchorage.

...Edge of the Bank, St Pierre Bay, fixed white light, visible 2 miles, lighted on the day the mail is expected, and for three nights after if not arrived.

...Carvelle Peninsula Ciracola Mount,  $\frac{1}{2}$  mile inland, lat 14 46 N, lon 60 53 W, fixed white light, visible 12 miles, white tower, centre of lantern, 410 feet high.

*Dominica, I.*, (E). Roseau Bay, extremity of Mole, lat 15 17 N, lon 61 24 W, fixed red light on a flag staff, when mail steamer is expected.

*Gaudaloupe, I.*, (Fr.) Petite Torre, 202 yards from eastern part, lat 16 10 N, lon 61 5 W, fixed white light, visible 15 miles, centre of lantern 108 feet high, building 75 feet high.

...Gozier Islet, lat 16 12 N, lon 61 29 W, fixed white light, visible 7 miles.

...Manroux Islet, lat 16 13 N, lon 61 31 W, fixed white light in lantern.

...Point a Pitra. White light. When the mail is expected a red light is exhibited at the outer buoy; a white light at the buoy marking the reef at Cassan Island, and from a beacon on the shoal opposite Foulhole; and green lights at the buoys on the starboard side of the channel, and at the mooring buoy.

Brass Ventilators Made by **MACDONALD & CO.**—See adv p. 3, cover.

**PICKFORD & BLACK'S W. I. S. S. Lines between Turk's Island & Jamaica.**

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- .... Port le Meule, lat 16 20 N, lon 61 20 W, fixed white light, visible 12 miles.
- .... Basse Terre, on Mole, lat 16 0 N, 61 45 W, 2 fixed red lights, visible 9 miles.
- Antigua, I., (E)* Sandy Island, lat 17 7 N, lon 61 54 W, fixed white light, visible 12 miles, 56 feet high, black wooden structure, height 53 feet. The light bearing S S W clears Diamond Bank, and bearing N by E clears Hurst and Irish Banks, and shoals to the southward.
- Mariagalante, I., Grand Bourg*, lat 15 54 W, lon 61 17 W, fixed white light, visible 7 miles, centre of lantern 5 feet high.
- Montserrat, I., (E.)* On beach at Plymouth, lat 16 42 N, lon 62 13 W. A light from a lantern is shown when mail steamer is expected.
- St. Christopher, I., (E)* On Beach at Basse Terre, lat 17 18 N, lon 62 43 W, fixed red light, visible 4 miles, lighthouse wooden frame, 33 feet from base to vane, centre of lantern 37 feet high.
- St. Martin's Island, Old Fort of Amsterdam, Grand Bay*, fixed white light, visible 8 miles, centre of lantern 150 feet high.
- Sombrero, I., (E.)* On the S E side of the island, one third its length from South Point, lat 18 36 N, lon 63 28 W, white light, revolving every minute, visible 20 miles, red open iron frame work, centre of lantern 150 feet high, height of structure 132 feet.
- Virginia Islands, (Da.) St. Thomas*, east side of entrance, Mohlenfel's Point, lat 18 19 N, lon 64 55 W, fixed white light, visible 12 miles, lighthouse white, centre of lantern 118 feet high.
- Santa Cruz or St. Croix Island, (Da.) Freckerickstadt Fort*, lat 17 43 N, lon 64 53 W, fixed white light, visible 4 miles.
- .... *Christianstadt Fort*, lon 17 45 N, lat 64 41 W, fixed white light.
- Puerto Rico Island, (S.) Morro Point Port, San Juan*, lat 18 29 N, lon 66 7 W, white fixed and flash light, a flash of five seconds duration every minute, visible 18 miles, centre of lantern 171 feet high, tower white octagonal iron. On Muertos Island, masonry, light house, white, F and Fl, Fl every 3 minutes, visible 18 miles, lat 17 53 N, lon 66 34 W.
- .... *Cape St. Juan*, a red and white light revolving every two minutes, visible 17 miles.
- .... *Celebra*, white fixed light, visible 16 miles.
- .... *Cape Roxo*, light white, light flashes every 45 seconds.
- .... *Mayaguez Bay, Pier Head*. Fixed red light. Harbor light.
- Hayti or San Domingo, I.* San Jose Fort, lat 18 28 N, lon 69 52 W, alternate red and white light, revolving every minute, visible 15 miles, cuscola white, centre of lantern 95 feet high. None of the lights on the Island of San Domingo are to be depended on.
- .... *Arcadians Isles*, lat 18 47 N, lon 72 38 W, one fixed white light, visible 9 miles, from North  $\frac{1}{2}$  to N  $\frac{3}{4}$  E by trees.
- .... *Port au Prince*, lat 18 33 N, lon 72 25 W, red light, revolving every half minute, 97 feet high, visible 15 miles.
- Plato*, port S S E, 350 yards from extremity of E entrance point, lat 19 49 N, lon 79 41 W, white light, revolving every 20 seconds, visible 14 miles, 137 feet high, octagonal tower, height 60 feet.
- Jamaica, I., (E.) Morant Point*, lat 17 65 N, lon 76 12 W, white light, revolving every minute, visible 15 miles, white iron tower, height 96 feet, centre of lantern 115 feet high. Visible when bearing about N N E  $\frac{1}{2}$  E, round by west round to S E by S.

Pickford & Black's West India Steamship Lines between Halifax and Demerara.

Residences and Public Buildings fitted with Plumbing Fixtures by Macdonald & Co.

Vessels fitted with Plumbing Fixtures by Macdonald & Co., Halifax.—See adv. p. 3, cover.

**All kinds of Nautical work repaired, at COGSWELL'S.**

**PICKFORD & BLACK, Ship Brokers and Steamship Agents, Halifax, N. S.**

Vessels fitted with Plumbing Fixtures by Macdonald & Co., Halifax.—See adv. p. 3, cover.

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.... Plum Point, 66 yards northward of point, lat 17 56 N, lon 76 47 W, fixed red and white light, visible 12 miles, lighthouse white, centre of lantern 68 feet high. Red between the bearings of N W by W  $\frac{3}{4}$  W, and E  $\frac{1}{2}$  E. White from N  $\frac{1}{2}$  E, round by S to S E.

.... Fort Augusta, lat 17 58 N, lon 76 52 W, single lamp suspended from the beacon centre of lantern 40 feet high. Fixed red and white light. The white light visible to the south and west, and red to the seaward.

Port Antonio, Folly Point, fixed white light on scaffold for mail steamers.

Port Guantomo, angle of Mole's Head, lat 20 1 N, lon 71 65 W, fixed light, one lantern has two white and two red glasses, the colored glasses toward the Bay. The red light marks the northern and the green light the southern angle, shewing the sides and heads of the Mole.

**CUBA AND BAHAMA ISLANDS—Cuba with its Islands.**

Santiago de Cuba, (Sp.) 100 yards east of the Moro Castle, lat 19 58 N, lon 75 54 W, white light, revolving every two minutes, visible 15 miles, lighthouse white, iron, height 20 feet, centre of lantern 226 feet high.

Cape Cruz, on Cape, lat 19 50 N, lon 77 44 W, white light with red flash, every three minutes, visible 16 miles, stone lighthouse, centre of lantern 144 feet high, keeper's dwelling yellow.

Port Xagua, or Cienfuegos, Colorado, east point of entrance, lat 22 1 N, lon 81 30 W, white light fixed and flash, every two minutes, visible 14 miles, light house Ville Neuva thereon, height 45 feet, centre of lantern 81 feet high.

Cochinos Bay, north part of Cay Piedras, lat 21 58 N, lon 81 3 W, fixed white light, visible 7 miles, lighthouse brown, 26 feet high, centre of lantern 30 feet high. Over keeper's dwelling.

Batabano, lat 22 41 N, lon 82 18 W, fixed white light, visible 3 miles, lantern on mast, 31 feet high.

Isles of Pine, lat 21 26 N, lon 83 6 W, revolving light, visible 16 miles. Proposed.

San Antonio, (Sp.) On Cape, lat 21 53 N, lon 84 58 W, white light revolving every  $\frac{1}{4}$  minute, visible 20 miles, lighthouse Roncoli thereon, height 107 feet, centre of lantern 117 feet high.

Jutias, on Cay, lat 22 43 N, lon 84 6 W, fixed and flash light. Proposed.

Goberhadora, on point, lat 23 N, lon 83 13 W, revolving light, visible 15 miles, centre of lantern 110 feet high. Proposed.

Havana, Mora Castle, east side of entrance, lat 23 9 N, lon 82 22 W, white light, revolving every half minute, visible 20 miles, lighthouse O'Donnell thereon, extinguished for ten minutes after midnight to clean and trim the lamps.

Guanos, on point, lat 23 9 N, lon 81 42 W, revolving light every minute, centre of lantern 93 feet high. Proposed.

*Cardenis Bay*, Beidras Cay, lat 23 41 N, lon 81 7 W, white light, fixed, with red flash every 2 minutes, visible 25 miles, tower on house, white, 67 feet high, centre of lantern 74 feet high.

.... Cay Diana, lat 23 10 N, lon 81 7 W, fixed white light, visible 7 miles, iron column, centre of lantern 43 feet high.

Cruz del Padre Cay, on reef  $\frac{1}{4}$  of a mile N E of Cay, lat 23 17 N, lon 80 54 W, fixed white light, visible 10 miles, lighthouse conical, white, height 46 feet, centre of lantern 49 feet high. Not to be depended on.

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Bahia de Cadiz, N E part of Cay, lat 23 12 N, lon 80 29 W, white light, revolving every minute, visible 24 miles, house iron, white, height 159 feet, centre of lantern 175 feet high.

Port Sagua le Grande, N W point of Hicacal Cay, lat 23 14 N, lon 80 4 W, fixed white light, visible 6 miles, mast on dwelling, centre of lantern 55 feet high. The keeper's dwelling has red doors and windows, and eastward of it there are a few huts.

Paredon Grand Cay, north part of Cay, lat 22 29 N, lon 78 10 W, white light fixed and flash, every minute, visible 26 miles, house iron, white, with a brown base, height 117 feet, centre of lantern 159 feet high.

*Neuvas Harbor*, Barlovento Point, lat 21 37 N, lon 77 5 W, fixed white light, visible 9 miles, on white mast from centre of building, height 44 feet, centre of lantern 49 feet high. Keeper's dwelling is quadrangular, yellow.

Maternillos Point, lat 21 40 N, lon 77 9 W, white light with flash every minute, visible 23 miles, house white, Colon thereon, height 170 feet, centre of lantern 273 feet high.

Lucrecia, on Point, lat 21 5 N, lon 75 38 W, red light revolving every minute, visible 15 miles, house stone, white, centre of lantern 112 feet high.

Baracoa, 250 yards E S E of Barlovento Point, lat 20 22 N, lon 74 30 W, fixed white light, visible 13 miles, iron column, height 29 feet, centre of lantern 48 feet high. On keeper's dwelling.

Cape Maysi, east point of Cuba, lat 20 15 N, lon 74 10 W, fixed white light, visible 17 miles, tower circular, centre of lantern 128 feet high.

#### Bahama Islands.

Lobos Cay, (E.) On Bay, lat 22 22 N, lon 77 35 W, fixed white light, visible 16 miles, house circular, iron, broad block, 7 in number, and white, 6 in number, bands, height 150 feet, lantern white, centre 146 feet high, base surrounded by keeper's dwelling.

Cay Sal Bank, N Elbow, Double headed Shot Cays, lat 23 56 N, lon 80 28 W, fixed white light, visible 15 miles, stone conical tower, white and red upper part, height 58 feet, centre of lantern 96 feet high. Not visible it bears S W  $\frac{1}{4}$  W, being intercepted by Water Cay when three leagues distant.

Guy Cay, near South Point, lat 25 34 N, lon 79 19 W, red light, revolving every minute and a half, visible 12 miles, conical tower, upper part red, lower white, height 79 feet, lantern white, centre 80 feet high. Not seen between the bearings of S by W,  $\frac{1}{4}$  W, and S  $\frac{3}{4}$  E, being intercepted by the Bemini Isles when 8 miles distant.

Great Isaac, on the Inland, lat 26 2 N, lon 79 6 W, white light, revolving every half minute, visible 16 miles, house iron, with broad red bands, 8 in number, and white 7 in number, horizontal bands, height 145 feet, lantern white, centre 158 feet high. Eclipses not total within 6 miles.

Great Stirrup Cay (E.) 600 yards from E end of Cay, lat 25 50 N, lon 77 54 W, fixed white light, visible 12 miles, house circular, 5 bands red and white, alternate y, height 46 feet, centre of lantern 81 feet high. Visible from seaward from about N W by W, through W and S to about N E.

Nassau Harbor, W point Hog Island, lat 25 6 N, lon 77 22 W, fixed white light, visible 10 miles, conical stone tower, white, height 58 feet, centre of lantern 68 feet high. It is stated that this light is seen at a greater distance than that given. Not visible between the N N E and N N W  $\frac{1}{2}$  W. A red light is exhibited at Hog Island from a flag staff on a point near the light house, when the state of the bar near the entrance of Nassau Harbor is impassable or dangerous.

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Athol Island, cupola of quarantine officer's dwelling, lat 25 5 N, lon 77 17 W, fixed white light. Visible between N N W  $\frac{1}{4}$  W, and W by N  $\frac{3}{4}$  N.

*Aboca*, about 3 cables northward of Hole in the Wall, lat 25 51 N, lon 77 11 W, white light, revolving every minute, visible 20 miles, conical store tower, white lower part and red upper part, height 85 feet, lantern white, centre 160 feet high. Visible from seaward from S W to E S E.

.... Little Guana, or Elbow Cay,  $\frac{3}{4}$  of a mile inland, lat 36 21 N, lon 76 58 W, fixed white light, visible 15 miles, house, circular with red and white bands, height 77 feet, lantern white, centre 123 feet high.

*Crooked I. Passage*, Bird Rock, lat 22 51 N, lon 74 22 W, white light, revolving every  $1\frac{1}{2}$  minutes, 120 feet high, visible 17 miles, building conical, stone, faced with blue bricks, 112 feet high. Vessels approaching Bird Rock light are cautioned to attend to its bearings, as the encircling reef on the north side of Crooked Island terminates in a direction N by W  $\frac{1}{2}$  W, and nearly one mile distant from the light tower. The currents northward or Crooked Island are variable.

.... Castle Island, 270 yards within S W part, lat 22 7 N, lon 74 21 W, fixed white light, visible 17 miles, house conical, 3 bands of red brick, height 114 feet, centre of lantern 120 feet high.

Inagua, Great I., 2 miles to the N W of the S W Point, lat 20 56 N, lon 73 41 W, white light, revolving every minute, visible 17 miles, conical building, with two white and two red bands, height 114 feet, centre of lantern 120 feet high.

Turk's Island, 400 yards S W  $\frac{1}{2}$  W from N extremity of island, lat 21 31 N, lon 71 8 W, white light, flash every minute, visible 15 miles, building white, iron, circular, height 60 feet, centre of lantern 108 feet high.

#### GUYANA COAST.

*Cayenne*, (Fr.), summit of Hospital on Royal Inlet, Salut Islets, lat 5 17 N, lon 52 35 W, fixed white light, visible 12 miles, centre of lantern 197 feet high.

.... Eufant Perdu, a rock 6 miles northward of Cayenne, lat 5 3 N, lon 52 21 W, fixed white light, visible 7 miles, house wood, frame work, centre of lantern 61 feet high. Visible between S W by S and E S  $\frac{1}{2}$  S, also between N E by N and W by N  $\frac{1}{2}$  N.

.... Cepereau Fort, lat 5 56 N, lon 52 20 W, fixed white light, visible 10 miles, centre of lantern 130 feet high, building 40 feet. The white and green lights in one S E by S, leads over *Amiable* Rock, which is avoided by keeping to westward of this rock.

.... End of Jetty, fixed red light, centre of lantern 39 feet high.

.... N W angle of Infantry Barracks, lat 4 56 N, lon 52 19 W, fixed green light, visible 8 miles, centre of lantern 69 feet high. Obscured westward of S W  $\frac{1}{4}$  S.

*Maroni River*, west side of entrance (D.) lat 5 45 N, lon 54 3 W, fixed white light, visible 10 miles, centre of lantern 73 feet high, building white, pyramid, height 70 feet. Visible from W  $\frac{3}{4}$  S to S  $\frac{3}{4}$  S.

.... E side of entrance (Fr.) lat 5 42 N, lon 53 58 W, fixed white light, visible 10 miles, building white, pyramid, centre of lantern 76 feet.

Surinam, (Du.) light vessel in 14 feet,  $3\frac{3}{4}$  miles N W Brams Point, lat 6 1 N, lon 55 16 W, fixed white light, visible 10 miles, yellow ball on foremast, centre of lantern 25 feet high. *Surinam* on all sides.

Berbice, (E.), light vessel moored in 22 feet, N E by N, 9 miles from St. Andrew Point, lat 6 29 N, lon 57 24 W, fixed white light, visible 10 miles, vessel red roofed over, centre of lantern 30 feet high. *Berbice* on each side, and carries a white flag with a red ball in the centre. A sloop pilot boat cruises outside the bar, and carries a white flag with *Pilot* inscribed thereon.

*Demerara*, (E.), light vessel in 19 feet, with Georgetown light house bearing S S W  $\frac{1}{2}$  W, distant 12 miles, lat 6 57 N, lon 58 5 W, fixed white light, visible 12 miles, vessel red, with one mast 60 feet high, and a blue flag by day; centre of lantern 30 feet high. *Guiana* on her sides. Pilots for Demerara and Esequibo Rivers are on board.

.... Georgetown, E side of entrance, lat 6 49 N, lon 58 11 W, white light, revolving every minute, visible 16 miles, octagonal tower, red and white, vertical, centre of lantern 103 feet high, house 100 feet.

.... In same tower, fixed red light. Visible S by E to S E to indicate to vessel being westward and clear of breakwater.

TERRA FIRME COAST.

*Trinidad*, (E.), Icaëas Point, the S W extremity, fixed white light, visible 5 miles, white mast, centre of lantern 39 feet high.

.... Port Espano, on jetty, lat 10 39 N, lon 61 31 W, fixed white light, visible 10 miles, hexagonal tower, height 43 feet, centre of lantern 50 feet high. Visible between bearings of N E by N and S E.

Tobago (E.), Scarborough or Baco'et Point, lat 11 10 N, lon 60 44 W, fixed white light, visible 12 miles. Pentagon tower, red and white, height 57 feet, centre of lantern 115 feet high. Visible between the bearings of E S E through S, and S W by W.

Cumana, tower on Custom House, lat 10 28 N, lon 64 12 W, fixed white light, visible 5 miles.

Puerto Cabello, Brava Point, lat 10 30 N, lon 68 W, revolving red and white light, alternately every 40 seconds, visible 14 miles, building quadrangular, centre of lantern 79 feet high. Uncertain.

Cabellos Port, white light, visible 3 miles.

Los Roques, on the north-east hill (150 feet high) of El Roque, lat 11 58 N, lon 66 38 W, white light, revolving every minute, visible 15 miles, centre of lantern 208 feet high. Reported to be irregular in its action from defect in revolving apparatus.

Buen Ayre, (Du.), Lacre, S point of the Island, lat 12 2 N, lon 63 22 W, fixed white light, visible 12 miles, building white, with vertical red stripes, height 75 feet, centre of lantern 85 feet high. Lantern destroyed by storm, September, 1877. Temporary light exhibited.

Orange Battery, at El Puerto, lat 13 10 N, lon 68 19 W, fixed white light, visible 3 miles.

Little Curacoa, (Du.), centre of Island, lat 11 58 N, lon 68 39 W, fixed and flash white light, every minute, visible 14 miles, centre of lantern 75 feet high. The flash is of six seconds duration, preceded by an eclipse of 7 seconds.

Great Curacoa Island, (Du.), St. Anne Harbor. Rif Fort, lat 12 6 N, lon 68 55 W, fixed white light.

Cumarebo Bay, lat 11 30 N, lon 69 25 W, fixed white light, visible 6 miles, centre of lantern 49 feet high. This is a private light and its exhibition uncertain. Manzanilla Point bears N E by E. E 5 miles from it.

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- Savanilla, Cupino Beach, lat 11 N, lon 74 58 W, white light, revolving every 2 minutes, visible 16 miles, centre of lantern 98 feet high. The light is not visible when bearing S E  $\frac{3}{4}$  S.
- ....Belillic Point, white fixed light, visible 14 miles.
- Marycabo, Zapor Island, lat 10 58 N, lon 71 40 W, fixed light, visible 6 miles, stone tower, centre of lantern 30 feet high.
- Santa Marta, summit of the Morra, lat 11 15 N, lon, 74 16 W, fixed white light, visible 24 miles, centre of lantern 328 feet high.
- Colon, or Navy Bay, (Pan.), N W part of Manzanilla Island, Colon or Aspinwall, lat 9 23 N, lon 79 53 W, fixed white light, visible 10 miles, wood, open white building, height 60 feet, centre of lantern 60 feet high. Reported not to be visible beyond 6 miles.
- ....Red light at N E end of town.
- Limon Port, or Crape Cay, lat 10 N, lon 83 2 W, fixed white light, visible 6 to 8 miles, centre of lantern 60 feet high.
- Truxillo Bay, Cape Honduras, lat 16 1 N, lon 86 3 W, fixed white light, centre of lantern 30 feet high. Truxillo lighthouse having been destroyed by a hurricane in 1875, a temporary light, visible only 4 miles, is now exhibited.
- Bonacco Island on Cay XII, lat 16 26 N, lon 85 54 W, fixed white and red light, visible 8 miles, on mast. Red towards the anchorage. Proposed to be changed to white.
- Coxen Road, westward of Government House, Roaten Island, lat 16 18 N, lon 86 35 W, fixed white light, visible 4 miles, centre of lantern 85 feet high, lighthouse white, square, black top, height 15 feet,
- Utilla Island, eastern reef, east harbor, fixed white light, visible 4 miles, small wooden building. Not to be depended on.
- Half Moon Cay (E.), S E Point, lat 17 12 N, lon 87 32 W, fixed white light, visible 18 miles, iron tower, white, height 80 feet, centre of lantern 70 feet.
- Bokel Cay, on Cay, lat 17 9 N, lon 87 56 W, 2 fixed lights, horizontal, one white, visible 18 miles, and one red, visible 5 miles, flag staff with a yard on which the lights are displayed, 75 feet high, centre of lantern 60 feet high.
- Belize*, (E.), English Cay, S side of Channel, lat 17 19 N, lon 88 4 W, white fixed light, visible 7 miles, 45 feet high, white mast.
- ....Custom House flag staff, fixed white light.
- Turneff Cays, (E.), Mauger Cay,  $\frac{1}{2}$  mile within north end reef, lat 17 37 N, lon 87 46 W, 3 fixed white lights, in a triangle, visible 13 miles, tower skeleton, iron, upper third black, remainder white, height 57 feet, upper light 53 feet, lower two 47 feet. The bank extends  $1\frac{1}{2}$  miles to the N E of the light house. The lights can be seen above the trees from all points of the compass, but the lighthouse is seen from seaward only, from N E to S W by W.

## BERMUDA.

Gibbs Hill, on summit, lat 32 15 N, lon 64 52 W, revolving white light every minute, 362 feet high, visible 24 miles. Seen round horizon except between the bearings S 50° W, and S 54° W, also S 55° W to S. Building circular, iron, white.

Mount Hill, near St. David's Head, lat 32 22 N, lon 64 41 W, fixed white, 208 feet high, visible over 270° from N E  $\frac{3}{4}$  E to S E  $\frac{1}{2}$  S, bearing S E by S. The light is hidden by St. George's Island.

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FLORIDA.

- Dry Tortugas*, Fort Jefferson, Garden Cay, lat 24 38 N, lon 82 53 W, fixed white light, visible 14 miles, house brown, lantern black, centre 70 feet above sea level, house 65 feet to centre of lantern.
- ... *Loggerhead*, or S W Cay, lat 24 38 N, lon 82 56 W, fixed white light, visible 19 miles, house, lower part white, upper part black, centre of lantern 152 feet above sea level, house 150 feet to centre of lantern.
- Note.*—An iron beacon surmounted by a cylindrical cage, and painted black, stands on Rebecca Shoal, and is visible about 7 miles.
- Cay West*, N W Passage, in 6 feet of water, lat 24 37 N, lon 81 54 W, fixed white light, visible 12 miles, tower red, dwelling and lantern white, centre of lantern 40 feet above sea level. Visible between the bearings S E through E to S W.
- ... S W point of Island, lat 24 33 N, lon 81 48 W, fixed white light, visible 14 miles, house white, centre of lantern 72 feet above sea level, house 60 feet to centre of lantern. Visible between the bearings of N N E  $\frac{1}{2}$  E, and E by N  $\frac{1}{2}$  N.
- Sand Cay*, on a sand and shell islet, about  $7\frac{1}{2}$  miles S S W  $\frac{3}{4}$  W from Cay West lighthouse, lat 24 27 N, lon 81 53 W, fixed and flash white light, every 2 minutes, visible 17 miles, house brown color, height 121 feet, lantern white, centre 110 feet above sea level. It shows for a space of one minute a clear steady light; in every alternate minute there is a brilliant flash of ten seconds duration; preceded and followed by partial eclipse of twenty-five seconds duration.
- American Shoal*, in 6 feet water, 67 yards N W of Beacon B, lat 24 31 N, lon 81 31 W, fixed white light, flash every five seconds, visible 16 miles, 110 feet high, building brown, on piles.
- Sombrero Shoal*, on Shoal, near Sombrero Cay, lat 34 38 N, lon 81 7 W, fixed white light, visible 19 miles, tower open frame work, iron, on piles, brown, centre of lantern 144 feet from sea level, tower 149 feet to centre of lantern.
- Alligator Reef*, in 5 feet water, near N E part of reef, lat 24 51 N, lon 80 37 W, white and red flash light every 5 seconds, visible 18 miles, house white, lantern black, centre 143 feet above sea level. The light is a flashing white and red light, showing a flash every five seconds in the following order, viz., five white flashes and one red flash.
- Caryfort Reef*, near the edge of Gulf Stream, lat 25 13 N, lon 80 13 W, white flash light every half minute, visible 17 miles, iron piles, dark color, 112 feet high, centre of lantern 106 feet above sea level. The dwelling is octagonal in shape.
- Fowey Rocks*, 50 yards south of Beacon P, in five feet water, lat 25 35 N, lon 80 6 W, fixed white light, visible 16 miles, 110 feet above sea level, tower dark brown, on piles, keeper's dwelling white.
- Jupiter Inlet*, between Jupiter Inlet and Gilbert Bar, lat 26 56 N, lon 80 5 W, white light, fixed flash every minute and a half, visible 19 miles, house red brick, lantern brown, centre 146 feet above sea level, house 94 feet to centre of lantern. Varied every  $1\frac{1}{2}$  minute by a brilliant flash of  $7\frac{1}{2}$  seconds duration, preceded and followed by partial eclipses of about 19 seconds duration.
- Cape Canaveral*, N E pitch of the Cape, lat 28 28 N, lon 80 32 W, white flash light every minute, visible 18 miles, house black and white horizontal bands, centre of lantern 139 feet above sea level, house 55 feet to centre of lantern. Old light tower near is white.

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## INTERNATIONAL STEERING and SAILING RULES.

*From the Order in Council, dated 11th August, 1884.*

### REGULATIONS FOR PREVENTING COLLISIONS AT SEA.

#### PRELIMINARY.

ART. 1. In the following rules every steam ship which is under sail and not under steam is to be considered a sailing ship; and every steam ship which is under steam, whether under sail or not, is to be considered a ship under steam.

#### RULES CONCERNING LIGHTS.

ART. 2. The lights mentioned in the following articles, numbered 3, 4, 5, 6, 7, 8, 9, 10 and 11, and no others, shall be carried in all weather, from sunset to sunrise.

ART. 3. A seagoing ship when under way shall carry,—

(a.) ON OR IN FRONT OF THE FOREMAST, at a height above the hull of not less than 20 feet, and if the breadth of the ship exceeds 20 feet, then at a height above the hull not less than such breadth, a bright White light, so constructed as to show a uniform and unbroken light, over an Arc of the Horizon of 20 points of the Compass; so fixed as to throw the lights two points on each side of the ship; viz., from right ahead to 2 points abaft the beam on either side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least Five miles.

(b.) ON THE STARBOARD SIDE, a Green Light, so constructed as to show an uniform and unbroken light over an Arc of the Horizon of 10 points of the Compass; so fixed as to throw the light from right ahead to 2 points abaft the beam on the Starboard side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least Two miles.



(c.) ON THE PORT SIDE, a Red Light so constructed as to show an uniform and unbroken light over an Arc of the Horizon of 10 points of the Compass: so fixed as to throw the light from right ahead to 2 points abaft the beam on the Port side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least Two miles.

(d.) The said Green and Red Side Lights shall be fitted with inboard screens projecting at least 3 feet forward from the light, so as to prevent these lights from being seen across the bow.

ART. 4. A STEAM SHIP, when towing another ship shall, in addition to her side lights, carry Two bright White lights in a vertical line one over the other, not less than two feet apart, so as to distinguish her from other steam ships. Each of these lights shall be of the same

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construction and character, and shall be carried in the same position as the White light which other steamships are required to carry.

ART. 5. (a.) A SHIP, whether a steam ship or a sailing ship, which from any accident is not under command, shall at night carry, in the same position as the White light which steam ships are required to carry, and, if a steam ship, in place of that light, Three Red lights in globular lantern, each not less than 10 inches in diameter, in a vertical line one over the other, not less than three feet apart, and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least two miles; and shall by day carry in a vertical line one over the other, not less than 3 feet apart, in front of but not lower than her foremast head, Three Black Balls, or shapes, each 2 feet in diameter.

(b.) A ship, whether a steam ship or a sailing ship, employed in laying or in picking up a Telegraph cable, shall at night carry, in the same position as the White light which steam ships are required to carry, and, if a steam ship, in place of that light, three lights in globular lanterns, each not less than 10 inches in diameter, in a vertical line one over another, not less than three feet apart; the highest and lowest of these lights shall be Red, and the middle light shall be the White, and they shall be of such a character that the Red lights shall be visible at the same distance as the White light. By day she shall carry in a vertical line one over the other not less than 6 feet apart, in front of but not lower than her foremast head, three shapes not less than two feet in diameter, of which top and bottom shall be globular in shape and Red in colour, and the middle one diamond in shape and White.

(c.) The ships referred to in this Article, when not making any way through the water shall not carry the side lights, but when making way shall carry them.

(d.) The lights and shapes required to be shown by this Article are to be taken by other ships as signals that the ship showing them is not under command, and cannot, therefore, get out of the way. The signals to be made by ships in distress and requiring assistance are contained in Article 27.

ART. 6. A SAILING SHIP UNDER WAY, or being towed, shall carry the same lights as are provided by Article 3 for a steam ship under way, with the exception of the White light, which she shall never carry.

ART. 7. Whenever, as in the case of small vessels during bad weather, the Green and Red side lights cannot be fixed, these lights shall be kept on deck, on their respective sides of the Vessel, ready for use; and shall, on the approach of or to other vessels, be exhibited on their respective sides in sufficient time to prevent collision, in such manner as to make them most visible, and so that the Green light shall not be seen on the Poat side, nor the Red light on the Starboard side.

To make the use of these portable lights more certain and easy, the lanterns containing them shall each be painted outside with the

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MACDONALD & CO., Manufacturers of Manrope Stanchions.—p. 3 cover.

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color of the light they respectively contain, and shall be provided with proper screens.

ART. 8. A ship, whether a steam ship, or a sailing ship, when at anchor, shall carry, where it can best be seen, but at a height not exceeding 20 feet above the Hull, a White light, in a globular lantern of not less than 8 inches in diameter, and so constructed as to show a clear, uniform and unbroken light, visible all around the horizon, at a distance of at least one mile.

ART. 9. A pilot vessel when engaged on her station on pilotage duty, shall not carry the lights required by other vessels, but shall carry a white light at the mast head, visible all around the horizon, and shall also exhibit a flare-up light or flare-up lights at short intervals, which shall never exceed fifteen minutes.

A pilot vessel, when not engaged on her station on pilotage duty, shall not carry lights similar to those of other ships.

ART. 10. Open boats and fishing vessels of less than 20 tons net registered tonnage, when under way and when not having their nets, trawls, dredges, or lines in the water, shall not be obliged to carry the colored side lights; but every such boat or vessel shall in lieu thereof have ready at hand a lantern with a Green glass on the one side, and a Red glass on the other side, and on approaching to or being approached by another vessel, such lantern shall be exhibited in sufficient time to prevent collision, so that the Green light shall not be seen on the Port side nor the Red light on the Starboard side.



The following portion of this Article applies only to fishing vessels and boats when in the sea off the coast of Europe lying north of Cape Finisterre:—

(a.) All fishing vessels and fishing boats of 20 tons net registered tonnage or upwards, when under way and when not required by the following regulations in this Article to carry and show the lights therein named, shall carry and show the same lights as other vessels under way.

(b.) All vessels when engaged in fishing with drift nets shall exhibit Two White lights from any part of the vessel where they can be best seen. Such light shall be placed so that the vertical distance between them shall not be less than 6 feet, and not more than 10 ft.; and so that the horizontal distance between them measured in a line with the keel of the vessel shall not be less than 5 feet or not more than 10 feet. The lower of these two lights shall be the more forward, and both of them shall be of such a character, and contained in lanterns of such construction, as to show all around the horizon, on a dark night with a clear atmosphere, for a distance of not less than 3 miles.

(c.) A vessel employed in line fishing with her lines out, shall carry the same lights as a vessel when engaged in fishing with drift nets.

(d.) If a vessel when fishing, becomes stationary in consequence of her gear getting fast to a rock or other obstruction, she shall show the light and make the Fog Signal for a vessel at anchor.

 **COGSWELL—Aneroid Barometers.** 

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(e.) Fishing vessels and open boats may at any time use a flare-up in addition to the lights which they are by this Article required to carry and show. All flare-up lights exhibited by a vessel when trawling, dredging, or fishing with any kind of drag-net, shall be shown at the after port of the vessel, excepting that, if the vessel is hanging by the stern to her trawl, dredge or drag-net, they shall be exhibited from the bow.

(f.) Every fishing vessel and every open boat when at anchor between sunset and sunrise, shall exhibit a White light visible all round the horizon at a distance of at least one mile.

(g.) In fog, mist, or falling snow, a drift-net vessel attached to her net, and a vessel when trawling, dredging or fishing with any kind of drag net, and a vessel employed in line fishing with her lines out, shall at intervals of not more than two minutes make a blast with her fog horn and ring her bell alternately.

ART. 11. A ship which is being overtaken by another shall show from her stern to the last mentioned ship a White light or a flare-up light.

**SOUND SIGNALS FOR FOG, &C.**

ART. 12. A steam ship shall be provided with a steam whistle or other efficient steam sound signal, so placed that the sound may not be intercepted by any obstructions, and with an efficient Fog Horn to be sounded by a bellows or other mechanical means, and also with an efficient bell. A sailing ship should be provided with a similar Fog Horn and bell. (Turkish vessels use a drum instead of a bell).

In fog, mist or falling snow, whether by day or night, the signals described in this article shall be used as follows, that is to say :

(a.) A steam ship under way shall make with her steam whistle or other steam sound signal, at intervals of not more than Two minutes, a prolonged blast.

(b.) A sailing ship under way shall make with her Fog Horn, at intervals of not more than Two minutes, when on the starboard tack, one blast, when on the port tack, two blasts in succession, and when the wind is abaft the beam three blasts in succession.

(c.) A steam ship and a sailing ship when not under way shall at intervals, of not more than Two minutes, ring the bell.

**SPEED OF SHIPS TO BE MODERATE IN FOG, &C.**

ART. 13. Every ship, whether a sailing ship or a steam ship, shall in fog, mist, or falling snow, go at moderate speed.

**STEERING AND SAILING RULES.**

ART. 14. When two sailing ships are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other as follows, viz. :

(a.) A ship which is running free shall keep out of the way of a ship which is close hauled.

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(b.) A ship which is close hauled on the port tack shall keep out of the way of a ship which is close hauled on the starboard tack.

(c.) When both are running free with the wind on different sides, the ship which has the wind on the port side shall keep out of the way of the other.

(d.) When both are running free with the wind on the same side, the ship which is to windward shall keep out of the way of the ship which is to leeward.

(e.) A ship which has the wind aft shall keep out of the way of the other ship.

ART. 15. If two ships under steam are meeting end on, or nearly end on, so as to involve risk of collision, each shall alter her course to starboard, so that each may pass on the port side of the other.

This Article only applies to cases where ships are meeting end on, or nearly end on, in such a manner as to involve risk of collision, and does not apply to two ships which must, if both kept on their respective courses, pass clear of each other.

The only cases to which it does apply are, when each of the two ships are end on, or nearly end on to the other; in other words, to cases in which, by day, each ship sees the masts of the other in a line, or nearly in a line, with her own; and by night to cases in which each ship is in such a position as to see both the side lights of the other.

It does not apply by day to cases in which a ship sees another head crossing her own course; or by night to cases where the red light of one ship is opposed to the red light of the other, or where the green light of one ship is opposed to the green light of the other, or where a red light without a green light, or a green light without a red light is seen ahead, or where both green and red lights are seen anywhere but ahead.

ART. 16. If two ships under steam are crossing, so as to involve risk of collision, the ship which has the other on her own starboard side shall keep out of the way of the sailing ship.

ART. 17. If two ships, one of which is a sailing ship and the other a steamship, the steamship shall keep out of the way of the sailing ship.

ART. 18. Every steamship, when approaching another ship, so as to involve risk of collision, shall slacken her speed or stop and reverse, if necessary.

ART. 19. In taking any course authorized or required by these regulations, a steamship under way may indicate that course to any other ship which she has in sight by the following signals on her steam whistle, viz:—

One short blast to mean "I am directing my course to starboard."

Two short blasts to mean "I am directing my course to port."

Three short blasts to mean, "I am going full speed astern."

The use of these signals is optional; but if they are used, the course of the ship must be in accordance with the signal made.

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ART. 20. Notwithstanding anything contained in any preceding Article, every ship, whether a sailing ship or a steamship, overtaking any other, shall keep out of the way of the overtaken ship.

ART. 21. In narrow channels every steamship shall, when it is safe and practicable, keep to that side of the fairway or mid channel which lies on the starboard side of such ship.

ART. 22. Where by the above rules one of two ships is to keep out of the way, the other shall keep her course.

ART. 23. In obeying and construing these rules, due regard shall be had to all dangers of navigation ; and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

NO SHIP, UNDER ANY CIRCUMSTANCES, TO NEGLECT PROPER PRECAUTIONS.

ART. 24. Nothing in these rules shall exonerate any ship, or the owner, or master, or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

RESERVATION OF RULES FOR HARBORS AND INLAND NAVIGATION.

ART. 25. Nothing in these rules shall interfere with the operation of any special rule, duly made by local authority relative to the navigation of any harbor, river, or inland navigation.

SPECIAL LIGHTS FOR SQUADRONS AND CONVOYS.

ART. 26. Nothing in these rules shall interfere with the operation of any special rules made by the Government of any nation with respect to additional station and signal lights for two or more ships of war or for ships sailing under convoy.

DISTRESS SIGNALS.

ART. 27. When a ship is in distress and requires assistance from other ships or from the shore, the following shall be the signals to be used or displayed by her, either together or separately, that is to say :—

In the daytime—

1. A gun fired at intervals of about a minute.
2. The international code signals of distress indicated by N C ;
3. The distant signal, consisting of a square flag, having either above or below it a bell, or anything resembling a bell.

At night—

1. A gun fired at intervals of about a minute ;
2. Flames on a ship (as from a burning tar barrel, oil barrel, &c.) ;
3. Rockets or shells, throwing stars of any colour or description, fired one at a time, at short intervals.

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