

one hundred and fifty miles wide present, in the fall of the year, aspects stormy enough to strain the stoutest craft and to try the strongest nerves.

The navigable season of 1887 was more than usually fruitful of disaster on the great lakes. It was one of the worst of recent years, and was so not only in respect of loss of property to owners and underwriters, but in regard to loss of life. In all these three particulars 1887 was a worse season than either of two preceding years, and the wrecks and casualties were most numerous in October last, that memorable month to navigators on the great lakes.

Mr. John N. Neill, adjuster, of this city, has compiled for us a series of tables showing the character of disasters to American and Canadian shipping on the lakes during the three seasons of navigation last past. He reports last season twenty-three total losses of steam vessels, whose aggregate value was \$620,600, and fifty of sailing vessels, amounting to \$719,400. Then there were forty-eight partial losses to steam vessels, put down at \$413,000; and sixty-nine to sailing vessels, aggregating \$487,000. The pecuniary loss by all these wrecks, collisions, burnings or what not, was thus no less than \$2,240,000. Marine underwriters lost, by the various disasters of the year, \$1,777,000, which is uncomfortably near eighty per cent. of the total estimated loss to property. But more to be deplored still is the loss of life which appears from the compilation. Seventy-four lives were lost in 1885 in the navigation of the lakes; one hundred and thirty-eight in 1886; while last year two hundred and nine sailors or passengers lost their lives.

At one time Lake Michigan, at another Lake Superior, has had the unpleasant distinction of furnishing the greatest record of wrecks, probably because among the largest, certainly not because they were the most crowded bodies of water. But last year Lake Huron headed the list in this respect. The record for the different lakes is given below:

Season of	LOCATION OF DISASTER.					
	Lake Superior.		Lake Michigan.		Lake Huron.	
	No.	Loss.	No.	Loss.	No.	Loss.
1885..	17	\$456,500	58	\$526,800	33	\$273,000
1886..	15	238,000	40	324,000	34	258,000
1887..	28	358,000	66	746,800	61	828,000

LOCALITY OF DISASTER (CONTINUED).

Season.	Lake Erie.		Lake Ontario.	
	No.	Loss.	No.	Loss.
1885	17	\$ 62,200	21	\$ 93,000
1886	27	314,000	21	298,800
1887	27	273,700	8	53,500

Naturally the greater number of these disasters arose from sail or steam craft running ashore; there were, in three years, 216 such instances, and last year's list was the largest. Over a hundred craft were burned or sunk. The moral hazard, we remark, appears to have improved last year, for in 1885 an unusual proportion burned, while in the following year an unusual proportion sank. Collision accounted for thirty-two, foundering for twenty-five. Considering the great risks captains will often run to secure high rates of freight late in the year, the number of accidents caused by ice (4) is very small. Leaking craft are stated to be four times as numerous last year as in 1886, which, perhaps, goes to show that an increased number of old

stagers were getting "ripe." Only five vessels capsized in the three years, while nine were dismantled. Twenty-five craft foundered in the two years 1885 and 1887, none in 1886, more by good luck than good guidance. We are quite prepared to learn that a good proportion of these were barges, for the recklessness of owners and navigators of such craft—they are usually taken in tow of a tug or a steam-barge—has been the frequent subject of remonstrance from boards of trade, marine inspectors, harbor masters and the press. Anything that will float is deemed, by some people, good enough to be "consort" to a tow-barge; and in spite of government or other regulations, numbers of them are set afloat imperfectly equipped, and then are over-loaded with utter disregard of the peril to human life. It is satisfactory to find only one case of boiler explosion in the three years, a small proportion out of four hundred and fifty accidents. It remains only to notice the date of these disastrous happenings. The months of October and November furnish by far the largest number; then in order, September, August, June and May.

CAUSE OF DISASTER.

SEASON.	ASHORE.	BURNED.	SUNK.	CAPSIZE.	COLLISION.	WATER-LOGGED.	DISMANTLED.	FOUND.	ICE.	BOILER EXPLOSION.	DISABLED.	LEAKING.
1885	31	31	10	4	10	.....	.....	14	1	1	25	.....
1886	74	8	29	1	7	3	3	11	3	.....	8	16
1887	111	8	17	.....	15	.....	6	25	4	1	36	20
Three years.	226	46	56	5	32	3	9	50	4	1	66	36

DATE OF DISASTER.

SEASON.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPT.	OCTOBER.	NOV.	DEC.
1885	2	4	13	10	12	29	33	33	10	1
1886	6	4	9	6	9	12	22	62	7
1887	1	4	13	16	6	20	16	72	39	3
Three years.	3	14	29	35	24	58	6	127	111	11

STATEMENT OF DISASTERS TO AMERICAN AND CANADIAN PROPERTY DURING SEASONS OF 1885, 1886 AND 1887.

Season No.	of ves'ls.	Total Losses.		Total Loss.
		Sail.	Steam.	
1885 ..	38	\$272,700	\$743,500	\$1,016,200
1886 ..	45	500,000	454,400	954,400
1887 ..	50	719,400	620,600	1,340,000
Totals.	133	1,492,100	1,818,500	\$3,310,600

Season No.	of ves'ls.	Partial Losses.		Total Loss.
		Sail.	Steam.	
1885 ..	56	\$150,100	\$244,400	\$394,500
1886 ..	52	184,000	28 196,000	380,000
1887 ..	69	387,000	48 413,000	900,000
Totals.	177	\$821,100	106 \$853,400	\$1,674,500

We come now to consider the bearing of these shipping disasters upon the underwriting fraternity. The figures show that 1885 was the worst year as regards losses by steam craft and 1887 as regards sailing craft. This is true whether we consider partial or total losses. Out of an aggregate loss to the insurance companies of \$3,972,000 in the three years, \$1,717,000 related to sail vessels and \$2,255,000 to steam craft. This means an average of 79.67 per cent. of the aggregate of partial and total losses sustained by owners. The season of 1886 was, judging from this compilation, relatively the least costly to underwriters, showing a percentage of 72 upon the pecuniary loss; while 1885 was the worst year in this particular (86.88), and last year was just about an average of the three years, viz., 79.3 per cent.

INSURANCE LOSSES OF THREE YEARS.

	Total Losses.		Total Insurance Loss.
	Sail.	Steam.	
1885..	\$210,000	\$650,000	\$860,000
1886..	342,000	272,000	614,000
1887..	450,000	507,000	957,000
3 yrs.	\$1,002,000	\$1,429,000	\$2,431,000

Partial Losses.

	Insurance Loss.		Total Insurance Loss.
	Sail.	Steam.	
1885..	\$125,000	240,000	\$365,000
1886..	160,000	196,000	356,000
1887..	430,000	390,000	820,000
3 yrs.	\$715,000	\$826,000	\$1,541,000

INDUSTRIAL EDUCATION.

We have been again reminded by recent circulars of the valuable work done in the schools established by the Board of Arts and Manufactures of the province of Quebec, and a practical and delightful proof of their efficacy lies on our office table, in the shape of finished lithographs of a variety of subjects executed by the pupils of these schools. Some of the specimens, of course, are crude, but most of them are well done, and among them are several specimens in landscape and portrait as well, really excellent. Of the circulars issued this year (in French and English) is one intimating a course of practical instruction in plumbing, for two hours on Tuesday and Friday nights. Having regard to the evils of improper plumbing, no better subject could have been chosen. Pupils in this class must be employed by or apprentices to plumbers and steam-fitters, and pay a dollar each to enter the class;