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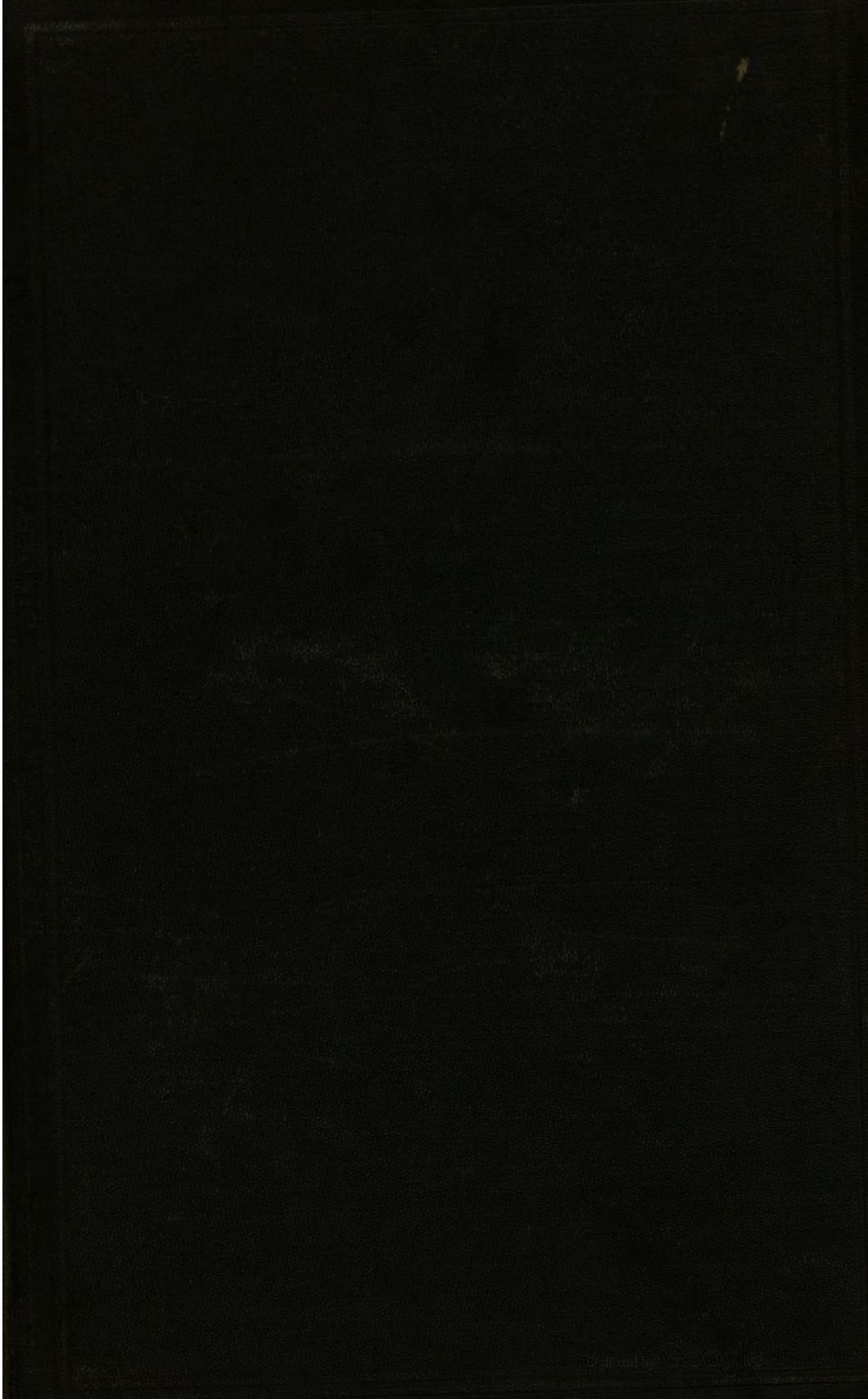
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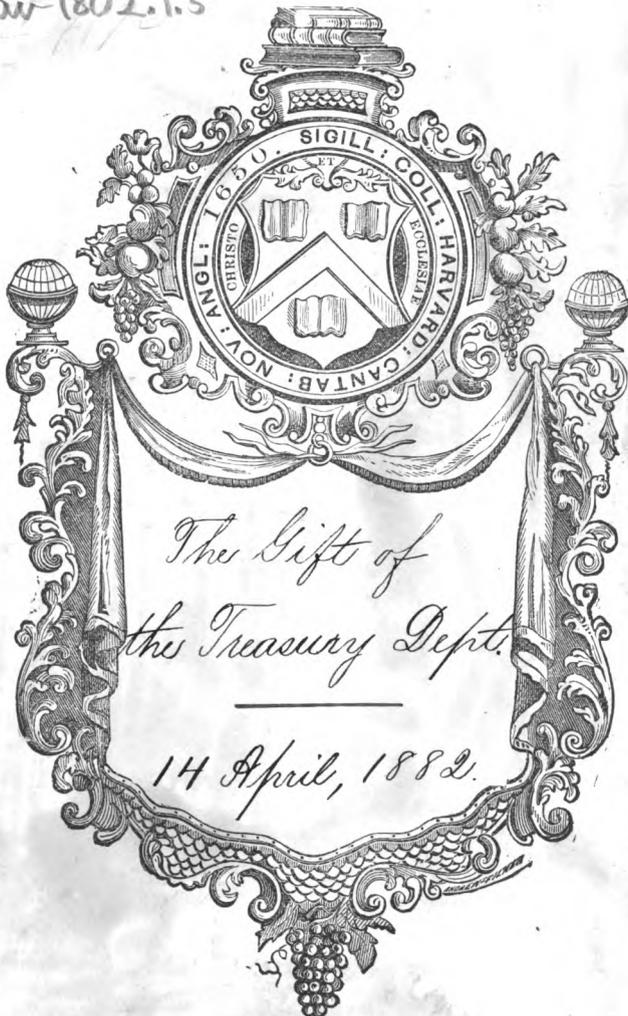
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14 April, 1882.

① ANNUAL REPORT

OF THE

OPERATIONS

OF THE

UNITED STATES LIFE-SAVING SERVICE

FOR THE

FISCAL YEAR ENDING JUNE 30, 1881.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1881.

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VIII 476

1882. April 4.
Gift of
The Treasury Dept.

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ORGANIZATION

OF THE

UNITED STATES LIFE-SAVING SERVICE.

(In conformity to Act of Congress approved June 18, 1878.)

SUMNER I. KIMBALL, General Superintendent.

WILLIAM D. O'CONNOR, Assistant General Superintendent.

CAPT. JAMES H. MERRYMAN, United States Revenue Marine, Inspector of Life-Saving Stations.

CAPT. JOHN MCGOWAN, United States Revenue Marine, } Superintendents of Con-
CAPT. JAMES H. MERRYMAN, United States Revenue } struction of Life-Sav-
Marine, } ing Stations.

ASSISTANT INSPECTORS.

First District.—CAPT. RUSSELL GLOVER, United States Revenue Marine, Portland, Maine.

Second District.—CAPT. DANIEL B. HODGSDON, United States Revenue Marine, Boston, Massachusetts.

Third District.—LIEUT. CHARLES H. MCLELLAN, United States Revenue Marine, Bay Shore, New York.

Fourth District.—LIEUT. WILLIAM C. DE HART, United States Revenue Marine, Tom's River, New Jersey.

Fifth District.—LIEUT. GEORGE E. MCCONNELL, United States Revenue Marine, Chincoteague, Virginia.

Sixth District.—LIEUT. FRANK H. NEWCOMB, United States Revenue Marine, Norfolk, Virginia.

Seventh District.— * * *

Eighth District.—CAPT. LEONARD G. SHEPARD, United States Revenue Marine, Galveston, Texas.

Ninth District.—CAPT. JOHN G. BAKER, United States Revenue Marine, Oswego, New York.

Tenth District.—CAPT. GEORGE R. SLICER, United States Revenue Marine, Detroit, Michigan.

Eleventh District.—LIEUT. WALTER WALTON, United States Revenue Marine, Milwaukee, Wisconsin.

Twelfth District.—CAPT. JOHN W. WHITE, United States Revenue Marine, East Oakland, California.

LIEUT. CHARLES F. SHOEMAKER, United States Revenue Marine, on special duty, Washington, D. C.

LIEUT. THOMAS D. WALKER, United States Revenue Marine, on special duty, New York City.

DISTRICT SUPERINTENDENTS.

First District.—JOHN M. RICHARDSON, Portland, Maine.

Second District.—BENJAMIN C. SPARROW, East Orleans, Massachusetts.

Third District.—HENRY E. HUNTING, Bridgehampton, New York.

Fourth District.—JOHN G. W. HAVENS, Metedeconk, New Jersey.

Fifth District.—BENJAMIN S. RICH, Onancock, Virginia.

Sixth District.—JOSEPH W. ETHERIDGE, Manteo, North Carolina.

Seventh District.—WILLIAM H. HUNT, Biscayne, Florida.

Eighth District.—CAPT. LEONARD G. SHEPARD, United States Revenue Marine, (Acting,) Galveston, Texas.

Ninth District.—DAVID P. DOBBINS, Buffalo, New York.

Tenth District.—JEROME G. KIAH, Detroit, Michigan.

Eleventh District.—LEVI S. MANN, Saint Joseph, Michigan.

Twelfth District.—CAPT. JOHN W. WHITE, United States Revenue Marine, (Acting,) East Oakland, California.

ASSISTANT DISTRICT SUPERINTENDENT.

Third District.—NICHOLAS BALL, New Shoreham, Rhode Island.

BOARD FOR THE EXAMINATION OF PLANS, DEVICES, AND INVENTIONS,
(EXCEPT WRECK ORDNANCE AND SIGNALS.)

— — — — —, *President.*

CAPT. GEORGE W. MOORE, United States Revenue Marine.

LIEUT. CHARLES F. SHOEMAKER, United States Revenue Marine, Assistant Inspector Life-Saving Stations, *Recorder.*

BENJAMIN C. SPARROW, Superintendent Second District, Life-Saving Service.

FRANKLIN C. JESSUP, Keeper Station No. 17, Third District, Life-Saving Service.

BOARD FOR THE EXAMINATION OF DEVICES AND INVENTIONS RELATING TO WRECK ORDNANCE.

CAPT. J. H. MERRYMAN, United States Revenue Marine, Inspector Life-Saving Stations, *President.*

CAPT. D. A. LYLE, Ordnance Department, United States Army.

LIEUT. T. D. WALKER, United States Revenue Marine, Assistant Inspector Life-Saving Stations, *Recorder.*

DAVID P. DOBBINS, Superintendent Ninth District, Life-Saving Service.

JOHN C. PATTERSON, Keeper Station No. 1, Fourth District, Life-Saving Service.

LETTER OF TRANSMITTAL.

TREASURY DEPARTMENT,
UNITED STATES LIFE-SAVING SERVICE,
Washington, D. C., December 3, 1881.

SIR: I have the honor to submit the following report of the operations of the Life-Saving Service for the fiscal year ending June 30, 1881, and of the expenditures of the moneys appropriated for the maintenance of the Service for that period, in accordance with the requirements of section 7 of the act of June 18, 1878.

A compilation of the statistics of wrecks and casualties which have occurred on or near the coasts and on the rivers of the United States, and to American vessels at sea or on the coasts of foreign countries, collected under the authority of the act of June 20, 1874, is included.

I have the honor to be, very respectfully,

SUMNER I. KIMBALL,
General Superintendent.

HON. CHARLES J. FOLGER,
Secretary of the Treasury.

OPERATIONS
OF THE
UNITED STATES LIFE-SAVING SERVICE.

1881.

REPORT

OF THE

UNITED STATES LIFE-SAVING SERVICE.

OPERATIONS.

The Life-Saving Establishment embraced at the close of the last fiscal year one hundred and eighty-three stations, distributed upon the sea and lake coasts as follows:

District No. 1 (coast of Maine and New Hampshire).....	7
District No. 2 (coast of Massachusetts).....	15
District No. 3 (coast of Rhode Island and Long Island).....	37
District No. 4 (coast of New Jersey).....	40
District No. 5 (coast from Cape Henlopen to Cape Charles).....	11
District No. 6 (coast from Cape Henry to Cape Hatteras).....	23
District No. 7 (eastern coast of Florida).....	5
District No. 8 (Gulf coast).....	5
District No. 9 (Lakes Erie and Ontario).....	9
District No. 10 (Lakes Huron and Superior).....	9
District No. 11 (Lake Michigan).....	16
District No. 12 (Pacific coast).....	6
Total	183

Of these stations, it will be seen one hundred and forty-three were on the Atlantic, thirty-four on the Lakes, and six on the Pacific.

The following statement shows the periods of the employment of surfmen at such of the stations as were manned with crews during any portion of the year, which periods respectively constituted what is termed the active season:

Employment of Surfmen, Season of 1880-'81.

District.	Stations.	Number of stations.	Number of surfmen.	Period of employment.
1	1, 2, 3, 4, 5, 6, and 7.....	7	42	September 1, 1880, to November 30, 1880, inclusive.
	1, 2, 3, 4, 5, 6, and 7.....	7	49	December 1, 1880, to April 30, 1881, inclusive.
2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, and 15.....	14	84	September 1, 1880, to November 30, 1880, inclusive.
	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15.....	15	106	December 1, 1880, to April 30, 1881, inclusive.
3	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, and 38.....	35	210	September 1, 1880, to November 30, 1880, inclusive.
	37.....	1	6	September 15, 1880, to November 30, 1880, inclusive.
4	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, and 40.....	36	252	December 1, 1880, to April 30, 1881, inclusive.
	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, and 40.....	39	234	September 1, 1880, to November 30, 1880, inclusive.
5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, and 40.....	39	273	December 1, 1880, to April 30, 1881, inclusive.
	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11.....	11	66	September 1, 1880, to November 30, 1880, inclusive.
6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11.....	11	77	December 1, 1880, to April 30, 1881, inclusive.
	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, and 23.....	22	132	September 1, 1880, to November 30, 1880, inclusive.
7	17.....	1	6	October 18, 1880, to November 30, 1880, inclusive.
	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 23.....	23	161	December 1, 1880, to April 30, 1881, inclusive.
8	1.....	1	6	October 7, 1880, to April 30, 1881, inclusive.
	3.....	1	6	October 13, 1880, to April 30, 1881, inclusive.
	4.....	1	6	October 22, 1880, to April 30, 1881, inclusive.
	5.....	1	6	November 8, 1880, to April 30, 1881, inclusive.
9	1 and 2.....	2	12	July 1, 1880, to December 13, 1880, inclusive.
	3.....	1	8	July 1, 1880, to December 14, 1880, inclusive.
	4, 6, 7, 8, and 9.....	5	24	July 1, 1880, to December 15, 1880, inclusive.
	5.....	1	8	July 1, 1880, to December 10, 1880, inclusive.
10	1, 2, 3, 4, 5, 6, 7, 8, and 9.....	9	55	April 25, 1881, to June 30, 1881, inclusive.
	2 and 4.....	2	12	July 1, 1880, to December 9, 1880, inclusive.
	5, 6, and 8.....	3	20	July 1, 1880, to December 10, 1880, inclusive.
	9, 10, 11, and 12.....	4	24	July 1, 1880, to November 30, 1880, inclusive.
11	2, 4, 5, 6, and 8.....	5	36	April 11, 1881, to June 30, 1881, inclusive.
	9, 10, 11, and 12.....	4	28	April 15, 1881, to June 30, 1881, inclusive.
	4, 6, and 12.....	3	18	July 1, 1880, to November 30, 1880, inclusive.
	5, 8, 10, 13, 14, 16, and 17.....	7	42	July 1, 1880, to December 16, 1880, inclusive.
12	7, 9, 11, and 15.....	4	30	July 1, 1880, to December 31, 1880, inclusive.
	4, 6, and 12.....	3	20	April 21, 1881, to June 30, 1881, inclusive.
	5, 7, 8, 10, 13, 14, 15, 16, and 17.....	9	64	April 16, 1881, to June 30, 1881, inclusive.
	9 and 11.....	2	16	April 11, 1881, to June 30, 1881, inclusive.
12	3.....	1	8	November 15, 1880, to April 30, 1881, inclusive.
	7.....	1	6	November 24, 1880, to April 30, 1881, inclusive.

District No. 7 is not included in the foregoing statement, no crews being employed in its stations, which are simply well-provisioned houses of refuge for the shipwrecked, under the charge of keepers only. This fact has been mentioned in previous reports, where it has also

been explained that the nature of the coast makes escape from stranded vessels comparatively easy, the main danger of seafarers in the case being less from drowning than from their liability to perish through exposure and famine after reaching shore.

STATISTICS.

There were, according to the reports of the district officers, two hundred and fifty disasters to vessels within the scope of the operations of the Service, during the year. On board these vessels there were one thousand eight hundred and seventy-eight persons, of whom one thousand eight hundred and fifty-four were saved, and twenty-four lost.* Succor was afforded at the stations to four hundred and seven shipwrecked persons, to whom one thousand and sixty days' relief in the aggregate was furnished. The estimated value of the vessels involved in these disasters was \$2,744,247, and that of their cargoes, \$1,310,505, making the total value of the property imperilled, \$4,054,752. Of this amount, \$2,828,680 was saved, and \$1,226,072 lost. The number of disasters involving the total loss of vessels was sixty-six.

The surf-boat was used two hundred and fifteen times in rendering assistance, making three hundred and seventy-six trips. By an odd coincidence, the self-righting and self-bailing life-boat did exactly the service of the preceding year, going out, as then, on ten occasions, and making, as then, just thirteen trips. Smaller boats were used on fifty-four occasions, and made seventy trips. The life-car was used once, and made three passages. The breeches-buoy was used fifteen times, and made one hundred and thirty-two passages. The wreck-gun was employed thirteen times, firing twenty-five shots. There were landed by the surf-boat, two hundred and forty-eight persons; by the life-boat, nineteen; by the small boats, twenty; by the life-car, six; and by the breeches-buoy, ninety-eight. By casting lines over vessels, the life-saving crews brought ashore, without other appliances, eleven persons, and the surfmen rescued fourteen by dragging them out of the surf and undertow. By a surfman swimming to him, one was rescued; one was dragged out from the ice; one was drawn from the water into which he had fallen or jumped; and five were recovered who had gone overboard from boats or piers.

In one hundred and eighty-eight instances vessels were worked off when stranded, piloted out of dangerous places, repaired when damaged, or assisted in similar ways by the station crews. In some of

* In addition to the 1,854 persons saved, there were sixteen rescued from drowning, who were not on board vessels.

these cases the men worked in conjunction with other wrecking agencies, but generally by themselves and the sailors on board alone. In many instances both vessels and crews would have been lost without this aid.

Another class of assistance deserves special mention, involving, as it does, all the benefits to commerce and humanity of the more serious operations, unaccompanied by damage or suffering. The vigilance of the life-saving patrols, nightly guarding the beaches, detects vessels either sailing too near the shore or standing directly into danger, and in such cases the patrolmen at once fire their red Coston signals, whose vivid flame warns the navigators of their peril, and enables them to wear ship or tack away in time. Thus the patrolman becomes a sort of perambulating beacon, flashing in aid of navigation upon occasion. There have been, during the past year, forty-five instances where vessels in jeopardy have received this species of warning, and been saved from partial or total wreck. In another part of this report will be found a statement in detail of the various services of the life-saving crews.

The apportionment to the several districts of the year's disasters, and the statistics connected therewith, are as follows:

District No. 1.

Number of disasters.....	19
Value of vessels.....	\$45,300
Value of cargoes.....	\$16,900
Total value of property.....	\$62,200
Number of persons on board vessels.....	92
Number of persons saved.....	92
Number of persons lost.....	None.
Number of shipwrecked persons succored at stations.....	36
Number of days' succor afforded.....	96
Value of property saved.....	\$48,230
Value of property lost.....	\$13,970
Number of disasters involving total loss of vessels.....	3

District No. 2.

Number of disasters.....	23
Value of vessels.....	\$95,970
Value of cargoes.....	\$42,202
Total value of property.....	\$138,172
Number of persons on board vessels.....	122
Number of persons saved.....	122
Number of persons lost.....	None.
Number of shipwrecked persons succored at stations.....	43
Number of days' succor afforded.....	96

UNITED STATES LIFE-SAVING SERVICE.

15

Value of property saved.....	\$96,325
Value of property lost.....	\$41,847
Number of disasters involving total loss of vessels.....	6

District No. 3.

Number of disasters.....	25
Value of vessels.....	\$303,150
Value of cargoes.....	\$308,966
Total value of property.....	\$612,116
Number of persons on board vessels.....	238
Number of persons saved.....	224
Number of persons lost.....	14
Number of shipwrecked persons succored at stations.....	37
Number of days' succor afforded.....	117
Value of property saved.....	\$325,904
Value of property lost.....	\$286,212
Number of disasters involving total loss of vessels.....	11

District No. 4.

Number of disasters.....	38
Value of vessels.....	\$413,430
Value of cargoes.....	\$165,125
Total value of property.....	\$578,555
Number of persons on board vessels.....	262
Number of persons saved.....	262
Number of persons lost.....	None.
Number of shipwrecked persons succored at stations.....	84
Number of days' succor afforded.....	185
Value of property saved.....	\$387,743
Value of property lost.....	\$190,812
Number of disasters involving total loss of vessels.....	6

District No. 5.

Number of disasters.....	26
Value of vessels.....	\$235,980
Value of cargoes.....	\$130,260
Total value of property.....	\$366,240
Number of persons on board vessels.....	204
Number of persons saved.....	204
Number of persons lost.....	None.
Number of shipwrecked persons succored at stations.....	77
Number of days' succor afforded.....	190
Value of property saved.....	\$188,785
Value of property lost.....	\$177,455
Number of disasters involving total loss of vessels.....	11

District No. 6.

Number of disasters.....	12
Value of vessels.....	\$317,200
Value of cargoes.....	\$238,000

Total value of property.....	\$555,200
Number of persons on board vessels.....	121
Number of persons saved.....	120
Number of persons lost.....	1
Number of shipwrecked persons succored at stations.....	34
Number of days' succor afforded.....	211
Value of property saved.....	\$437,920
Value of property lost.....	\$117,280
Number of disasters involving total loss of vessels.....	3

District No. 7.

Number of disasters.....	1
Value of vessels.....	\$225,000
Value of cargoes.....	\$12,000
Total value of property.....	\$237,000
Number of persons on board vessels.....	18
Number of persons saved.....	18
Number of persons lost.....	None.
Number of shipwrecked persons succored at stations.....	None.
Number of days' succor afforded.....	None.
Value of property saved.....	\$233,400
Value of property lost.....	3,600
Number of disasters involving total loss of vessels.....	None.

District No. 8.

Number of disasters.....	7
Value of vessels.....	\$31,300
Value of cargoes.....	\$23,700
Total value of property.....	\$55,000
Number of persons on board vessels.....	35
Number of persons saved.....	32
Number of persons lost.....	3
Number of shipwrecked persons succored at stations.....	13
Number of days' succor afforded.....	53
Value of property saved.....	\$25,900
Value of property lost.....	\$29,100
Number of disasters involving total loss of vessels.....	2

District No. 9.

Number of disasters.....	46
Value of vessels.....	\$454,410
Value of cargoes.....	\$151,227
Total value of property.....	\$605,637
Number of persons on board vessels.....	333
Number of persons saved.....	332
Number of persons lost.....	1
Number of shipwrecked persons succored at stations.....	34
Number of days' succor afforded.....	44

Value of property saved.....	\$459, 139
Value of property lost.....	\$146, 498
Number of disasters involving total loss of vessels.....	11

District No. 10.

Number of disasters.....	9
Value of vessels.....	\$76, 100
Value of cargoes.....	\$17, 375
Total value of property.....	\$93, 475
Number of persons on board vessels.....	85
Number of persons saved.....	85
Number of persons lost.....	None.
Number of shipwrecked persons succored at stations.....	7
Number of days' succor afforded.....	14
Value of property saved.....	\$68, 902
Value of property lost.....	\$24, 573
Number of disasters involving total loss of vessels.....	3

District No. 11.

Number of disasters.....	39
Value of vessels.....	\$460, 207
Value of cargoes.....	\$196, 750
Total value of property.....	\$656, 957
Number of persons on board vessels.....	297
Number of persons saved.....	294
Number of persons lost.....	3
Number of shipwrecked persons succored at stations.....	42
Number of days' succor afforded.....	54
Value of property saved.....	\$537, 432
Value of property lost.....	\$119, 525
Number of disasters involving total loss of vessels.....	8

District No. 12.

Number of disasters.....	5
Value of vessels.....	\$86, 200
Value of cargoes.....	\$8, 000
Total value of property.....	\$94, 200
Number of persons on board vessels.....	71
Number of persons saved.....	69
Number of persons lost.....	2
Number of shipwrecked persons succored at stations.....	None.
Number of days' succor afforded.....	None.
Value of property saved.....	\$19, 000
Value of property lost.....	\$75, 200
Number of disasters involving total loss of vessels.....	2

2 L S

The apportionment of the foregoing statistics to the Atlantic, Lake, and Pacific coasts, respectively, is shown in the following table:

	Total number of disasters.	Total value of vessels.	Total value of cargoes.	Total amount of property involved.	Total amount of property saved.	Total amount of property lost.	Total number of persons on board.	Total number of persons saved.	Total number of persons lost.	Number of shipwrecked persons succored at stations.	Total number of days' succor afforded.	Number of disasters involving total loss of vessels.
Atlantic and Gulf coasts	151	\$1,667,330	\$957,153	\$2,604,483	\$1,744,207	\$860,276	1,092	1,074	18	324	948	42
Lake coasts	94	990,717	365,352	1,356,069	1,065,473	290,596	715	711	4	83	112	22
Pacific coast	5	86,200	8,000	94,200	19,000	75,200	71	69	2	.....	.....	2
Total	250	2,744,247	1,310,505	4,054,752	2,828,680	1,226,072	1,878	1,854	24	407	1,060	66

REMARKS ON STATISTICS.

The inclement seasons of the year were markedly hard and tempestuous; and although the number of disasters to shipping within the sphere of station operations, namely, two hundred and fifty, was less than that of the year preceding, when the number reached three hundred, it was greater by thirty-one than that of any other annual period, while the number of wrecks involving the total destruction of the vessels, sixty-six, was much larger than in any former year, except the year anterior, which, however, exceeded it by only one. Yet, despite the destructive character of the storms, the loss of life was smaller than in any previous year since the Service was extended to include the Great Lakes, the year before only excepted, when the number was but nine, a figure which must be considered phenomenal. The lowest number of any other year was thirty-nine, while the average loss of life has heretofore been thirty-seven, a number, as will be seen, thirteen in excess of the loss of the present year.

The subjoined table gives a summary of results in the field of life-saving operations for the last ten years, the period since the introduction of the present system:

GENERAL SUMMARY

*Of disasters which have occurred within the scope of life-saving operations, from November 1, 1871, (date of introduction of present system,) to close of fiscal year ending June 30, 1881.**

Total number of disasters.....	1,347
Total value of vessels.....	\$16,083,320
Total value of cargoes.....	\$8,429,167
Total value of property saved.....	\$14,958,895
Total value of property lost.....	\$9,553,592
Total number of persons on vessels.....	12,259
Total number of persons saved.....	†11,864
Total number of lives lost.....	‡395
Total number of persons succored.....	2,610
Total number of days' succor afforded.....	7,050

LOSS OF LIFE.

The details in the case of each shipwreck involving fatality within the domain of the Service, during the past year, are given in the following narratives, which also show the conduct of the life-saving crews upon the several occasions:

WRECK OF THE SCHOONER J. H. HARTZELL.

The first wreck of the year, within the range of the the Life-Saving Service, which involved loss of life, was that of the schooner J. H. Hartzell, and occurred about a mile south of the harbor of Frankfort, Lake Michigan, on the 16th of October, 1880. The scene on this occasion was in every respect extraordinary, and few narratives could surpass in interest the soberest recital of what took place that day abreast of and upon the wooded steeps in the neighborhood of one of our western towns.

* It should be observed that the operations of the Service during this period have been limited as follows: Season of 1871-'72, to the coasts of Long Island and New Jersey; seasons of 1872-'74, to coasts of Cape Cod, Long Island, and New Jersey; seasons of 1874-'75, to the coasts of New England, Long Island, New Jersey, and coast from Cape Henry to Cape Hatteras; season of 1875-'76, coasts of New England, Long Island, New Jersey, coast from Cape Henlopen to Cape Charles, and coast from Cape Henry to Cape Hatteras; seasons of 1876-'77, and since, all the foregoing, with the addition of the eastern coast of Florida and portions of the lake-coasts; and during the past year the coast of Texas.

† In addition, sixteen persons were saved this year who were not on board vessels.

‡ One hundred and eighty-three of these were lost at the disasters of the steamers Huron and Metropolis—in the case of the former when the stations were not open, and in the latter when service was impeded by distance; and fourteen others in the same year, owing to similar causes.

The schooner belonged at Detroit, and left L'Anse, Lake Superior, on Monday, October 11, with a cargo of four hundred and ninety-five tons of iron-ore for the Frankfort Furnace Company. She was commanded by Captain William A. Jones. Her crew consisted of six men, named, respectively, John Cassidy, (mate,) Mark Mahan, William Hyde, Edward Biddlecome, Charles Coursie, and George Hyde. There was also on board a woman cook, named Lydia Dale, who had shipped at Buffalo, but is supposed to have belonged in Toledo, Ohio. The vessel made a good run, with favoring winds, and arrived off Frankfort about 3 o'clock on Saturday morning, October 16. Her captain concluded to wait until daylight before entering the harbor, and she lay off and on in the fresh southeast breeze until about 6 o'clock, when the wind suddenly shifted to the southwest, and began to blow a hard gale, with squalls of hail, snow, and rain. She was then rather close to the shore, and about two miles south of the piers. An attempt was at once made to wear ship, but, in the growing fury of the wind and sea, the vessel would not obey her helm, and began to drift in; seeing which, her master let go both anchors and set his signal of distress. She still continued to drag, and soon struck upon the middle bar, about three hundred yards from shore. Directly abeam of her was a range of wooded sand-hills or bluffs, almost precipitous, and several hundred feet high, known as Big and Little Bald Hills. As soon as she struck, the captain slipped the anchors, and she swung around, bow to the shore. Hard aground, the seas at once crashed over her, and the awful staving and rending usual in such cases began. The yawl was carried away, the deck-cabin wrenched asunder and scattered to the breakers, and the vessel began to founder. In a couple of hours all that remained for her crew was to take to the rigging. The cook, Lydia Dale, had been seriously ill. She was very weak, and it took the united efforts of four men to get her aloft into the cross-trees of the foremast, across which planks had been nailed. Upon this species of platform she lay, wrapped up as well as possible, with her head supported on the knees of one of the sailors, and, as they stated, rapidly grew delirious. A little while after the men had got aloft, the vessel sank in sixteen feet of water, the stern resting upon the bar and the forward part in deeper water. Later the mainmast gave way and went over, remaining attached to the foundered hulk by some of the cordage, and thrashing and plunging alongside with every rush of the seas. The foremast, with the men upon it—one of them, the captain, clinging to the ratlines, about ten feet above the water; the remainder fifty feet aloft in the cross-trees, with the recumbent

woman—swayed and creaked ominously, some of the wedges having become loosened, and seemed likely to go over at any moment. It was a horrible feature of this shipwreck that the vessel, now an utter ruin, had a short time before been loitering to and fro in the fresh breeze, with no anticipation of disaster, waiting only for daylight to drop into her harbor, near at hand. So suddenly and fiercely had the tempest risen that within an hour destroyed her, and placed in deadly jeopardy the lives of the wretched company that clung to her one tottering spar.

The vessel was seen from the town shortly after she struck. One of the earliest to observe her was a little boy, the son of a fisherman named Joseph Robeior, who lived with his parents in a cabin on the hill near the south pier, and who, looking through the sheeting rain and hail, saw her plunging in the breakers. The lad at once told his father, who ran without delay to the village of South Frankfort with the alarm, and, accompanied by some fifteen or twenty citizens, cut across the hills and got abreast of the wreck near 8 o'clock. Other persons continued to arrive, and at length the crowd built a fire and laid pieces of driftwood along so as to form in huge rude letters, black against the white ground of the bluff, the words "LIFE-BOAT COMING." Eager signals from the sailors announced that they could read this gigantic telegram. Meanwhile, a gallant young citizen named Woodward had started on horseback for the nearest life-saving station, (No 4, Eleventh District,) at Point au Bec Scies, ten miles distant, by a sandy and hilly road, mostly lying through woods. The young man galloped furiously through the tempest, which was constantly increasing in violence, tearing along the difficult highway to such good purpose that by half-past 8 o'clock he dashed up to the station with the news of the wreck. The keeper, Captain Thomas E. Matthews, at once ordered out the mortar-cart and beach apparatus. In a few minutes, the cart, loaded with the Lyle gun, the breeches-buoy, hawser, and hauling lines, and other appurtenances, left the station, dragged by the horse, which young Woodward hitched on, the hauling being also aided by himself and the station-men, Marvin La Cour, J. W. Stokes, Martin L. Barney, Leonard Rohr, and J. Manuel. One of the surfmen, Charles La Rue, was away on the south patrol when the start was made, and followed his comrades to the scene of the wreck subsequently.

The expedition had set out upon a terrible journey. The Point au Bec Scies station is upon the lake-shore, north of Frankfort, south of which town the wreck lay, and the intervening river and the harbor-

piers making out into the lake from the town made it impossible, in any case, to arrive at the wreck by following the line of the coast. The only way was to make a circuit through the woods and around the rear of the town, where the bisecting river could be crossed by a bridge in that locality, and the beach south of Frankfort gained. The shortest route, not less than seven or eight miles long, was by a road which led off the beach to an intersecting road leading to the town, but to gain this it was necessary to travel two miles from Point au Bec Scies along the beach, and the beach was now submerged by a swashing flood constantly bursting against and washing away the steep banks of the lake shore, battering the escarpment with intertangled masses of logs, stumps, and trees, and of course rendering the way impassable. The expedition was therefore compelled to lengthen the detour by taking an old trail or cart-track, which had been pioneered by the Point au Bec Scies light-house construction party several years before for the transportation of materials. This road wandered through the woods, along winding ravines and up steep, soggy sand-hills. Across these acclivities the way was so difficult that the men and the horse, tugging and straining at the cart together, could only make ten or fifteen yards at a pull without pausing. This violent toil was pursued amidst the roaring of the gale, which now blew almost a hurricane, and the rushing of the storm, until about a mile's distance from the station had been accomplished. By this time the men, despite the bitter cold, were hot and wet with their efforts, and the horse, steaming with exertion, trembled on his limbs and could scarcely draw. There were at least nine miles more of their disheartening journey before them, and the party were already sorely spent. The difficulties of an ordinary country road, in the rougher regions of the west, are quite indescribable, and thus far the way was not even a road, but a rude cart-trail, made years before, already half-choked with a dense undergrowth, and cumbered here and there with fallen trunks of trees. The load which the horse and men had to drag through its rugged and mushy ruts weighed not less than a thousand pounds, and it is needless to say that the labors of hauling this burden were not lightened by the frightful blasts which fitfully burst through the pines upon the gang as they strained and bent at their toil, nor by the incessant pelting of the driven hail and rain, which lashed and stung their faces.

Fortunately some relief was at hand. The State road had been gained, and a light buggy came hurrying along with Mr. Rennie Averill, who, at the solicitation of Mr. Burmeister, the marine corre-

spondent of the Chicago Inter-Ocean, had nobly undertaken the task, from which several persons had recoiled on account of the severity of the storm and the dreadful condition of the roads, of bearing the wreck alarm to the station, not knowing that this had already been done by Mr. Woodward. With the aim of getting help for the hauling, the keeper jumped into the buggy and rode on with Mr. Averill, ahead of the crew. Before long, they met another brave citizen, named Samuel Benton, who was also hastening to the station with a double team to give the alarm. He reported another team behind him, on the road, and, at Captain Mathews' request, which showed wise forethought, he pushed on to the station to bring up the life-car and Merriman suit, taking with him, by the keeper's order, Surfman La Cour, as he passed the cart on the way. The keeper also requested Mr. Benton to bring back Surfman La Rue, whom he judged to have reached the station by this time from his patrol. It is noticeable, and it is due to Captain Mathews to say, that his conduct of operations, from the beginning to the end of this laborious and difficult enterprise, was in the highest degree praiseworthy, no step being omitted or forgotten which could facilitate the rescue.

The life-saving crew had got on with their load some half a mile further, when they were met by another citizen with a team of stout horses, sent on by the keeper to aid the hauling. A more rapid progress was now assured. The State road upon which they were travelling was a great improvement on the trail they had left, although fearfully rough. It lay for four or five miles straight to Frankfort through dense timber, broken as it neared that place by an occasional farm clearing. The lower part of the town traversed, the road continued along the inner basin which forms the harbor, leading to a bridge spanning the river which feeds this place of anchorage. The bridge crossed, the track went on for some miles further through a dense growth of woods to the neighborhood of the wreck. Nearly the whole way was a series of steep up-grades, plentifully strown with pitch-holes. Along such a course the expedition valiantly struggled, arrived at and rushed through Frankfort, emerged again upon the rugged country road, crossed the river, plunged into the woods, and finally, about half-past 10 o'clock, reached the rear base of the bastion of high hills which separated them from the lake where the wreck lay. The ardor of the rushing march of this train of men and horses is shown by the fact that they conquered the rough stretch of ten miles in about two hours.

The keeper had driven on to an elevated farm, known as Greenwood's, from whence he could overlook the lake, and saw about a quarter

of a mile to the north, the wreck with the stormy water flying over her. He was returning toward the cart of apparatus, with the idea that the road to Greenwood's must be taken, when a citizen named Miller, mounted on horseback, rode up to him, crying out, "Follow me and I'll show you a short cut." The party followed him through a ravine about a quarter of a mile. The way then led up the overhanging hill-side through the brush, and the tug with the loaded cart was terrible. So steep was the ascent that man and beast had fairly to climb, and almost to hoist the cart after them. Nothing could have been done but for the aid of a crowd of sturdy townfolk, who had assembled there, and, anticipating the arrival of the life-saving party, had cleared away with axes and handspikes a great deal of the undergrowth and fallen trees. Even with these impediments removed, so precipitous was the acclivity, that it took the united efforts of twenty-seven brawny men, by actual count, and a span of stout horses, to gain the summit, only about twenty feet being made at a time. By these efforts, worthy of giants, the top of the hill was reached; but the crowd were now brought up all standing by a belt of woods, as yet unpierced, which bristled along the crest of the eminence, and in which lay fallen trees half buried in brush and dense undergrowth. The obstacle seemed to inspire all present with a sudden electric energy, and gave occasion for a striking and admirable scene. In an instant, and as by a simultaneous impulse, all hands, citizens and crew, flung themselves upon the wood with axes and handspikes, and a work began which resembled a combat. The hill-top resounded with the blows of the implements, the heavy thuds of fallen timber lifted and flung aside, and the shouts of the brigade of pioneers mingled with the howling of the wind and the hissing of the descending hail and rain. The wood seemed tumbling asunder, and its rapidly-opening depths were alive with rude figures in every variety of fiery action. In some places, men were showering terrible blows with axes upon standing timber. In others they were prying and lifting aside great fallen trees with all their branches, shouting in chorus. Groups here and there, with frantic activity, were uprooting and rending away masses of brush and undergrowth. Sometimes, ten men would fling themselves in a mass upon a young tree or a sapling, pull it down and tear it away in an instant. In an incredibly short space of time the way through the wood was cleared, and the mortar-cart loaded with apparatus was dragged forward to the brow of the hill.

The gap cloven by this heroic onset disclosed a strange and dreadful diorama. The concourse of life-savers, fifty or sixty in number, were upon the summit of a precipitous bluff nearly three hundred

feet above the sea. This bluff was composed of sand, covered near the top with a yellow sandy loam, with here and there a patch of clay upon its slanted surface. The mass not being compact, owing to the nature of its substance, yielded readily to any force brought to bear upon it, and the gale, which was now blowing with fury, beating upon the acclivity like a simoom, flung up the sand for ten or twelve feet high upon the face of the slope, so that, to the gazer looking down, the whole surface appeared in rapid and violent motion. Above the dusky layer of this sand-storm was an air thick and blurred with the snow and rain, and the crowd looking through, saw far below, looming with a sort of misty distinctness from the terrific confusion of the waters, the nearly sunken wreck, its two masts still standing, resembling grotesque dishevelled steeples made up of spar and cordage. This object had the effect of rendering all things subsidiary to itself—the immensity of livid and lowering atmosphere in which it was central—the ragged undulations of surf, bursting into foam, which flung themselves around it with furious celerity, and seemed racing toward it from the farthest sea. The hull was well smothered up in the breakers, but at intervals between seas it appeared for a moment black and streaming as the surf on the bar fell away. Standing in the spreading ladders of the lower rigging, a few feet above the water, was a diminished figure with upturned face, watching the people on the summit of the bluff. This was the captain. The monstrous waves curled and broke below his feet, and covered him with their spray. Forty feet above him could be seen, lessened by distance, a huddle of faces, peering at the crowd on shore from the swaying cross-trees. These were the faces of the crew. The foretop-mast rose above them, and the gaff-topsail, partially unfurled, bulged and flapped over them in the tempest. This frightful spectacle, seen by the crowd on the heights through the weird curtain of the tempest, amidst the uproar of the wind and sea, had something of the vivid unreality of the scenery of a vision.

What the crowd could not see, owing to the distance, was fraught with deeper elements of pity and terror. The captain of the vessel, who had but recently recovered from a fever, stood covered with frozen snow and rain in the ratlines, stiffened and discolored with exposure to the storm. High above him, on their giddy and unstable perch, the six men crouched, blue in the face with cold. The fury of the wind in this tottering eyrie was such, that when one of the group had occasion to communicate with another, he could only do so by shouting through hollowed hands into his ear. Amidst all the din

of gale and sea, the unhappy men could hear the harsh creaking of the mast as the vessel swayed to and fro. They expected every moment to go over. The poor woman lay among them in the narrow space the elevation afforded, her lower limbs, swathed in a web of canvas which one of the men, Edward Biddlecomb, had cut out of the gaff-topsail above and roped around them, hanging down through the orifice in the deck of the cross-trees, and her head on the knees of the sailor, William Hyde, who kept her face covered from the storm. She had become very cold and numb, and from time to time the men nearest her chafed her hands and arms in the effort to revive her. She gave no heed to these attentions. The delirium, which the sailors aver in their testimony, marked her first hours aloft, had, as they state, yielded to unconsciousness.

No time was lost by the life-saving crew and citizens in commencing operations for the rescue. The prospect was discouraging in almost the last degree. It was a long distance from the summit of the hill to the wreck, and the slope of the sandy hill-side, as has been said, was almost a precipice. Anxiously surveying the ground, Captain Mathews descried, about two hundred and fifty feet beneath him, a narrow ledge or plateau, some ten or twelve feet wide, and at once determined that the cart must be lowered to this foothold as the place of operation. A portion of the whip-line was unwound from the reel and fastened to the body of the loaded vehicle as a drag-rope, the other end being taken to a fallen tree as a loggerhead or snubbing-post. Surfmen Barney and Stokes and citizen Woodward placed themselves in the shafts to guide the cart; the rest of the crew and citizens seized the rope to lower away, and the perilous descent of the nearly perpendicular bluff was begun. At every step the yellow slope gave way in masses, instantly caught up in the whirl of the blasts that burst incessantly upon the acclivity. The descent continued steadily, without accident, to a point when it was found that the line employed was too short to enable the cart to gain the plateau. An audacious expedient was at once entered upon. The line was cast off from the fallen tree, and held by the crowd, each man sitting and laying back with his feet braced in the sand, and acting as a drag upon the burden. In this way the men slid down the bluff behind the cart-load, plunging and tearing their way amidst an augmented storm of sand and dirt; some of them being jerked down the bank head-foremost, but most of them maintaining their position. In a few minutes, panting and sweating with their effort, and looking like the dirtiest of brick-makers, they stood around the cart on the narrow ledge, the tremendous surf, thick with flood-wood, bursting in foam and spray a few feet below them.

The cart was at once unloaded, the lines made ready, and the Lyle gun planted and fired. It was then a little before 11 o'clock. The charge was seven ounces, and at the first fire the shot, directed with great judgment on the part of the keeper, flew almost directly across the wind about two hundred yards beyond the vessel, carrying the line along her starboard broadside as she lay nearly head on to the shore, and letting it fall right upon her weather-rigging, fore and aft, where it was instantly caught by the captain. Unfortunately, the slack of the line was immediately swept by the wind and current under the head-gear of the wreck, where it fouled and could not be cleared by the people on board. The first effort to establish line communication with the wreck therefore proved a failure, and the shot-line was hauled in and faked for another trial. This time, with the view of overcoming the added weight of the line, which was wet and clogged with sand, the keeper used an eight-ounce charge. He also trained the gun a little nearer the vessel, aiming to make the line fall higher against the rigging and to prevent, if possible, its fouling with the wreckage. His calculations were superbly accurate. Before the echoes of the report of the gun had ceased along the bluff, the line, flying aloft its full length, had fallen directly across the fore-rigging, where it was caught by the men in the cross-trees.

It wanted at this time a few minutes of noon, and the shipwrecked sailors were in possession of a line from the shore. The anxious question now was, whether this line would stand the strain of hauling out the double rope, or whip, running through a tail-block, which was at once bent on to it. As allowance had to be made for the slack caused by the distance and the tremendous current, there was a vast length of this double line to be paid out between ship and shore. It was manned by at least fifty men, who strung themselves along up the face of the bluff with the aim of keeping the line as much as possible out of the sea, where it was endangered by the drift-stuff and wreckage. At times the force of the current would carry both parts of the whip far to leeward, and the sailors would fail to haul in an inch, and could only take a turn with the shot-line around the heel of the foretop-mast. Then the men upon the slope of the bluff would raise and straighten out the whip as much as possible, and at a signal from the keeper below, suddenly slack, giving the sailors in the cross-trees, working in concert with them, a chance to haul in a few feet at a time. These manœuvres were regulated by the keeper solely in pantomime, for such was the uproar of the gale that his voice could not have been heard beyond the distance of a few feet, even through a speaking-trumpet.

The strain on the slender shot-line increased as it took out more and more of the whip-line, and every moment the toilers on the slant of the acclivity, timing their labor to the gestures of the grimy figure below them, felt, with him, the dread that the strands would part; but the tough braided linen held, and, after more than two hours of such exertions as make the muscles tremble, they had the satisfaction of seeing the whip arrive, and the tail-block properly fastened around the lower mast-head and heel of the topmast, the block hanging forward of the cross-trees.

A new obstacle, involving a terrible discouragement, had gradually been developed as the further end of the whip-line rose from the water up the mast. The whole length of this double rope, hanging between the tail-block at the mast-head and the shore, was seen to be twisted, one part over the other, and full of turns. Every effort had been made to prevent this result; the files of men that paid out the rope had been kept widely apart, with members of the life-saving crew judiciously stationed at certain points among them; and two experienced surfmen had tended the reel on the cart which gave off the whip to the sea. But the trouble had commenced when the rope first struck the water. The tail-block then immediately began to spin, showing that the rope, dragged upon by the current, and unequally soaked by the sea, was curling and twisting as it ran. Presently a large tree, with all its branches, lying in the wash of the surf, had fouled with the whip, increasing the difficulty, and the line was only released by the keeper and several of the crowd rushing down the bank and jumping into the frothing surf, waist-deep, to clear it. Besides, in assisting the sailors to overcome the current by hauling in the slack, and then rapidly paying out, the tangle had been constantly increased, the sea taking advantage of each delivery to roll and twist the line before it could be tautened. It now stretched in this condition, in a sagging double, between the unsteady mast and the hands of the files of men along the storm-blown surface of the bluff.

The ardent throng of citizen co-workers with the life-saving crew, were reasonably enough struck with consternation at this incident. A volley of excited questions began to shower upon the keeper in regard to what he was going to do to save the men. Every other second anxious interrogations or expressions of dejection or despair were shouted at him through the uproar of the storm, and for a few minutes his position was exceedingly trying. The crowd, however, were good-natured and obedient in the highest degree, and presently every

man rushed to his place under the keeper's orders, and all fell to work clearing the line. This was done by fastening one end to a tree on the brow of the hill and hauling it taut, then untwisting or dipping the other part around it, tautening up both parts from time to time while maintaining the operation. Finally, after fully an hour's work the last of the turns were out, and the line was clear.

The breeches-buoy was at once rigged on. As the slope was constantly giving way, several small land-slides, half-burying the men below, having already occurred, no sand-anchor was planted, the keeper relying on the force he had under command to hold and handle the line. Surfman La Cour was stationed at the summit to tend the slack, which he did by taking a turn with the line around a fallen tree. The buoy then went out toward the wreck, urged by the eager arms of the haulers.

As the men who worked the line were compelled by the steepness of the bank to stand in constrained positions, half upright, half reclining, upon ground constantly giving way, and were also greatly hindered by the blinding sand and buffeting wind, the outward progress of the buoy was slow, but at length it arrived at the mast. After some little delay, as though the people in the cross-trees hesitated, a man was seen through the dim atmosphere to get into the buoy, which was at once hauled back to the shore. The hauling was done under such difficulties that the passage of the buoy to the shore occupied seventeen minutes by the watch of one of the bystanders. As it approached, several persons rushed down the bank into the surf, and the man was pulled out and helped up to the little plateau. It was the first mate, John Cassidy. His jaws were set, his eyes vacantly fixed, and the expression of his face dazed and frightened. A citizen, Mr. Burmeister, gave him a draught of brandy. This seemed to revive him, and presently he said, "Save the others." Two or three questions were asked him in regard to the vessel and the persons on board, which he answered faintly, and he was then led away towards the town, supported on either side by two citizens.

In reply to one interrogation, he had been understood by the keeper to say that the woman in the cross-trees did not want to come ashore in the buoy, and as he left, the keeper was notified by Surfman La Cour that the tree to which the whip-line was secured was slowly giving way, and the bank coming down under the strain. This circumstance, and the mate's declaration, decided the keeper to substitute the life-car for the buoy, partly because the car could be towed out like a boat until it reached the mast, thus relieving the latter of a certain amount

of tension upon it, while its use also dispensed with the fallen tree and spared the pull upon the bank; partly, also, because its employment might facilitate the rescue by landing a greater number of the shipwrecked at each trip. The car was accordingly ordered forward, and the keeper, with his own hands, attached it to the lines.

Every face blazed with excitement as the hauling began. The life-car, as soon as it entered the surf, was dashed about like a cockle-shell. In the second line of breakers, owing to the men not paying out rapidly enough to allow it to tail to the current, it was suddenly tossed bottom up, but righted again immediately, and continued violently lurching on its way. Gradually it grew steadier as it got further from the shore. After protracted effort on the part of the haulers, it had at length reached the wreck, when, all at once, the jagged mainmast, which had fallen some time before, and was swinging alongside with other wreckage, rose on the summit of a huge breaker, and, lunging like a battering-ram, struck the car such a blow that it tossed it spinning twelve or fifteen feet into the air. Although every one's heart leaped into his mouth, the life-savers took swift advantage of the momentary lightening of the line to haul in the slack, and rowse the car up, where it hung almost perpendicularly some twelve feet below the mast-head. Without the least delay, two of the men, William Hyde and Edward Biddlecomb, were successively lowered from the cross-trees by ropes around their bodies, and got in. A third man was lowered in the same way, who secured the door, and was then hauled back again by his companions. All hands then fell to work on the hillside, and the car approached the shore. As it drew near, floundering in the surf, the keeper and several men rushed down waist deep into the foaming flood, seized and dragged in the car, unclasped the door, and liberated the two sailors. Mr. Burmeister at once gave them brandy from his flask. They were then helped up the bank, and as the crowd, in their eagerness to assist, gathered rather too thickly for a soil which seemed to vie with the sea in instability, the bank suddenly gave way, and the whole mass were within a hair's breadth of being precipitated into the tumbling sea below them. They were clutched and pulled out by those above them, and, after a violent scramble along the steeps, succeeded in gaining a narrow strip of level ground to the northward. Upon being interrogated about the woman, the two men appear to have given evasive answers, to the general effect that she would come ashore in the next trip of the car. They were led away by Mr. Burmeister, until a team near by was reached, which conveyed them to the place of shelter and succor they sorely needed.

The life-car had received some damage around the hatchway and cover from the blow of the mast and the battering wreckage. It was speedily hammered into shape and again sent out on the lines. The haulers had learned by their first experience how to handle the ropes, and the car pursued its course through the broken water without capsizing. From time to time during the strenuous hauling bursts of sand on the slope indicated the moments when the ground gave way under the feet of the files of devoted men toiling in the heart of the gale, and who could be seen on these occasions to slide and stagger as they pulled, struggling to preserve their foothold or escape engulfment. The tempest continued to scourge the escarpment with unabated violence, and the air of the waning afternoon was thicker than ever with the wind-blown rain, snow, and hail, driven in alternate gusts, and interblent with the driving substance of the hills. Amidst this continued fury the car slowly worked on toward the wreck.

The captain of the sunken vessel meanwhile painfully crept up from his place in the lower rigging toward the men above. He was so exhausted by long standing and exposure that he was unable to climb over the futtock-shrouds on to the cross-trees, and was prevented from ascending through the orifice which had been left in the platform, as the lower limbs of the woman, swathed in their wrappage of canvas, hung through the opening. By the efforts of the sailors, aided by his own, the inert body was drawn away and lashed by the bent knees to the Jacob's ladder. The captain then mounted through the opening, and endeavored, as he testifies, to rouse the woman into some signs of life. The life-car soon hung again in mid-air below them, and the second mate and captain clambered slowly down and got in. In the beginning of the creeping darkness the car arrived from the sea, and was torn open by a dozen eager hands. The crowd were confident that the woman would be brought this time, and were stupefied when only the two men appeared. There was an instant burst of fierce interrogations, to which the captain and mate appear, like their predecessors, to have rendered equivocal answers. The effect of their replies was that the woman was the same as dead, and that she would be, or might be, brought to shore at the next trip. These rejoinders were received with sullen looks and angry murmurs from the crowd. There was no time, however, for parley, as approaching night was fast darkening the storm, and the two men were led to a team near by, which drove away with them, while the battered life-car was hastily repaired, and once more hauled out upon its way.

The first breaker flung the car upside down, and it remained so the entire trip. It was nearly dark by the time it arose again from the

sea to the neighborhood of the cross-trees, and the anxieties of the keeper became intense lest some shocking accident should mar the closing act of rescue. He could only barely see that the car had reached the proper place. The glasses merely enabled him to discern shadowy objects moving about the mast-head, and he vainly endeavored to determine whether the two sailors were engaged in lowering the woman from the cross-trees. To give them every opportunity to save her, he kept the car a long time out, fearful all the time that the crowd, from which every now and then burst expressions of impatience, might suddenly become uncontrollable, and madly haul away, possibly at the very moment when the sailors were descending with their burden through mid-air. An admirable instinct of obedience, however, from first to last pervaded these volunteers, and they remained under command. Finally it grew so dark that the car became utterly invisible, and the keeper at length gave the signal to haul. A frenzy of activity at once fell upon the hillside. The common consciousness that the woman was at last coming in the car with the remainder of the men on the wreck, and that the tremendous hardship and effort of many hours were about to bear full fruit, gave a furious alertness to the cordons of obscure figures on the ghostly front of the bluff, and the rope of the life-car slid swiftly through the darkness. The night had fairly set in on this sustained labor, when the life-car was seen emerging from the gloom over the riot of the breakers. It had made the trip bottom-up, and presently grounded in this position on the edge of the shore. The voice of the keeper at once rang out to those around him. "Now, boys," he cried, "jump down and roll that car over and get that woman out as soon as you can." A dozen men rushed down the slope, waist-deep into the surf, and lugged the car up out of the swash and floodwood. In a moment the car was rolled over, and the hatch snatched off. A man instantly sprang out quite nimbly. It was the sailor, George Hyde. Another figure, stiff and halting, rose in the opening, and was helped from the car. This was the other sailor, Charles Coursie. A cry of many voices then rose, "Where's the woman?" It was followed by a momentary silence, in which men were seen bent over the open hatch and groping about with their arms inside the car. Then some one shouted to the crowd in a terrible voice, "They haven't brought the woman!" The announcement was received with a savage burst of imprecations. The dark air resounded with a roar of curses, and amidst the din men were heard yelling that they never would have laid hands to the hauling-lines if they had known that the woman was to be left upon the wreck to perish.

Amidst the tumult, the keeper took aside the sailor, George Hyde, and demanded, looking him right in the eyes, "Why didn't you bring that woman?" Hyde faced him, and replied, "The woman is dead." "Be careful now," retorted the keeper, "if you don't know for certain that she's dead, say so; and if you do know, say so." "The woman is dead, and stiff as a board," returned the sailor, adding, "she's been dead for sometime." The keeper then wheeled about to the sailor Coursie, and sternly demanded, "Is that woman dead?" Coursie replied, "Oh, yes; she's been dead quite awhile."

It is probable that the feeling that the sailors spoke the truth—at all events, that the doubt as to what the truth was—mixed in either case with the horrible sense of irremediable tragedy—had its influence upon the generous men who had toiled so long at the wreck, and gradually stilled them. What is known is, that their rough fury soon settled into sullen quietude. It is, and doubtless will always be, an open question in what condition the hapless woman was left upon the mast. Whether alive or dead, her desertion caused great excitement at Frankfort for some time afterward, and it is certain that on this topic opinion was considerably divided. No common conclusion appears to have been reached, nor is it likely that such unanimity would be possible from the evidence. A coroner's inquest held upon her body, which was washed ashore seventeen days afterward, found that she came to her death by drowning, leaving it to be inferred that she was left upon the wreck alive, and perished upon the subsequent fall of the mast into the sea. None of the sailors appear to have been present at this inquest, they having all left the neighborhood soon after the disaster; and the strongest evidence against them seems to have been the depositions of certain witnesses as to admissions made by two or three of their number. On the other hand, the concurrent testimony of the last four men upon the wreck, given in the form of affidavits immediately after the occurrence, is, that the woman was, at the time of their departure, quite dead. If this statement can be accepted, it is not without support from some antecedent circumstances. It does not seem to be questioned that she had soon become unconscious after her removal to the staging of the cross-trees, and was in a failing condition for hours before the last man was brought ashore. Her death, therefore, from previous illness and current exhaustion, is not unlikely, and if dead, the men perched aloft with her upon a mast rocking in its step, and every moment likely to fall, must have felt it useless, as it would have been physically impossible, to have lowered the heavy and inert burden of her corpse twelve feet down into the car, and felt also

that their every exertion was justly due to their own preservation. Another possibility is, that when they left she was not dead, but insensible or in a dying condition, and that they felt that her insensibility would make it impossible to save her. In this case their failure to make the effort would hardly be less than criminal. Its only extenuation would be the consideration of the terrible and perhaps insurmountable difficulties of the task. She was a heavy woman, and lay, an utter weight, powerless to help herself, on the narrow ledge of the cross-tree planking, sixty feet above the rush of waters. It will be remembered that the sailors had to descend from this shaken perch, a distance of about twelve feet, to gain the life-car, each man partly availing himself of the broken shrouds which flapped around the mast, and partly lowered from above by a rope in the hands of his comrades. It was like the descent of a spider who hangs in mid-air by a thread while he catches at filaments of his broken web to guide his way downward. To each man, a certain and considerable amount of self-help, in such a descent, was possible, but far otherwise in the case of an inert mass, lowered from a swaying spar, toward the mouth of a life-car swinging at random, almost perpendicular, and well-nigh inaccessible. At all events, it remains, and will doubtless always remain, a mystery, whether, as the coroner's jury substantially found, the poor woman was needlessly sacrificed; whether she was abandoned in her insensibility because her companions felt the impossibility of lowering her to the car; or whether she was left behind because she was dead, and could not therefore be saved.

The keeper stood for a few minutes gazing into the stormy darkness and debating with himself whether anything could be done for the recovery of the body. Had there been daylight left, he would have called for volunteers to go out to the wreck in the life-car and make the effort. But he realized that he would have no control of the movements of his volunteers after they left the shore. He would not be able to guard the car from the wreckage alongside the sunken hull, nor know when it had reached the mast-head. He would not know when to lower it for the return trip; he might let it down while the hatch was still open, and spill his men into the sea, or he might haul home and leave one of the number on the cross-trees. More than all, as the rickety mast might fall at any moment, he would be guilty of risking the destruction of the bold men who undertook the enterprise. The only course left open to him was to suspend operations and endeavor to get the body in the morning, if the mast was left standing, and this he resolved to do.

In a few minutes the whip was unreeved, the apparatus secured high up on the bank, and the sullen crowd, bitterly disappointed at the loss of the woman, though they had saved the seven men, dispersed and straggled away to the town. They had eaten nothing all day, and were much spent by their exertions. The life-saving crew were too exhausted to attempt to return to their station that night, and scattered around at different houses, with instructions to reassemble at the scene of the wreck early in the morning. Surfman La Cour, who had fared rather harder than the others, having been in charge of the landing of the car, and been repeatedly thrown down in the surf, was compelled to halt on the way to town, and spend the night at a house near the beach. Before long the vague slopes, beaten by the tempest, were left in utter solitude, and nothing that was human remained upon the scene except the body of the woman, lashed to the rude tressels on the mast, out in the sightless darkness.

In the night the mast fell. The keeper, up at 4 o'clock in the morning, found that it was gone. Visiting the wreck as soon afterward as possible, he recovered his shot and shot-line from the fallen spar which was there, but found the cross-trees vacant. Seventeen days later, however, as has been stated, the body of the woman was discovered on the beach near Frankfort, where it had drifted ashore.

The purpose of this narrative is to relate the circumstances under which a human life was lost; but, although this occurrence was singularly ghastly and mournful, it is necessarily reduced to a secondary place in the recital by the noble character of the exploit of rescue which accompanied it. It will at once be remarked that this rescue was largely accomplished by the aid of people from the town, and it is regretted that their names cannot be given, a complete list being wanting, for never was the public recognition due to service in a humane cause more justly deserved than in this instance. The conduct of the life-saving crew in toiling to the wreck from such a distance, and despite the formidable obstacles interposed by the wild country and the October gale, is admirable; and also all they did and endured when once abreast of the sunken vessel. It might be said, however, that they acted under the obligations of official duty. But no abatement can be made in the tribute which belongs to the throng of great-hearted volunteers, who served with them so staunchly. Without any compulsion or requirement, other than their own manly hearts supplied, they were there with the men of the station from first to last. Hour after hour, patiently, sternly, they stood braced on the slanted front of a crumbling precipice, without food, without rest, beaten by

wind and rain and hail, mired by the muck of the hills, choked and blinded by the sand-blasts, often half engulfed by the sliding soil, strained and aching in every muscle and sinew by the very act of standing on the steep and yielding acclivity, and by the racking pulling and hauling upon the ropes of the life-car, and never turned their faces from the work until the last being whom it was possible to save from the wreck was in safety among them. More even, however, than their bravery and endurance was the splendid discipline they imposed upon themselves through all the trying hours of the labor. They were a miscellaneous throng—blown together, one might say, by the winds—fifty or sixty farmers, lake-sailors, lumbermen, roustabouts, plain townfolk of several varieties, and bound by no engagement, and without even a moment's conference, they massed themselves as one man under the orders of the keeper, and obeyed him with the subordination and steady constancy of trained soldiers. Before such behavior the language of commendation fails.

WRECK OF THE SCHOONER GRANADA.

On October 17th, the day following the disaster to the J. H. Hartzell, the same storm wrecked the schooner Granada near Muskegon, Lake Michigan, about a hundred miles below Frankfort. The schooner belonged to Grand Haven, Michigan, and was bound from Muskegon to Chicago with a cargo of lumber. Her captain was Robert Linklater, and she had a crew of six men. She had proceeded on her voyage about forty miles, when, at about 6 o'clock in the morning of October 16th, she was struck by the sudden gale which arose on that coast and instantly capsized. In this overturn, her deck-load, the cabin and steering-wheel and the mainmast all went by the board. Soon afterward she righted, but in a leaky and water-logged condition; and as she lurched and rolled about heavily, a helpless hulk, in the tremendous sea, the wedges worked out of the partners, and the foremast began to sway from side to side, soon carrying away the foretop-mast. She continued to drift to the north and east all that day, the night following, and the day after, until about 3 o'clock in the afternoon (Sunday, October 17) she struck on the outer bar, about a mile and a half north of the piers at Muskegon. The gale, meanwhile, blew without intermission, with heavy, blinding squalls of snow. The air was bitterly cold, and there was a prodigious sea.

The schooner was descried about noon of the 17th, some four miles southwest of the Muskegon piers, by Keeper William Groh, of Life-boat Station No. 8, Eleventh District. All he could see of her at that dis-

tance, even by the aid of his marine glass, was a mast sticking up from the tumbling waters of the lake, and a split gaff-topsail flapping in the gale. At times, a little of her hull was visible as she lifted on the great swells. She appeared to be drifting with a strong current, setting to the north, and gradually approaching the shore. She at length passed the entrance to the harbor, still well out to sea, and Keeper Groh saw that her foremast was loose in the step, by the way it jerked from side to side as she rolled. A number of people had congregated to watch her, among whom were several captains of tugs, and the keeper, knowing that she would soon strike the beach near by, and the difficulty, if not impossibility, of getting to her in a sea so monstrous, offered the tug-men fifty dollars out of his own pocket to tow him clear of the piers in the life-boat. The offer was declined, on the ground that the task would involve the destruction of both tug and life-boat in such a stress of tempest. In fact, the existing conditions justified this conclusion of the tug captains. The gale, which had been blowing long from the southwest, had canted to west-northwest, and blew with a registered velocity of forty-six miles an hour, making a terrific cross sea; and as at Muskegon the south pier is much longer than the other, the north side of both of these projections was swept by the breakers, which directly beat upon them, and the greater part of both piers was constantly smothered in raging water, through which no tug could expect to pass with safety. Besides, near the entrance was a bar, from which, with every subsidence of the surf, the water fell away so sheerly that a tug endeavoring to make its way over would be sure to strike the bottom.

Seeing that the means necessary to get the life-boat out to the wreck before she drifted into the breakers could not be procured, Keeper Groh hastened to the station, and ordered the crew to track the vessel along the beach with the mortar apparatus until she struck. He had formed the conclusion that it would be impossible to propel the life-boat from shore by any force of oars, and it was plainly impossible to get out under sail. His idea, therefore, in taking the apparatus, was to rescue the sailors by the breeches-buoy if practicable; and if not, to have the line shot over the vessel used to haul out the surf-boat under her lee.

It was about 3 o'clock in the afternoon when the crew got away from the station with the mortar-cart to follow the vessel up the shore. After a toilsome haul over a bad road along the sand hills, the beach was struck, abreast of which the wreck was drifting. A crowd of sailors and mill-men, about two hundred in number, had collected,

and the keeper, when half a mile or more north of the piers, dispatched about fifty of them to the station, in charge of two of his crew, to bring the surf-boat. There is hardly a point along the eastern shore of Lake Michigan, and the same is true of many places upon the shore of the other lakes, where the bristling strew of logs, trees, and wreck debris of all kinds thrown up by the surf upon the beach, is not an ugly factor in the difficult problem of rescuing the shipwrecked. On this occasion the beach was lined for miles north of the piers with this formidable refuse, over which the boat-wagon was jolted so furiously by the party sent to bring it, that it came up to the cart with its bed-pieces split and shattered, the force of men on the drag-ropes, numerous enough for almost any burden, having found it easier, in their exultant vigor, to stave along over everything than to make a safer road for the wagon by clearing away the heavy flood-wood. Fortunately, the boat was not injured, and immediately upon its arrival the keeper dismounted it and got it ready for possible use, the gun being already placed for firing.

It was then about 5 o'clock, and, as these preparations implied, the moment of crisis had arrived. After her long drifting, the vessel had come to land, and a wild scene followed. She struck upon the outer bar, about three hundred yards from shore, in some sixteen feet of water. Seen across the crashing confusion of the breakers, through the snow squalls, she appeared in a slightly oblique position, nearly head on to the shore, poised on an even keel, with the sea flying over her. Only her foremast and bowsprit were left standing. Something of her port-rail showed three or four feet above the sea. Her hull was sunken so deeply that her bare deck, swept every other moment by the waves, was low down near the water. Two of the sailors were lying aft upon the deck, dead from their long exposure of over thirty hours. Four of the remaining five stood huddled in a group clinging to the wreck on the port-quarter, while the other one was forward. The couple of hundred men upon the beach, greatly excited at this spectacle, were rushing about in the violent wind, many of them vociferating to the keeper to launch the surf-boat, and others cursing and swearing at his refusal, he being bent upon trying to fire a line across the wreck in accordance with his original plan. The stormy colloquy was cut short by the report of the gun, and the line was seen to rush aloft and fall near the wreck—so near, indeed, that the men on board tried to catch it, but failed, and the line fell in the sea. Just as the gun was fired, the foremast toppled over with a crash, carrying away with it the bowsprit also. The miserable vessel—

rotten as a pumpkin, in the graphic phrase of one of the witnesses; so unseaworthy that even her masts were rotten, as the investigating officer found—at once began to break up. Her whole starboard bow fell off; she split open, and her cargo of deals gushed out, in rafts and bunches, says a witness, and from that time until dark came from her in a steady stream to the shore. The gazers could see the surf rear up alongside the vessel, throwing the lumber high in the air; the clumps changing ends, and fantastically tumbling in all sorts of ways, and the whole sea seeming full of them.

Although the falling of the mast and bowsprit left nothing higher than the men to catch the line, Keeper Groh was so sure of the necessity of its use that he at once hauled it in, faked it down upon the beach and fired it again. It fell on board forward, but the sea sheeted across the vessel and swept it away. A third time the line was fired, but the shot passed over the wreck amidships, and the line drifted clear over the wreck before it fell, there being no spar, as already said, to arrest it.

The vessel was now fast crumbling, and pieces of her were coming on to the beach. The lumber floated out from her also in greater profusion, looking, the keeper said, as it pitchpoled about in the combers, like a rail fence coming ashore. Seeing that she could not last long, the desperate order was given for the launch. The keeper and his men kicked off their rubber boots, stripped themselves of their upper clothing, shoved into the breakers, and gave way with fury. All the chance they had of making headway against the stress of the sea was to take advantage of the slender lee the position of the vessel afforded, and, keeping the boat in the narrow track this breakwater made, they bent to their oars with such energy that they actually got within three boats' lengths of the wreck, and were on the point of throwing the heaving line on board. At this moment a huge green sea suddenly rushed down and threw a shower of lumber about them, breaking one of the oars, fouling the others, and sending the boat back to the shore with a terrible velocity. When the wave was spent the astonished crew found themselves near the beach. There were only a few inches of water in the boat, so buoyantly had she sustained the assault of the surge. She was hauled out, emptied, and another launch was at once made, well to windward, to countervail the drift of the current. This time, by strenuous efforts, the crew succeeded in getting a little more than half-way to the wreck, when the fallen foremast, hanging alongside, swept up, with a lot of riff-raff, against the boat, and striking her forward, sent her back almost to the beach. At the same time

the steering-oar, fouling with some lumber, got an abrupt twist, which caused the loom to strike the keeper violently in the back as he stood at his post in the stern, almost paralyzing his arms, and splitting the pins out of the scull-port. Despite the injury he had received, which soon began to disable him, the keeper lashed the oar, bailed out the boat, and took another start for the vessel. The crew, resisting the exhaustion of their previous efforts, bent desperately to the oars, and again succeeded in making about half the distance, when a piece of the vessel's stern came up against the boat; both were struck at the same time by a huge sea, and the boat spun round under the blow, and was swept back toward the shore. Not beaten yet, the crew valiantly dragged the boat up far to windward with the aim of getting down to the vessel before encountering the fatal stream of wreckage constantly spouting from her bows to the shore, and launched for the fourth time. Their gallant effort was in vain. As they rowed, a double comber swept upon the boat and filled it to the gunwales, forcing a return to the land.

An hour had been consumed in these efforts. It was now 6 o'clock, and darkness was setting in upon the miserable scene of disaster and struggle. As the baffled crew landed from their fourth attempt at rescue, an intrepid man, Captain Richardson, of the steam-barge *Hilton*, confronting the keeper with a manner full of confidence, asked to be allowed to take the boat and make the effort to save the men on the *Granada*. The keeper, himself almost incapable of further exertions, owing to the bruises he had received, at once acceded, and a crew composed of four of the life-saving men and two sailors immediately manned the surf-boat under their new leader. The futility of attempting to make head against the irresistible rush of that sea was soon demonstrated. In obedience to Captain Richardson's orders, the boat was launched far to windward. He took the steering-oar, and the boatmen, full of resolution, did their level best, cheering and encouraging each other as they rowed, and putting out their strength to the utmost. But their brave leader soon found, as Keeper Groh had seen from the first, that away from the slight lee the wreck made, the sea was impassable. Sixty yards from shore, the boat was nearly swamped, and had to be put back to be emptied. Another launch was then made, the breakers growing even heavier as the boat proceeded, until presently one sheeted down and filled it to within six inches of the thwarts. Captain Richardson instantly ordered a return, and upon landing disappeared.

In the meantime Keeper Groh had at once renewed his efforts to establish line communication with the wreck. He fired the gun with

a six-ounce charge, but the line, weakened probably by previous trials, parted at some distance from the projectile. The keeper hauled in the remainder, and just then caught sight, in the gathering darkness, of one of the sailors drifting toward the shore buoyed by an armful of lumber. The man had been carried well to leeward, and the keeper, tying a rope around his waist, ran down abreast of where he was and rushed deeply into the breakers to seize him. Two seas broke over the keeper in quick succession, and, when they fell away and he could see, the man had disappeared. Presently, however, he caught sight of one of his hands sticking up from the swirling water through the pieces of lumber, and clutching hold of it he shouted to the men on shore to haul on the cord around his waist and drag them in. For some unexplained reason the hold on the line had been relinquished, and it was only by a violent effort that the keeper succeeded in regaining the shore, which he did without letting go of his man. The latter proved to be the mate of the vessel, William Bissett. A fire had been kindled on the beach and the keeper led the rescued man up to it, stripped him of his shoes and a portion of his wet clothing and went to work rubbing his limbs. It was then snowing hard, and bitter cold; the keeper was himself half frozen, being in his stocking-feet and drenched to the skin, the only dry article of clothing upon him being his cap, which he put at once on the head of the sailor. Just as his operations began, one of the life-saving crew and some citizens came dripping to the fire bearing another of the shipwrecked men, named Mathias Sapps, whom they had just pulled out of the surf. He was almost lifeless, but gradually came to himself under the rude ministrations of the bystanders. Meanwhile the keeper dispatched one of the surfmen to the station for some dry clothing, continuing to chafe the mate's limbs until he got him into a condition to walk, when he had him conducted to the station for shelter, whither the other man was led also.

The life-saving crew were all drenched, and, as they were to watch upon the beach all night, the keeper let them go to the station to change their wet clothing, he occupying himself during their short absence in scanning the dark surf abreast of the wreck, at times being compelled to go to the fire to warm his bare feet, which were nearly frozen, and which the next day were so sore and swollen that boots could not be put on them. In this interim, amidst the confused noises of the tempest, voices seemed to be heard out in the darkness in the direction of the wreck, and soon after these weird and lamentable sounds had ceased, a third man was dragged out of the surf and

brought to the fire. This was the last man saved. He proved to be Angus Linklater, brother to the master of the Granada. He had left the wreck on a sort of raft made of lumber in company with a sailor named Duffy. The breakers presently split the raft in twain, the portion upon which Duffy remained being dashed to pieces and he drowned. The rescued man stated that his brother, the captain, had been swept off the wreck and lost before he, himself, left the vessel. The other two members of the crew who perished from exposure, as already stated, while the vessel was out at sea, were a sailor named Owen Conolly, and the steward, whose name is unknown. Of the seven men on board, three were saved.

It seems impossible, from the statements of the survivors, that any one should have been left upon the wreck; but much later, or about 9 o'clock, when the crowd upon the beach had greatly thinned, voices were heard calling from the sea during the lulls of the storm. At the edge of the surf a lot of men were scattered along straining their eyes into the dense gloom, but nothing could be seen but tumbling water and lumber. The mysterious calls appeared to be repeated, and wrought so upon sympathy that Captain Richard Ames, of the schooner Seabird, with some others, got Keeper Groh's permission to again take out the surf-boat. The attempt was made with a picked crew, but they soon returned to shore, having got into the fatal stream of lumber, as all the others had done before them, and not being able to make headway against it.

Nothing more remained to be done. The life-saving crew soon returned from the station and patrolled the beach until 8 o'clock the next morning, without further result from the wreck.

As is commonly the case when a miscellaneous assemblage is present at a scene of foiled effort, some censure was cast upon Keeper Groh and his crew for failing to rescue the sailors on the Granada. No blame, however, would seem to justly attach to the keeper and his men. Their daring courage and activity in endeavor were conceded on all hands. It was also allowed that the stream of flailing lumber poured from the miserable hulk, made her inaccessible by her lee, and that outside her lee the unabated breakers could not be stemmed by the surf-boat, as repeated trials by various parties showed. But it was alleged that the keeper might have gained the vessel under the shelter of the hulk before the wreckage issued from it, had he not spent some time, however short, in attempting to shoot a line on board. To this, which is the only point urged against his conduct of affairs, the answer can be forcibly made that he could not know nor suspect

that the hull was about to burst open like a rotten gourd flung against a wall, and that the advantage of getting a line to the wreck, which could be used to save the sailors by the breeches-buoy, or enable them to assist in working out the surf-boat, was so great, in the furiously unnavigable condition of the surf, that he was fully justified in endeavoring to secure it as a preliminary to other effort. It is evident, indeed, that the true cause of the loss of life on this occasion is referable strictly and solely to the wretched hull, which at once fell to pieces upon stranding, and used her cargo as weapons of offence against the sorties of the rescue and the efforts at escape of her crew.

WRECK OF THE SCHOONER EDWARD PARKE.

A singular wreck, involving the loss of two lives, occurred in perfectly clear weather at the entrance to Humboldt Bay, California, on October 28th, eleven days after the disaster at Muskegon. The schooner Edward Parke, of San Francisco, bound from San Pedro to Humboldt in ballast, but with thirty tons of grain, commanded by Captain James Erlandon, and having a crew of seven men and one passenger, was attempting, on the date above named and a little after 4 o'clock in the afternoon, to cross Humboldt bar without the aid of a tug, one being inside the bar at anchor at the time. The wind was fresh from the northwest, and there was a very heavy sea. Just as the schooner was on the bar, a mammoth wave struck her astern, and drove her ahead with such speed that, in nautical phrase, she lost the wind, whirled around broadside to the sea, and was instantly thrown down so that her masts and sails lay flat on the surface of the water. The momentum she had received from the sea sent her clear inside the bar, where she lay tossing on her side, the breakers pouring over her and the men on board helplessly holding on.

The tug inside the bar at once went to her assistance, and Keeper Frederick Star, of Life-boat Station No. 5, (Twelfth-District), who had seen the disaster from the station, not far distant, at once gathered a volunteer crew of seven men from a vessel near by, there being no regular crew at this station, and, after an ineffectual attempt to launch the heavy life-boat, resorted to the lighter surf-boat and got out into the neighborhood of the wreck in a few minutes. The tug had meanwhile taken off the captain and six of the crew, but the seventh, a seaman named Christianson, was missing, together with the passenger, Robert Williams, and neither of these men could be found. The tug took the surf-boat in tow and brought her near the wreck, to which her men then pulled as closely as they dared. Fearful breakers were

sweeping over the capsized vessel in the gathering darkness of evening, and to the ringing hails of the boat's crew there was no answer. It was clear that the two men were lost.

The captain and the men rescued from the schooner came to the station in the tug the next morning, and at their request the keeper went with them in the surf-boat to endeavor to get a hawser to the vessel, for the purpose of towing her into the harbor. It was low water at the time, and owing to the heavy swell that swept over the wreck, nothing could be accomplished, and effort was deferred until the following day, when she was got off.

WRECK OF THE SCHOONER FALMOUTH.

A life was lost in the month following, within the scope of the operations of the Service. On the 21st of November, the schooner Falmouth, of Oswego, New York, bound for that place from Toledo, Ohio, with a cargo of wheat, lost all but her head-sails in a north-northwest gale and heavy sea, and was taken by a tug off Buffalo to be towed into harbor. The tow-line parted, and the schooner drove violently head on to the Buffalo breakwater, staving in her bows and crushing her sides, so that she soon sank. This happened at about 4 o'clock in the morning, while there was thick darkness. The captain of the schooner, Thomas Murray, and his crew of five men contrived to escape from the foundering wreck by clambering up on to the breakwater, and thence descending to a tug lying upon the inside. The woman cook, however, who was in the cabin, was drowned. As the night was dark and the distance considerable, the patrol of Life-Saving Station No. 5, (Ninth District,) in that vicinity, was unable to see the disaster, and the crew only knew of it upon being notified, half an hour after it happened, by the captain of the tug, when the keeper, Thomas Williams, at once launched the life-boat and proceeded to the scene, arriving just after the vessel sank. All assistance possible under the circumstances was rendered, but without avail as regards the life of the unfortunate woman.

WRECK OF THE BARK JOSIE T. MARSHALL.

After this disaster, the field of life-saving operations was exempt from fatality until January 6, 1881, upon which date the bark Josie T. Marshall, 1,060 tons register, of Digby, Nova Scotia, James H. Parker, master, from Antwerp, Belgium, bound to New York, in ballast, stranded at about midnight on the bar of Gilgo Inlet, coast of Long Island, at a point about two and a quarter miles westerly from Life-Saving Station No. 27, Third District.

Her signal was discovered by Surfman Nelson Pearsall, at about 12.30 A. M. of the 7th instant, and he at once hurried forward to ascertain its meaning. Arriving at the point of the beach, he made out a large vessel aground on the bar, at the mouth of the inlet, and at once burned his patrol signal and then returned in haste to the station and gave the alarm.

Although the wind was moderate from west-northwest, the surf was heavy; and upon the report of Pearsall that he "thought she was close enough to use the gun," Keeper Frank E. Wicks decided to proceed to the scene with the breeches-buoy apparatus. The bark presented a large surface above the water, and this fact, no doubt, led Pearsall to suppose she was close in, the mistiness of the atmosphere helping to mislead him. The life-saving crew left the station at about 2 o'clock, but as the tide was full, and the beach encumbered with snow and ice, the apparatus did not reach the vicinity of the inlet until near 3.30 A. M. It was then found that the vessel was too far off to justify an attempt to send off the breeches-buoy, and Keeper Wicks ordered his men back to the station for the surf-boat. The tide was now falling, and on their way to the house they found a yawl-boat, and, further on, a bag of clothing, both of which they removed beyond reach of the surf. While proceeding to the inlet with the surf-boat, the body of a man was discovered, a few hundred yards east of the yawl-boat. An attempt at resuscitation was speedily made, but without avail, as the body was ice-cold and apparently quite dead.

The surf-boat arrived at the inlet at about 5.30 A. M., or two hours before sunrise. The tide was ebbing swiftly out of the inlet, carrying seaward immense cakes of ice, which rendered the passage of a boat to the vessel extremely hazardous; and as her appearance and position remained unchanged, it was deemed necessary to wait for daylight before launching the boat.

Meanwhile the people on board the bark had not been idle. Very soon after she stranded the men appear to have become partially demoralized, and determined to take to their boats. Two boats were safely lowered and manned—one, the launch, by five men, headed by the boatswain, a son of the captain, and the second, a smaller one, by three men. They pulled clear of the ship, and, watching their opportunity, managed to get beyond the line of the breakers seaward. The lowering of the third boat, on the off-shore side of the vessel, was not so successful; for just as it touched the water, with a seaman named Axel Emanuel Anderson, a Swede, in it, a heavy sea broke alongside, crushed the side of the boat, and then swept it away into the darkness, out of sight of

those on board; the mate shouting to Anderson to seize an oar and scull the boat around the bow of the bark to the inshore side, where it would be comparatively safe. The suddenness of the shock must have half-dazed the poor fellow. He shouted back, in reply to the mate, that the boat was nearly full of water, and, as it rapidly disappeared from view, he was seen seated on one of the thwarts pulling vigorously at an oar. The precise time of his death will never be known, but it is probable he was swept from the boat as it passed through the breakers to the shore. This theory is suggested by the fact that a rope placed in the boat before lowering was found in it afterwards when cast ashore, pointing to the probability that it had not been overturned. The other boats remained off the bar until daylight.

As soon as it was sufficiently light to see the way clear of the floating ice, the surf-boat was launched, and all those remaining on board the wreck, eight in number, were safely landed. While engaged in this work, the life-saving crew sighted the captain's son's boat, and signals were made to them to pull to the eastward of the inlet bar and then make for the shore. The other boat had gone seaward, and could only be seen at intervals well off shore, and the station crew, therefore, disposed themselves on the beach to receive the launch. The boatswain gallantly headed it in through the breakers, steering with an oar, surfman fashion, the crew of No. 27 assisting them to land in safety.

At about this time, within an hour after sunrise, the surf-boat of No. 28 arrived from across the inlet, and, being considered an abler boat than the four-oared boat of No. 27, it was dispatched, under the lead of Surfman William E. Birch, of No. 27, in search of the three men in the missing boat. Birch cruised off shore for sometime, and, failing to find the boat, returned. He states that he pulled off a distance of two or three miles.

Thirteen of the bark's crew were now safe on the beach, and they were conducted to the station and made comfortable, the captain leaving very soon afterward for Amityville, in company with Keeper Wicks, to communicate with his agents in New York, the keeper sending his preliminary report at the same time.

While matters were thus progressing at the beach, the three men, unconscious of the search made for them by the life-saving crew, had pulled to the eastward towards the inlet near Fire Island light-house, the tower, no doubt, serving as a mark for them to steer by. Upon approaching the inlet they were discovered by the men at No. 26, some of whom were, as yet, uninformed of the wreck, the others having gone

in search of a patrolman, who, failing to meet the patrol from No. 27, had continued on until he reached that station, and learned of the disaster in time to assist in the operations for the rescue of the shipwrecked crew. Upon returning to his post in the forenoon, he met his comrades in search of him. As the party neared their own station they noticed the signal on the flag-staff to the approaching boat, and it was at once conjectured that the men were those missing from the bark's crew. They quickened their steps, and, upon reaching the station, launched the surf-boat and proceeded to the assistance of the men. The yawl was soon reached, and, after transferring one of their number to it to act as steersman, it was piloted through the channel into smooth water and beached, the men being conducted to the station, where they remained until the following day, (January 8,) when they rejoined their shipmates at No. 27.

The survivors soon afterwards left for New York, and the body of the drowned man was turned over to the coroner and decently interred at Amityville.

The officer who investigated the circumstances of the wreck, concludes his report as follows:

"The life-saving men displayed commendable alacrity in moving to the rescue of the unfortunate crew. The position of the vessel on the inlet bar rendered operations with the breeches-buoy or life-car almost impossible, (the distance being so great,) while the floating masses of ice passing down the channel between the wreck and the shore made the safe passage of the surf-boat before daylight extremely doubtful. I am, therefore, led to believe that Keeper Wicks displayed good judgment in waiting for day to dawn before attempting to go off.

"The drowning of Anderson occurred before anything effectual could have been done by the life-saving crew, and his death appears to be involved in a repetition of the old story of a demoralized crew seeking safety in their own boats; whereas, if they had patiently waited until daylight all hands would have been taken off in safety.

"I therefore respectfully submit that the Life-Saving Service, as represented at Station No. 27, is free from blame; the men appearing to have done all in their power, under the peculiar circumstances of the case."

WRECK OF THE SCHOONER DANIEL GOOS.

The wreck next in order of time which involved loss of life within the scope of the Service, took place about five miles south-southwest of Life-Saving Station No. 4, (Eighth District,) coast of Texas, on the 26th of January. The vessel was the three-masted schooner Daniel Goos, of Boston, Massachusetts, bound from Galveston to Corpus Christi, Texas, under the command of Capt. T. W. Norman, with a crew of five men. The captain's wife and their infant boy, six months

old, were also on board. The schooner was laden with railroad-iron, too heavily, it appears, and with too much deck-load; her condition in these respects being undoubtedly the cause of her disaster. The formal investigation of the case shows that she cleared from Galveston at about 8 o'clock in the evening of January 25. By 10 o'clock, two hours later, she was found to be leaking, but with all hands at the pumps, she was kept free and continued on her way. At about 2 o'clock the next day, when some distance to the northward of the bar at Pass Caballo, it was found that the water was gaining on her, there being three feet in the hold, and the American flag was set union down in her port fore-rigging as a signal of distress to the schooner Sidbury, which was standing to the southward, the two vessels having undertaken the voyage in company. She was then about eight miles off shore, steering her course west by south under foresail, mainsail, and two jibs. Her load made her set very low in the water, and the waves frequently boarded her. There was a very heavy sea on, the wind was fresh from the northeast, and the air thick with drizzling rain. The Sidbury hove to upon seeing the signal of distress set by her consort, and when within speaking distance her master, who is understood to have been part owner of the Daniel Goos, directed the captain of that vessel to set his signal for a pilot and make for Indianola. In obedience to this direction the signal was set at the mizzen-truck of the distressed schooner for a pilot, who answered from shore by setting his range flags to enable the vessel to come in, the heavy sea making it impossible for him to go out to her. An effort was then made by the schooner to beat up to Pass Caballo, which failed, the strong current sweeping the vessel off; and Captain Norman, finding the water fast gaining, headed her for the beach in this sinking condition. The pilot, meanwhile, seeing the vessel change her course, and supposing that she had failed to fetch in, and was bearing for Aranzas, hauled down his range flags, quite unaware, like other spectators on the distant shore, that anything was the matter with her.

At 4 o'clock in the afternoon, she had got within about an eighth of a mile of the beach, with the seas rushing over her every moment, and all her people upon the starboard side of the top of the deck cabin, that being highest out of water, when she went down in two and a half fathoms, swinging around, head off shore. The captain, with his baby in his arms, and his wife following, endeavored, as the vessel was in the act of foundering, to gain the mizzen rigging, when an immense sea boarded the schooner aft, tearing his child from him, and sweeping them all overboard. Both the mother and the baby

immediately perished. The captain, struggling in the water, had his left leg broken a moment after, by a frightful blow from a skylight whirling by, and would have been lost, but was clutched by the mate, borne past on the top of the cabin, which the next sea had wrenched off the deck, helped to mount it, and both men landed a few minutes after in safety on the beach. Three others of the crew clung to the yawl as it was washed off the davits, and gained the land. The remaining man was last seen clinging to a piece of wreck, very near the beach, but he never reached it; he was drowned. Meanwhile, upon seeing the schooner heading for the beach, the master of the Sidbury had sent his mate and three men in a life-boat to take off the crew before the vessel should strike. The latter foundered just as they were nearing her, and seeing her men struggling in the surf, the boat's crew gave way and pulled in to their succor at full speed, and were at once capsized in the breakers. Fortunately, they all gained the shore.

The body of the little child was found upon the beach early the next morning, about ten miles from the station, by Mr. William Madden, and placed by him in a trunk, where it was come upon soon after by the station crew, patrolling the beach in search of bodies. The body of the mother and that of the seaman drowned do not appear ever to have come to land.

At the time of this occurrence, some blame was cast upon the life-saving crew of Station No. 4 for not having proceeded to the assistance of the wrecked vessel. The fact, established by a thorough investigation, is that the life-saving crew did not know, and had no means of knowing, that the vessel was even in danger until after the catastrophe. She was first seen from the station through a cloud of drizzling rain, standing to the southward under four lower sails, with nothing in her appearance to indicate anything wrong with her. Her flag was then set for a pilot, and seeing her afterward bear away to the westward, the keeper, like the pilot, supposed that she could not make the entrance, and was keeping off for Aransas. It will be remembered that she finally sank about 4 o'clock, three miles in a direct line from the station, and the distance, together with the obscuring rain, prevented her from being plainly seen from the station lookout. It was not until about half an hour after her foundering that something in her appearance created suspicion, and the keeper and crew at once ran down to a point upon the beach where they could see her more clearly, one of the crew being dispatched still further on horseback to ascertain her condition. Discovering that she was sunk, the keeper and crew ran back to the station to get out the

life-boat, when a messenger who lived in the neighborhood of the wreck galloped up with the news that the survivors of the ship's company were on their way to the shelter of his house. Under these circumstances, it is clear that the station crew are blameless of any connection with the disaster. In fact, the captain and mate of the wrecked vessel, the captain and mate of her consort, the *Sidbury*, and the people on shore who were personally cognizant of what took place, all testify that the life-saving crew were nowise at fault, and that they rendered every possible assistance to the survivors.

WRECK OF THE BARK AJACE.

The next wreck of the year involving fatality within the range of life-saving operations, was that of the Italian bark *Ajace*, which took place on Rockaway Shoals, Long Island, on March 4, 1881, and added thirteen deaths at one stroke to the twelve-month's record of mortality.

The circumstances appear to have been as follows:

The gale of the 3d and 4th of March last was the severest of the season, and wrought heavy damage to pier constructions and shipping on various parts of the coast of New York and New Jersey. At 3 o'clock in the afternoon of the 3d, there was a brisk east wind and a rising sea. By midnight the storm had fairly set in. By 2 o'clock there was a roaring gale, the sea had grown terrific, and, through an atmosphere of dense fog, the rain fell in torrents. At half-past 7 o'clock on the morning of the 4th, the gale had reached its height, and, in the judgment of the most experienced surfmen, was blowing at the rate of fifty miles an hour. It was not until near 11 o'clock that the fog lifted and the storm broke. In the meantime, the damage had been immense all along the coast. Many vessels that had sought a harbor in Raritan Bay were washed into the meadows, swamped or sunk, and at various points along shore wrecks were frequent. At Long Branch the ravage was considerable. In many places the bluff was cut away by the breakers. About a thousand feet of bulkhead were washed out, and a section of the outer end of the iron pier, about ten feet wide and twenty feet long, with an iron girder weighing twenty-five hundred pounds, was wrenched off, and despite its ponderous bulk carried up on to the beach. At Coney Island, there was savage havoc. For several years the tide had not been so high, and the furious water tore away the Plymouth Rock pier, broke down and demolished one side of the Hussey Hotel, swept off most of the Tilyon bathing-houses, left the Marine Railway station not much better than

a ruin, damaged the entire railroad track, and wrought mischief to the extent of many thousands of dollars.

At about 9 o'clock on the morning of the 4th, although the gale was still violent, the rain falling hard and thick, and the surf and sea tremendous, the storm had passed its height and was beginning to break, a fact evidenced by the shifting of the heavy fog, which at moments fell away, sometimes half a mile, sometimes even two miles, allowing a view of the ocean to those distances. In one of the farthest of these recessions of vapor, at the hour above named, the crew of Life-Saving Station No. 36, (Third District,) who were out on the beach at Rockaway, saw a bark standing directly toward the station, under close-reefed topsails, about two miles away. Her navigators appeared to suddenly discover her proximity to the shore, for she was abruptly hauled around to the southward and westward, and went pitching and tossing along the outer edge of Rockaway Shoals, which were on her lee. The flood-tide was then setting in to New York Bay, and the heave of the sea seemed to make the bark sag rapidly to leeward. Presently she reached the point of the shoals, and they suddenly saw her topmasts fall alongside, which showed that she had struck bottom. The life-saving crew instantly sprang for the surf-boat, and, as the raging breakers made a launch in front of the station impossible, they hauled the boat over to the bay in the rear of the beach, somewhat over half a mile distant, where the water was still, launched and rowed down through the inlet, hoping that there might be an opening out over the bar; but the sea was a stupendous mass of foam as far as the eye could reach, and the breakers spread across the bar in an incessant tumbling wall. As the ebbing of the tide, by abating the surf, might give them the opportunity they sought, the men remained on their oars at the mouth of the inlet until 2 o'clock in the afternoon watching the foggy offing. No effort, however, appeared to be demanded of them, for nothing could now be seen of the bark, and finally the men naturally supposed that, after striking, she had worked off the shoals and proceeded on her way.

They were mistaken, and a terrible catastrophe had happened. The bark they had seen was the *Ajace*, of Genoa, Italy, 566 tons register, Federico Morice, master, bound from Antwerp, Belgium, for New York, laden with old iron and empty kerosene barrels. She had fourteen men on board, including the captain, of whom only one was destined to survive her destruction. It appears from the story of this man, Pietro Sala, an Austrian, that at the time the bark was seen by the crew of No. 36, she was driving in the northeast gale, all sign of

land being hidden by the fog. Without any premonition, she suddenly struck the shoal on her starboard side with a shock so dreadful as to demolish her steering-gear. The waves at once burst over her and began to rend her to pieces. For about three-quarters of an hour she resisted the process of demolition. Her crew meanwhile gathered at the stern, around the deck-cabin. They had fallen almost immediately into utter despair. The survivor, who seemed to have preserved his coolness better than the others, states that they stood loudly praying to the Madonna, a picture of whom one of them, the steward, held in his hands. In the midst of the tumult of supplications, Sala saw the carpenter cutting his throat with a knife, and immediately after the steward and two others also drew their knives and slashed their necks savagely. The four men did not die or fall from their wounds, but stood on the convulsed deck loudly raving out their prayers, with the blood spouting from the gashes. A few minutes later Sala had gone into the cabin, when the hull lifted and fell with a tremendous shock, and the ship tumbled to pieces. He found himself among fragments of planking and timber, and sprang to the air-hole of the cabin to climb out upon the roof; an effort in which he succeeded. The cabin had been torn from the hull with the after part of the spar-deck, to which it had been attached, and was floating, with a few feet of the mizzen-mast and top-mast sticking up through the wreck, the lower part of the mast having slipped down through. The ship had entirely disappeared. In the dense enclosure of fog, through which streamed a mighty wind, nothing could be seen from the almost submerged raft on which the sailor lay clinging, but some ten feet's equidistance of foaming green swells, strown all over with a pell-mell of tumbling barrels and shattered planks and beams. Presently, amidst this confusion, Sala saw the third officer and two men with bloody throats rise from the water alongside his square of wreck, clutching it in a frantic effort to gain its summit. The third officer, a young Italian, and one of the men fell backward in a few minutes, unable to maintain their hold, and were engulfed. The other, who was the carpenter, a robust young man, struggled longer, and even got within reach of Sala, who seized him and tried to haul him up, but the strength of the bleeding wretch seemed to suddenly give way, and he hung inertly on the edge of the roof until his weight dragged him from the hands that held him, and he fell away and went down. Sala remained alone upon the cabin top, drifting he knew not whither.

In the meantime the hurricane was raging in its dying fury along the shore of Coney Island, and all the beach resounded with the

crash and shock of ponderous breakers, flung down incessantly with a noise like that of great cliffs falling. The frail bridge which connected the Nereid boat-house in Sheepshead Bay with the land had been swept away, and the house itself, standing on a pile foundation, was in such danger, under the buffeting wind and flooding sea, that Keeper Charles Bebensee, of Life-Saving Station No. 37, (Coney Island,) went out with his crew in the surf-boat, and brought ashore from the building a man and a woman, who were there in great peril. Between 10 and 11 o'clock in the forenoon the fog began to roll back over the waste of wild and crested water, and Keeper Bebensee, who was on the beach, saw a dark mass, which he at first took for a portion of an old dock or wharf, rising and falling aslant upon the foaming swells, every other moment dropping from sight into the trough of the seas. He brought his marine-glass to bear upon it, and made out the after house or cabin of a vessel, and a stump of a mast and top-mast sticking up through it, together with a man clinging to the top of the house, feebly waving his cap. It was the survivor of the *Ajace*. The surf-boat was at once launched by Keeper Bebensee and his crew, and amidst roaring cheers from the assemblage on the beach, several hundred persons, mostly workmen on the neighboring hotels, having gathered, a splendid struggle with the sea was entered upon. It seemed impossible that any boat could live, still less make headway, against the enormous bursts of surf that barred the way, and it was literally inch by inch that the passage through the breakers was effected. All the powers of the agile surf-boat had to be brought into their wariest exercise by the life-saving crew to prevent an overturn, while it was only by the sternest toil of the oarsmen that any advance could be made against the heavy inshore rush of the combers. Each moment of the contest was big with peril; and when the breakers were at length passed, and the boat was rising and falling like a chip on the vast toppling swells of the outer sea, this peril seemed so much increased that the crowd on shore, who had long maintained their cheers of enthusiasm and cries of encouragement, gradually grew still and watched mutely, with pale faces, the gallant crew, as they strained their oars with desperate courage against the surge, steadily aiming for the fragment of the wreck on which lay the half inanimate seaman. Although this waif was only about a mile and a half from land when first discerned, the perils and difficulties of the passage were so great that it took a full hour for the boat to come within hailing distance. It was seen upon approach that the cabin, upon which the sailor lay, was attached to the deck and deck-beams, and it required skilful

manœuvring to keep the surf-boat from being struck by these projections as they rose from their submersion on the swells. By combined management and daring, the keeper and his men shot up alongside, and, as it were, snatched off the benumbed and exhausted seaman, whose joy at his deliverance was almost delirious. The boat was then headed around for her perilous voyage back to the beach, where, after an hour's struggle, it arrived in safety, amidst the wildest cheering from the people who had witnessed this laborious and gallant rescue. With the assistance of the eager crowd, the life-saving crew lifted and carried to the station the now almost insensible body of the only man saved from the demolished vessel. Restoratives being administered, and every necessary attention being given, he soon recovered from his terrible experience, and took dinner with the men; after which, as well as his broken English would allow, he told his story, which was subsequently obtained in a clearer form in a deposition taken before the Italian consul. The material facts have been recited here.

It is manifest that this was a case of shipwreck occurring almost beyond the province of the Life-Saving Service, and that no human aid could, under the circumstances, have reached any of the unfortunate crew, except the single man providentially drifted near enough to the beach to become the subject of a daring and dangerous effort to save him—an effort which happily succeeded.

WRECK OF THE A. B. GOODMAN.

The last fatal wreck of the year, within life-saving limits, was that of the schooner A. B. Goodman, of Seaford, Delaware, bound from Baltimore, Maryland, to New Berne, North Carolina, with a cargo of guano, and having on board five men, including the captain. The wreck took place on April 4, 1881, at about half-past 6 o'clock in the evening, the vessel striking during a northwest gale, upon the outer edge of the inner shoal off Cape Hatteras, and being at once boarded by the sea, there was only time in the overwhelming rush of waters for the men to fly to the rigging; in the effort to gain which, one of them, Louis Beck, was swept overboard, and drowned.

The point at which the disaster took place was about three miles from shore, and six miles east of Life-Saving Station No. 22, Sixth District, North Carolina. This station is built upon the rise of an eminence known as Creed's Hill, and its north patrol reaches for six miles around the edge of the dreaded cape. Looking from the station, the view toward the cape presents to the eye the aspect of an immense desert of sand, strangely and fantastically sprinkled all over

with gnarled and twisted trunks of black, dead trees. In winter, or during the inclement season, nothing more dismal could well be imagined than this Sahara, with its thin remnant of a former vegetation killed by the salt tides. The level is only diversified by occasional mounds of sand, and, here and there, pools of sea-water, left by some overflow in the hollows. Behind, or to the west, a forest of pines and live oaks, dense and almost impenetrable, stretches away northward to Hatteras light-house. All around the cape for two miles, in storms at flood-tides, a heavy sea swings across the low and somewhat shelving beach, in among its bordering hummocks, and back again with violence, ploughing gullies as it runs. The surf makes the sand a quag, quicksands form in the gullies, and the solitary patrolman, making his way along the top of the beach in the darkness by the dim light of his lantern, faces the chances of destruction, being liable to be swept off his feet by the rush or reflux of the surf, sucked down in the gullies by the quicksands, or struck by some fragment of wreck-stuff shot forth by the breakers. Yet his dreadful watch is made necessary by the presence off shore of a nest of shoals, range after range, which are the terror of navigators. The first, a mile wide, stretches from the point of the cape between two and three miles seaward, covered with a depth of only seven feet of water, which in storms are miles of raging foam. This formation is, in fact, a submarine prolongation of the cape. Beyond it, separated by half a mile of channel, is another formidable shoal, the Diamond, two miles long; and beyond this again, another range of shallows, the outer shoals. For six or seven miles out from shore, these terrible bottoms spread their ambush for shipping, and hence the watch in this locality for vessels in danger requires to be particularly kept around the point of the cape, no matter at what toil or hazard to the sentinel. On the evening of the disaster to the A. B. Goodman, the patrolman, pursuing his journey through the floods sheeting across his way, in the midst of a squall of rain and snow, saw far off, despite the distance and thick weather, the dim outlines of a vessel, and knew by this indication that there was some sort of a craft in the neighborhood of the shoals, though exactly where, or whether in danger, it was impossible to determine. The fact was reported by 10 o'clock to the keeper, B. B. Daily, who was up at dawn, and saw the schooner evidently aground, and, in fact, sunk, on the outer edge of the first range of shoals. He at once ordered out the surf-boat to the rescue.

The storm of the evening before had been brief, and the wind, blowing freshly from the north-northwest, had beaten down the surf upon the

beach. The sea, therefore, was smooth for launching, but beyond, it was very heavy. Heaps of rough water incessantly tumbling, and thickets of bursting foam, filled the offing, and the current running one way, while the wind was the other, made an ugly cross-sea. The little group of surfmen about to enter upon this stormy field had still a more serious peril before them than the chance of being overswept or capsized by the colliding waters. Their boat being light and flat-bottomed, the breeze, which was strong, and off shore, might make return impossible, and force them out to sea, where they would almost certainly be lost. Nevertheless, as the stout keeper naively said in his testimony, "they knew it was their duty to do what they could, so they did it." The group was composed of the keeper, B. B. Daily, and of Surfmen Thomas J. Fulcher, Damon M. Gray, Erasmus H. Rolinson, Benjamin F. Whidbee, Christopher B. Farrow, and John B. Whidbee, the last-named a substitute for a member of the crew absent on leave. One of the crew, Z. Basnett, was left in charge of the station. It is certain that none of the others counted upon returning alive. The disposition of their slender effects was a part of the charge given to Surfman Basnett by his companions in case they perished. Having thus made each his simple will, as men facing the issues of life and death, they entered the boat and gave way.

For a long way out the surf-boat kept the lee of the cape, where the surf, flattened by the off-shore wind, was comparatively smooth. Once beyond the point of the cape, they entered the rough water, and their gravest peril was encountered when, rounding the end of the inner shoal, they gained the slue or channel, lying between the inner and Diamond Shoals, down which they had to row for perhaps a mile to the locality of the wreck. In this channel, all there was of the cross-sea was in full career, and the greatest circumspection was necessary in the management of the boat. Finally, at about half-past 7 o'clock, two hours after starting, the life-saving crew arrived near the wrecked schooner.

She was completely sunk, her hull all under. Only her two masts stuck up from the swirling water, and perched up in the main cross-trees, wrapped in the main-gaff topsail, were huddled the four wretched survivors of her crew of five. After three or four daring and dangerous attempts to get near, baffled by the strong current and the vast commotion of the sea above the sunken hull, Keeper Daily hailed the wretched group up on the mast, telling them to keep good heart and that they would be rescued as soon as possible; then dropped astern about three hundred yards and let go the anchor, having decided that it was necessary to a successful effort to wait. The

efforts already made had consumed much time, and the boat anchored within an hour of noon. An hour afterward, the flood-tide somewhat smoothed the break of the sea over the sunken hull, and the life-saving crew got up their anchor, worked up to the windward of the vessel, where they again moored, and then slowly and cautiously, by slackening on the anchor-line, let the boat veer down toward the main-mast of the wreck. Once within range, the keeper hove his boat-hook, by a line attached, into the rigging and held on. The fateful moment had arrived, the boat was slacked in, so that the keeper could get hold of the first man that came down from aloft, and the first mate slowly descended the rigging. As he came within reach, the keeper, standing in the stern of the boat, seized him, but the man, terrified at the frightful rush and roar of waters beneath him, and doubtless unmanned by cold and hunger, and the many hours of horror he had undergone, broke from the keeper's hold and clambered up the rigging again. The boat was hauled back a little, and the keeper spoke up cheerily, encouraging the men in the cross-trees, and declaring they would all be saved. Presently, the line was again slacked, the boat veered down, and the mate once more descended. His fright again seized him, but the keeper, forewarned, got a mighty hold, and by sheer force, jerked him out of the rigging and landed him in the boat. The captain then came down, was seized by the keeper the moment he came within reach, and torn from the shrouds. The other two men, emboldened by this energetic succession of deliverance, slid down the rigging and jumped into the boat without aid. Quickly the keeper then let slack his warp, recovered his boat-hook, and gave the word to haul back to the anchor. Three of the rescued men were seated on the thwarts, the captain in the stern-sheets, the anchor was got up, and the hard work of the return began.

By this time the wind had changed to west-southwest, blowing freshly, and so roughening the water on the south side of the shoals—which was the side on which the approach to the wreck had been made—that the keeper decided it would be safer to attempt the landing on the north side, or near Hatteras light-house. The men gave way with a will, wind and sea against them. The light-keepers watching them as they toiled upon the running swells, had some time before made up their minds that they would not be able to get to land that night, if they ever did. But the strenuous effort conquered, and somewhere about 2 o'clock the life-saving crew, dripping and exhausted, gained the beach, near the light-house tower, with the sailors they had saved.

These sailors were at once taken up to the light-house by the keepers, where a meal was set before them. No food had passed their lips since about 11 o'clock of the day previous, and they were nearly perished with cold and hunger. Their rescuers were in little better case, having eaten nothing since 4 o'clock the day before, a period of about twenty-two hours. Nevertheless, without waiting to share in the repast of the sailors, they set off to their own quarters, a tramp by the shortest cut across the cape of nearly five miles. They reached the station greatly exhausted. All of them had been out on the tempestuous patrol for some part of the night before, some of them from 2 o'clock in the morning until dawn. From this night of broken rest they had passed abruptly to eight hours of tragic labor under the shadow of death upon the sea. Their valiant rescue achieved, there still remained this long trudge, which left them finally at the station, a group of haggard, worn-out men.

Descant is unnecessary upon the feat they performed in saving the four sailors. Such deeds attest themselves; and there are few scenes in human life more deeply affecting than the spectacle of this crew of poor men making their wills upon the beach, and leaving their small store of effects in charge of a comrade for the benefit of their families before entering upon a struggle of deadly peril for the lives of four unhappy creatures, who, in their dying misery, must have thought themselves abandoned forever by men, if not beyond all human aid. To have done this—to have quietly resigned the certainties for the chances of existence in such a case and under such circumstances—was more than noble; and there are no hearts, however cold, that will not feel that in this action the unassuming surfmen of an obscure coast reached again, as many low-down and almost nameless men have often reached, the full stature of heroism.

RECAPITULATION.

It will be seen by the foregoing narratives that the lives lost during the year which can be properly borne upon the death-lists of the Service were just twenty-four in number. Of the persons involved, one was the woman who perished in the cross-trees of the Hartzell. Excluding from the count the couple who died at sea, two were sailors drowned in endeavoring to swim ashore from the disintegrating Granada, in the midst of the desperate and baffled sallies made by the life-saving crew for their rescue. Two others were the seaman and passenger lost instantly by the sudden capsizing of the Edward Parke, in clear weather, while she was entering her harbor. Another was the

woman instantaneously drowned by the foundering of the Falmouth when dashed against the Buffalo breakwater. One was the sailor lost alongside of the Josie T. Marshall, by the boat in which he was attempting to cast off being stove against the hull. Three more were the seaman and the mother and child swept overboard from the Daniel Goos as the vessel abruptly went down. Thirteen were the sailors drowned almost immediately, as related, by the breaking up of the Ajace on the shoals off Rockaway. The final loss of life was that of the sailor carried overboard by the sea from the A. B. Goodman as the vessel foundered. The only case where the loss of life is connected with the failure of operations for rescue on the part of the life-saving crews is that of the Granada, where the effort at succor, although obstinate and powerful, was foiled by the wreckage spouting from the burst hull and by the resistless sea. The remainder are cases of mortality which were beyond human intervention or control, all but one of them belonging to the category of sudden death by the accidents of shipwreck. This result, where so many lives were imperilled, cannot but be considered highly creditable to the professional ability, courage, and fidelity of the men at the stations.

LOSS OF SUPERINTENDENT JOSEPH SAWYER AND KEEPER GEORGE FEABEN.

To the death-record of the year, there still remains to be made a sorrowful addition—the loss by drowning of the Superintendent of the Tenth Life-Saving District, Capt. Joseph Sawyer, and of Capt. George Feaben, the keeper of Life-Saving Station No. 8, in that district, while engaged in the prosecution of duty. The melancholy circumstance was mentioned in a note in the last annual report, added while in press, and the following are the details:

It is part of the duty of a superintendent to make the round of his district once a quarter, from station to station, for the purpose of paying the crews and examining the general condition of the Service, and Captain Sawyer was engaged upon this circuit when he met his death.

At half-past seven, on the morning of October 20th, he set sail from Station No. 8, at Forty-mile Point, Lake Huron, in the station supply-boat, with Keeper Feaben and Surfman Joseph Valentine, who had undertaken to sail him over to Rogers City, a distance of sixteen miles, his probable intention being to take the steamer from the latter place for the first Lake Superior station, some hundred and fifty miles further on. The supply-boat, which was named the Arrow, was a fish-boat, clinker-built, with a centre-board, thirty-two feet keel, and nine feet beam. She had two masts; her foremast being larger and

longer than the other, as is common with such boats on the lakes. Working to the south, against the wind, her managers, when within a mile and a half of Rogers City, found it necessary to tack, in order to reach the place of destination, the wind having shifted to south-south-west, and considerably freshened, coming and going in squalls. The weather had been rainy in the morning, but by this time was clearing, the sun at times breaking through the clouds. Tacking again, when about half a mile from shore, Surfman Valentine secured the fore-sheet and started to trim the ballast, Keeper Feaben being at the helm, with Captain Sawyer sitting beside him, when suddenly a squall struck the boat and listed her over on her port side so far that the water began to pour into her. Surfman Valentine sprang to cast off the fore-sheet, but the boat filled so quickly that there was not time to unfasten the rope, and all on board leaped on to her starboard side and tried to gain her foremast, but found themselves in the water, the boat having sunk from under them.

The disaster was the work, so to speak, of an instant—horribly unexpected and sudden, as catastrophes often are. In a few seconds, the three struggling men saw the foremast of the boat, with its gaff, emerge three or four feet above the surface of the lake, the boat having straightened up as she descended, owing to the resistance her sails offered to the water, so that when she reached bottom, which was not far down, she resumed an upright position, which allowed so much of her mast to appear. The three men at once swam for the mast. Captain Sawyer clambered up and sat on the block at the mast-head, with one arm around the spar and his feet resting on the gaff, while the other two men held on to the spar and gaff below him. Straight before them, a little less than half a mile away, was a sandy beach, backed at a little distance by a barrier of low scrub-pine trees. To their left was Rogers City, its dock projecting upon the lake, with a saw-mill at its shore end; and it was maddening to see men working monotonously at the mill and upon the dock, not far from them, and yet taking no heed of their dreadful situation. It is not understood why they were not observed, or, if observed, why a movement was not made for their rescue; but it is certain that, although they swung their hats and made every possible signal for assistance, the figures at the mill and on the dock toiled away stolidly, without any apparent notice, like so many automata or animated statues. At length, Captain Sawyer declared that they must swim for shore or perish. Surfman Valentine stripped off his overcoat, undercoat, and boots, and struck out for the land, but before he got away fifty yards was so benumbed

by the icy water that he could not open his hands, and was obliged to make his way back to the mast, ten yards from which he met Keeper Feaben. His hands were so frozen that he could not lay hold of anything, but could only put his arm around the gaff, (which was just on top of the water,) and hang on. Presently he saw Keeper Feaben return to the spar. Getting his blood into circulation by vigorous rubbing, Surfman Valentine once more swam away for the shore, but was obliged to return before he had made twenty yards. Keeper Feaben then divested himself of all his clothing, except his shirt and cap, and struck out again, but failed in a few minutes, and came back to the mast without saying a word. Captain Sawyer then proposed to cut off the gaff and endeavor to swim to land by its support; but Keeper Feaben said he could no longer retain his hold upon the mast without the aid of the gaff, and Captain Sawyer then announced his determination to make the effort without assistance. In a few minutes he stripped himself entirely naked, entered the water, and swam away boldly. He did not go far, however. The bitter cold of the water soon overcame him, and he silently turned and swam toward the spar. When within about fifty feet of it, his comrades in misery saw him slowly sink in a torpor like marble, and they never saw him again. He had drowned before their eyes.

A moment after this, Surfman Valentine thought of renewing the signalling for assistance with a white shirt which was on the peak of the gaff, and asked Keeper Feaben, who was nearest it, to hand it to him. Obtaining no response, he got up on the gaff, and with a waist-sash which he had on, lashed his left wrist to the peak halyards. While doing this, he heard Keeper Feaben, who was clinging by the left arm to the gaff behind him, paddling in the water with his right, and saying that the boat was drifting toward shore. Without turning, the surfman asked him if this could be so, (it was, of course, an illusion,) and began to draw toward him some clothing within reach and wrap it about him. He had just got a blanket around him, when the gaff upon which he was perched seemed to lift a little. He looked around. Keeper Feaben was gone.

Left alone upon the spar, the perishing survivor could only search the shore for assistance, with slowly glazing eyes. The figures at the mill and on the dock continued their stolid motions, without observing him. Presently, he heard the mill-whistle blow, and for a while thought it an alarm, and, with quickened expectation, looked for the signs of coming rescue. No help was set on foot, however, and he afterward learned that the whistle was only sounded to denote the

arrival of noon. In a little while he lost all hope of aid from Rogers City, and even averted his eyes from that direction. He had gazed up the beach a long time, when he happened to turn his head again toward the town, and was electrified to see a small boat, with two sails, bearing down upon him. He arose upon the spar and screamed with all his might. No answer was returned, but the boat silently continued to sail for him. It was plain that the disaster had been recognized at last, and that his deliverance was at hand. At length, the agonized interim was passed; the boat reached him, his lashings were cut, and he was taken on board. It was now 1 o'clock, and he had been over two hours and a half between life and death on the wreck.

The men who came to the rescue were John B. Raymond, Charles Perkins, Frank Platz, and Levi La Londe, all residents of Rogers City. As the beach was nearer than the pier, and the rescued man was so stricken with cold that he could barely move, they sailed straight for the sands, which they reached in a few minutes, landed, and instantly kindled a fire, before which they rubbed the almost inanimate survivor until warmth and life were fully restored. As soon as he was brought to, he got a couple of his saviors to go to the station, and the other two to return to the sunken boat in quest of the bodies. No trace of them could, however, be found, and all that was recovered from the scene of fatality were a few articles of clothing entangled in the halliards or floating in the water, so that they could be fished out with a boat-hook or an oar.

The body of Keeper Feaben was found on the 12th of the following November, or twenty-three days after the disaster, seven miles north of the place where the boat went down. That of Captain Sawyer never came to shore, and the incessant efforts for its recovery, which were continued for weeks after the dreadful event, were unrewarded.

To the Life-Saving Service the loss of these brave and faithful officers was one of the saddest of calamities. Of the little group of district superintendents who guard the interests of the Service, and each of whom, in relation to the corps of keepers and their crews, is as the head of a brigade, Captain Sawyer was the second who laid down his life in the discharge of his duty. Henceforth, among these, his co-workers, will be missed the man of noble presence, with his fine oval head, clear features, and jet-black eyes, whose heart was in his work beyond all measure, and who found in that work, because of its humanity, a motive which roused to their fullest his chivalrous intelligence and energy. Sadder than the deepest regret which even the loss

of such a man can cause, is the knowledge that his death bereft of a father five little children, the eldest only ten years old, the youngest an infant of eight months, who the March before had lost their mother.

He was born at Ogdensburgh, New York, in 1836, and was forty-four years old when he died. In early manhood he was a lake sailor. During the late war he entered the volunteer Navy as an ensign, and was one of those who barely escaped with their lives from one of the burning vessels of the Mississippi squadron, under the fire of the rebel batteries, in an engagement near Johnsonville, Tennessee. After this affair, Ensign Sawyer was promoted master, and continued in the Navy until the close of the war. He then went into business at Detroit. In 1869 he married. A lumbering enterprise in which he had engaged failed, and years of honorable privation and struggle followed. His mind ran on life-saving during these years, spurred by the frequent disasters and loss of life on the lakes, and he became the inventor of a detachable floating apparatus, intended for use on shipboard as a means of rescue, which is said to have had considerable merit, although lack of capital prevented its being brought into use. In 1876 he entered the Life-Saving Service as superintendent of its Tenth District, and although the compensation was, as it continues to be, miserably small, and altogether below what a man of his capacities and charged with his duties should have received, the aims and nature of the Service inspired him with an enthusiasm so cordial as to balance in his mind the slenderness of the pay, and kindled in him the resolution to make the province committed to his charge so rich in helpfulness to seafarers that its administration should one day be recognized at its true value and the trust be made worth holding. His proud belief in the future of the Life-Saving Service was a matter of common report. "It will be the banner Service of this country yet," was his constant declaration to his friends. In this spirit he continually studied the improvement of his district, and labored to keep its utility up to the highest mark. The efficient work done, and the many lives saved under his administration, bear testimony at once to his ability and his zeal. It is enough to say in his favor that the officers in charge of the Service at large were satisfied with him, and more than satisfied. With the keepers of his district and their men he was no less valued. They found themselves less his subordinates in office than his associates in a noble work, and sustained and encouraged in their duties by a friendliness almost brotherly. His sympathy with them was intimate and ardent. At the time of the Point aux Barques disaster he gave aid from his own narrow means to the families of the brave men drowned, and at once

set on foot and urged with all his vigor in Detroit a movement for their pecuniary relief. The action was simply characteristic of one to whom all weakness, all misfortune, constantly appealed.

In the spring previous to the autumn which proved fatal to him, he suffered, as already stated, the loss of his wife, to whom he was tenderly attached, and it was with a heart still sore from this bereavement that he met his fate. It can only be hoped that the tragic close of his life, already so saddened, was not embittered by the thought of the five little motherless children he was leaving, but that the final moment had for him some supreme consolation, such as perhaps death alone can bring.

Of Keeper George Feaben, nothing is known but good. He was poor, depending upon his pay for support, and left a wife, but no children. His personal character was without blame, and he was one of the best keepers in the district. During the time he had charge of the station, he and his crew distinguished themselves by the great amount of labor they performed in clearing away timber and making roads around their post in the interest of prompt and efficient life-saving operations. He himself was a hard worker, always taking the lead in these magnanimous exertions. He rests now from his labors, and his work is in other hands.

LOSS OF MEMBERS OF THE PEAKÉD HILL BAR LIFE-SAVING CREW.

Still another fatal disaster belongs to the death annals of the year. A foot-note in the report of 1880, supplied while the sheets were in press, briefly related the loss of Capt. David H. Atkins, the keeper of Station No. 7, Second District, Peakéd Hill Bar, Cape Cod, and of Elisha M. Taylor and Stephen F. Mayo, two members of his crew, while engaged in the labors of rescue. The event belongs by date to the annals of the present year, and the circumstances were, in detail, as follows:

It appears that about 4 o'clock in the morning of November 30th, the sloop C. E. Trumbull, of Rockport, Massachusetts, bound for that place from New Bedford, with about twenty tons of coal for ballast, and having six men on board, including a pilot and the captain, mistayed from the loss of her head-sails in the violent northwest wind then prevailing, and stranded in the first flood of the tide on the outer bar, in the neighborhood of the Peakéd Hill Bar Station. The weather was clear at the time, but the sea was rough, and breaking heavily on the bar. Patrolmen Samuel O. Fisher and Charles P. Kelley had the watch of the beach from 4 o'clock until sunrise, and were preparing to go out at the time. Going to the door, Kelley heard

the slatting of sails and rigging and saw the outlines of a vessel and her lights to the eastward. Starting out immediately after, both men beheld the sloop aground about two hundred yards to the eastward of the station and some four hundred yards from shore. Her stern was toward them, her bows being headed about northeast. Patrolman Fisher sprang back to the station with the alarm, while Kelley ran down the beach and burned his red Coston light as a signal to the vessel, then hurried to the station, where he found all hands aroused and actively preparing for the rescue. Keeper Atkins was one of the first ready, and hastened out to look at the surf, which was comparatively smooth on shore, though rough on the bar. Returning to the station he ordered the men to run out the boat, which was at once done. It is the peculiarity of much of the beach on Cape Cod that it is overhung by a high scooped embankment, ranging from twenty to a hundred feet in altitude; and it was along the summit of this species of bluff that the crew dragged the boat on its carriage for about two hundred and fifty yards, or until they were abreast of the vessel. They then dismounted the boat and scrambled with it down the bank, which was twenty-five feet high at this point, and too steep for wheels. As they reached the edge of the surf the sloop got afloat and drifted eastward along the bar about a third of a mile, when she again stuck fast. The keeper and his men picked up their boat and followed her until she grounded.

Besides the keeper, Captain David H. Atkins, the force consisted of Elisha M. Taylor, Stephen F. Mayo, John L. Cole, Isaiah Young, Charles P. Kelley, and Samuel O. Fisher. Of these, Surfman Cole was left on shore, charged with the duty of keeping the lanterns burning. As soon as this charge had been given him the launch was made.

What took place afterward can, perhaps, be best given in the narratives of the principal actors in the tragedy. The fullest account is presented by Surfman Isaiah Young, as follows:

"When we launched, the vessel was still some to the eastward. We went off in this manner to take advantage of the tide that was running to the eastward between the bar and the shore. It was low tide. The sea was smooth on the shore, but on the bar, where the vessel lay, it was rough enough to be dangerous. I pulled the starboard bow oar, double-banked, with Stephen F. Mayo. Taylor pulled the harpooner's oar, (bow.) The vessel headed northeast. Her main sail stood full, and had in two reefs, with sheet half-way out, and she was rolling the boom in the water to the slings. We went up under her stern, a little out on her lee quarter, and threw a line, which the people on board made fast, I think, to the main-sheet bits. We hauled up from the boat until the bow lapped on to her quarter. Keeper Atkins called to them to jump in. They threw in a jacket, then a clothes-bag. At-

kins told them, 'We are not here for your baggage; get in yourselves.' I was holding the boat clear of the vessel with a boat-hook, and four men came into the boat with a rush. One came on to me, and the boat-hook broke or twisted off in its socket, and we swung in under the counter. Keeper Atkins called to the men on board, 'Cast off.' They did not, and he said, 'Cut,' and they let us go. We landed four persons. This trip could not have consumed more than fifteen minutes. The second time we went off we approached not as much on a fore-and-aft line with her as at first, but came up on her quarter more athwart-ships. As we got quite near a sea swept us back, and we pulled up again. Keeper Atkins called, 'Cut the main sheet,' but it was not done by the people on board the vessel. When we pulled up again, after being thrown back, Taylor stood in the bow with the line ready to heave. I cautioned Keeper Atkins to have a care for the boom. He said, 'Be ready with the boat-hook; I will look out for the boom.' I was just taking up the hook when a sea came around the stern, threw the stern of the boat more towards the boom as the vessel rolled to leeward, and the boom went into the water. I saw both Kelley and Keeper Atkins dodge, when the boom came down, as it came near them; but I am very positive it did not strike the boat with any force, if at all. As the vessel rolled to windward and the boom rose, it caught under the cork belt near the stroke rowlock and threw us over, bottom up. The gunwale came across my back, and I got a blow in the side. I crawled up on the boat by means of the cork float around it. When on the boat I saw Taylor throw his arm across the shoulder of the rudder and a sea wash him off. All got up on the boat. It went to the westward, with the flood running in that direction on the outside of the bar, and would not throw across into the smooth water inside. I asked Mayo for a chew of tobacco. He took a piece from his pocket and passed it to me. I bit off a piece and put the remainder in my pocket. We rolled the boat over, right side up, and I was the first to get into her. Others got in; I am not positive how many. She did not keep right side up more than two minutes, when a sea rolled us over again. We got on again, and were washed off two or three times before I struck out for the shore. I asked Mayo to strike out with me, as I knew him to be an excellent swimmer; but he said we could not hold out to reach the shore, and he would stay by the boat. Keeper Atkins was holding by the boat. Kelley had already struck out. I heard Taylor groaning near me as I started, but did not see him. I headed a little down the shore, so as to swim before the sea, thinking it would heave me along faster. I turned on my back three times and rested. I could not kick my boots off. I kept on my mittens and sou'wester. As I swam I heard the morning train going across the east harbor dike, and at one time I appeared to see the captain of the schooner 'Powow,' who was lost near Station No. 9, in January, 1878. I seemed to see him plainly, and altered my course to swim by him. I had prepared his body for burial after it was picked up. I think that about this time I must have been growing very weak. I saw a gap in the beach, which must have been Clara Bell Hollow, two miles from Station No. 7. When about three seas from the shore my sight began to fail, and soon I could see nothing; but I kept swimming. I felt myself whirled over in the undertow, and knew I was in the swash of the shore. When my hands struck the sand I held on all I could, and crawled till I no longer felt the surf run up

around me, and lay down. I could not recover my feet. I recollect Surfman Cole saying, 'For God's sake, Isaiah, is this you?' and of his taking me up. I knew nothing more until I found myself in the station, after being resuscitated. I should think that I remained by the boat half an hour before I struck out. The cork belt was all that enabled me to reach the shore. The cork belts on the boat are a good thing, and should be kept on. They made us a footing as we clung to the boat. They held her from rolling over as we climbed in, after we righted her full of water. I think if the sea had thrown us over the bar into smooth water, their buoyancy would have made it possible to have bailed her out. I know that the stern-post was not torn out by the boom when we fouled with it, as I once climbed on the boat by getting my foot on the steering-oar, which was still in the strap."

Another of the three survivors, Surfman Charles B. Kelley, gives the following account of the fatality:

"I pulled the stroke-oar. We got fast to the vessel by throwing our bow line, that was taken on the lee or starboard quarter by the people on the vessel. We hauled up on the lee quarter and four men got in at once. We were thrown under the counter by the sea and narrowly escaped being stove. The two remaining men, when called, wanted to stop for their clothes and would not get in. When we went under the counter, Keeper Atkins told them to cast us off. They did so, and we started ashore. One of the passengers said he wished he was back on the vessel with those left behind. Keeper Atkins told him he could go back when he had landed those we had. Landed all right. I think time from launching to landing was less than half an hour. Returned at once. Pulled up under the stern. Keeper Atkins called to them to cut the main-sheet and let the boom go out to the shroud. (The sloop's mainsail was double-reefed, the sheet half-way off, and the sail standing full with the outer part of the boom going into the water as the vessel rolled.) They did not do it. The men were called to jump into the boat, but wanted to take their clothes. Keeper Atkins told them he would not take them. A sea swept us away from the vessel and we had to pull up again. Keeper Atkins designed to keep from being thrown again under the counter. In so doing came in contact with the main-boom as the vessel rolled to leeward. It hit the boat somewhere. We had to dodge it. As the vessel rolled to windward something caught and turned the boat bottom up. I at once struck out for the shore, when some one, I think Keeper Atkins, called 'Stay by the boat!' and I came back. Then we righted her by all getting on one side, standing on the cork float. I think all got into her. She came up about broadside to, and the next sea capsized her again, and I struck out for the shore. Think I may have remained by the boat twenty or thirty minutes. I kicked off my boots and turned on my back to rest when I thought it best to do so. As I swam I saw Highland light and the lantern Cole had on the shore, and shaped my course by them. I landed about two miles east of the station, and started towards it. Met Surfman Cole and one of the sloop's crew with him. Was able to tell Cole to go to the eastward. The man with him assisted me to the station and got off my clothes. I told them where to find the key of the medicine-chest, and they got me some brandy. Fisher came in, and they did the same for him. When

we felt a little recovered, we went out to see if we could assist any one else. We met Cole and others carrying Young. Tried to assist in restoring him, but gave up from exhaustion. The life-belt floated me easily, and was the means of my being able to hold out to reach the shore."

The third survivor, Surfman Samuel O. Fisher, gives the details of the catastrophe as follows :

"I pulled the starboard midship oar. The vessel was a sloop lying headed off shore, or about northeast. Her fore-stay-sail and jib were hanging in tatters. The mainsail was double-reefed and standing full with the main-sheet about half-way out. As the vessel rolled to leeward, the boom would go into the water to the slings and rise as the vessel rolled to windward, but it did not swing in. The sea was rough to an extent that rendered care necessary in handling the boat. We got communication by throwing our bow line. They made it fast on board, I think to the main-sheet cleat. When we hauled up our bow would lap a little on to the sloop's lee quarter, (starboard.) Keeper Atkins directed Young to hold the boat from working under the counter by the boat-hook. In this position four men got in. I think the pole of the hook broke, and the sea swept us under the counter, and made us a narrow escape from accident. The two remaining men wanted to get their clothes and would not get in. When the boat went under Keeper Atkins called 'Cast off.' It was not done, and he called 'Cut.' Before the bowman could cut they cast us off on board the sloop. We went ashore and landed all right. I do not think it took more than fifteen minutes to make the trip. On approaching the vessel the second time, we did not throw the line. We pulled up with oars until the bow lapped on to the lee quarter. Before we were fairly up with the vessel, Keeper Atkins called to them to jump, but they did not. We were near enough a sufficient time for them to have done so. Then a sea struck the boat and swept us astern. We pulled up again, but were not near enough for them to get in when a sea swept around the stern, from the port side, and swung the stern of the boat toward the boom, as the vessel rolled to starboard from the sea that struck the boat. The boom came down rather across the starboard quarter of the boat. I think it struck her. As the vessel rolled to port, the boom, I think, caught under the cork float of the boat, and turned her over. As the boat went over I was caught by a rope of some sort (it might have been an oar or bucket lanyard) around my body that held me to the gunwale with my head hardly out of water. I gathered myself against the boat, then straightened with all my force, broke myself clear and crawled on to the boat. I think all were on the boat then but Taylor. I saw him in the water within reach. He made no effort to help himself, but was groaning. I drew him up on the boat. He got hold and held on until a sea washed him off. I think Young helped him on again. We rolled the boat over, by all getting on the cork belt on one side. All got into the boat but myself, and I think Taylor. I was hanging by the bow; I do not know how the boat lay, but think in the trough of the sea. Young spoke of lashing oars athwartships to aid in keeping her from rolling over. It was but a little while, perhaps half a minute, when a sea rolled her bottom up again. I kept my hold as she went over. I saw Keeper Atkins,

and reached out my foot to him; he caught it and I drew him up, and he got hold of the boat. I then worked myself to the windward side of the boat, so that the sea might break on my back, and not in my face; also that it might force me on to the boat. On the lee the water would force under us and peel us off. No one was on the windward side but myself. The last I saw on the boat were Mayo and Keeper Atkins—the former astride the stern, the latter holding on by or with him. A heavy sea swept me off, carried me some distance, and left me near Taylor, who was calling for help, but making no effort. He caught me by something that gave way. I think it was the waist-strings of my life-belt, as I found them broken, so that the belt floated up when I turned on my back to rest. While swimming, I have no definite idea of the length of time I clung to the boat (it may have been twenty minutes) or of which way we drifted. I had pulled off my boots, mittens, and sou'wester. The latter bothered me about seeing, by the water coming down into my eyes from it all the time after being forced under it by the sea. After passing Taylor, I felt something touch my foot, and found it was the bottom. I went across the bar, by touching bottom in the hollow of the sea, into the deep water of the lagoon inside and swam for shore. I landed at what we call Clara Bell Hollow, two miles from the station. In getting out of the surf to my feet, I threw off my life-belt and coat, as they seemed to weigh me down; saw a light in that direction and went towards it. I met Surfman John L. Cole, who gave me his hat, and kept on eastward. At the station dry clothes were put on me, and they gave me some brandy. I felt better, so that when I saw them bringing in Young, I went out with Kelley to assist. His eyes were set and he was insensible. As soon as he began to revive, I started down the beach to see if I could find any one else. I went about one-fourth of a mile on to the section of Station No. 8, and came to the body of Keeper Atkins, that some one had drawn up out of the water. We examined him for signs of life, but found none. I met Surfman Small from Station No. 8, who told me they had recovered the body of Taylor, and were following that of Mayo along the shore. I turned back and proceeded a short distance, when, feeling very tired and sleepy, I sat down to rest, and did not start along again until J. H. Fisher and L. P. Morgan picked me up. I think the life-belt was the means of enabling me to reach the shore."

It is a touching point in these relations, that the noble fellows saved, immediately upon their revival, while still suffering and exhausted from the torture of the sea, tottered up and out of the station they had gained with the one thought uppermost of helping their comrades. The only one who did not do this was Isaiah Young, who was unable to move.

The details of the disaster, from the shore point of view, appear in the narrative of Surfman John L. Cole:

"When ready to launch, Keeper Atkins said to me, 'Remain on shore and look out for the lanterns and look out for the boat.' He also said, 'Be sure and keep both lanterns burning.' We set the lanterns down where we unloaded the boat. I went for the lanterns but

could find only one, so I went back to the house and got another and started down the beach with both burning. Had two, because they are apt to blow out in the wind, and with both hoped to average one light all the time. When I started away from the station it was 5.10 A. M. After going a little beyond where the boat was launched, I heard some one call behind or west of me. I answered, and four men appeared coming down from the bluff of the beach. I was at the water's edge. They said they had landed from the sloop and the boat had gone for the captain and pilot. The keeper had told them to go to the house and get warm. After they had passed me, I called and asked one of them to go along with me, as the wind was blowing harder; one of them turned back, his mittens were wet and I gave him mine and one of the lanterns. The vessel was farther to the east than when the boat first went off. I proceeded along the shore upwards of a quarter of a mile and heard some one call, who proved to be Surfman Kelley. He was coming towards us. He said, 'They are all lost.' I sent the man with me to help him along and kept eastward. I could still see the sloop eastward. After running three or four minutes, I heard another call, which proved to be from Surfman Fisher. He was bareheaded, and without boots or coat. I gave him my hat, and thinking he could get along, I kept eastward. I cannot say that I noticed the sloop after I passed Fisher. I went as far as Clara Bell Hollow and found Surfman Young. He was scarcely clear of the surf. He was breathing with difficulty and hardly appeared to know me. I managed to get him along about one-fourth of a mile, and found him growing weaker and myself unable to help him on but slowly. I got him up into the beach-grass and laid him down and ran to the station. I sent one of the crew of the sloop to follow the road to town and call assistance. Got one of the men to go with me for Young, and left the others to care for Kelley and Fisher. We found Young where we left him and brought him to the station. When we arrived he was insensible, and we took the usual means of reviving him."

It is a circumstance of the disaster that the survivors all gained their own patrolling-ground, and were found by their comrade, while the bodies of those who perished sought the adjacent beach and were discovered by the men of the station below. The story of their discovery is thus given by Captain E. P. Worthen, keeper of Station No. 8, the next station to the westward :

"On the morning of November 30, 1880, Patrolman L. S. Small had the watch from four until sunrise. He left the house as soon after that time as he got equipped, his beat being toward Station No. 7. At 6.50 he returned to the station in a somewhat exhausted condition, and in a hurried and excited manner told me some terrible accident had happened at Station No. 7; for, as he had been to the end of his beat and seen nothing, and was returning, he had proceeded but about five hundred yards when he observed something black roll up in the white foam of the surf. At first sight he thought it a bunch of seaweed; but when it again appeared he was horrified to find it a man. He immediately drew him to the shore and knew him to be a life-saving man by his having on a cork belt, and on close inspection

believed it to be Keeper Atkins. He immediately applied himself to the task of trying to restore life, but without success. He worked on him until he was satisfied he was dead. It was yet dark, and he could see nothing to indicate why such an accident should occur. He took the body above high-water mark, carefully covered the face with the cork belt, which he had taken off from it, to protect it from the drifting sand. He then retraced his steps toward Station No. 7, scanning the bar in search of a stranded vessel or some object that might unravel the mystery; but in vain; he saw nothing. Being now about one-third of a mile beyond his beat toward Station No. 7, he turned toward Station No. 8, and when up to the place where he found Keeper Atkins, saw another body in the surf; but the incoming tide and increasing wind prevented it from landing; so he kept on, and arrived at the station at the time above mentioned, and narrated what I have recorded. I could not believe his statement to be true, so I took Surfman Lucas and started immediately in the direction from which he had come. I had gone about three-fourths of a mile when I saw a man in the surf. It was flood-tide, and a strong wind was blowing from the northwest, making such an undertow that nothing would land. I threw off my coat and mittens and watched when it came, so I thought I could get it. I made the attempt, which very nearly carried me beyond my depth. I succeeded in getting my man, but was thoroughly drenched. With the assistance of Lucas I drew him to the shore. I cut the cork belt from his body, placed him in position and tried to restore life, but to no purpose, and while yet at work on this man, which proved to be Surfman Taylor, from Station No. 7, another man passed by in the surf who was floated up by his cork belt, and whose face was turned toward me. I recognized him as Surfman Mayo, from Station No. 7. We then carried Taylor to a place of safety and left him, and tried to get the other body, but it would not come near enough. I then said to Lucas, 'They must be all gone.' I was then convinced it was Keeper Atkins that Small had found; and as I was wet and cold, and it was freezing, I left Lucas, telling him to watch the body in the surf, and I would go to the station and send help with a rope and grapnel. On arriving at the station I sent Surfmen Marshall and Francis to his assistance. I then took Surfman Atkins* and started for the telegraph office. On the way I told Atkins what had happened, and that I supposed they were all drowned. I told him to go home to his mother. He did so, and I went to the telegraph office and telegraphed to Superintendent Sparrow that Keeper Atkins and his crew were drowned. I then went out on the bank and saw that the body of Mayo had not been recovered. I went down the bank, and with the assistance of Lucas and McKinnon succeeded in landing it one mile to the south of Highland light. I procured a team and had the body brought to the station."

Immediately after the capsizing of the boat, the sloop, which had been the occasion of the disaster, slued off the bar, and drifted away with the captain and pilot on board. About 9 o'clock in the forenoon she was seen wallowing in the surf off the beach at Chatham, her colors flying for assistance, and was boarded by a wrecking party from

* The son of the dead keeper.

town, who brought her to anchor, supplied her with a jib and three men, and got her under way for Boston. Her injuries were very slight, being indeed confined to her sails, and the only serious result of her unlucky stranding was the fate it brought upon one of the bravest and ablest of the life-saving crews.

The simple and homely relations herein given, with their touches of the quaint and weird, present the disaster in striking outlines, and a few words will suffice to complete the melancholy recital, and make what took place fully realized. It will be borne in mind that the vessel was a sloop; a circumstance which explains the peril of going near her when it is remembered that her mast was set far forward, and that the boom, which was from eighty to ninety feet long, and lay out aslant over the side from the mast, at an angle of forty-five degrees, with the main sail partly furled upon it, was plunging up and down, churning the water with every roll of the hull, at least fifteen or twenty feet of it dipping deep into the sea with every plunge, thus almost barring approach on the sloop's leeward side, her windward side being of course unapproachable on account of the sea, which was sweeping up against, and indeed flying over her. Despite the violent rocking of the vessel from side to side, the boom did not swing, being stiffly held away by the pressure of the strong wind against the sail. It will thus be understood that between this dipping wall of spar and sail and the sloop's quarter, there was only a triangular space into which the boat might venture, protected, during the operations of getting the people from on board, by the breakwater made by the vessel, and only endangered by the liability of being driven within reach of the boom, or of being thrown in collision with the hull, by the sea curling around the vessel's stern. Had the people on board obeyed Keeper Atkins, when he sang out to them to cut the main-sheet, the boom would have swung away far forward under the pressure of the wind, thus removing it from the neighborhood of the boat, and this danger would have been lifted from the surf-boat crew. As it was, they had to face it. It was not their only danger. They held by their oars in a small boat upon the perilous heaving of the sea, and were swept toward or from the vessel, despite their wary resistance, by the fierce rush of the waves. All around them was an atmosphere of icy darkness, blurred with the coming snow, and beaten by the wind. At such a time, and under such conditions, every moment's delay alongside increased their peril, and it was of the utmost moment, as they well knew, that the rescue should be effected with all the dispatch possible. Hence, the demand made upon the ship's company to de-

scend into the surf-boat without waiting to collect baggage. Of the six men on board, four at once responded to this call, and had the other two done so, a single trip of the boat would have sufficed, and the catastrophe would have been spared. As it was, the only course open to the surf-boat crew, pending the hesitation of the captain and pilot on the sloop, was to immediately put for the shore, since it would have been highly imprudent to remain alongside in those wild waters with ten men on board the surf-boat. The four sailors safely landed, it would have been contrary to the intent of the Service to have left the other two in jeopardy, and the true-hearted keeper and his men at once returned for them to the neighborhood of the dangerous vessel, where the plunging boom, rising from the water, caught and capsized the boat, and tossed the inmates into the sea. Then followed the intrepid struggle of these brave and hardy men for their lives in the horrible gloom, amidst the rushing of deafening and blinding waters. Had the sloop remained aground, some aid might have been rendered them from that quarter, but immediately after the overturn, without help from outside or effort from those on board—an unfrequent occurrence—she surged off the bar, and drifted away. The surf-boat crew were left to an unassisted battle with the breakers. Their valiant effort to right the capsized boat failed. Repeatedly the monstrous force of the sea tore them from the bottom. Had it not been for the cork life-belts which sustained them, they must have almost instantly drowned. But against the cold of their immersion they had no protection, and the closing scene shows their vital energies failing in the deathful chill of the sea, three of their number gaining the beach with their souls almost parted from their bodies, the remainder dying in the water, where their brave hearts froze.

The funeral of these martyrs took place three days afterward, in the afternoon of December 3rd, at the Centre Methodist Episcopal Church at Provincetown. It was a bright winter day. The ensign and district flags were at half-mast on every station on the cape. The town was in universal mourning. Business was suspended, and at the wharves, and on board the vessels in the harbor, the colors drooped half-mast high. The Centre Church, to which the men and their families belonged, is the largest in Provincetown, and its spacious interior was crowded to its utmost capacity, at least fifteen hundred people being within, while many were unable to obtain admission. The town fire department, of which the deceased had been members, was present in full ranks. The superintendent of the district attended, and members of the life-saving crews of Stations

Nos. 6, 7, 8, 9, 10, and 12 bore into the church the coffins, deeply covered with flowers, of the men who had died that others might live. All the ministers of the different denominations had been invited to assist in the tribute, and the services consisted of addresses of tender comfort for the bereaved and praise for the gallant dead, mingled with the exalting music of a large choir. Then came the scene never to be forgotten by those present, when the pale and crippled survivors of the disaster drew near, and as they bent over the coffins, shaken with emotion, taking in silence the last leave of their comrades in many a noble peril, the whole assemblage broke into sobs and tears. The parting ended, and the town swept in procession to the cemetery behind the draped hearse of the life-savers. There a brief prayer and benediction were pronounced by the officiating clergyman, and, as the rays of the setting sun rested upon the hills, the little that can be mortal of such men was laid in the tomb.

The heroic station bereft of their presence had been manned a few hours after the disaster by another group, hastily gathered together by the superintendent. Of its former inmates only a single one remained. All the others were new men, under a new leader.

Of the old leader, who had resigned to another his grave and perilous trust, it is proper to speak here. At the time of his death Captain Atkins was forty-three years of age. He had been all his life in nautical pursuits—whaling, fishing, coasting. For over ten years he had been custodian of the Massachusetts Humane Society's boat-house. In 1872, he became keeper of the station of the Life-Saving Service at Peakéd Hill Bar, in which position he continued until the date of his death. During this period he had been present at many a terrible scene of shipwreck on that wild outpost, and rendered valiant service.

In 1879, for the first time, a cloud fell upon his record. At the wreck of the schooner Sarah J. Fort, in April of that year, after nearly twelve hours of exposure and effort upon the wintry beach in a northerly gale and raging snow-storm, abreast of the stranded vessel; after laborious endeavors with the wreck ordnance, and two attempts to drive the surf-boat through the dreadful whirl of the breakers, the second resulting in the boat being tossed back upon the beach and shattered, and the crew spilled from her like matches from a box, Captain Atkins and his men, spent, faint, heart-sick, having eaten nothing since the evening before, a period of about twenty hours, and having wrought hard to save the imperilled lives before them, and been baffled, had to endure the mortification of seeing the rescue effected by an unworn volunteer crew in a fresh boat brought

from the town. In the report of this Service for 1879, the story has been fully and accurately told. It there appears that the men upon the wreck might have been promptly landed by the life-lines, but for the keeper's failure to employ the Lyle gun, which had recently been furnished the station, through a singular inapprehension of its powers. To extenuate this strange error would be as unjust as to allow it to outweigh the unsullied record of courage and capacity, the fidelity and heroic energy, of this noble man's career. It is a consolation to the officers of the Service to remember, now that he is dead, that they stood by him, and sustained him, as he deserved, in the obloquy that he incurred upon this occasion. They could not but give credit to the gallant leader of the surf-boat party, who succeeded in effecting the rescue, nor could they fail to expose the error which gave the rescue into alien hands; but it was equally a duty not to allow their own brave and tried officer, in the face of his unquestioned valor and energy, upon this very occasion, to be razed from the book of honor for an unintended fault, and they signified their opinion of the keeper by retaining him still at the station. It is beyond doubt that he greatly suffered in his continued charge. As nothing succeeds like success, so nothing fails like failure, and in the town nearest the station, virulent criticism was roused by his defeat at the wreck. There is an expression one often hears among the people on this coast, as elsewhere, and which, to their staid habit of speech, appears of deep intensity. This stock phrase is simply "the goading slur." It conveys unspeakable bitter feeling if one says of another, "I had to take from him the goading slur." The goading slur was unhappily frequent with Captain Atkins's name and fame, up to the hour of his death, ever since his failure at the work of rescue, and the proud and sensitive man felt the shower of rough stings no less keenly for the silence with which he bore them. Doubtless they drove him to the determination to spare no hazard, however desperate, in the future discharge of duty. It is in evidence that when he left his home in Provincetown, for the station, at the commencement of the active season, and his wife cautioned him to be careful of himself, he replied that "he would endeavor to be so, but desired her to fully understand that he would die at his post before he would either disgrace himself or the Service to which he belonged." The surviving surfmen of his crew all testify that he told them that whenever a wreck occurred he would endeavor to reach her, whatever the weather, though it should cost him his life. It was in this spirit, and with this resolution, that he faced his duty, and met his death.

Of his fellow-martyrs, and of those who suffered with him but survived, less is known, but in the life they chose, and in the courage and devotion with which they bore themselves in that wild night of rescue and disaster, rests the proof of a manly quality equal to his own.

The saddest circumstance of all is the poverty, bordering upon destitution, which too often follows the great heroism of the lowly, and lends a squalid anguish to the sacrifice. The ardent crew who died in the blaze of their valor, at the wreck of the *Nuova Ottavia*, on the North Carolina coast, five years ago, left families in almost the lowest penury. A large group of poor widows and helpless little children remain behind those who perished so nobly at the Point aux Barques disaster, in 1880. In the case under notice, Keeper Atkins was not well off, and left his bereaved wife with two dependent little ones. Surfman Taylor was poor, and left a widow and several small children. Surfman Mayo was unmarried, but the only child of parents well advanced in years, the father in poor health, and in great measure relying upon the son. Of the survivors, Surfmen Kelley and Fisher, although remaining for sometime severely hurt, have since recovered; but Surfman Young, with cutting pains in his chest, his lungs in hemorrhage, and one of his legs apparently paralyzed, was in a worse condition, and at the latest accounts seemed to be crippled for life. What reason is there why poor men like these, disabled in the public service, or the widows and orphans of those who die in the hazards of that service, should not become the wards of the nation, and share in the benefits of the pension laws? Must national justice with us regard with a face of wood all such high deserving outside the Army and Navy? Fortunately, in this case, public sympathy in Massachusetts was roused to a noble degree, and in Boston and other parts of the State, a subscription for the benefit of the sufferers from the heroic enterprise at Peakéd Hill Bar, repaired to some extent an existing defect in our national equity and charity. No official information has been received of the amount thus collected, or of its distribution; but the most trustworthy report is that eleven hundred dollars fell to the widow of Keeper Atkins, sixteen hundred to the family of Surfman Taylor, and six hundred to the aged father of Surfman Mayo. To the disabled surfman, Young, eight hundred dollars is reported to have been donated, while the two recovered men received thirty dollars each, probably as a sort of testimonial. Little as the largest of these sums may be in the premises, it is gratifying to know that the distress which so often follows heroism has received, in this instance, a measure of alleviation, and that there are still people in the world who attend to the neglected and remember the forgotten.

ESTABLISHMENT OF STATIONS.

Three stations have been erected and put in operation on Lake Huron (Tenth District) since the date of the last report—one of them at Sand Beach Harbor, Michigan; another at Port Austin, Michigan, and the third at Middle Island, Michigan.

A station has been in process of erection at Cape Fear, North Carolina, and by the terms of the contract was to have been finished last September. It is now near completion, and will form the southernmost life-saving post of the Sixth District.

Another station, which has been assigned to the Ninth District, and designated as Station No. 10, has been established at the Falls of the Ohio, Louisville, Kentucky, and also put in operation. This station differs materially from any of the others, the nature of the service in this locality demanding a peculiar construction. It has been explained in a previous report that the strong chute, known as the Falls of the Ohio, is very dangerous to persons navigating the river, especially at low water, and a number of lives and much property have been lost in consequence. It was, therefore, found desirable to establish a life-saving station in this locality, which was duly authorized by the last Congress, and as examination determined that there was no suitable site to be had for it upon the shore, it was decided to make it a floating station, consisting of a barge with a house upon it, to be moored wherever desirable, and furnished with boats adapted to rescues under the existing conditions, lines for the aid of vessels drawn into peril, and such other life-saving appliances as the exceptional character of the service at these rapids might require. This scheme was accordingly carried out, and the station, having been completed and put in operation, is already making a good record. It will be remembered that, in the report for 1879, it was stated that the gold life-saving medal had been awarded to three gallant boatmen—William Devan, John Tully, and John Gillooly—who, by generous personal efforts, often undertaken at deadly hazard, had since 1875 succeeded in saving forty-five persons from the perils of the Falls. These three men, together with a fourth, constitute the crew of the station, the one first named, William Devan, being the keeper.

Proposals were invited during the year for the erection of the life-saving station, authorized to be built near the mouth of Portage Lake and Lake Superior Ship Canal, but no bids were received, and proposals will be again invited in the early spring.

Proposals were also solicited for a life-saving station to be erected between Stations Nos. 7 and 8, Peakéd Hill Bars, Cape Cod, Massa-

chusetts, a locality peculiarly dangerous to navigators; and also for a life-saving station on Muskeget Island, near Nantucket, Massachusetts, another locality of much hazard. No bids were received for the proposed station at Muskeget, and only two for that at Peakéd Hill Bars, both of which were so much higher than was anticipated that it was deemed expedient to reject them, and defer further action until early in the coming spring, when it has been determined to invite proposals again upon plans modified in certain particulars.

A station has been completed at Bolinas Bay, California, (Twelfth District,) and is now receiving its equipments.

The several other stations authorized by the act of June 18, 1878, are still in abeyance, the efforts to procure proper titles to sites for them not having yet been successful.

REBUILDING, REMOVAL, AND REPAIR OF STATIONS, ETC.

The stations at Amagansett, Long Island, (No. 10, Third District,) Seabright, New Jersey, (No. 3, Fourth District,) Cobb's Island, Virginia, (No. 10, Fifth District,) Pea Island, North Carolina, (No. 17, Sixth District,) mentioned in the last annual report as in process of rebuilding, were completed early last winter, and were occupied during most of the inclement season.

The station at Brazos Santiago, Texas, (No. 6, Eighth District,) the destruction of which by the hurricane of the 11th and 12th of August, 1880, was announced in the last report, was rebuilt by August 30, 1881, but has not been opened for service on account of the impossibility of procuring either keeper or crew at the low rate of compensation allowed. The building and the public property contained are under the charge of a person employed to care for them.

The encroachment of the sea at Peakéd Hill Bars, Cape Cod, compelled the removal of Station No. 7, (Second District,) and in view of the contemplated erection of a station between Nos. 7 and 8, as hereinbefore stated, Station No. 6 was also removed, the purpose being to equalize the distances between the four stations. This arrangement will result in a much better protection of this dangerous locality.

An important improvement has been effected on the coast of the Seventh District, Florida, which consists in the erection of guide-posts a mile apart, the first post being about twenty miles north of House of Refuge, No. 1, and each of these way-marks plainly expressing the distance to the nearest house of refuge, or to any intervening light-house; the object being to guide shipwrecked wanderers to the first available place of shelter. It has been already stated that the coast

of Florida differs in its conditions, and in the character of the life-saving aid there afforded, from any other coast of the United States. Its conformation is such that vessels driven ashore come so near the beach as to enable their crews to gain the land by their own efforts with comparatively little difficulty, and without any considerable hazard of drowning. Hence there is less than the usual need of the help to landing offered by regular life-saving stations. But as those who gain the shore are then in danger of perishing by hunger and thirst, as before mentioned, the coast being entirely desolate and with hardly an inhabitant, victualled houses of refuge, in the charge of keepers and their families, are the form of aid dictated by the necessities of the case for the benefit of such sufferers. These houses, too few in number, and provision for the multiplication of which was contained in bills which have failed for two sessions to pass Congress, are located at unequal intervals, but in the neighborhood of points where shipwrecks are periodically most liable to happen. To enable seafarers cast away upon this barren coast to journey toward them or toward the light-houses, which are the only other available asylums, and keep them from straying blindly into the bush and dying miserably of privation, these guide-posts have long been a need which only the narrowness of the means afforded has prevented from being established.

IMPROVEMENT IN LIFE-SAVING APPLIANCES AND METHODS.

The two boards for the examination of plans, devices, and inventions intended for use at life-saving stations, have continued in operation during the year.

BOARD ON WRECK ORDNANCE.

The board on wreck ordnance, of which Capt. J. H. Merryman, the inspector of the service, is chairman, has had under consideration the Hunt life-saving projectile, the Spencer line-throwing gun, Coston's new beach-light, Dunham's tarred-cotton cordage, together with plans and devices for galvanized sheet-iron faking-boxes, fastenings for faking-boxes, and other minor matters. They have also had under consideration the German rocket systems, and the English Boxer rocket system. Their conclusions upon so much of this matter as they have been able to dispose of will be found in another part of this report.

The labors of Capt. D. A. Lyle, of the Ordnance Department of the Army, have been continued on this board through the courtesy of the War Department, and their value, always great, has increased

through the experience gained in dealing with the special problems of the Service.

BOARD ON MISCELLANEOUS APPLIANCES.

It is a cause for sincere regret that the growing years of Mr. R. B. Forbes have compelled him to tender his resignation of the presidency of the board on miscellaneous appliances, and to sever his connection with the organization. His experience and judgment upon such matters as are brought before it have been of rare value, and the place he has left vacant has not yet been filled, mainly because of the difficulty of finding a successor equally qualified for the charge.

Since the last annual report there was not, up to the time of his resignation, a sufficient accumulation of subjects for examination to warrant the convening of this board, and the few matters that have since accrued will receive due attention when his fit successor is determined upon, as he probably soon will be.

MANUAL OF INSTRUCTIONS TO MARINERS IN CASE OF SHIPWRECK.

Although the success of the life-saving crews in operating at scenes of shipwreck has been remarkable, there have been numerous occasions when they have encountered great, and sometimes serious difficulties through the failure of the sailors on board wrecked vessels to intelligently co-operate with them in the measures taken for their rescue. At times these efforts have been much embarrassed by foolhardy attempts on the part of mariners to effect landings through the surf in their own boats—attempts almost certain to end in their destruction through their lack of professional ability to cope with the breakers, or, in other words, their ignorance of the art of surfing, and which, in any case, involve the protraction of their suffering, by causing temporary suspension of action with the life-saving apparatus on shore, while means are improvised of warning them back to their vessel, or saving their lives by desperate and dangerous grapples in the surf and undertow. At other times, life-lines sent to stranded hulls have been suffered to lie across the decks unused, despite the instructions of tally-boards or the pantomime of the beachmen, or have been improperly or bunglingly set up to the masts or rigging in places or by methods which made them half or wholly useless, dislocating, one might say, the whole operation of relief, and delaying or endangering the rescue. In these and similar ways the labors of the life-savers have met with obstacles as undue as grievous, and it is no small part of their credit that they have so constantly succeeded under conditions which have materially added to the sufficiently refractory character of

the giant tasks of rescue before them. With the view of simplifying these conditions, and making deliverance swifter and surer for wrecked seafarers, a hand-book has been prepared during the year and distributed copiously through the several custom-houses to masters and owners of vessels, giving instructions how mariners may help themselves and those endeavoring to save them in case of shipwreck. This hand-book is printed on paper which will best resist the damp and wet incident to voyaging, and is bound in a size and form convenient to be carried on the person in a breast-pocket. It contains, first, all essential general information in regard to the situation and character of the life-saving stations, their equipments and appliances, their signals, the nature and extent of their constant patrols upon the beaches by night and in thick weather; secondly, plain instructions for co-operation with the life-saving crews as soon as they appear abreast of a wreck, these instructions being accompanied with wood-cuts to show how to set up the hawser and hauling-lines on board; and finally, a list of all life-saving stations on our coasts, with their latitude and longitude, showing the localities in which life-saving aid may be looked for.

With a view of extending the information contained in this manual, which is considered of great value to shipping interests, and especially to navigators, the work, together with its illustrations, is reproduced in another part of this report under the caption "Instructions to Mariners in case of Shipwreck, with information concerning the Life-Saving Stations upon the Coasts of the United States."

PATROL CHECKS.

It is perhaps well known, but probably feebly realized, that for eight months of the year the patrols of the Life-Saving Service keep watch upon the ocean beaches from sunset to dawn—in other words, that for hundreds of miles of dark coast, beaten by incessant breakers, every night and all night long, while others sleep, a line of solitary men march and countermarch to and from each other, with eyes that ransack the offing for ships in peril. The way is long, dreary, obscure, lonesome, sinister, difficult, perilous. It lies along a waste of foot-detaining sand, whereon to walk is to trudge laboriously, frequently ankle-deep; at times to stumble over stones, or wreck-wood washed up by the sea, or to sink suddenly in spots of quicksand. Often the surf shoots seething across the path, or the sentinel wades knee-deep, and even hip-deep, across inlets which traverse the beach into the bays beyond, or cuts which trench through into the

sand hills. The fitful lights and shadows of a lantern alone mark the sombre way. Winter and rough weather are the companions of the journey—all natural vicissitudes, all hardships, all exposures known between the autumnal and vernal equinoxes, bitter cold, rain in torrents, cutting sleet, blinding flights of sand and spray, tides that flood the very dunes behind the beaches, the terrible snow-storm, the suffocating blasts of the hurricane. There is a case where a man perished in one of these heroic marches. In several instances men have been found fallen and nearly dead by the comrades whom their long absence from the station has sent out in alarmed quest of them. In still others there have been accidents involving broken limbs to the nocturnal journeyers. There is no case where their patrollings are less than irksome and toilsome, and they are often hazardous, and sometimes fatal. But the duty is necessary in the interest of seafarers, and nothing so much as this stern and noble watch upon the beaches has contributed to the success of the Life-Saving Service, because its performance involves the early discovery of vessels driven ashore, and the opportunity to rescue their crews before the surf can destroy them. On the other hand, no duty could make higher demands upon the moral nature of the patrolmen; for what task set them can offer stronger temptations for shirking than this gloomy and dangerous tramp, undertaken from a warm station, away from the snug rest of a comfortable bed, into the awful solitude of the winter beaches, perhaps on nights when tempest makes the heavens and the earth tremble? The very companionlessness of the patrol, which strengthens the temptation to evade duty, offers also ready facilities for doing so, and considerable trouble has been given at times both to the life-saving crews and the officers of the Service by accusations of unfaithfulness against the patrolmen, brought by active members of the coast population. It is due to the life-saving watch to say that while in a few cases these charges have been found true, the patrols have almost universally been kept with perfect fidelity—a fact fully established by the record of the prompt discovery of wrecks in nearly every instance, and the swiftness with which in so many cases, the rescues have followed stranding; and this fact, remembering that the duty, with all its involved demands upon the fortitude, the loyalty, and the intrepidity of the individual, has been performed under no task-master's eye, is not only in the highest degree creditable to the crews engaged, but an honor to human nature. With a view both to the protection of these brave and honorable men against false charges, and of furnishing the officers of the Service with proof

of their fidelity even more decisive than the inference drawn from their speedy discovery of stranded vessels, a system of patrol-checks has been devised. These tokens, which bear the several crew numbers and station designations of the respective patrolmen, are carried by them and interchanged when they come together, thus furnishing to the keeper of each station a record of the patrol meetings, which is specifically entered in the station journal. Transcripts of the journals are forwarded to the office of the General Superintendent, where they are subjected to reciprocal examination, which would expose discrepancy.

It is proper to state that a report of disaffection among the station crews, which became current at the time of the introduction of this system, was greatly exaggerated. The trouble which formed its basis was founded upon a misunderstanding, and was both slight and temporary, and confined to two adjacent crews. The system has been frankly accepted by the men as entirely fair and in their interest, and appears to be cordially favored by them.

THE WOMAN'S NATIONAL RELIEF ASSOCIATION.

The necessity for supplies of clothing, blankets, restoratives, &c., for the use of shipwrecked persons at the stations, was set forth in last year's report, but the appropriations have not yet been sufficient, in view of the more pressing wants of the Service in other directions, to provide the needed comfort and relief in this direction. Much has been done, however, through the instrumentality of the Woman's National Relief Association, a society with headquarters at Washington, and auxiliary branches in various States, whose general aim is to organize public benevolence to meet any class of national distress or calamity, and whose first attention has been given to the life-saving stations, nearly fifty of which they have furnished with clothing and cordial food for the shipwrecked, which has already, in several cases, been used with signal benefit, some of the stations having been furnished a second time, upon the exhaustion of the original supply. Reference to the projected work of this society was made in the last report, and the thanks of the Service are due to the generous women who have made the plan an active reality.

AWARDS OF MEDALS.

In four instances during the past year medals have been awarded for heroism in saving life.

The first case was that of Captain Charles Gnewuch, of Manistee, Michigan, to whom was awarded the gold medal of the Service. A

mass of testimony presented by leading citizens of Manistee showed that, since the date of the law authorizing the award of medals, Captain Gnewuch had saved no less than twenty-eight persons from drowning. The first example was in November, 1874, when he rescued two fishermen whose boat had capsized in Lake Michigan. His next service was in October, 1879. At this date, the schooner Frankie Wilcox capsized at night in a terrible gale on Lake Michigan. The cook was lost when the vessel rolled over, and the remaining six men on board contrived to cling to the wreck, and lashed themselves to the rigging. In this plight they were discovered off Portage, at daylight the next morning, by Captain Gnewuch, who at once with much difficulty organized a crew, and put out to the rescue in a fish-boat. The sea was furious, and the boat filled several times in getting through the breakers. Upon approaching the schooner, it was found necessary to run between her main and mizzen-masts as she lay on her side, and the spars were thrashing and rolling around dangerously, but after an hour's hard work and peril the exhausted and helpless men were reached, their lashings cut, and they were hauled into the boat. Half an hour after they were landed the vessel broke up completely. The year following this exploit, 1880, in February, Captain Gnewuch, while lying in his bunk at night, on board his tug, at Ludington, heard screams of distress, and, making his way out, found a man struggling in the ice in Pere Marquette Lake, fished him out, and took him home to his family, a wife and four children. In the April following, he performed a feat, the devoted daring of which only seamen can entirely appreciate. In towing the schooner W. B. Allen fifteen miles off the west shore of Lake Michigan, an awful gale and snow-storm struck the two vessels, and the sea swept over the schooner to such a degree that it became evident she must founder. To save the eleven men on board, Captain Gnewuch ran his tug five times in succession up alongside, taking off men every time, until he got them all. His fender-rail was completely carried away in these perilous collisions, and it is needless to say that during the entire enterprise he was on the brink of destruction. Such was the rolling of the sea, and so enormous were the troughs of the waves into which the tug momentarily fell, that she could not be seen more than half the time from the deck of the schooner, and the blinding snow-storm added greatly to the perils of the situation. The sailors aver that every instant they expected both vessels to go down. Twenty minutes after Captain Gnewuch got off the last man, the schooner pitched headlong to the bottom. In October of the same

year, he accomplished another noble rescue. During a tremendous storm—the same which wrecked the steamer *Alpena*, and one of the most disastrous that ever visited the lakes—he sighted the scow *Selma* dismantled off *Manistee*, battened down his hatches, and put out of harbor to the rescue, saved the four men on board, and with careless audacity even towed the wreck into port. Anterior to these rescues, which show an epic courage and humanity allied with the hardest sea-craft, there appears to have been others replete with the same qualities, and doing equal honor to this sturdy savior of seamen.

The second instance of award during the year relates to the heroic group of life-savers at the wreck of the schooner *George Taulane*, on February 3, 1880. The men were William L. Chadwick, Isaac Osborn, David B. Fisher, David B. Clayton, Abner R. Clayton, and Abner Herbert, volunteers; the crew of Station No. 11, Fourth District—Keeper Britton C. Miller, and Surfmen William H. Brower, Louis Truex, Abram J. Jones, Charles W. Flemming, and Demerest T. Herbert; and the crew of Station No. 12, Fourth District—Keeper William P. Chadwick, and Surfmen Peter Sutfin, Benjamin Truex, Tylee C. Pearce, William Vannote, Charles Seaman, and John Flemming. To each of these nineteen men, with the exception of Keeper Britton C. Miller, who had died, the gold life-saving medal was awarded in honor of conduct seldom equalled and never surpassed in the history of life-saving effort. The story of their exploit was told in last year's report with a circumstantiality which renders its repetition unnecessary. It is deeply regretted that the decease of Keeper Britton C. Miller prior to the award, prevented, under the terms of law, his inclusion in the tribute which the presentation of the medal implies. No man of the nineteen better deserved his equal share of the honors due to their kindly valor at the wreck of the *George Taulane*.

The gold life-saving medal was awarded to Captain Charles P. Smith, the commander of the steamer *Seawanaka*, whose heroic conduct at the time of the destruction of that vessel by fire is of too recent date to be forgotten. It will be remembered that the *Seawanaka* plied from New York to Sea Cliff, Glen Cove, Roslyn, and other points on Long Island, the haunts of summer residents. She left her pier upon the East River, New York, at about 4 o'clock in the afternoon, on the 28th of June, 1880, having on board about three hundred people. The weather being intensely warm, the larger number of the passengers sought the forward part of the boat to catch the breeze, and the steamer was passing or had just passed Hallett's Point, when those on board became aware that something mysterious and strange had

happened. To some, it seemed that there had been a muffled explosion, at once heard and felt, below them; to others, that the deck had lifted gently beneath their feet, amidst a sinister hissing like escaping steam. A few moments afterward, while they watched and wondered, they saw in the direction of the engine-room a thicket of flames arise softly and spread across the deck with an effect like magic, forming an impassable barrier between the fore and after parts of the boat. A moment later, amidst the general noises of alarm, the volcano burst out with a dreadful crackling roar, and the people on board were given over to the wild agony and horror, the confusion and the frenzy, which belong to the scene of the ship on fire.

Amidst the deafening clamor of the passengers and the terrific leaping and wreathing of the flame and smoke, it was noticed by some of the cooler spirits that the wheels moved steadily and the boat was racing at her topmost speed. The explanation was that Captain Smith had not lost his head nor left his post at the wheel, but with will keyed up to the high pitch of desperate heroism, was driving the vessel to the shore to save his passengers. He had seen at one flash of judgment that it would be useless to fight the fire, and that the only chance of safety for those on board lay in quickly beaching the steamer. The banks were abrupt, and the sunken rocks of Hell Gate obstructed passage in their direction, but within half a mile ahead was a low-lying, marshy island, called Sunken Meadows, and it was to this place that Captain Smith drove the burning vessel. As she flared on her course her advance in the fresh breeze drove heat, smoke, and flames aft, forcing many in the after-part of the boat to leap into the water. In this way between thirty and forty persons were drowned. The captain continued at his post in the pilot-house. When he first headed the boat for Sunken Meadows the flames were nearly under him. He was now slowly roasting, but amidst the frightful scorch he kept his unflinching grip upon the wheel. From time to time, amidst the frenzied shrieks of the passengers, his voice was heard shouting to them not to leap overboard. Most of them obeyed him, and remained until the race with the fire was won, and he drove the flaming steamer forty feet upon the marshy surface of the Sunken Meadows. Then, with his face swollen to nearly double its ordinary size by the action of the fire, and his hands, arms, neck, and the upper part of his body all in blister from the burning he had endured, he ran from the pilot-house to help down women and children from the crackling hull and aid others in the water to wade ashore.

A melancholy circumstance is connected with the award of the medal to this brave man. There was some delay owing to the diffi-

culty of procuring the evidence of his action in proper form to satisfy the requirements of law, and meanwhile, for a long time after the loss of the steamer, Captain Smith lay confined to his bed by his terrible injuries. He duly recovered, and in course of time the award was made; but an attack of erysipelas supervened, due doubtless to the hurts he had sustained from the fire, and the very day the medal which commemorated his gallantry was received by the Department from the Mint, he died. It can only be regretted that he did not live long enough to receive this additional token of the universal honor in which he was held.

A gold medal was awarded to Mrs. Ida Lewis-Wilson, who, under her maiden name of Ida Lewis, has won a national celebrity by her many rescues. The papers accompanying the application made in her case to the Department show that she has saved from drowning thirteen persons, and it is understood that the number is greater. The special instance upon which the medal was awarded, was her rescue, on February 4th, last, of two soldiers belonging to the garrison of Fort Adams, near Newport, Rhode Island. These men were crossing on foot, at 5 o'clock in the afternoon, or near twilight, between the fort and Lime Rock light-house, of which Mrs. Lewis-Wilson is the keeper, and suddenly fell through the ice, which had become weak and rotten. Hearing their drowning cries, Mrs. Lewis-Wilson ran toward them from the light-house with a rope, and, in imminent danger of the soft and brittle ice giving way beneath her, and also of being dragged into the hole by the men, both of whom had hold of the line she had flung them, she succeeded in hauling first one, and then the other, out of the water. The first man she got out entirely unaided; her brother arrived and helped her with the second. The action on her part showed unquestionable nerve, presence of mind, and dashing courage. The ice was in a very dangerous condition, and only a short time afterward, two men fell through and were drowned, while crossing in the night in the immediate neighborhood of the scene of the rescue. All the witnesses unite in saying that the rescue was accomplished at the imminent risk of the rescuer's life.

RECOMMENDATIONS.

The recommendation made in previous reports for the establishment of additional stations at the following points is renewed:

One at or near Damariscove Island, Maine; one at or near Hunnwell's Beach, Maine; one at or near the entrance to Portland Harbor, Maine; one at or near the entrance to Portsmouth Harbor, New

Hampshire; one on Cape Ann, Massachusetts; one in the vicinity of Peakéd Hill Bars, Cape Cod, Massachusetts; two in the neighborhood of Nantucket and adjacent islands, Massachusetts; one at or near Lewes, Delaware; five on the coast between Cape Henlopen and Cape Charles; two on the coast of North Carolina; one at or near Quintana, Texas; one at or near Grand Marais, (Michigan,) Lake Superior; one at Frankfort; one at Pentwater; one at the mouth of White River; one at Holland, Michigan; one at South Haven; and one at Michigan City, on the coast of Lake Michigan; also, six houses of refuge on the eastern coast of Florida.

The need for these stations has been shown in former reports.

The act of June 20, 1874, provides for two kinds of life-saving medals, respectively designated as first and second class; the class to which each medal struck under this authority belongs being indicated upon its face. It is found that the latter of these two designations is not satisfactory to the recipients of the medal thus described, for the reason that it appears to signify that the deeds which secure the award have the character of mediocrity, whereas they may be of a degree only less than the highest heroism. It is, therefore, desirable that the law be amended so that the medals shall be hereafter known as the gold and silver life-saving medals, respectively. Furthermore, as under the present act, a person may be awarded an indefinite succession of medals, one for each repetition of the act of heroism which gained him the first, and a corslet of such tokens, which is the logical sequence, not being a matter for reasonable contemplation, it is recommended that provision be made by enactment that hereafter any person who has won either medal, may receive for each additional act of such heroism as would entitle him to another of the same grade, a suitably-inscribed bar of metal, identical with that of the original memorial, to be attached to the medal by a ribbon of a prescribed description.

It is a duty to renew the recommendation repeatedly made to extend the benefits of the pension laws to the widows and orphans of members of life-saving crews who perish in attempts at rescue. To what has been said on this point from year to year, and with all possible earnestness, it is not considered necessary to add another word. The fact remains undisputed and indisputable that the life-saver, killed in the line of his perilous duty in the service of the nation, is exactly in the category of the soldier or sailor who falls in the same service, and deserves equally that the same form of grateful remembrance shall reach to his wife and children. It is no less incumbent upon the

nation to provide pensions for those who become disabled in the discharge of life-saving duty. They, too, are in the category of those who have become injured or diseased in the public military defence, and should receive the same succor and protection.

The recommendation of former years, for the increase of the compensation of the district superintendents, is again made. Since the date of the last report, the bonds of these officers have been raised to amounts ranging from \$20,000 to \$50,000. The duties and responsibilities of these positions have increased, and are ever increasing, and the salaries of the incumbents, which, as previously stated, are only \$1,000 per annum severally, save in two instances, where they reach \$1,500, are much lower than those accorded to other public officers of the same grade, whose burdens are often lighter.

The increase of the pay of the keepers and crews of stations, which has long been deserved, has now become an imperative necessity, and provision to this end is strongly recommended. In last year's report it was shown that the rising rates of wages for coast and maritime pursuits had already brought the Service into direct competition with private enterprise, so that a number of skilled surfmen had been drawn away from the stations by the double inducement of easier life and better pay, while many others were retained with difficulty. This condition of affairs was, in some degree, relieved by the action of the last Congress, so far as the station crews were concerned, their monthly stipend having been left to the discretion of the General Superintendent in accordance with the original provision of the act of organization, freed from the restrictions inserted in successive appropriation bills as to amount, and the sum appropriated being enough to enable him to retain most of the men, at least temporarily, by slightly advancing their wages, although only for a limited portion of the year. A general increase of the pay of the crews, however, for the entire period of active duty, is now made necessary by the advance in the price which the services they can render commands from employers, coupled with the increased cost of living; and the appropriations made for their compensation should be at least measured by this necessity. Unless this is done it will be impossible to retain, as a body, the splendid corps of surfmen whose services upon patrol and at wrecks have for years been celebrated; a corps which has already been greatly weakened in places by changes it has been impossible to prevent, and each one of which—the education of the men in the use of life-saving appliances, the habitudes of their station

discipline, and the experience they have gained in times of trial, being remembered—is like the loss of a veteran in a regiment, in whose place steps an untrained and untried man.

In the case of the keepers, as distinguished from the men, the matter is still more serious. Leaving out of view the slight increase referred to, the pay of a station surfman, employed for eight months of the year, is \$40 a month. The pay of a keeper employed for the whole year, and continually having the station in his custody, being always responsible for its safety, and the safety of its contents, is fixed by law at \$400 per annum—a fraction over \$33 a month. Thus the keeper, proficient in beach-craft above all the others, and loaded with the most serious cares and responsibilities, receives several dollars less a month than any of his men. Were this not so, people would still hear with incredulity that \$400 a year is all men get who are keepers of stations, captains of crews, wardens of coasts, inspectors of customs, custodians of property, and saviors of seamen, all in one. These men are personally answerable for the conduct and efficiency of their squads of surfmen, for every life lost from a stranded hull upon their beaches, for every parcel of property landed within their precincts, and this is the paltry pittance they get in return. They take their lives in their hands in every gale when the surf-boat or life-boat heads through the breakers; they are the men of the *Amerique*, the *Bertschey*, the *Amazon*, the *Mercury*, the *Hartzell*, the *Goodman*, the *George Taulane*, and a hundred wrecks besides—the daring leaders in great exploits of rescue with which the country has rung for ten years; and for all their valuable service and priceless heroism they get no more than the barest living. Little as their pay is, it is still further reduced, as the pay of their men is also, by the mess-bills, which their station life on lonely and uninhabited beaches, far from their homes and families, involves—reductions of from \$5 to \$10 per month on the Atlantic coast, and \$10 to \$16 on the Lakes. Yet in many localities, side by side with these men, are other officers of the Government, with trusts no graver, and functions involving neither hazard nor hardship, who get twice their salary per annum. Take, for instance, the light-keepers. The business of a light-keeper is simply to clean and watch a lamp. On the worst winter nights he sits in his warm and comfortable tower, charged with but one duty—to see that the flame never sinks within his lens. For this he gets paid at the average rate of \$600 per annum. The more important lights command salaries of from \$800 to \$1,000 yearly. This compensation is not a dollar too much, weighed against a trust whose simplicity does not abate its gravity. But what comparison is there between the respective duties

of the station-keeper and the keeper of a light-house? Take this station, for example, where the inlets and the sound make the beach an island, with neighboring bars and shoals, which are fearful traps for shipping, and there are eight miles of dangerous coast for the patrols to guard. Here the keeper lives with his men eight months of the year, with twelve miles of water, which winter makes ice, between them and the nearest villages. Storm-tides send the surf sheer across the low beach, and the patrolman is often insulated for hours upon a hummock. The keeper of such a station, with his anxieties, his sleepless surveillance of the watch on his beach, his jeopardy and his valor in the wild hours of shipwreck, draws in reward his thirty-three and a third dollars per month. Near by, in the light-house, perhaps in the very hour when his gallant brother faces death in the drench of the winter surf at his stand on the stern of the surf-boat, the light-keeper sits fortified against the tempest in the snug glow of his tower, and his pay is \$700 per year. Or, take another station, where the life-saving patrols wade in storms knee and waist-deep in surf and sand, six miles on one beat and three the other. The breakers rush with a roar across the beach among the hummocks, the ebb flood returning with a force against which a man must brace lest he be swept into the sea. Wreck-wood is liable to be in this turbulent flying water, a blow from a piece of which might break a limb, perhaps instantly kill. The surfmen patrolling must watch their chances between seas to get over the streaming deeps of the gullies. On bad nights, the keeper, a brave, live, faithful man, is out with the patrols to make sure that there is no shirking. On him rests the unceasing care to see that the work is done; to shore up the underpaid, perhaps disheartened men to the nightly task of risking health, life, and limb in the watch for ships in danger. At wrecks, as in a recent instance, he takes the steering-oar and guides the surf-boat through miles of seas which make the boldest crew white, across shoals as terrible as the Goodwin Sands. For all this, \$400 a year! Meanwhile, \$800 a year, and two assistants at \$400 each, for the adjacent light-keeper, ensconced aloft in his solid chamber near the lens, when death and tempest walk the strand with the patrolmen.

When, in addition to these circumstances, the remuneration offered by private enterprise is considered, it may be wondered how the Service has retained a single keeper. While the Government is paying its chief life-savers less than boys and messengers get in the custom-houses, business prosperity increases and holds out its lures on every side. Especially is this true of localities in the neighborhood

of ports, harbors, and summer resorts, and particularly on the lakes. Our lake keepers are often former masters of vessels, and their old vocations invite them. They see their neighbors all around them making money, some from \$2 to \$4 per day, others from \$1,000 to \$2,000 per annum. It is true, that for a portion of the year, both on the lakes and the Atlantic seaboard, the keepers can add something to their salaries by outside occupation, but the time spared from active station-duty is too short to make the addition worth mention. In certain cases, the keeper may also have a little farm, or a fishing-rig, and by employed labor eke out the dole he gets from his position; but his official duties must not be neglected, and they cannot but interfere materially with his private interests. Why, then, have these men remained in the Service? It never will be believed, but the officers of the Service know it to be true, that the enthusiasm for humanity, the passion for life-saving, the love of the aim and operations of the establishment, have been the prime motives for the protracted endurance of life under trying circumstances, which marks the long continuance of the keepers and crews at their posts. However this may be, these motives have at last begun to weaken, as in time was inevitable, and unless action is taken by Congress, the Life-Saving Service will receive the greatest injury. During the past year the establishment has been greatly embarrassed. Many resignations have been received, and many more are impending, delayed only by private official solicitation, and the hope of coming remedy. In one case a station has been actually closed, it being impossible to find a keeper or crew willing to serve for the pay. In other cases the stations are without keepers, only crews being in charge, no member of which will accept the responsibilities of keepership. In another instance it has been necessary to reappoint a keeper dismissed for serious misconduct, as no one else could be found for the position. The superintendent of an important district has communicated the information that, unless the rate of pay is raised, every keeper under his charge will resign in the spring. A similar feeling of disaffection has long been slowly spreading through all the districts. The instances given exemplify the disintegration which has begun, and which, as already remarked, has only been retarded by the strenuous efforts of the officers of the Service.

It is of vital importance that the compensation of these able and gallant men should be raised to at least a living rate; that toils and triumphs which no thoughtful person can realize without gratitude and pride, and which make part of the glory of the nation, should at

least have for their recompense the hire of which even the laborer is worthy. The time has long gone by when the Life-Saving Service could be considered as problematic in its character, a sentimental experiment of questionable utility. To-day it stands justified upon every coast in the solid results of its achievement—in sweeping reductions of mortality by shipwreck, in its ten years' array of lives rescued and property saved, the fruit of the sea-craft and the valor of its keepers and crews. All that it has done is but an earnest of what it will yet do if its strength is maintained by due sustenance; if, at this time, the strong hands upon the steering-oars are not let wither from inanition. In the retention of such men lies all the future of the Service, for in the moment when the veteran surfing science of the beaches drops from its rolls, it will have received its death-blow. There was a time when its development lay in arrest, despite the two years' pleading of its officers, and it cost the double shock of catastrophe—it cost the wreck of the Metropolis right after the wreck of the Huron, and the loss of one hundred and eighty-three lives—to startle action from its sleep and secure the legislation which has made the Service all it is, and prepared the way for all it is to be. It is hoped that such a sacrifice may not be again needed to obtain enactments which now involve not merely the extension and efficiency of the Service, but are necessary to prevent its decay and dissolution.

SERVICES OF LIFE-SAVING CREWS

DURING

FISCAL YEAR ENDING JUNE 30, 1881.

SERVICES OF LIFE-SAVING CREWS

DURING

FISCAL YEAR ENDING JUNE 30, 1881.

July 3, 1880.—At 11 A. M., the schooner *Electa Bailey*, of Philadelphia, with a cargo of ice and a crew of seven men, mistook the channel and stranded on the shoals a mile south of Station No. 40, Fourth District, (Cape May, New Jersey.) At 1 o'clock in the afternoon she was boarded by the crew of the above station, who helped to work her off the shoals, sounded the channel, and piloted her into safe water, leaving her undamaged at 4 P. M.

July 4.—At 3 o'clock in the afternoon the lookout at Station No. 5, Ninth District, (Buffalo, Lake Erie,) noticed a commotion among a party of boys who were bathing on the lake shore a few hundred yards distant from the station, and suspecting that one of the number was in danger of drowning, gave an alarm, and the life-saving crew at once hurried to the spot. They found a young man, named Pasker Pillors, lying upon the beach apparently dead. Being unable to swim, he had got into a deep hole and sunk to the bottom, the boys with whom he had been bathing having just succeeded in recovering the body as the life-saving crew arrived. The latter took him in hand, and by the prompt application of the method in vogue in the Life-Saving Service for the resuscitation of persons apparently drowned, succeeded in about twenty minutes in restoring animation. After receiving all the attention necessary for his full recovery, he left for his home. His life was undoubtedly saved by the exertions of the station crew.

July 6.—Annie Bennett, aged forty-one years, fell from the harbor-pier into the lake, at Chicago, at about 2 o'clock in the morning. The sound of her fall and her screams attracted the attention of the watch on the lookout at Station No. 11, Eleventh District, (Lake Michigan.) He rushed down stairs, awakening the crew on his way. The boat, which lay ready in the water, was quickly manned and pulled out to the place from which the cries came. The crew arrived just in time to catch the woman as she was sinking the second time. She was conveyed to the station, provided with dry clothing and a bed. Having been considerably injured in falling, she was obliged to remain at the station one day; and then, being unable to walk, was sent home in a carriage.

July 7.—The schooner *William Gilbert*, of Big Sandy Creek, New York, bound from Oswego to her bailing-port, with a crew of three men and one passenger, mistook the lights when attempting to make her harbor, ran too far north, and was in imminent danger of stranding on the north bar, when she was perceived by the crew of Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) at 10 o'clock in the evening. The boat was instantly launched, and, with part of the crew, pulled out to the schooner. The remaining men staid on the shore

and built range-lights to guide the others in their work. At 10.30 P. M., the life-saving crew reached the vessel, ran a line to her, and towed her into harbor.

July 10.—At 10 P. M. of the 9th, the schooner Eastern Light, of Millbridge, Maine, with a cargo of lumber and a crew of four men, stranded on Hog Island Ledge, while attempting to run into Seal Harbor. At high water she came off and lay at anchor, leaking badly. One of the surfmen of Station No. 5, First District, (Whitehead Island, Maine,) going out fishing, discovered her the next morning, with signal of distress flying. There was no time to summon the keeper or assemble the crew, the stations on the Atlantic coast being closed at this season. He therefore signalled to, and obtained the assistance of a surfman whom he saw near, and then went to a fleet of coasting-vessels that lay in Seal Harbor, and, obtaining sufficient help from them, towed her into the harbor, intending to put her onto the flats; but at this time the fog that prevailed lifted, and he perceived a small steamer, the services of which he procured to take her into Rockland.

July 10.—The schooner Ganges, of Detroit, Michigan, laden with iron ore, and having a crew of seven men, grounded on the bar at Fairport, Ohio, at 4 A. M., while attempting to make the harbor. At 5 A. M., the crew of Station 7, Ninth District, (Fairport, Lake Erie,) launched the surf-boat, pulled out, and boarded her. They then ran out lines, and hove on them until 2 P. M., when they succeeded in getting her afloat, and sailed her into the harbor.

July 11.—Thomas Campbell, aged twenty-six years, went in the lake to bathe, about seventy-five yards from Station No. 11, Eleventh District, (Chicago, Lake Michigan.) He was taken with cramp on diving under water; remained under about three minutes, and when he came to the surface was helpless. The life-saving crew immediately launched the surf-boat and brought him in. Although he was breathing, his jaws were clenched, and it took several minutes to bring him right.

July 12.—At 3 P. M., the schooner Mabel Rose, of Philadelphia, bound from Boston to Philadelphia, with a crew of seven men, mistook the channel and stranded on the Rips, two miles south of Station No. 40, Fourth District, (Cape May, New Jersey.) The crew of the station launched their boat, boarded the vessel, and rendered assistance in getting her afloat, which was accomplished without damage.

July 12.—At 3 P. M., the crew of Station No. 5, Tenth District, (Sturgeon Point, Lake Huron,) observed something floating on the lake about two miles off. They launched the boat, rowed out, and discovered it to be a steamer's gangway-slip, with two head of cattle fastened to it, one of the animals being still alive. They had been lost overboard from the steamer St. Paul, of the Shore Line, between Detroit and Mackinac, and had been floating since a little after 7 o'clock in the morning. The life-saving crew towed them ashore and turned the property over to the owners.

July 14.—While the keeper of Station No. 4, Second District, (Gurnett Point, Massachusetts,) and another person, were mackerel-fishing south of Brown's Island Shoals—the stations on the Atlantic coast being closed at this season—a fresh southeast wind blowing, and the weather thick and stormy, they noticed a schooner about half a mile off to the northeast, with a pilot-signal flying, and heading directly for their boat. Presuming that they were being mistaken for pilots, and seeing that if the vessel kept on her course she would ground

on the shoals, they made sail and headed her off in time to signal her to a right course. They then remained within hailing distance, directed the captain how to steer, and, as it was too rough to board the vessel, kept close after her until she got inside the shoals. When she had arrived safely inside, the keeper signalled her to heave to, boarded her, and piloted her to a safe anchorage. The vessel proved to be the schooner *Jesse W. Knight*, of Philadelphia, from Baltimore to Plymouth, Massachusetts, with a cargo of coal and a crew of six men. Her captain offered to pay the keeper double pilotage, in consideration of the danger from which his vessel had been rescued, but the proffer was declined.

July 16.—The schooner *J. Duvall*, of Racine, Wisconsin, with a crew of seven men, bound from Kewaunee to Chicago, with a cargo of tanbark, was struck during the night of the 9th of July by a sudden squall and capsized, when about twenty miles east-northeast of Two Rivers, Wisconsin, and twelve miles from land. The entire crew was lost. On the morning of the 16th, the tug *Hagerman*, of Milwaukee, was sighted by the keeper of Station No. 17, Eleventh District, (Two Rivers, Lake Michigan,) lying to, with the schooner in charge, about five miles southeast of the station. The tug was alongside of the wreck, apparently engaged in attempts to right her, she having been found bottom up. The keeper at once launched the surf-boat and went out to offer assistance. Arriving upon the scene at 8 A. M. the vessel was found on her beam ends, with the spars in the water. The schooner *Fearless*, of Racine, was near by, with guys and tackles attached for the purpose of righting her. The services of the life-saving crew were gladly accepted, as the vessels engaged in the work had but their ordinary crews. At 11 A. M. the schooner was righted, and two bodies were found and transferred to the *Fearless*. The tugs *Hagerman* and *Wetzel*, the latter of Racine, then took the two schooners in tow and started for Manitowoc—the life-saving crew, having been asked to do so, remaining by the *Duvall* until she was safe in the harbor, at 5 P. M. They then reported the facts to the city authorities and returned to their station. When the vessel was pumped out two more bodies were recovered. The remaining three bodies were never found. They were doubtless swept overboard when the schooner capsized.

July 17.—James Lavery, a sailor belonging to the steamer *Magnet*, fell overboard while that vessel was lying at her dock at Charlotte, New York. Surfman No. 4, of Station No. 4, Ninth District, (Charlotte, Lake Ontario,) witnessed the accident, took his skiff, went at once to the rescue, and brought the man, who could not swim and must have drowned but for timely help, safely to shore.

July 18.—A number of persons who had been sailing on the lake in the yacht *Fanchon*, of Charlotte, New York, went ashore in a skiff at Charlotte, leaving their craft riding at anchor, with her sails set. Shortly after, a squall came up and capsized her. It was immediately reported at Station No. 4, Ninth District, (Charlotte, Lake Ontario,) with the misstatement that people who had capsized in her were clinging to her bottom. The crew hastened out in their boat, but found no one on her. They stowed her canvas, righted her, pumped her out, and left her secure.

July 19.—The schooner *George W. Holt*, of Detroit, with a cargo of iron ore, a crew of seven men, and four passengers, on her way from Marquette to Detroit, sprang a leak, and, while endeavoring to

make Port Austin, struck on the reef about four hundred feet from the Port Austin light-house, and a mile and a half from shore. The disaster occurred at 5 o'clock P. M., and at 6.30 P. M. a despatch was received at Station No. 2, Tenth District, (Point aux Barques, Lake Huron,) asking for help. A team was at once procured, and the surf-boat and mortar-cart and apparatus were conveyed overland, twelve miles northwest of the station, to the scene of disaster. They arrived abreast the wreck at 1 o'clock in the morning. The wind was blowing such a gale, with rain, that no effort could be made for relief of the wrecked crew. As soon as daylight appeared, the beach, which had been patrolled all night, was carefully searched for signs of the wreck; but nothing was to be seen, and just as the keeper had the surf-boat ready to launch to make further search, the light-house keeper reported that the wreck had been swept away. The keeper and life-saving crew went with him home to breakfast, and then started out to search again for the wreck. They met a man who reported the vessel ashore west of Port Austin Dock, two miles southwest of where she first struck. The crew went to the place indicated, found she had gone to pieces, and searched in vain for dead bodies. On their way back to the surf-boat, they discovered a flag floating from the Port Austin light-house. They launched the surf-boat, and landed at the light-house at 8.05 A. M. Here they found the crew and passengers of the vessel, one of whom was a woman. They were desirous of going ashore at once, but the keeper thought it unsafe to take the woman in the existing high sea; and, as the surf-boat could not remain in safety at the light-house pier, the life-saving crew returned to the shore at 9 A. M., and at noon, when the sea had abated, went out again to the light-house, and safely landed the wrecked people. The life-saving crew returned to the station at 5.50 P. M.

July 20.—At 10.30 A. M., the Italian bark *Birtolotto Savona*, of Savona, Italy, bound from Trapani, Italy, to Gloucester, Massachusetts, with a cargo of salt and a crew of twelve men, stranded, during a thick fog, on the bar two miles northeast of Station No. 13, Second District, (Chatham, Massachusetts.) The keeper of the station—the stations on the sea-coast at this season being closed—obtained a volunteer crew and went to her assistance. Arriving abreast of the vessel, they were unable to communicate with her crew, as the latter did not understand English. The keeper, seeing the requirements of the occasion, sent to Boston for two tugs and an interpreter. On the arrival of these, the life-saving crew boarded the *Savona* and threw overboard a part of her cargo, most of which was taken into boats and saved. When she was sufficiently lightened, the tugs hauled her off and she went her way, having been ashore thirty-six hours.

July 20.—At 11 A. M., the yacht *Storm*, of Charlotte, New York, with two persons on board, was struck by a squall and capsized on the lake a half-mile from the pier. A surfman of Station No. 4, Ninth District, (Charlotte, Lake Ontario,) being on the pier, witnessed the occurrence, and, obtaining the assistance of two volunteers, went out to the rescue in a fishing-boat. Three other surfmen immediately followed in a double-oared skiff; and the keeper, hearing of the accident, and that a number of his men were already *en route* to the rescue, took a tug and tow-line and followed them. The men were rescued, and the yacht was towed into harbor, and bailed out.

July 26.—The schooner *Cocheco*, of Camden, Maine, with a crew of three men and one passenger, stranded, it being very foggy, at 10

o'clock A. M., near Whitehead Island, Maine. The keeper of Station No. 5, First District, was notified of the casualty by a surfman who witnessed it. The crew, who were not on duty at this season, were assembled and the boat was launched within thirty minutes. They boarded the *Cocheco* at 10.50 A. M., ran out lines and her anchor, and hove her off, after which they ran her into Seal Harbor. She sustained no damage.

July 28.—Mrs. H. C. Van Dusen and another lady, who had been rowing on the river in a skiff, at Charlotte, New York, attempted to land at the pier. Mrs. Van Dusen stood up in the boat and put her hands on the pier to climb up, and, as she did so, the boat slid out from under her, letting her into the river. A surfman of Station No. 4, Ninth District, (Charlotte, Lake Ontario,) heard her cries, ran to the spot, and rescued her.

July 28.—At 10 o'clock in the evening of the same day, H. H. Wood, who was standing on the edge of the pier with his back to the river, made a misstep backward and fell in. He shouted for help, and the same surfman, being at hand, rescued him.

July 28.—The schooner *Francis Palms*, of Detroit, Michigan, arrived off the harbor of Fairport, Ohio, at 7 A. M., and made signal for a tug, the master being unacquainted with the channel which is very narrow and crooked. There being no tug at hand, the crew of Station No. 7, Ninth District, (Fairport, Lake Erie,) went off to the vessel and piloted her safely into port.

July 28.—On the same day, the schooner *Southwest*, of Cleveland, Ohio, with a crew of seven men and laden with iron ore, hove to off the harbor at dusk with colors at half-mast. Supposing her to be in distress, the life-saving crew (Station No. 7, Ninth District) at once put off in their boat, and found she had lost her yawl and that the master was very anxious to be taken into port, as the night was dark and the channel-stakes could not be seen. The keeper piloted her to a safe anchorage inside.

July 28.—The same evening, about two hours later, the same crew discovered another schooner, which proved to be the *Smith & Post*, lumber-laden, standing in towards the bar. They launched the boat again, and on finding that she also was bound to Fairport, piloted her safely in.

July 29.—At 8 P. M., the row-boat *Alert*, of Oswego, with two persons, a man and woman, out rowing on Lake Ontario for pleasure, unshipped her rudder. In the attempt to reship it, the man fell overboard and was drowned. At half-past 8, word of the catastrophe was taken to Station No. 3, Ninth District, (Oswego, Lake Ontario.) The surf-boat was immediately launched, and, taking two sets of grapnels and heaving-lines with them, the life-saving crew went out to search for the body. They recovered it at 10 o'clock at night, it having been in the water about two hours.

July 29.—The propeller *James Fisk, jr.*, of Buffalo, New York, with a crew of twenty-two men, and laden with general merchandise, stranded about half a mile north of North Point, Lake Michigan, and five miles from Station No. 15, Eleventh District, (Milwaukee, Lake Michigan.) The disaster was reported to the lookout of the station, by a passing steamer, at a quarter of 4 o'clock in the morning. The crew were summoned immediately, and the surf-boat launched. The fog was so dense that it required the utmost care in steering to find the

way, but they reached the vessel safely in an hour's time. They found the captain expecting the arrival of a tug. In anticipation of its approach, the life-saving crew made soundings to guide it, and on its arrival assisted in running lines. The vessel was got off with little damage.

August 1.—The sloop Fleetwing, of Chicago, with four persons on board, two of whom were passengers, pleasuring on the lake at Chicago, was run into by a steamer at the entrance of the harbor. Her jib-boom and mast were carried away, and, thus disabled, her occupants were without means of getting to land. Three of the life-saving crew of Station No. 11, Eleventh District, were cruising about in the basin, and, seeing the collision, headed their boat at once for the yacht, which was drifting rapidly out on the lake. They caught up with her, made fast to her, and towed her safely into harbor.

August 2.—A fish-boat, with two men, going in to Erie, Pennsylvania, with a load of fish, was struck by a sudden squall and capsized. The lookout at Station No. 6, Ninth District, (Erie, Lake Erie,) reported the fact on the instant, and the life-saving crew launched the surf-boat and went at once to their assistance. They rescued the men, who were clinging to the bottom of the boat, and then assisted in righting her. She was towed into harbor by a passing tug.

August 7.—A small boat, with three men, engaged in fishing near Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) capsized near the mouth of the creek at half-past 3 o'clock in the afternoon. The only one who could swim struck out for the shore, leaving the others trying to cling to the bottom of the boat; but they were badly frightened and confused, and the boat rolled over and over, so that they could not hold on. A surfman of the station, who was near at hand, saw the accident, and quickly pushed off in a skiff to their aid. In the meantime the station crew had been alarmed, and immediately proceeded in the surf-boat and rescued the party.

August 14.—As two teamsters were fording their wagons across Two Heart River, Michigan, near Station No. 11, Tenth District, (Lake Superior,) on their way to a lumber camp in the woods, one of the wagons stuck fast in the quicksand, of which the bed of the river is largely composed. In the efforts of the horses to get free, the wagon-body floated off from the wheels, while the latter, with the horses attached, were carried by the current to a shoal spot further down, where they lodged. The keeper of the station, observing the mishap, hastened to the spot, accompanied by one of the surfmen, with a coil of rope to render assistance. They waded out to the wagon-body, which was conveniently near, and by using that as a boat, soon reached the team. The line was then fastened about the horses' necks, and by dint of hard work and after a long struggle, alternately wading and swimming, they succeeded in getting them safely across the river, the horses being so exhausted in the struggle that it was with much difficulty they could reach the station. Once there, the drivers and their teams were properly cared for until the next day, when they were in condition to resume their journey.

August 15.—The crew of Station No. 9, Ninth District, (Marblehead, Lake Erie,) was called upon to drag the lake for the body of Edward Berry, who fell overboard from the yacht Maid of the Mist while out with six others pleasuring on the lake. The body was recovered after seven hours' search.

August 15.—Early in the morning the keeper of Station No. 2, Tenth District, (Point aux Barques, Lake Huron,) saw a barge broken loose from her tow. Her sail was set, and as she was three miles and a half away, it was at first impossible to discern whether she was sailing southward or drifting ashore. At 7.45 A. M., she stopped in her course, and the keeper had the surf-boat launched and manned, and pulled out to her. The wind was fresh from the northeast, and the sea so heavy that the surf-boat, forced to go abeam to sea and wind, could not reach the barge until 9 o'clock. They found her to be the Eleanor, of Bay City, Michigan. She was on a reef, in ten feet of water, and abandoned. Her stern was badly stove, and the lumber with which she was laden had shifted aft and broken through the cabin. In the cabin were discovered some bedding, a compass, carpenter's tools, a few books, and other small effects, of which the keeper took charge. The life-saving crew kept a watch over the barge until the parties owning her arrived. Most of her cargo washed ashore, and was secured and taken care of for the owner.

August 16.—The schooner Estella, of Wellfleet, Massachusetts, with a crew of four men and a cargo of salt, sprang a leak at 5 o'clock in the morning and so filled with water that her pumps could not free her. At 11 A. M., her captain ran her ashore about one hundred yards north of Station No. 10, Second District, (Cape Cod, Massachusetts.) One of her crew swam ashore and sent word of the disaster to the keeper, who was at his own home, the stations on the Atlantic coast being closed at this season. The keeper called to his assistance the only surfman at hand and started at once for the schooner, arriving abreast of her at 1 P. M. They launched a small boat and boarded her. The Estella's captain went ashore to make arrangements with the wreck-master for getting the schooner off, the keeper, surfman, and some volunteers remaining on the wreck. They labored three days trying to work her off by running out hawsers, filling the hold with casks, and pumping. The third night, August 18th, the vessel floated, but turned on her beam ends and filled with water. The sea at the time was rough, and as there was no chance of saving the vessel the life-saving men assisted, on the 19th, to strip her. They were able, however, to save but a few of her sails, and that night she went to pieces, strewing the beach with rotten wood.

August 16.—The schooner Fiat, of Big Sandy Creek, New York, bound from Trent, Ontario, to her home port, lumber-laden and with a crew of four men, stranded at 2 o'clock P. M. on the bar at the mouth of Big Sandy Creek. The crew of Station No. 1, Ninth District, went to her assistance in the surf-boat and attempted to work her off with poles and by rolling her main-boom; but finding these means ineffectual they made a raft of the lumber that formed her cargo, and thus lightened her sufficiently to get her over the bar and take her safely into harbor.

August 18.—At half-past 5 o'clock in the morning, the schooner Cortez, of Oswego, New York, with a cargo of coal and a crew of eight men, was discovered by the patrol of Station No. 8, Tenth District, (Lake Huron,) stranded on the point outside of Hammond's Bay, about eight miles west-southwest of the station. As soon as possible he reported to the keeper, who at once took the sail-boat, and with his crew ran down to her, arriving at 8.10 A. M., a little more than an hour after leaving the station. They boarded the vessel and carried out her anchor,

which failed to hold, and came home. They then commenced throwing over cargo to lighten her, and after nearly thirty tons of coal had been discharged she went off without damage.

August 18.—On the same day, while the crew of Station No. 8, Tenth District, were engaged upon the *Cortez*, the schooner *Dreadnaught*, of Sheboygan, Michigan, which was on her way to assist the *Cortez*, was struck by a squall and dismasted. The keeper, with a part of his crew, went immediately to her, and worked three hours in getting the mast on board, after which they stripped her, stowed her canvas and rigging, and put her in shape to be towed into port, and then returned to the *Cortez*.

August 19.—Christopher Bradford, of Atlantic City, New Jersey, who was out in a boat by himself, watching a swimming match, attempted to catch a line thrown him from a passing vessel, intending to draw his boat alongside. The vessel was going very fast through the water, and the sudden tautening of the line jerked the small boat bottom side up with the occupant beneath it. The vessel continued on her course, but the life-saving crew of Station No. 28, Fourth District, (New Jersey,) who were near at hand in their boat, went to the rescue. They picked the man up and righted his boat, after which he returned with it safely to the shore.

August 19.—A boy named Albert Ia Fond, aged five years, fell from the dock at Two Rivers, Wisconsin. The crew of Station No. 17, Eleventh District, (Lake Michigan,) who were out on the beach at drill some distance off, saw a number of persons running towards the place, and hastened themselves to the scene. Surfman Hugh Le Clair, who first reached the river, almost breathless from his run, jumped in and swam out into the current, which was very swift, but when he was within a few feet of the boy, the little fellow sank for the last time. As he disappeared, Le Clair endeavored to reach him under water with both hands and feet, but having gone in with his clothes and boots on, he could handle himself only with great difficulty and was unsuccessful. Finding himself failing in strength, he now turned for the shore, calling out as he did so that he should need assistance to land. When he reached the dock, he had to be pulled out of the water by his mates in a completely exhausted condition. The life-saving crew and the resident fishermen went out and grappled several hours for the body before it was found.

August 20.—At 4.30 P. M., the row-boat *Pinafore*, having on board two persons out pleasuring on Lake Michigan, filled with water, owing to the fresh breeze, and her occupants, having no means of bailing her, were in imminent peril of drowning. The lookout at Station No. 15, Eleventh District, (Milwaukee, Lake Michigan,) four and a half miles distant, saw their situation and gave the alarm. The surf-boat was quickly launched and pulled out to the rescue, reaching the boat at 5.15 P. M. The men were in the water sustaining themselves by holding on to the gunwale of the boat. They were taken into the surf-boat and their boat was towed ashore.

August 21.—The tug *Urania*, of Fairport, Ohio, with a crew of three men and two passengers on board, out on a pleasure cruise on Lake Erie, unshipped her rudder and became disabled. A signal for assistance was made, and the crew of Station No. 7, Ninth District, (Fairport, Lake Erie,) launched the surf-boat, pulled out to her, made fast lines, and helped her into harbor.

August 25.—The sloop *Emma*, from Jersey City to the fishing banks, with eight persons on board, misstayed in a squall and was

cast ashore, where the sea made a clean breach over her, at 5 o'clock in the afternoon, a quarter of a mile north of Station No. 4, Fourth District, (Long Branch, New Jersey.) The crew of the station and some men belonging to Stations Nos. 2 and 3, who happened to be near by, the stations being closed at this season, ran to the shore and into the surf, brought the men to land and sent them to the station, where a fire was made to dry and warm them. They were all provided with food, and six were given shelter for the night.

August 26.—The crew of Station No. 13, Eleventh District, (Kenosha, Wisconsin,) went off to the schooner C. H. Hackley, of that port, anchored two miles from land with a signal of distress flying. She was bound from Chicago to Menomonee, and had disabled her windlass by the breaking of some of its parts. The strong southeast wind, which was blowing at the time, had caused a high sea, and, as they had lost the oars out of their yawl, they were unable to land to obtain necessary repairs. The station crew landed the captain, who proceeded by rail to Milwaukee, to obtain the requisite castings. Upon his return the next day, he was conveyed back to the vessel, and the life-saving crew assisted in repairing the damage. By the timely assistance thus rendered, the schooner was enabled to continue her voyage in safety.

August 26.—In thick weather, the schooner Hannah Etty, of Manitowoc, Wisconsin, with a cargo of coal and wood, and a crew of five men, sprang a leak and became water-logged and capsized about eight miles south of Sheboygan, Wisconsin. Her crew attempted to reach the harbor in their yawl. The lookout of Station No. 16, Eleventh District, (Sheboygan, Lake Michigan,) perceived the boat approaching. The night had been stormy and the morning opened with thick fog and a high surf. The keeper, fearing that the yawl would capsize in the breakers on the bar, went out to meet it, transferred the men to the surf-boat, and took them safely ashore to the station. Without this assistance they could scarcely have got over the bar in safety, for the yawl, a small one, besides being overcrowded, was wretchedly equipped, having but two oars, the blades of which were partly gone, an iron bolt in one gunwale, and an old file stuck in the other, serving as thole-pins; while a piece of pine board about five feet in length was made to do duty as a steering-oar. With this outfit, the shipwrecked men had thought to cross the bar, but, on nearing the breakers, the boat shipped so much water, that they were compelled to lay to outside until the life-saving crew came to their rescue.

August 27.—A spile-driver, which had been out setting spiles near Fairport, Ohio, was returning to the harbor in tow of a fish-boat, when the latter lost her rudder in a squall and became unmanageable, so that she had to be cut loose from her tow. The crew of Station No. 7, Ninth District, (Fairport, Lake Erie,) launched the surf-boat and ran lines to the driver, and towed her and her four men safely into harbor.

August 27.—On the same day, the schooner Winnie Iona, of Fairport, returning to port from a trip out on the lake, was caught in a squall, unshipped her rudder, and partly filled with water, when about two hundred yards west of the harbor. The crew of the station (No. 7, Ninth District) ran lines to her and got her safely in.

August 28.—A man named John Neary, while attempting to get upon the dock from a skiff, fell into the river at Chicago. A surfman of Station No. 11, Eleventh District, who was on the dock at the

moment, ran to him, pulled him out, and took him to the station, where he was provided with dry clothing.

August 29.—At daylight, the keeper of Station No. 4, Second District, (Gurnett Point, Massachusetts,) discovered a small sloop ashore, about three miles distant, on Plymouth Beach. The weather had been bad during the evening previous, and at the time of his discovery of the sloop, the keeper was accompanied by a gentleman who was visiting the beach. The station was closed, as is customary on that coast during the summer months; but as one of the surfmen lived near, he was hastily summoned, and the three men proceeded to equip themselves for the task of aiding the stranded vessel. The keeper's sailboat was got ready for use, and with a tackle, a coil of rope, a boat anchor, and other appliances for heaving the sloop off, and with a dory in tow, they started from the beach. Arriving abreast of the stranded vessel, which proved to be the fishing-sloop *Black Diamond*, of Plymouth, bound in from a fishing cruise, with two men on board, they anchored as near as it was safe to do so, and the keeper and surfman jumped into the dory and ran a line to the sloop, for the purpose of hauling her off. They lightened her by throwing the ballast and cargo of fish overboard, and then, by alternately heaving on the line, and getting into the surf and lifting and pushing with all their strength, the sea breaking over them continually while thus employed, they succeeded in getting her afloat in a leaky condition.

August 29.—The side-wheel steamer *Marine City*, of Port Huron, Michigan, bound to Toledo, Ohio, with a cargo of lumber and fish, and having on board one hundred and ten passengers and a crew of forty-eight men, took fire at half-past 3 o'clock in the afternoon, off Alcona, about two miles from land, and was destroyed. Although not within the scope of the Service, a portion of the crew of Station No. 5, Tenth District, (Sturgeon Point, Lake Huron,) rowed out to the scene of the disaster in the surf-boat and picked up five persons, tugs and other boats having rescued all of the others saved. Nine persons were lost.

September 1.—The crew of Station No. 1, Third District, (Narragansett Pier, Rhode Island,) had just opened the station and entered upon their duties for the active season, when at noon they heard a cry that a man was drowning. The surf-boat was immediately launched and pulled out to the man, who having gone in bathing, was rapidly being swept seaward by the current. He was rescued in an exhausted condition, and would have perished but for the prompt service of the life-saving crew, the surf being very high at the time.

September 2.—The yacht *Black Bird*, of Little Sandy, New York, with two men, while running from the Thousand Islands up the St. Lawrence River, having received damage by striking upon a rock, put into Big Sandy Creek. The crew of Station No. 1, Ninth District, went to her assistance. They found her leaking fast, her jib blown away, and her fore-sail badly rent. They took out her ballast, rigged a purchase, and hauled her ashore upon rollers, found the leak, calked it and relaunched her, leaving her in good condition. The two men were kept one day at the station.

September 4.—The schooner *Jas. S. Hewett*, of Philadelphia, bound from Boston to Philadelphia, in ballast, with a crew of six men, stranded in a high sea a quarter of a mile north of Station No. 27, Fourth District, (Atlantic City, New Jersey.) The crew of the station boarded her, ran out an anchor at ebb-tide, and at high-tide assisted her crew to heave her off and run inside the harbor.

September 5.—A boy named Louis Summers, of Racine, Wisconsin, aged nine years, while at play on the beach near that place, went too far out in the surf and sank. A surfman of Station No. 14, Eleventh District, learning of the accident, ran into the lake and recovered the body after it had been twenty minutes under water. The life-saving crew, assisted by a physician, used the customary methods of resuscitation, continuing them an hour and a half, without success. The physician certified that the temperature of the water must have produced death in a few moments after immersion.

September 7.—The sail-boat Eudora, of Point au Pelé, Canada, while racing with another boat, capsized, about four and a half miles northeast of Station No. 9, Ninth District, (Marblehead, Lake Erie.) The boat was seen from the station, and the life-saving crew went out at once. Before they reached the spot, however, the Eudora's men had been picked up by the companion boat. The life-saving crew took the sails off the capsized boat, and tried to right her. As they were unable to do this, they anchored her so that she would remain until a tug could be procured to take her into port.

September 8.—At 3 A. M., the schooner Mary A., of St. John, New Brunswick, with a cargo of bark, a crew of four persons, and two passengers, was caught in very thick weather, could not see land, and struck on Squam Bar, a mile southwest of Station No. 2, Second District, (Annisquam, Massachusetts.) On account of the fog the crew of the above station did not discover the vessel until two hours later, and at 5 A. M. went out to her in the surf-boat, ran out an anchor, and left her to go to the relief of the schooner Franklin. On their return from this duty they found she had got off and gone into harbor.

September 8.—At 3 A. M., the schooner Franklin, of Wiscasset, Maine, with a cargo of lumber, and a crew of three men, went ashore, owing to thick weather and an error of compass, four miles from Station No. 2, Second District, (Annisquam, Massachusetts.) The life-saving crew went to her in the surf-boat, and found her on a spit, about three hundred yards off the beach, and ascertained that the crew had landed in their own boat. They took the sailors again on board to collect their baggage, and landed them with their effects. At high-water the vessel came off the spit, but beached and became a total wreck.

September 8.—At 3.30 A. M., the schooner Adirondack, of Boston, with a crew of fourteen men, on a fishing cruise, laden with fish, dories, and fishing gear, stranded near Station No. 3, Second District, (Scituate, Massachusetts.) The patrol reporting the disaster, the keeper immediately mustered his crew and boarded the vessel. The tide being at ebb, and the sea quite smooth at the time, the sailors remained on board until 6 o'clock, when they came ashore and took shelter at the station. The captain went to Boston for a tug, with which he returned at 11.30 A. M., at which time a heavy sea was running. The keeper and crew of the station, with five of the Adirondack's men, went out in the surf-boat and ran lines between the two vessels. The schooner was soon got off, and towed to Boston, the captain and one man going in her. The rest of the crew remained at the station until evening, and went to Boston by rail. They left behind them on the beach six dories and their fishing gear, which the keeper stored until called for by the owners.

September 9.—The weather being thick with rain, and a strong north-east wind blowing, the keeper of Station No. 8, Fifth District, (Cedar

Island, Virginia,) saw a steamship running direct for the shoals. He immediately ran up the warning flags, and the vessel changed her course and cleared the shoals in safety.

September 9.—The keeper of Station No. 9, Fifth District, (Hog Island, Virginia,) the weather being bad and the sea high, discerned a steamer close on the outer shoals. He hoisted a flag of warning, which the steamer saw and changed her course.

September 9.—The schooner Julia Willard, of Erie, Pennsylvania, laden with iron ore, and having a crew of six men, sprang a leak in heavy weather, about five miles north of the piers at Cleveland, Ohio. The life-saving crew of Station No. 8, Ninth District, went out to her in the surf-boat, assisted in getting up her anchors, manned her pumps, and were just able to keep her free while she was towed by a tug into the port of Cleveland.

September 10.—At 4.30 A. M., the schooner Wellington, of Bucksport, Maine, with a cargo of lumber and a crew of five men, encountered severe weather, and stranded on Rocky Hill Point, two miles north of Station No. 5, Second District, (Manomet Point, Massachusetts.) She was discovered, before she struck, by the station patrol, who hastened to the point and arrived just after the mate had swum ashore—it being but a short distance—with a line, and by its means he and the surfman succeeded in landing the remaining four men of the crew in safety. At 5 A. M., the wreck was discovered from the station by the keeper. He at once summoned his crew and started with the mortar and beach apparatus for the scene. On their way they were met by the surfman with the rescued sailors. They were conducted to the station, furnished with food and dry garments, and as soon as they were made comfortable the life-saving crew returned to the wreck for the clothing of which the men had divested themselves before coming ashore. Nearly all of it was recovered and taken to the station. Three of the crew were kept at the station two days, and the other two men remained one week. The vessel was a total loss.

September 10.—At 2 o'clock in the morning, a surfman of Station No. 9, Fifth District, (Hog Island, Virginia,) saw a vessel standing close in to the beach. He burned his Coston light and the vessel stood off shore.

September 10.—The British schooner Isabella, of Napanee, Ontario, with a crew of four men, bound from Whitby, Ontario, to Sodus Point, New York, with a cargo of iron ore, was dismasted and sunk a few hundred feet outside the entrance to the harbor of Charlotte, New York. It appears that while riding at anchor during the night the foremast was carried away by the rolling of the vessel. In its fall it stove a large hole in the deck, and as the sea occasionally broke over her she began filling with water. The captain, fearing she would founder in deep water, slipped anchor with the view of allowing her to drift in to the beach, about fifteen hundred feet distant. Some part of her dismantled rigging must have fouled on the bottom, for she soon fetched up again and swung head to the wind and sea. In this condition she was discovered at daybreak by the light-keeper, who immediately reported to the keeper of the station, (No. 4, Ninth District,) located inside the harbor piers. In the meantime she was also discovered by Captain Hadden, of the schooner Two Brothers, who gave the alarm to several vessels anchored near, and then lowered his boat and went off to the assistance of the imperilled crew. Just as he was about to return he was joined by the crew of the

station in their surf-boat. The station men, finding the crew safe, pulled back to the station, where they procured lines, and then, with the captain of the disabled schooner in their boat, and accompanied by a steam-tug, returned for the purpose of attempting to tow the vessel into the harbor. While the life-saving crew were engaged in making fast the lines on board the schooner, which by this time was nearly full of water, she gave a sudden plunge and went down, head first. Some of the members of the life-saving crew and others who were on board rendering assistance, barely had time to run aft and scramble into the boat as the schooner sank; one of them, Captain Sanders, of the Eureka, being waist-deep in the water as he caught the gunwale of the boat and was drawn in, and thus escaped going under. The schooner was a total loss.

September 12.—At 7 o'clock in the evening, a surfman of Station No. 9, Fifth District, (Hog Island, Virginia,) discovered a steamer steering too close in shore. As she paid no heed to the signals he made with his lantern, the keeper, who observed the situation from the station, burned a red rocket, on which the vessel changed her course barely in time to clear the bar.

September 13.—At 3 P. M., at flood-tide, the schooner T. W. Allan, of Eastport, Maine, with six men, one a passenger, on board, and a general cargo, being caught in a thick fog, the captain lost his reckoning and anchored near Carr's Ledge, some distance from Station No. 3, First District, (Crumple Island, Maine,) in a dangerous position. Her fog-horn was heard at the station, and the crew immediately launched their boat, and, passing between Fisherman's and Browney's Islands, followed the sound of the horn and reached the vessel, boarded her, hove up her anchors, ran her out between the above-named islands, then beat down between Crumple and Wass Islands, and took her safely outside into the open sea. They then left her, and returned to the station at 9 o'clock in the evening.

September 13.—The sloop Highland Lass, of Friendship, Maine, with two men on board, bound from Chatham, Massachusetts, to Boston, with a cargo of lobsters, stranded during the night a mile and three-quarters north of Station No. 12, Second District, (Orleans, Massachusetts,) the wind at the time being light from the southwest. She grounded in consequence of the carelessness of the watch in falling asleep. Very soon after striking she was discovered by the patrol from the station. The sailors contemplated landing in their own boat, but it had barely touched the water when it filled, and they were glad to hoist it on board again and await assistance from the station, which the patrolman promised to bring. Within an hour the life-saving crew were on board. They carried out an anchor, and succeeded in heaving the vessel off on the incoming tide, just about daybreak, to the great relief of her crew. It was fortunate they did so, as the wind had shifted to the northeast and a high sea set in soon after. Had she remained ashore longer, it is probable she would have become a total loss.

September 15.—In the early afternoon, a company of ladies and gentlemen, seven in number, visited Station No. 16, Fourth District, (Island Beach, New Jersey.) After they had finished their inspection of the house and apparatus they returned to the yacht, the Mist, of Waretown, New Jersey, in which they had come, and found she had run ashore on the north point of the beach and lodged on an old wreck, where, partly

filled with water, she was pounding heavily. The life-saving crew, observing the condition of affairs from the station, went to the assistance of the party. They removed the ballast from the yacht, and got her afloat, and inside the bay. The keeper sent the ladies to Waretown in charge of one of the crew, and took the men, who were thoroughly drenched in righting the yacht, back to the station and provided them with dry clothing.

September 18.—The schooner Margaret Amelia, of Absecon, New Jersey, with a crew of eight men, returning from the fishing-grounds with a cargo of menhaden, stranded while running for the harbor on the south end of Auchorage Island. The crew of Station No. 23, Fourth District, (New Jersey,) took the surf-boat and boarded the vessel. By skilful management of her sails, they forced her off, bow first, without damage, and she proceeded on her way.

September 21.—At 5 P. M., the British schooner Bonetta, of Windsor, Nova Scotia, bound from Windsor to Boston, with a crew of six persons, and ten passengers on board, was seen through the fog which prevailed, from the lookout of Station No. 2, First District, (Cross Island, Maine,) lying at anchor in an exposed position, about one mile east of the station. The keeper's small boat being afloat and ready for use, he went out to the schooner, informed her captain of her perilous situation, and brought her into a safe harbor.

September 21.—While the barge Seminole, of Bay City, Michigan, was anchored at Buffalo during a southwest gale, her crew, consisting of four men, attempted to go ashore in her boat, and, the sea being very heavy, were capsized in the surf. The crew of Station No. 5, Ninth District, (Buffalo, Lake Erie,) launched the surf-boat and went to the rescue, saving the men and their craft.

September 21.—The schooner Penobscot, of Milwaukee, with a crew of seven men, bound from Chicago to Muskegon, while endeavoring to make her harbor of destination, struck on the piers and was driven ashore, at 3 o'clock in the morning. The keeper of Station No. 8, Eleventh District, (Muskegon, Lake Michigan,) mustered his crew at once, ran lines from the vessel and hove on her until, at 11 A. M., they got her out into deep water. They then fastened her with lines to one of the harbor piers to await the moderating of the sea. She received considerable damage.

September 24.—The schooner Helvetia, of Buffalo, bound from Escanaba, Michigan, to Fairport, Ohio, laden with iron ore and having a crew of ten men, grounded on the bar outside of the harbor of Fairport while being towed in by a tug. The crew of Station No. 7, Ninth District, launched the surf-boat to their assistance, ran lines to the piers, and went on board and helped heave her in.

September 25.—At noon, a man entered Station No. 2, Fourth District, (New Jersey,) and gave information that a boat was capsized in the river about one mile from the station, and two persons were in imminent danger of drowning. The crew, who hastened to the shore, launched a small boat, and pulled out to the rescue. They found Mr. Wolff and wife, of New York city, who had been summering at Atlanticville, clinging to the bottom of a sail-boat, the Anneke, of Atlanticville, which had careened in consequence of mismanagement of the tiller. They were rescued and taken to the station in a chilled and much exhausted condition. They were cared for as well as the resources of the station allowed; but the lady was exposed to inconveni-

ence and danger, by being obliged to remain in wet garments until dry ones were obtained from a distance. The Women's National Relief Association, a short time subsequently, sent a supply of clothing and other necessaries to this station, as well as to others, for use in similar emergencies.

September 25.—The schooner *Resumption*, of Marquette, Michigan, bound from Kenosha, Wisconsin, to Ford River, Michigan, with a crew of eight men, stranded at 8 o'clock in the morning, one mile southwest of Station No. 17, Eleventh District, (Two Rivers, Lake Michigan,) during a fog. The captain went ashore at the above station immediately after the disaster, and requested the services of the life-saving crew, with the tug *M. A. Gagnon*. They manned the surf-boat and went out with the tug, arriving half an hour after she struck. The surf-boat took the captain to his vessel and ran a line from her to the tug. An unsuccessful attempt was then made to pull the schooner off. The life-saving crew returned to the station at noon, leaving the vessel lying easy, while a larger tug was sent for, which eventually got her off.

September 26.—An open row-boat, with a party of six boys and girls, out on a pleasure excursion on the river at Cleveland, was observed by the lookout at Station No. 8, Ninth District, (Cleveland, Lake Erie,) to be drifting out into the lake. In the meantime, the occupants of the boat, not understanding its management and finding they could not control it, the wind being fresh, hoisted a shawl as a signal of distress. The surf-boat was immediately launched, and the crew pulled out a distance of about five miles, and rescued the party, towing them into port.

September 28.—The schooner *C. H. Foster*, of Boston, bound from Boston to Philadelphia in ballast, with a crew of seven men, misstayed and struck one and a half miles northeast of Barnegat light, during a thick fog, at 3 o'clock in the morning. At 5.30 A. M., the crew of Station No. 16, Fourth District, (New Jersey,) reached the schooner with the surf-boat and boarded her by means of a line thrown from the schooner. There proved to be no immediate assistance required, and the life-saving crew returned to the station. A little later in the day, assisted by the crew of the adjacent station—No. 15—they hauled the breeches-buoy apparatus to the beach opposite the vessel, rigged it, and kept up communication with the schooner until sunset, making in all fifteen trips, and sending aboard several persons to consult with the *Foster's* master regarding means to be taken for her safety. The crews of Stations Nos. 17 and 18 were also on hand, ready to render assistance if required, and the crew of No. 17 took a dispatch to the signal-station sending for a tug. At 12.30 P. M., a tug arrived and laid anchors, and at 2 P. M., on the 29th, the vessel was hauled off and proceeded on her way.

September 30.—The schooner *Volunteer*, of Ogdensburgh, New York, having on board a crew of three men and one passenger, and a cargo of hop-poles, while endeavoring to make Port Ontario in a gale of wind, misstayed, became unmanageable, and stranded. Her condition was perceived by the lookout at Station No. 2, Ninth District, (Salmon Creek, Lake Ontario,) and the life-saving crew hastened to launch the metallic life-boat, and went out to her assistance. They had more than five miles to go, and the transit occupied three-quarters of an hour. When they reached the vessel they found the crew had got ashore in their own boat. As nothing could be done for the relief of the vessel,

and as it was impossible to make the journey back with the boat, against the strong headwind and heavy sea, the keeper and crew returned to the station on foot, leaving the life-boat in care of the man who had charge of the Texas light. The next day, October 1st, the life-saving crew returned with the surf-boat and towed the life-boat back to the station. The same night, the keeper went down with a hawser and placed a surfman on guard to protect the revenue by seeing that no cargo was removed. The vessel was got off on the 6th of October, by the aid of the life-saving crew.

October 3.—The yacht George Anderson, of Somers Point, New Jersey, with two men, capsized in a heavy sea on the east point of the north shoal, Great Egg Harbor Bar, about three miles south of Station No. 29, Fourth District, (New Jersey.) The crew of the station, who had been watching her, saw the disaster, and immediately launched the surf-boat and pulled out, but, when within a hundred yards of her, met the boat of a wrecking-schooner which lay in the inlet not far away, having the yacht's men on board. Subsequently, the life-saving crew assisted in the search for the yacht, which was found the third day after the disaster, in the sound about three miles north of the station.

October 3.—The schooner Monterey, of Detroit, Michigan, with a cargo of block stone and a crew of eight men, while lying at the dock at Marblehead Point, Ohio, was endangered by a heavy wind blowing on shore and driving her against the dock. The life-saving crew of Station No. 9, Ninth District, (Lake Erie,) took their surf-boat, went to Sandusky, procured a tug, and assisted in hauling the schooner out of her perilous position.

October 4.—Frank Burbage, a young fisherman residing at Rehoboth City, Delaware, attempted to launch his boat at high water, while a fresh southwest wind was blowing and there was a heavy undertow. When his boat reached the breakers, she turned bottom up and caught him underneath. The life-saving crew of Station No. 2, Fifth District, (Delaware,) ran quickly to the beach, formed a line extending out into the breakers by clasping hands, and caught the boat, hauled her in, and released the nearly exhausted young man from his perilous position.

October 4.—At midnight, a patrolman of Station No. 18, Sixth District, (North Carolina,) discovered the light of a vessel coming directly on shore. He burned a Coston signal, and the vessel went about and stood off shore.

October 4.—The British schooner Sea Bird, of Kingston, Ontario, laden with lumber, having on board a crew of five men, and six passengers, stranded at 7 o'clock in the evening, about half a mile east of Station No. 3, Ninth District, (Oswego, Lake Ontario,) the wind blowing hard at the time and a heavy sea running. The crew of the station, who had been watching her, were on hand when she struck with the cart and apparatus. They immediately planted the Lyle gun and sent the shot-line aboard at the first shot. The breeches-buoy was soon rigged, and one of the life-saving crew sent off in it to superintend the landing of the sailors. They were all safely landed without getting wet. The vessel was subsequently saved in a damaged condition.

October 5.—The schooner H. A. Lamars, of Cleveland, Ohio, with a cargo of limestone and a crew of five men, sank about one hundred and twenty rods east of Station No. 9, Ninth District, (Marblehead Point,

Lake Erie.) The crew of the station assisted to lighten the schooner off the rocks, after a steam-pump had been obtained to free her of water. The steam-pump broke down, and the life-saving crew were called on a second time to assist, when they succeeded in raising the vessel and getting her off.

October 6.—The schooner *George Sherman*, of Cleveland, Ohio, with a cargo of iron ore and a crew of eight men, in attempting to make port at Erie, Pennsylvania, misstayed and drifted onto the beach about two miles northwest of Station No. 6, Ninth District, (Lake Erie.) The life-saving crew launched the surf-boat, went out, and gave assistance by running lines from the schooner to the tugs which were employed to pull her off and tow her into port.

October 7.—At 8 A. M., the British schooner *Vesta*, of St. John, New Brunswick, laden with freestone and having seven persons on board, ran on a reef as she was going out of Cranberry Island harbor. The keeper of Station No. 4, First District, (Maine,) who was watching her, had seen her standing into danger. Ten minutes after the stranding he was alongside of her in the small boat, and boarded her. She had all sails down and her anchor under foot. As soon as she floated and came head to the wind the keeper advised the captain to make sail, and, this done, piloted him through the inner passage out to sea. No damage was sustained by the vessel.

October 8.—At 5.30 P. M., the keeper of Station No. 30, Third District, (Long Island,) discovered a cat-boat and sloop, which proved to be the *Bride of the Mine* and the *United States*, both of Sayville, Long Island, on shore at Jones' Inlet Bar. He immediately launched the surf-boat and went first to the cat-boat, but finding it deserted proceeded to the sloop, on which the three men of the *Bride of the Mine* had taken refuge. The life-saving crew carried out the anchor of the *United States* and hauled her off into deep water. They then took the cat-boat's captain and went again to her. Finding her full of water they returned to the sloop and remained by her two hours, until the tide allowed them to get her over the bar, after which they took her inside and anchored her off the station. The cat-boat went to pieces.

October 12.—At 8.30 P. M., October 11th, the schooner *Kearsarge*, of Chicago, bound from Traverse Bay, Michigan, to Chicago, with a crew of seven men and a cargo of hard-wood lumber, ran ashore, while a heavy fog prevailed, on a reef off Racine, Wisconsin. Soon after grounding she showed a torch, which, however, was not visible at the nearest life-saving station, (No. 14, Eleventh District, Lake Michigan.) At about 10 P. M., the keeper of the station received information from the captain of the tug *Wetzel*, of the disaster, with the statement that he had brought the master of the schooner ashore to telegraph for wrecking apparatus. In answer to inquiries made by the keeper, he also stated that, unless the wind should rise and the sea grow heavy, there would be no need of the presence of the life-saving crew at the scene of disaster. At 7 o'clock on the following morning, the keeper and five of the surfmen went on board the tug and steamed out to the reef on which the schooner lay, about three miles off shore, to ascertain if they could be of any use in stripping her and saving property. On arriving alongside, the tug thumped bottom, and, as the surf was rising, it was deemed advisable to return to land and launch the life-boat. This they did, and when they again reached the wreck

the sea was breaking all over her. The captain and his six seamen were taken into the life-boat and landed at the station, where they were sheltered and cared for until the evening of October 14. In the meantime the life-saving crew took one of the owners of the schooner, who had arrived, out to the wreck in the life-boat and saved considerable of the property. Subsequently the Kearsage floated off, and was towed, in a capsized condition, to Milwaukee, where she was beached, but soon went to pieces.

October 12.—The schooner Red, White, and Blue, of Milwaukee, bound from Buffalo to Milwaukee, with a crew of eight men, lost her bearings in thick, smoky weather, and stranded at 4 o'clock in the morning, on North Point, seven miles north of Station No. 15, Eleventh District, (Milwaukee, Lake Michigan.) The keeper of the station, on being informed of the fact, launched the surf-boat at a little after 7 o'clock, and, in tow of a tug, went out to the vessel. They boarded her at 8 A. M., and, after running lines, assisted in throwing overboard sufficient of her cargo of coal to lighten her, so that the tug succeeded in pulling her off.

October 13.—The sloop Lidie Jones, of Tuckerton, New Jersey, with two men on board, laden with coal for Stations Nos. 24 and 25, Fourth District, (New Jersey,) stranded at midnight on Short Beach, near Station No. 23. Her crew left her and went on shore, and shortly afterwards the sloop floated off, drifted, and went ashore again on the north point of Brigantine Beach. She was discovered by a patrolman of Station No. 24, who burned a red Coston signal and hastened to alarm the crew of his station. At 3.35 in the morning, they reached the sloop in their surf-boat, but finding her deserted and sunk returned to the station for breakfast, after which they went to her again and found the crew of the sloop and that of Station No. 23 already there. The two life-saving crews, hoping to save the sloop, threw over her cargo, and on the 21st the master of the sloop and his two sons, assisted by the crew of Station No. 24, hove the vessel off.

October 14.—Early in the morning, a surfman of Station No. 11, Eleventh District, (Chicago, Lake Michigan,) discovered a small boat, full of water, drifting past the station. He reported to the keeper, who sent two men to examine it. They found her so damaged as to be of no value, and on the beach they found several fish-nets, and some other articles, which were taken to the station. Later in the day, a chest, painted red, came ashore. On one end was the name "Aug. Hellgren," in white letters; on the other, the words "North America." It was found to contain fishing apparatus. The goods were dried, stored away for safe-keeping, and advertised in the Chicago papers.

October 16.—During a terrible southwest gale, which swept the coast of Lake Michigan, the schooner Trio, of Chicago, bound from Portage, Michigan, to Chicago, with three men on board, and a cargo of lumber, attempted, in tow of the steam-tug Wetzel, to make the harbor of Racine, Wisconsin. As the two vessels neared the entrance of the piers, they were almost engulfed; the tow-line parted, and the schooner was at once swept past the end of the north pier over a sunken crib, which she struck, and drifted a mile north of the harbor. Her only anchor was let go, but it proved of little service, and she soon set a signal of distress. The tug, meanwhile, had got into harbor. The keeper of Station No. 14, Eleventh District, (Racine, Lake Michigan,) immediately notified the captain of the tug that a hawser would be loaned

from the station. The Wetzel steamed over to the station, and a 4½-inch hawser was placed on board, accompanied by one of the life-saving crew, to assist in working the lines. The tug succeeded in making fast to the Trio, the latter slipped her chain, and was again towed to the entrance of the harbor, when the hawser parted and the Trio was swept over the sunken crib as before; but the tug, being handled with great skill, kept close to her charge, and the hawser was cast on board once more by the surfman, and a third time the piers were approached. The spectators were apprehensive that the line would again give way, but on nearing the piers, the tug slackened her speed to ease the strain on the hawser, and the instant the two vessels were headed fairly for the harbor, all steam was crowded on, and the Trio was pulled safely in, though with her bows stove in and leaking badly. But for the timely use of the station hawser in the hands of the surfman, and the skill and determination of the captain of the Wetzel, the schooner undoubtedly would have been lost.

October 16.—At daybreak, a surfman of Station No. 17, Eleventh District, (Two Rivers, Lake Michigan,) discovered near by a fish-boat lying bottom up on the beach. The sails and oars were scattered along the shore. He recognized the boat as belonging to Frank Oswald, of Two Rivers, he and another man having gone out in her three days previous to fish at the Clay Banks, forty-seven miles distant. The surfman obtained the help of some men who were near to get the boat up into a place of temporary safety, and then reported at the station. The keeper, one of the life-saving crew, and two volunteers went out to search for the fishermen, but failed to find them. They secured the boat, and what could be found of her rigging, and placed them in safety, and returned to the station at 3 P. M. At 6 P. M., the body of Oswald was found nine miles north of the station.

October 19.—At daylight, a dismasted vessel was discovered about two and a half miles from shore by the crew of Station No. 4, Eleventh District, (Point au Bec Scies, Lake Michigan.) The surf-boat was immediately launched and pulled out to her. No person was on board. She proved to be the schooner Anna Maria, of Ludington, Michigan. She had been lumber-laden, but nearly all of her deck-load was washed away, the cabin gone, her steering-gear unshipped, small anchor broken, and great anchor so jammed with wreckage and timber that the life-saving crew, after working more than an hour to get it overboard, were obliged to relinquish the effort. They then returned to the station for axes and other tools, and sent word to Frankfort for a tug. The tug St. Mary was sent out and towed her into the harbor of South Manitou Island, and anchored her. She had been dismasted and filled with water twenty miles off Two Rivers Point, in the terrible gale which prevailed on the 16th of October. Her crew of seven men were picked up by the schooner Reindeer on the 18th, with the exception of one man who was lost.

October 21.—The keeper of Station No. 5, Third District, (Block Island,) was out in a small boat, near the station, fishing, when he saw a boat, similarly engaged, capsize, and its occupant, a man fifty-nine years of age living on the island, thrown into the water. Pulling rapidly to the spot, he found the man entangled with the lines in the upturned boat, and unable to free himself. His perilous position was discovered from the station at about the same time, and the crew at once put off in the surf-boat. They reached the scene just as the

keeper had succeeded in extricating the man in an exhausted condition, and taken him into his boat. After righting and bailing the boat, they conveyed the man to the station and hauled his boat up clear of the surf.

October 22.—The Italian bark, *Giambattista Primo*, of Genoa, Italy, bound from Ipswich, England, to Baltimore, in ballast, with a crew of thirteen men, was wrecked at 5 o'clock in the morning, during a heavy storm, on the southeast end of Hog Island Shoals. Half an hour after, the patrol of Station No. 9, Fifth District, (Virginia,) sighted the vessel pounding on the shoals, about three miles south of the station. He burned a Coston signal, and hastened to the station to notify the keeper. The crew were immediately mustered, and the boat was hauled to the beach, opposite the station. It was found, however, that the surf was running too high to render it practicable to launch, and they hauled the boat a mile and a half along the beach to a more favorable point at the inlet, where they launched, and made every effort possible to pull the vessel against the strong flood-tide, high sea, and gale; but it was impossible to get out of the inlet, and finally the boat drifted, in spite of all their efforts, onto the beach at Prout's Island, on the south side of the inlet. The keeper, believing that the bark's crew would be lost if the storm continued, unless help could be got to them, took with him three of his crew, and walked a distance of six miles along the beach to Station No. 10. Here he obtained a reinforcement. The keeper and crew of No. 10 launched their surf-boat, and, with the keeper of No. 9 and his crew, pulled up inside the beach of Cobb's Inland, towards the inlet, intending when they reached the proper point to join the remainder of the crew of No. 9, double-bank the oars, and make another effort to reach the ill-fated vessel. But on reaching Rowe's Channel they found the crew of the bark on board the schooner *W. G. Tufts*, having taken advantage of the flood-tide, and left the bark in their own long boat. The boat was stove in several places, and filled with water and the crew had divested themselves of most of their clothing, to be in readiness to swim for their lives in the event of the boat's swamping or capsizing. The schooner's captain had received them kindly, and cared for them as well as he could. On the arrival of the life-saving crew, the shipwrecked men were conveyed to Station No. 10, and made comfortable. The keeper gave them clothing and shoes, and kept them at the station two days. They then left on board a wrecking-schooner for Norfolk, Virginia. The keeper of Station No. 10 subsequently found a number of articles of clothing which had belonged to the wrecked crew, and forwarded them to the Italian consul at Norfolk. The vessel was a total loss.

October 22.—The British schooner *A. Muir*, of St. Catharine's, Canada, with a crew of eight men, in running into Cleveland, during a northeast gale, shortened sail too soon, and, losing headway, drifted upon the short piles of the west pier. The crew of Station No. 8, Ninth District, (Cleveland, Lake Erie,) boarded her in the surf-boat from the east pier, and, after running lines, had commenced to heave her off, when they discovered the more imminent peril of the schooner *Josephine*, which had drifted ashore to the westward of the harbor, and at once went to her assistance. After safely landing the crew of the *Josephine*, they returned to the *Muir*, hove her off into the channel, and then took her inside and made her fast to the dock.

October 22.—The British schooner *Josephine*, of Montreal, with six men and one lady on board, bound from Port Colborne to Black River, attempted to make a harbor at Cleveland to escape the northeast storm then prevailing on Lake Erie. In running for the harbor at nightfall, she fouled the west pier, stove her bows, and drove ashore to leeward of the harbor. The life-saving crew (Station No. 8, Ninth District) were engaged at the time in an attempt to heave off the schooner *A. Muir*, as above related. As the latter vessel was in no immediate danger, they started at once in the surf-boat to the relief of the *Josephine's* crew. Her position was such that it became necessary to approach from the windward side by backing down stern first. In doing so the surf-boat capsized, and one of the air-chambers was dislodged and washed out. The crew succeeded in righting her, but were unable to bail her out while afloat, the sea being so heavy. They reached the beach in safety, however, and after freeing the boat of water and effecting temporary repairs, made a second attempt, which was successful. After landing all hands from the schooner, they conducted them to the station, provided them with dry clothing, and made them comfortable. Then they returned, and completed their work on the *Muir*. Four of the people from the *Josephine* were sheltered until the next day.

October 23.—At 9 o'clock in the morning, the weather being rainy, with occasional heavy hail and snow-squalls from the eastward, the two patrolmen on duty from Station No. 3, (Crumple Island, Maine,) discovered a brig—afterwards found to be the *Kate Upham*, of St. John, New Brunswick, with eleven men on board—in an apparently disabled condition, about three miles southeast from Red Head, the easterly point of the island on which the station stands. One of them immediately reported the fact at the station. Keeper Hall, with his crew, at once hurried out to the point named, and, after watching the vessel for a few moments, became satisfied that she was in trouble. No distress-signals were set; the reason, as was afterward learned, being that the cabin was full of water and the flags could not be got at. As soon as possible Keeper Hall hoisted a warning signal from the flag-staff on the Head, but received no answer from the vessel. He now saw that the spars and sails were gone, and lumber from her deck-load was floating in the water as she rapidly drifted toward the rocks in an apparently unmanageable condition.

The keeper and his men, finding their signal unanswered, endeavored to attract attention by waving their hats and coats in such a manner as to give the brig's crew to understand that they ought to use all possible efforts to head the vessel to the westward, toward the channel between the Crumples and Great Wass Islands. These signals were soon discovered by the brig's crew, and they could be seen endeavoring to pay her off in the direction indicated. Satisfied that he was understood on board the vessel, the keeper directed his men to return to the station and run out the new surf-boat, and then wait his further instructions; he remaining meanwhile to watch the movements of the brig. Observing that they had succeeded in heading her for the channel, he ran back to the station and found the boat outside the house in readiness for its perilous voyage. The crew had divested themselves of their heavy clothing and donned cork life-belts, in anticipation of rough work, and, thus attired, they stood leaning on their boat, grimly watching the storm and sea, awaiting the order to start, their minds

fully made up, as one said, "to save the brig's crew or go with them." The keeper hastily put on his cork-belt, and then giving the word to launch, away they went and pulled for the channel. The wind was blowing with nearly the force of a hurricane, and although the depth of water in mid-channel is fully five fathoms, the sea was breaking clear to the bottom.

As the life-saving crew cleared the point of the island with the boat, they saw the brig just entering the breakers in the channel, and coming like a race-horse, the seas breaking all over her—one, more heavy than the rest, rushing over her stern, a witness says, "like a wall of water fully ten feet high, and smashing her two decks together." The crew of the brig, eleven in all, two St. John pilots being of the number, with scared and anxious faces, watched the almost superhuman efforts of the surfmen to get to their assistance. The boat was gallantly pulled into the breakers and a close watch kept for a chance to approach the brig. Soon the vessel struck on a small sunken ledge and swung around. This gave the keeper an opportunity, by watching the seas as they tumbled in, to pull up and allow the men on the brig to jump into the boat. The captain, in the excitement of the moment, missed the boat and fell overboard. He was speedily hauled in, and after a hard and exciting tussle with the sea and wind the entire number were rescued.

It was afterward related that the captain of the brig, when he saw the life-saving crew deliberately pulling out into the whirl of waters, exclaimed, "Good God, what can that little white boat do?" He in good time found out, and when, after an hour's hard pull, he and his men were safely landed on the island, they could not find words to express their gratitude to the crew of the station, nor to extol the "little white boat" which, under the management of brave and skilful men, had been the instrument of their rescue from a watery grave. They were sheltered at the station two days.

A gentleman from Logansport, Indiana, who was visiting on one of the islands and witnessed the rescue, addressed to Captain Richardson, the district superintendent, the following letter :

LOGANSPORT, IND., *November 4, 1880.*

DEAR SIR: On the morning of the 23d ultimo, I witnessed an act of heroism on the part of Captain Hall and his crew, of the Crumples life-saving station, which deserves especial mention.

The English brig *Kate Upham* was driven into the Western Bay, between Pond Point and the Crumples, during a fearful storm, and struck on a ledge near Fisherman's Island. She had lost her rudder, her boats, and was otherwise injured. The brave crew of the life-saving station, with more courage than it required to face a battery, launched their surf-boat and went to the rescue. Standing on Beal's Island, looking through my glass, I had a good view of the surroundings. It seemed impossible for a boat to live in such a sea. "Tempest tossed" was no longer an imaginary picture. On every hand the sea was breaking, and the life-boat, with her noble crew, seemed but the sport of the angry waves; one moment hidden in the trough of the sea, the next borne rapidly on a vast comber toward the ill-fated brig. While I could but admire the spirit that prompted the daring men to risk their lives in the noble service, it seemed a suicidal attempt; for the chances were greatly against them. By almost superhuman efforts they reached the brig and saved the crew—eleven men.

In my western home I learned something of the Life-Saving Service, but never dreamed of its importance till I saw it practically demonstrated a few days ago. The Service commends itself to every lover of his race, and should receive the cordial support of the people of all sections of the country. When will Congress render it more efficient by needed appropriations? We cannot weigh life in the balance with dollars and cents. What better or wiser way to expend a fair proportion of our revenue than in the cause of humanity?

Very respectfully,

W. G. NASH.

Capt. J. M. RICHARDSON,
Portland, Maine.

October 23.—The barkentine William H. Gawley, of Port Townsend, Washington Territory, a vessel of 484 tons, bound from Madison, Washington Territory, to San Francisco, with a cargo of lumber, and having on board a crew of twelve men, including the captain, together with three lady passengers, ran ashore at half-past 5 o'clock in the morning, at a point five miles south of Station No. 7, Twelfth District, (Golden Gate Park, California.) There was a dense fog at the time, but the wind, which was west-northwest, was nearly calm, and the sea smooth. The vessel grounded somewhat over three hundred yards from the beach, resting on an even keel in quiet water, and soon after her stranding the second mate landed in a boat with four men, having run a line, on the passage, between the vessel and the shore, and proceeded to the Cliff House with a message from the captain. As the mate did not stop at the life-saving station, nothing was known there of the disaster until about half-past 8 o'clock, when one of the park officers, *en route* on horseback for the scene of the wreck, notified the keeper, who at once mustered a few men, procured a horse and wagon, and loading up with the wreck-gun, the breeches-buoy, and other apparatus, set out upon what proved to be, owing to the condition of the beach, an exceedingly toilsome journey. For four miles of the way the fog was thick, but suddenly lifted in a burst of sunlight and showed the sea and the tow-boat Rescue lying close to the stranded vessel a mile away. The close of the journey was slow and tiresome; the horse, which had previously been halted several times to allow him to recover breath and strength, now stopping every few minutes of his own accord. Finally, however, by 11 o'clock in the forenoon, the weary labor ended, and the wagon-load of apparatus drew up abreast of the stranded vessel. She lay easy, with her head directly toward the beach, perfectly upright on her keel, with her boat tethered to her in the smooth water alongside. Men were busy tossing her deck-load of lumber overboard, and the tug, on board of which the three ladies had been conveyed, was snorting and straining in a vigorous effort to haul her off into deep water. Her top-sails were set, her remaining sails were clewed and furled, her port-anchor was down, and such other dispositions had been made as might aid the endeavor to pull her afloat, which the tug was making. This endeavor was presently abandoned for the time, the intention being to renew it at flood-tide the next day, and the tug steamed away to harbor at San Francisco. No help being at this time required from the Life-Saving Service, the keeper left the apparatus in charge of the officers of the vessel and went back to the station, from whence he returned by sundown, bringing a load of life-saving appliances with a fresh team.

The night fell darkly, the sky being overcast; but, later, some stars came out, and the weather continued calm and the sea smooth. The vessel remained upright on an even keel, and the easy surf and tranquil sea gave assurance that she would be worked off the next day and towed into harbor. Nevertheless, every preparation was made by the keeper for the possible contingency of rescuing the captain and the four men remaining with him on board. A line, as already stated, had been stretched between the vessel and the shore, and the cart containing the life-saving appliances was drawn up abreast of the vessel. A fire had been lighted on the beach early in the evening, piles of lumber having been accumulated near by to feed it; and a little cooked food having been supplied by the agent of the vessel, the keeper and his men, together with the sailors landed from the barkentine, bivouacked around the flames. The night passed calmly. At midnight the moon rose, disclosing a heavy bank of fog off shore. The wind continued light and the sea smooth, and the surf broke upon the beach without violence.

By daybreak, however, (Sunday, October 24,) the surf had gained in force, and it was seen that the vessel was no longer upright, but had listed over on her port side. By 7 o'clock she had careened still further, and it was clear that an unexpected danger had begun. The shore end of the line which connected the vessel with the shore had got adrift before daybreak, probably carried off by the warping and straining of the hull; and, as it had become suddenly necessary to bring ashore the men on board, line communication had to be re-established. The Lyle gun was, accordingly, trained upon the wreck, and at the first fire the shot was landed on the deck-load, close to the fore-mast. In a few minutes the line thrown enabled the seamen to haul on board the whip-line and hawser; but, although the tally-boards, bearing instructions for setting up the ropes, were sent out, no one paid any attention to them, and the hawser was attached to the fore-rigging, instead of to the mast, an arrangement which made operations impracticable. Some time was consumed in making the sailors understand by motions (the distance being too great for communication by voice) that the lines must be set higher; but finally the hawser was taken aloft and fastened to the truss of the fore-yard. Five minutes later, or at a quarter to 8 o'clock, the first man was landed, and, as described by a witness, "was running up and down the beach like a deer" in the satisfaction of his deliverance.

The vessel now worked in to a degree which required the readjustment of the hawser, after which the second man was hauled ashore. The working party consisted of nine men, including the keeper, and up to this time a small Mexican boy was the only spectator, but a crowd of men came driving along the beach in a furniture wagon, arriving in time for some of them to lend a hand in the second hauling. The scene rapidly gained in animation. The sun was out and the day fine, and all sorts of conveyances rapidly assembled on the beach, bringing a considerable throng of people. After the third man had been brought ashore, operations changed to the landing of the sailors' baggage, which was made up in large sling-loads, and hauled in, two hours being given to the work. The hawser was then refixed to the mast, and the two remaining men were landed, the captain leaving the vessel last.

At sundown, a large furniture-wagon started for the city with the sailors' baggage, and the last of the spectators left the beach. The

life-saving gear was left attached to the vessel, at the owner's request, until after dark, when the whip was drawn in, the hawser being still left standing. The mate and two men remained as a watch all night upon the beach, and at 9 o'clock in the evening the keeper returned to the station. He made two successive visits to the scene of the wreck on Monday and Tuesday with a team, and brought away the apparatus. On Wednesday the vessel began to break up, and on the day following she had gone to pieces, the lumber with which she was laden being scattered far and near along the beach. With every prospect of being got afloat soon after her stranding, she was doomed to become a total loss within four days.

October 24.—The bark W. A. Holcomb, of Bath, Maine, from Ilo-ilo, Philippine Islands, bound to New York with sugar, stranded in a gale of wind at 2 o'clock in the morning, three-fourths of a mile off the coast of Long Island, and about half a mile easterly from Station No. 32, Third District, (Long Island.) She had seventeen persons on board, including the captain's wife and child. The vessel was discovered shortly after striking, by the patrol from the station, who at once returned and gave the alarm. The life-saving crew, with their surf-boat on its carriage, started for the wreck. The surf was high, and as the distance of the vessel from the shore was great, it was resolved to exchange signals with the vessel before venturing out in the boat. Accordingly a rocket was sent up. No answering signal appeared, however, until about 5 o'clock, and then the boat was at once launched into the breakers. The sea was so heavy that the surfmen could not reach the vessel, and they were compelled to return to the beach. Just as they were hauling their boat up clear of the surf the crew of Station No. 30 appeared in sight with a new and larger boat. Joining forces, a fresh attempt was made in the large boat, but with like result, the wind and waves being still more than a match for them. About this time the party on the beach was reinforced by the arrival of the crew of No. 33. After a short consultation, it was resolved to renew the struggle, with a change of tactics. The current setting along shore had proved a powerful factor against them in the two previous attempts. It was, therefore, resolved to launch further down the beach, to windward, and thus endeavor to counteract the effect of the current. This move brought them success, and getting the boat off in handsome style they reached the vessel, after a hard pull, at 8 o'clock. As the entire number of sailors could not be taken into the surf-boat at one trip, they advised the lowering of one of the bark's boats and then dividing the people between the two, the life-saving men soon landed them safely about a mile and half from the station, the shelter of which was reached at half-past ten. The captain, his wife and child, and the crew, excepting the second mate and two men who remained behind to take care of the baggage, proceeded at once to New York. On the 25th, the life-saving crew, accompanied by the Holcomb's three men, boarded the vessel, collected whatever they could find of clothing and personal effects and put them on board a wrecking-steamer, which the captain had sent down from New York. They proposed boarding her again on the 26th, but the sea was making a clean breach over her, and the idea had to be abandoned. The vessel became a total wreck. The three men left behind were sheltered for a time at the station.

October 24.—At about 2 o'clock in the morning, two surfmen of Station No. 14, Eleventh District, (Racine, Lake Michigan,) while on patrol

north and south, respectively, heard a steamer blow a succession of long whistles outside, from a northeasterly direction. Supposing assistance was being called for, the north patrol endeavored to burn a Coston light, and, after two failures, resorted to his beach-lantern, which he swung as a signal, and then hastened to the station, followed in a few moments by the patrol from the south, with the same alarm. The keeper immediately notified the captain of the tug *Wetzel*, and directed the patrolman from the north to accompany the tug and aid him in ascertaining the bearings of the sound of the whistles. The life-boat was then launched, at 3 o'clock in the morning, and on clearing the piers, the steamer's lights were discovered and pulled for. After rowing about five miles, they met the *Wetzel* returning, having in tow the steamer *Michael Groh*, of Chicago, with a crew of eleven men. She had blown out her cylinder-head, and sustained other damage on her way from Chicago to Muskegon, Michigan. She was towed into harbor at Racine.

October 26.—The schooner *Mist*, of Oswego, New York, with a general cargo and a crew of two men, while crossing the bay from Nine-mile Point to Ellisburgh, New York, sprang a leak in a heavy sea, the wind blowing fresh. The keeper of Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) observing that she was in trouble, and that her cargo was being washed or thrown overboard, immediately launched the surf-boat, sounded the channel for the best water, and boarded the schooner to pilot her in. She drew too much water, however, for the depth on the bar, and grounded. The life-saving crew then used the station-lines to heave her in, threw overboard barrels of kerosene, and lightered grain and water-lime to the shore in the metallic boat, thus relieving her sufficiently to float. She was taken safely across the bar at 5 P. M., the life-saving crew having labored on her from 10 o'clock in the morning. The next morning the life-saving crew assisted in recovering the cargo thrown overboard and in putting it aboard the schooner.

October 27.—The British brig *Zetland*, of Richibucto, Nova Scotia, bound from Miragoane to Delaware Breakwater for orders, with a cargo of logwood, and having eight persons on board, including her owner, was observed by the north patrol from Station No. 1, Fifth District, (Cape Henlopen, Delaware,) apparently steering for the breakwater, but dangerously close in-shore. He at once burned a Coston signal to warn her of danger, but his warning was too late. The brig was nearing the beach very rapidly, with the strong northeast wind and high sea then prevailing, and, before she could change her course, stranded on the point of Cape Henlopen. The patrolman hastened to the station, and, giving the alarm, the surf-boat was at once run out by the crew, the keeper intending to launch and pull along the shore to the vessel, which was some distance northward. The wind and sea, however, were strongly against them, and the difficulty was augmented by the absence of the surfman who was on the south patrol. The yielding condition of the sand made it equally impossible for the short-handed crew to drag the boat on its carriage, so, securing three yoke of oxen from the neighboring salt-works, they were soon toiling along the beach to the vessel, abreast of which they arrived at 11.15 P. M. It was a difficult journey, and with the assistance of the Cape Henlopen light-keeper and the teamster, the crew had all they could do to make the launch. The brig was found to be in no immediate danger, although her crew were in great alarm. The life-saving crew therefore remained on board until 1 o'clock

in the morning, and then, as the tide had fallen, and thus lowered the sea, they returned ashore to telegraph to Lewes for a tug, promising, before they went, to remain on the watch with their boat in readiness to afford immediate succor, if necessary. Their services were not called for, however, until daylight, when a signal was made from the brig, and the station crew at once went off and brought the captain and the owner ashore. The tug *North America* soon afterwards came out to the vessel, and, after some difficulty in passing a hawser on board, succeeded in hauling her off, and then towed her in to the anchorage at the breakwater.

October 27.—At daybreak, the patrolman of Station No. 16, Eleventh District, (Sheboygan, Lake Michigan,) discovered a vessel at anchor about eight hundred yards east-southeast of Sheboygan Harbor, flying her colors at half-mast. He reported promptly at the station, and without delay the life-boat was launched and manned. At 5 A. M., having previously summoned a tug to follow, the life-saving crew set out. The vessel proved to be the schooner *Belle Laurie*, of Green Bay, Wisconsin, bound from Ahnapee, Wisconsin, to Milwaukee, laden with pease and cedar posts. Her pumps were disabled and she was water-logged. The weather was heavy, with strong northeast wind and high sea. The tug arrived almost immediately after the life-boat. The life-saving crew assisted the men of the schooner, two in number, to heave anchor, and then carried a line—which, on account of parting, had twice to be replaced—to the tug. The schooner was then towed safely into harbor, and her men were sheltered and cared for one day at the station.

October 28.—The schooner *Solon*, of Rockland, Maine, with a crew of three men, while beating up the channel at Spruce Head, Maine, attempted to cross the bows of the *Cora Etta*, a larger schooner which lay at anchor inside the channel. In so doing she was carried by the strong current into collision with the anchored vessel, ran her mainsail onto the *Cora Etta*'s flying jib-boom, tearing the sail badly. The vessels being thus afoul, the *Solon* swung across the other's bow and dropped her anchor, which was carried directly under the large vessel's bottom. The keeper of Station No. 5, First District, (Whitehead Island, Maine,) who had been watching the *Solon*'s course, witnessed the collision and hastened at once to the station for the crew. The small boat was speedily manned and pulled out to the scene of the accident, when the life-saving crew cleared away the entangled rigging, and the vessels immediately swung apart, and the *Solon* went home to her anchor and lay astern of the *Cora Etta*. The life-saving crew assisted in unbending the damaged mainsail, then unbent the foresail, which was in good condition, and bent it in place of the damaged sail; and, after waiting until the large vessel hove ahead, got the *Solon*'s anchor. This done they set her jib, beat her up past the mouth of the harbor, and left her. The *Cora Etta* sustained no damage.

October 28.—The schooner *J. W. Fish*, of St. George, Maine, with a cargo of ice and a crew of six men, stranded on Sugar Reef, three miles west of Watch Hill, Rhode Island, at half-past one in the morning. She was discovered by the patrolman of Station No. 3, Third District, (Rhode Island,) at daylight, and at about the same time by the lookout at the station. The surf-boat was immediately launched and manned, and started for the vessel, stopping by the way to take in the patrolman, who was returning to the station to report. The schooner was found on the reef, two miles from shore. Assistance was not, for

the time being, needed, as the vessel was lying easy and her captain had gone by steamer to New London for wreckers. In the afternoon the life-saving crew returned to the schooner and assisted at the pumps. The vessel was saved with only the loss of a part of her false-keel.

October 29.—The steamer Avon ran into the barge Thomas A. Scott, of Erie, Pennsylvania, from Chicago, bound to her hailing-port, with a cargo of forty-four thousand bushels of corn and a crew of ten men. The disaster occurred about three-quarters of a mile east of the harbor of Milwaukee, at 7.55 P. M. At 8.10 P. M., the surf-boat of Station No. 15, Eleventh District, (Lake Michigan,) was launched and went out with the life-saving crew to her assistance. When they arrived she was sinking, and was on the bottom twenty-five minutes after the collision. Three of her men had got aboard of the Avon. The remaining ten, in their own yawl, were towed ashore by the surf-boat. After this the life-saving crew returned to the wreck with a lantern, which they hung lighted in her rigging, to prevent passing vessels from running into her. At the request of the collector of customs, they continued to keep a good light upon the wreck nightly until the 19th of September, 1881, nearly a year, on which day the only standing spar fell. She was then twenty-three feet under water, and no longer dangerous to navigation.

October 30.—The British schooner Odd-Fellow, of Toronto, Canada, bound from Port Hope, Canada, to Charlotte, New York, with a cargo of shingles, and four men and the captain's daughter on board, while feeling her way during a fog, ran too close to the beach, and made land close aboard about six and a half miles west of Charlotte. In an attempt to go about, the vessel misstayed, and in endeavoring to wear took the bottom and struck heavily. The anchor was then let go, and the vessel brought head to, where she occasionally thumped bottom. The fog was heavy, and the night very dark, and the captain stowed his sails, lowered his boat, and, taking his daughter and a part of the crew, pulled for the shore, making a safe landing. The wind, immediately after, canted to northwest and blew a gale, making an ugly sea, and the vessel dragged her anchor and went ashore. In the meantime the master of the schooner had obtained shelter for his daughter at a farmer's, and a conveyance to take him to Station No. 4, Ninth District, (Charlotte, Lake Ontario,) where he gave the alarm. "Assemble guns" were fired at 2 o'clock in the morning, (October 31,) and the volunteer crew very soon mustered. The surf-boat was drawn on its carriage by a team of horses over a very rough road to the point of disaster, where it was launched, and the one man who had been left on board was rescued.

October 31.—The sloop Melvin R. Drew, of New York, bound from Fortress Monroe to Chincoteague, Virginia, with a crew of four men, was discovered by the keeper of Station No. 7, Fifth District, (Assateague Beach, Virginia,) about three miles to the southwest, and two and a half miles from land, in distress. He immediately launched the surf-boat, and went to her assistance against a heavy sea and gale of wind. The sloop was found entirely disabled, her sails having blown away, and her best anchor being lost; she was lying to her small anchor, and liable at any moment to drag out to sea. Recognizing the dangerous condition she was in, the keeper advised the captain to send a man ashore with the surf-boat for a tug. The mate was accordingly taken ashore to the station, where they arrived at 12.35 P. M., and soon after

started for Chincoteague, procured a steamer, and at 4 o'clock P. M., had her alongside the disabled vessel. Before dark she was safely anchored in the harbor of Chincoteague.

October 31.—The British schooner *Tranchemontague*, of Montreal, Canada, with a cargo of rye and a crew of five men and one woman, the cook, ran into the new breakwater at Oswego, New York, in a northeast gale and heavy sea, about 3 o'clock in the morning. The schooner immediately showed a torch as a signal of distress, which was seen and reported at once by the lookout at Station No. 3, Ninth District, (Oswego, Lake Ontario.) The surf-boat was launched and pulled out to the breakwater, on which the surfmen landed from the inside, and with heaving-sticks cast lines aboard the schooner, by means of which, fastened around their bodies, her crew were safely taken onto the pier, and thence by the surf-boat to the shore. The rescue had scarcely been accomplished, and the life-saving men were getting the schooner's people into the surf-boat, when the masts went by the board, and the vessel was soon after knocked into pieces against the pier. At the station the wrecked crew were provided with dry garments, hot coffee and food, and were given shelter one day and night.

November 1.—The sloop *Little Moses*, of Bridgeton, New Jersey, with two men on board and a cargo of coal, stranded on Turtle-gut Bar at 11 A. M., at ebb-tide, and partly filled with water. She was boarded at 11.45 by the crew of Station No. 38, Fourth District, (New Jersey,) who assisted in getting her off, taking her inside and laying her ashore, safe from further damage.

November 1.—The *Nina Bailey*, a small schooner of Milwaukee, with two men on board, in a strong northwest wind and heavy surf, filled with water, struck against the north pier at St. Joseph, Michigan, capsized, and became a total wreck at 2.45 in the morning. Her occupants climbed upon her bottom and clung to her keel. The crew of Station No. 10, Eleventh District, (St. Joseph, Lake Michigan,) launched their boat, pulled out to the capsized schooner, and brought the men ashore. The sea ran very high, making constant sweeps over them, and when taken off they were so chilled and exhausted that they must soon have perished but for the rescue made by the life-saving crew. They were taken to the station, where they remained a day.

November 1.—A young lady from Carlton, Wisconsin, was on the north side of the river at Chicago, opposite Station No. 11, Eleventh District, (Lake Michigan,) which she desired to visit. One of the surfmen took her across in a small boat. On arriving at the dock near the station the surfman jumped out to assist her in landing, but before he had time to turn around she endeavored to leap to the dock, in doing which she fell into the river. The surfman sprang back into the boat and caught her as she was going down the second time. She was taken to the station and supplied with dry garments.

November 2.—The schooner *A. Hammond*, of Saco, Maine, bound from Portland, Maine, to New York, with a cargo of lumber and a crew of six men, was collided with by the schooner *John Slusman*, of Philadelphia, which cut her down to the water's edge, ten miles south of Chatham lights, Cape Cod. The crew immediately left her, the mate and three men going on board the *Pollock Rip* light-ship, and the captain and one man taking refuge on a small vessel going up the sound. The mate and his companions were taken to Chatham by a fish-boat. The station at that place, No. 13, Second District, (Massa-

chusetts,) having just been moved to a new site, was not yet in condition for use. The keeper, therefore, took the men to his house, kept them over night, and procured free passes for them the next day on the Old Colony Railroad to their homes.

November 3.—The patrol of Station No. 30, Fourth District, (New Jersey,) discovered in the night a vessel standing in towards the bar. He burned a red Coston light, which warning was observed, and the vessel wore off and escaped from imminent peril.

November 3.—The schooner *Mary*, of Indianola, Texas, laden with railway-ties, having a crew of three men, bound from Orange, Louisiana, to Corpus Christi, Texas, struck on Pass San Luis Bar, and sprung a bad leak on November 1st. Her crew threw a part of her deck-load overboard, and kept her afloat until the following night. At dark on that day she reached Pass Cavallo, and ran in for a harbor. Not being aware that the station there (No. 4, Eighth District, Texas) was manned, no signal of distress was set, but her crew ran her up the Pass about two miles, and then ran her ashore to keep her from sinking, as they were too much exhausted to work longer at the pumps. At 8 A. M., on the 3d of November, the crew of the station launched the surf-boat for practice, and, while rowing, discovered the grounded vessel. They pulled to her, found her half-full of water, and her crew in the condition above described. The life-saving men immediately manned the pumps and commenced pumping and bailing. At 1 P. M., they had the vessel free of water, ran out an anchor, hove her off the flats, got her under way, and took her into Saluria Bayou. Here they ran her on the mud flats, where she could not fill, and could be repaired. The vessel must have been lost had not assistance been rendered, for the sea where she lay at flood-tide became rough and would have broken her up.

November 4.—The patrolman of Station No. 15, Second District, (Nantucket, Massachusetts,) picked up portions of the upper works of a wrecked vessel; also a seaman's chest, containing a small quantity of clothing, two trade-dollars, and a letter directed to Capt. Aaron Grant, schooner *Viola*, of Machiasport, Maine. After correspondence with the master of the *Viola*, the articles were expressed to him, as they belonged to one of his sailors.

November 4.—The schooner *Stony Brook*, of Galveston, Texas, bound from Galveston to Corpus Christi, Texas, with a cargo of railroad iron and a crew of five men, which had put into Pass Cavallo for a harbor, attempted to go to sea. The wind was light and southerly, and on reaching the bar she found the tide setting out strong, a heavy sea running, and a calm on the breakers which rendered her helpless. She drifted out over the bar, but struck twice in the breakers, which started her stern-post and set her leaking. The keeper of Station No. 4, Eighth District, (Pass Cavallo, Texas,) was watching the vessel from the station lookout, and, as soon as she struck, got out the surf-boat and launched it just as she ran up a signal of distress. The surfmen had to pull through a heavy surf to reach her, and on boarding her found about three feet of water in her hold and rapidly gaining. They manned the pumps. The schooner's captain was sending papers, clothing, cabin furniture, and all valuable movables on board the schooner *Catha Minerva*, which had followed him out of the harbor. The keeper advised the captain not to leave the vessel, hoping to keep her free with the pumps until flood-tide, and then to run her back into the harbor

and save her; but her pumps were old and worn-out, and the water gained on them rapidly. The vessel, also, had gone to leeward of the channel and close on to the beach, and, as she filled, became unmanageable and finally sunk. The life-saving crew unbent her sails, and hoisted them clear of the sea, and then took her crew ashore and to the station. On the 5th, the wind blew too strong from the north to allow a visit to the wreck, but on the 6th, the gale having moderated, they procured a small sloop, took the Stony Brook's crew, went out to her, stripped her, and brought her sails, rigging, &c., ashore. The schooner was a total loss, but the greater part of her cargo was saved. The crew were provided for at the station five days.

November 5.—The British steamship Sandringham, of Glasgow, bound from Galveston to Liverpool, laden with cotton, with a crew of eighteen men, was discovered by the patrolman of Station No. 1, Sixth District, (Cape Henry, Virginia,) aground on a spit off Cape Henry, having come on in a dense fog. He burned a Coston signal, and at once reported at the station. The surf-boat was immediately manned and launched and pulled out to the distressed vessel, reaching her at 7.30 P. M. The keeper offered service, and the captain of the steamship was taken ashore in the surf-boat and conducted to the telegraph office to communicate with the British consul at Norfolk. He then returned with the keeper to the station, where he was entertained for the night. At 9.30 P. M., the keeper and two surfman from Station No. 2 arrived, with a view of rendering assistance if needed, and remained until the morning of the 7th. On the 6th, the life-saving men landed the remainder of the Sandringham's crew in the surf-boat, and also their personal effects; and as the weather was very threatening, they shot a line aboard the steamer, rigged the beach apparatus, and got things in readiness for immediate action in case their assistance should be needed to land the wrecking company, who were unloading her. The apparatus remained up one night, and the following day was taken down and replaced by a temporary arrangement belonging to the vessel. The captain was kept at the station four days, and the crew two. A letter was sent to the office of the General Superintendent from Captain McKay, of the Sandringham, speaking in the highest terms of the service rendered by the life-saving crew, and their hospitality to him and his men. The Sandringham was got off on the 13th of November by the Baker Wrecking Company.

November 5.—The schooner Mist, of Oswego, New York, bound from Oswego to Big Sandy Creek, New York, with coal, and a crew of two men, got aground on the bar just outside the mouth of the river at 1 P. M. As the keeper of Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) saw her approaching the mouth of the river, he went out with the surf-boat, sounded the channel, set out buoys, pulled off to the vessel, and boarded her to pilot her in. She brought up, however, as she drew four inches more water than there was on the bar. The life-saving crew took sufficient of her cargo ashore to enable her to float, and, running out her anchor, succeeded in heaving her in at 10 P. M.

November 6.—During the severe gale which prevailed on Lake Erie, blowing a portion of the time at the rate of sixty miles an hour, the schooner Mohawk, of Au Sable, Michigan, was anchored in the harbor of Buffalo, New York, behind the new breakwater. In the height of the gale, she dragged her anchors and went ashore near the light-house. She had a crew of seven men on board. The crew of

Station No. 5, Ninth District, (Buffalo, Lake Erie,) went off in their surf-boat to the assistance of the vessel, carrying with them a stout hawser belonging to the station. After securing one end of the hawser to the schooner, they ran the other end to a tug, which had also come to the Mohawk's assistance, and she was pulled off without damage.

November 6.—The schooner John Kelderhouse, of Sheboygan, Wisconsin, bound from Chicago to Buffalo, with a cargo of corn and a crew of nine men, having encountered a snow-storm so thick as to obscure the light at Sturgeon Point, ran on the south reef of Black River Island, nine miles north of Station No. 5, Tenth District, (Lake Huron,) about 5 o'clock in the morning. During the forenoon she was perceived by the keeper of the above-named station, and although she was showing no signal of distress, he went up the beach, procured a sail-boat and went to her to ascertain if she needed assistance. He found her crew engaged lightering her and glad of proffered help. A small tug was sent back to the station with the keeper. He had the surf-boat launched, manned, and put in tow of the tug, and returned to the Kelderhouse, where the life-saving crew assisted in lightering her until she could be pulled off. This done, they helped weigh anchor, make sail, and put things in good order, and left her ready for her voyage.

November 7.—At 2 o'clock in the morning, as a patrolman of Station No. 9, Fifth District, (Hog Island, Virginia,) was on his south beat, he came upon the body of a man just washed ashore. The flesh of his face and hands was gone, his forehead was crushed in, and six of his front teeth were missing. He was about five feet five inches high, with light hair, and was dressed in three shirts, two flannel and one cotton, cotton pants and woollen drawers, socks and low-quarter shoes. There were on his person two copper cents and a common pocket handkerchief. It was evident that death was not recent, and the patrolman returned to the station and reported. The keeper, accompanied by four of the crew, went immediately to the beach and secured the body. At daylight they took buckets, canvas, and other things needful to the place, and after washing the sand from him, and making as close an examination as possible for marks of identification, without finding any, they covered him with the canvas while they proceeded to make a coffin. The keeper in his report says: "I had a box made, and wrapped plenty of canvas about him, and we buried him on a high hill as respectably as we could."

November 7.—The schooner Sallie Coursey, of Wilmington, Delaware, bound from Georgetown, South Carolina, to Rondout, New York, with a cargo of lumber and a crew of six men, struck upon the Isaac Shoal, four miles southwest of Station No. 11, Fifth District, (Smith's Island, Virginia.) The surf-boat was launched and the life-saving crew pulled out to the vessel, boarded her, ran out her anchor, and assisted in heaving taut the hawser. The captain, hoping that at high water he might be able to heave his vessel off, did not wish to leave her, and nothing remaining at the time for the life-saving crew to do, they returned to the station. The following day they again boarded the schooner, found her in good condition, and, at the captain's request, took two of her crew ashore and to the station. The captain then employed a company of wreckers to try to get the schooner afloat, but on the 10th, finding it impossible, determined to abandon her, and hoisted a signal of distress for the life-saving crew, who boarded the vessel and

took her crew and their effects ashore in the surf-boat. They were lodged and succored at the station three days, when they left for Norfolk. The vessel was a total loss. A part of the cargo was saved.

November 7.—The British schooner Wood Duck, of Frenchman's Bay, Canada, with a cargo of barley and a crew of five men, stranded, at noon, half a mile east of Oswego, New York, in a gale and heavy sea. The crew of Station No. 3, Ninth District, (Oswego, Lake Ontario,) saw her coming on, and were at hand with mortar-cart and apparatus as soon as she struck. The first shot threw the line over her, and the whip and hawser were hauled aboard, but, her crew not understanding how to rig them, a surfinan had to be sent aboard for that purpose. The sailors were then transported safely to the shore in the breeches-buoy. They were wet, cold, and exhausted, and on arriving at the station were provided with dry clothing and hot coffee. They were sheltered and succored at the station two days. The vessel was a total loss.

November 7.—The schooner W. H. Willard, of Milwaukee, with a crew of four men and a cargo of lumber, ran into the north pier at St. Joseph, Michigan, at half-past 1 o'clock in the morning. She was discovered while still outside, by the patrol of Station No. 10, Eleventh District, (St. Joseph, Lake Michigan,) who reported at the station her danger. The crew went immediately to the pier, reaching it before she struck. They showed her a torch as she came on, and ran down to her and assisted the crew ashore by helping them off the schooner's jib-boom which lay a little way over the pier. The schooner was totally wrecked, and her crew were kept at the station a day and a night.

November 8.—The British schooner George Calloun, of and for St. John, New Brunswick, with a cargo of coal from New York, and having a crew of six men, anchored in Seal Harbor, near Spruce Head, coast of Maine. In endeavoring to get under way her anchor fouled with an old chain lying on the bottom, and the crew were unable to clear it without assistance. Being seen in this dilemma by the life-saving crew on Whitehead Island, (Station No. 5, First District,) they at once went off to her, assisted in clearing the anchor, and then, helping to get her under way, left her to pursue her voyage.

November 8.—The British schooner C. F. Baird, of St. John, New Brunswick, bound from Norwalk, Connecticut, to St. John, with a crew of five men, mistook the shore lights and got into shoal water, where she anchored. The sea was very rough; both her chains parted, and she stranded at 8.30 a. m. The crew of Station No. 14, Second District, (Monomoy, Massachusetts,) launched their boat and went out to her, but for the time being were unable to relieve her. At 11 A. M., they returned to the station, took dinner, and again went out to the vessel. At 2.30 P. M., flood-tide, the life-saving crew succeeded in getting the schooner over the outer bar. She had sustained but little damage, and did not leak. The life-saving crew left one of their number on board to pilot her over the shoals. Had it not been for the timely assistance she received the vessel must have been lost.

November 8.—The sloop Equator, of Patchogue, Long Island, from Jersey City to Islip, New York, loaded with coal and having two men on board, in a fresh wind and sharp sea, attempted to run into Fire Island Inlet; but, owing to the absence of the buoy, stranded on the bar. The casualty occurred at 7 o'clock in the evening, and was seen by the patrol of the first watch of Station No. 25, Third District,

(Long Island,) who burned a red Coston signal and then ran to the station for the rest of the crew. They immediately launched the surf-boat, rowed out to the sloop, ran out her anchor, and soon got her afloat, after which they took her inside to a secure anchorage. The master, who was also owner of the sloop and cargo, made warm expressions of gratitude to the life-saving crew for their timely assistance.

November 8.—The patrolman of Station No. 6, Fifth District, (Pope's Island, Maryland,) saw a schooner standing too close in, and fired a red Coston signal to warn her of her danger. She immediately tacked and stood off shore.

November 8.—At 3 o'clock in the morning, the patrol of Station No. 9, Fifth District, (Hog Island, Virginia,) saw a steamer running too close in-shore. He burned a red Coston signal, and she wore off without apparent damage, but not before touching once or twice. Had it not been for the patrol's warning, and the rising tide, she must have had serious trouble.

November 10.—The British schooner George M. Mowbray, of Quebec, Canada, bound from Montreal to Fort Williams, Canada, with a crew of six men, and a cargo of twenty tons of nitro-glycerine and powder for the Canada Pacific Railway, was driven into the bay at Erie, Pennsylvania, for shelter during a severe northwest gale and snow-storm. In the night she dragged anchors, and drifted onto the bar, afoul of an old pier crib, and pounded heavily. The crew, aware of the character of the cargo, and, alarmed lest an explosion should result from the concussions, abandoned the vessel. At 5 o'clock in the morning the crew of Station No. 6, Ninth District, (Erie, Lake Erie,) discovered the vessel ashore, and went to her assistance, but on learning the nature of her cargo, and that her crew were safe on shore, returned to the station. The next day, November 11th, they joined a tug and boats from the revenue cutter Perry, and the United States steamer Michigan, and assisted in an attempt to pull her off, which, however, was not successful. The vessel finally went to pieces, having been first unloaded.

November 10.—The schooner Mary E. Cook, of Hamlin, Michigan, bound from that place to Chicago, with a cargo of lumber and a crew of seven men, struck on the bar while being towed out of harbor. The tug let go the line, and, the wind blowing fresh from the southwest, the schooner drifted north of the piers about one mile south of Station No. 6, Eleventh District, (Grand Point au Sauble, Lake Michigan.) The keeper, who was on the pier, witnessed the casualty and went at once to the station for his crew. As the wind and sea were both contrary, and too much time would be exhausted in pulling against them, he did not have the surf-boat launched, but got the tug to take his crew out to the vessel on the lee side. The vessel was pounding hard and the spray falling so that the men were wet to the skin. They assisted the tug in running lines and otherwise, and at 8 o'clock in the evening she was got off and towed safely into harbor. Sparks from the tug had set fire to the dock, under a pile of lumber. As soon as the vessel was secured, the life-saving crew attempted to extinguish the flames. To get at the fire, they began to throw the lumber over, but were soon driven off by the intense heat. The crew were then stationed at another pile of lumber to prevent the fire from spreading, while others tore up the dock in the vicinity of the fire. It was not got under until 3 o'clock in the morning. The dock was dam-

aged to the extent of \$500, and seventy thousand feet of lumber, valued at seven hundred dollars, were burned.

November 11.—The schooner *Addie Ryarson*, of Lubec, Maine, bound from New York to Pembroke, Maine, laden with iron ore and having a crew of six men, undertook to make a harbor near Whitehead Island, Maine, during a rain-storm accompanied by a strong gale and heavy sea, at 6 o'clock in the evening. Her captain attempted to go through a narrow passage seldom used, and the vessel, steering badly, stranded on the northeast point of the island. She was discovered, almost as soon as she struck, by the patrolman of Station No. 5, First District, (Whitehead Island, Maine,) who signalled them with a red light. This was seen by the schooner's crew and answered. The surfmen then hastened to report at the station. The small boat was immediately launched and manned, and pulled out to the vessel against the gale. They boarded her, set her sails, and tried to force her over the reef, but failed. They then manned the pumps, remaining until the tide left her hard and fast aground, at half-past 1 in the morning. They then returned to the station. *November 12th*, they returned to the vessel, carried the captain to the main-land, and obtained a conveyance to take him to Rockland to procure the assistance of a tug. *November 13th*, a scow and steam-tug arrived to take out cargo, in doing which the life-saving crew assisted until the 16th. In the meantime, the vessel had become unfit for the crew to live in, and they were taken to the station. On the 17th, the vessel was sold at auction, and the life saving crew assisted in stripping her and saving her outfit. Her stores and the crew's effects were stored in the station boat-house. The crew were at the station four days. The vessel was a total loss.

November 11.—The British bark *Formosa*, of Miramichi, Nova Scotia, a vessel of 637 tons, laden with sand for ballast, with fourteen men on board, including the captain, left Sandy Hook on the afternoon of *November 10*, bound for Charleston, South Carolina, the wind being then northeast and the weather threatening. The wind continued to increase, changing to the east-southeast, until by midnight it blew a gale, which steadily augmented in violence and was accompanied by a blinding storm of rain. A heavy head sea was running, and the vessel labored on her course with her head to the south, the aim being to keep well out to sea. She had started under full sail, except flying-jib and royals, and had taken in successively, as the gale increased, her foretop gallant sail and outer jib, her mainsail, maintop gallant stay-sail, and gaff topsail, and finally her maintop gallant sail. As nothing could be seen ahead in the darkness and rain, the lead was brought into requisition, and the last cast, made at a quarter to 4 o'clock in the morning, a few minutes before disaster broke upon the vessel, showed no bottom at a sounding of ten fathoms. In the struggle to make an offing, due allowance, however, appears not to have been made for leeway; for the bark, being only in ballast, and, consequently, light in the water, was constantly pushed sideways by the heavy head sea while maintaining her course, and was, therefore, continually nearing the land. No intimation of this was possible under the circumstances, and it was entirely without warning that, a few minutes after the cast which showed such favorable soundings, while the lead was being passed forward for another heave, the vessel struck with a shock which threw men down and hurled the foremast over the side with all its hamper, the spar tearing out the starboard side of the deck as it

went down. The point of striking was on the outer bar off Squan Beach, New Jersey, about two hundred yards from the shore and two hundred yards south of Station No. 11, Fourth District. Despite their contiguity to the land, those on board were unable to discern the beach, so thick was the darkness, and could only see the surf, white and raging, on their lee. The vessel at once began to pound so heavily on the bar that no one could stand upon her deck, and the sea flew over her in cataracts.

Fortunately the stranding had taken place so near the station that help was almost immediately at hand. Just as the bark was plunging onto the bar, the patrolman was leaving the house upon his beat southward, and descried her by the lights in her fore-rigging before the mast went over. He at once fired his Coston light and flew back to the station with the alarm. The keeper sent up two rockets as a further signal of recognition to those on board the wreck, while the crew poured out of the station with the apparatus, and in a few minutes were opposite the vessel, which was now so dimly visible (her lights being quenched by the fall of the foremast) that the keeper decided to wait a little while, until it grew lighter, in order that a line might be thrown to her with more precision. Before long, the mist rolled away somewhat, and showed the vessel lying broadside to, with a small boat alongside, and knowing that the dangerous attempt to land in their own boat was about to be made by some of the seamen, the life-saving crew exerted themselves in shouted remonstrance and warning, but soon realized that their voices were drowned by the roaring wind, and saw the boat put off for the shore with three men in it. Luckily the position of the bark made a broad lee for the effort, and the boat swept to the beach in its shelter without accident. Meanwhile the vessel had worked in to about one hundred and twenty yards from the shore. The Lyle gun was soon brought into action and flung a line over the hull, and by half-past five the eleven men remaining on board were landed by the breeches-buoy, and, together with their three companions, were brought to the station, where they remained for several days and were hospitably cared for.

In a few hours the vessel had worked well up on the beach, lying head to seaward. She had bilged, was partly full of water, her stanchions were all started, and her bulkheads badly twisted. Nevertheless it was hoped that she might be got off, and the services of the Coast-Wrecking Company were employed for this purpose. Four days after she stranded, the wreckers, fifteen in number, together with the captain, first and second mates, carpenter, and two seamen, making twenty-one men in all, were on board actively engaged in the effort to float her, and with every prospect of success, the wind and sea being very favorable. The work, indeed, had so far advanced that the wreckers expected to heave off the bark at flood-tide, or 7 o'clock the next morning, (November 16th.) But at 4 o'clock that morning, one of the station patrolmen saw a signal on board, and, hastening abreast of the vessel, heard the shout, "Get your men! We want help!" It was the time of spring tides, and the surf was rising fast and high. The vessel, yielding to its sudden rising fury, had canted over much farther seaward than she was before, and hogged. The life-saving crew at once rushed to the rescue. Anticipating possible disaster, the keeper had prudently kept up the hawser and hauling-lines between the vessel and the shore, which made quick work practicable. The breeches-buoy was immediately slung on, with an inch whip-line attached, and before long the

twenty-one men on board were safely landed, coming in two at a time. They were taken to the station and given a warm breakfast. The next day a survey was held and the vessel condemned.

November 11.—The schooner U. S. Grant, of South Haven, Michigan, with a crew of four men, was discovered by a patrolman of Station No. 9, Eleventh District, (Grand Haven, Lake Michigan,) in danger as she was endeavoring to make the harbor of Grand Haven, in a southwest gale. He made warning signals to her, but in the high sea and strong current she was unable to avoid the north pier, which she struck, then, falling off to leeward, stranded about one hundred and fifty feet above. It was half-past 3 o'clock in the morning, but the crew of the station were on hand immediately, and got her hawser ashore and made it fast to windward, which kept the schooner from falling further to leeward and going to pieces on an old wreck. They kept watch over her all night, but nothing more could then be done. Much bad weather ensuing, she became a total loss.

November 12.—The wreck on this date of the schooner Cortez, of Oswego, New York, which took place in Mexico Bay, Lake Ontario, nearly four miles north of Station No. 1, Ninth District, (Big Sandy Creek,) although the occasion of a failure to render assistance on the part of the life-saving crew, was also the occasion of much manful effort, involving severe labor and hardship, for which they should receive the amplest credit, and which can hardly be appreciated even when fully recited. The circumstances of the case are as follows:

The Cortez, a vessel of a little over 300 tons, laden with wheat, bound from Milwaukee for Oswego, and having on board a crew of seven men, including the captain, together with a woman cook, unaccountably went past Oswego in a moderate gale while ostensibly endeavoring to make that harbor, and drove down into Mexico Bay. The weather was that day somewhat variable. At times it was clear, but generally thick and cloudy, and there were occasional snow-squalls, the gale being westerly, or nearly so. At about half-past 10 o'clock in the forenoon, Keeper Marshall E. Parker, of Station No. 2, Ninth District, descried the schooner, then hull down, ten or twelve miles distant, a mere speck of sail upon the water. She hove into clearer sight before long, and as she then appeared to be making for Port Ontario, a harbor several miles to the right of the station, the keeper anticipated trouble for her, and began to get out his apparatus, dispatching a man to fetch a team half a mile away. The man went and came on the run, bringing back the team in twenty-five minutes. Just as he returned, the schooner, which had been standing into the bight of the bay, in the direction of Port Ontario, suddenly altered her course and stood towards the station. The keeper at once gave her up as lost, concluding that the heavy drift of the sea would soon take her ashore, and, without troubling himself to watch her any longer, started with the surf-boat and apparatus for a bluff to the right or eastward of the station, a point abreast of which he calculated the vessel would drive ashore. Before he and his men had got with the team more than a couple of hundred yards, they saw the schooner, then a mile away, haul around to the northward and stand down the lake. From that moment the keeper considered her in no danger. He watched her for several hours as she went lifting on the seas, sailing with a free wind, and making her course, as he expressed it, splendidly.

In due time she appeared on the horizon of Station No. 1, some twenty miles below. The testimony given in the official investiga-

tion, which was afterward held upon the case, is conflicting as to the time of her appearance at this station; but according to the evidence of Keeper W. E. Van Alstine, of No. 1, and his men—which is corroborated by the testimony of Keeper Parker—it appears that the vessel hove in sight of No. 1 at about half-past 11 o'clock in the forenoon, and got opposite the station at twenty minutes past three. Keeper Van Alstine rested content with maintaining a watch upon the vessel without ordering out the apparatus. The subsequent event showed that this was an error. At the same time it should be allowed that neither he nor his men, nor the keeper of the other station, considered, as they testified afterward under oath, that the vessel was at that time in danger, as indeed it does not appear she was. It was fully established at the investigation that she was sailing due north, with a free wind, toward the lower part of the bay, and there was every reason to believe that she was then heading for Stony Point passage, beyond which there were places of anchorage. She was making good weather, and showed no signals of distress; moreover, the moderate character of the gale is clearly proved by the fact that she was sailing under a double-reefed mainsail, double-reefed foresail, forestay-sail, jib, and flying jib—a press of canvas quite incompatible with the idea that she was not under the entire control of her navigators. Nevertheless, what was liable to happen, either through design or accident, in the case of a vessel sailing in rough weather so close in on a lee shore, should have warned the keeper, in prudence, to prepare for action immediately upon her first appearance. The schooner seemed at length to have stood in too far to weather Stony Point and make the passage, and when about five miles from the station, wore ship and stood to the southward. Her movements had now become mysterious and perplexing, and the keeper and his men, after watching her for some time, saw her at a distance of nearly four miles suddenly come up head to the wind and let go her anchor. For a short time she held, but soon either parted her chain or dragged her anchor, and surged stern foremost toward the beach, two hundred yards from which she went aground.

It was about 4 o'clock when she dropped her anchor, and the keeper started with the apparatus. In addition to the station crew, there were present three citizens, who valiantly took hold with the men and engaged in the arduous toil of the next half hour. The way lay along a narrow beach, in places rugged with stumps, bounded on the shore side by high, steep sand-hills covered with trees and brush, over which passage was impracticable. At several points there were gullies trenched across the beach by the rushing surf, through which passage could only be had by wading. As the sea was high, the water burst over the beach every minute sheer to the wooded banks. It was over this beach, converted by the floods into a mush of sand, that the cart, with its weight of over a thousand pounds, had to be dragged by ten men. The cart-wheels sank four or five inches in the track, and the men, straining at the load, went ankle-deep in sand and water at every step, often knee-deep, sometimes up to their hips. In the wash-outs the sea burst with great force, and the cart went staggering through with difficulty. In this way, splashing and floundering, nerved and sustained by the excitement of the occasion, the little group of drenched and toiling figures arrived, after exactly thirty-eight minutes' exertion, at the first obstacle which barred their passage since they left the station, over a mile and a quarter behind them—a strange stream called the wind-gap.

This was the overpour of a shallow spread of water, thinning into a marsh, which was situated a hundred yards back from the beach and known as Wood's Pond, and which had channelled for itself an outlet into the lake. On the day of the wreck the surface of this stream was three hundred and thirty-six feet broad by actual measurement, and its depth varied from a foot in the shallow margins to four or five feet in the middle. The bushy hills sloped down into flats, knobbed with sand hillocks, on the side reached by the men, and the opposite side had the same character, save that in the neighborhood of the pond there was a sort of bluff of sand. The natural flow of the stream was of course toward the lake, but the sea being high, the breakers bursting in, every other minute, forced it in the other direction till they fell away, so that the turbid water was roaring up and down between its banks perpetually. Its noise, added to the howling of the wind, was so great that it dimmed the voices of the men. As they entered the shallows of the margin, the cart sank deep, the bottom being so soft as to be of the nature of quicksand, and the keeper shouted to the men to wade in, leaving the cart, and find the shoalest place to ford. The ten men spread out, some to the lake and others to the pond side, and entered the water. In the excitement and confusion of the hour, augmented by the uproar and commotion of the stream in its convulsed flux and reflux, and particularly by the difficulty of maintaining a sure foothold on the sinking bottom in the swashing inrush of the breakers, it is probable that the difficulty and danger of the passage were exaggerated, and that cooler men might have found the task feasible. But some of the crew, deceived doubtless by the surf combing over them, or by being swept off their feet by some sudden rush or conflux of the water, cried out that the stream was over their heads; others began to clamor for a boat, and only one man succeeded in getting across, apparently after a considerable struggle. The remainder floundered back to the bank they had left, and the keeper dispatched three of his men to the station for a punt wherewith to ferry the stream.

It certainly appears as if these brave and eager men had suddenly lost their heads. The intensity of their excitement seems to have had a common effect, for not one of the ten had his wits about him, or showed equality to an occasion which after all was not unduly exigent in its demands. Despite the brawling turbulence of the water rushing to the right and left before them, it was, as already remarked, unquestionably fordable, and to lose time on the way to a shipwreck, by sending for a boat merely to cross a rough ford, simply showed in what a phenomenal condition of mind they were. The main point, of course, was to cross without wetting the ammunition and shot-lines, for without their load, despite all illusions and obstacles, the squad would doubtless have got over. While the three men were off on the hard run for the boat, the keeper himself, taking advantage of a reflux sea, made an attempt to wade across with his canister, but found that he could not make the passage without wetting the powder. It never occurred to him to fire a line across the wind-gap, get over his hauling lines, and drag the cart across by this means, with the ammunition high and dry upon its summit, he sitting on the loaded cart, if necessary, to hold his powder canister clear, although the expedient would seem to have been at once obvious to any keeper of a life-saving station. Neither did it occur to him nor to any of his companions to make the ford across the merely ruffled pond, above the wind-gap, where the water was not over three

or four feet deep and removed from the inrush of the breakers. In brief, none of the several methods for surmounting or flanking the obstacle to their progress occurred to one of these men, who remained apparently in complete mental paralysis, on the edge of their literally raging canal, waiting for the arrival of the boat.

During this interim, one of the men who was up on an eminence in the rear, with a marine glass, sang out that a team was coming, and shortly a two-horse wagon, carrying five men, was seen in the fading light struggling along the beach on the opposite side of the wind-gap. It had come on to aid forward the life-saving party. The keeper shouted to the driver to cross, but the wind and the roar of the water made his voice and the answering voices inaudible, and the dialogue was continued by gesticulations, ending with the driver signifying his refusal to enter the stream. It appeared afterward that the horses were ill, and could not be driven into the water. After some time spent in waiting, the cry was raised that the boat was coming. The men sent by the keeper had gone post-haste, accomplishing the round distance of nearly three miles in just half an hour, and bringing the boat mainly by the way of a creek running to the pond behind the beach hills. In five minutes, the lighter part of the apparatus, including the gun and ammunition, was ferried over, and the cart, with the remainder, dragged across, some of the men steadying it through the boiling stream, while others hauled on a line made fast to the handles. The cart was then tailed on to the wagon, the men took hold with the horses, and the interrupted march of the life-saving party was resumed in the growing darkness along the surf-lashed beach, the weight of the load and the roughness of the way preventing progress at a rate faster than a walk. In this way about a mile and a half was achieved in the course of half an hour, the wreck being now only a quarter of a mile away, and the beach had grown quite dark, when a party of men were met coming down an intersecting road from the direction of the lake. There was a mutual halt, and in a moment the news had passed—the people on the Cortez had been brought ashore.

It appeared, in the course of the investigation, that upon the vessel failing to enter harbor at Oswego, a telegram had been sent to parties in the neighborhood of the place of stranding, commending the vessel to their attention. As soon as she began to come ashore, a crowd of men started in wagons down two roads, four and five miles, respectively, northward of the life-saving station, arriving speedily abreast of the schooner, which lay broadside to, a little south of the second road, within a hundred yards of the beach. A seine-boat was launched, and the people on board were landed within half an hour. It may as well be said here, that the vessel thus distenanted soon became a total loss.

Upon receiving the news that they had been forestalled, the keeper and his men transferred to the cart what apparatus had been placed in the wagon, and, although greatly discouraged by the result, which had rendered nugatory all the rough labor of the two previous hours, trudged on to the scene of the wreck, which it was still their duty to visit. They were all drenched to the skin by the dousing got in crossing the wind-gap, and were very tired with the toil of the road. By the time they arrived at the beach the night had fully set in. The schooner, canted over broadside to the shore, appeared only as a disordered mass of shadow stuck aslant in the commotion of the surf. There was nothing to be done for her, and after a brief survey of the situation

the dispirited and draggled group plodded back to the station, where they arrived at 10 o'clock. In consideration of the darkness and the ruggedness of the road, the apparatus was left behind on the beach, guarded by two members of the crew, an arrangement not creditable to the keeper, who thus left his station dismantled for the night of the means for wreck service, should a marine disaster occur in his neighborhood, and who should have hired horses to haul the gear back to the station without delay.

The affair ended in the keeper resigning his position. His resignation was accepted with reluctance, and only after his serious errors of conduct upon this occasion had been indubitably established, for up to this date he had been known as a good officer, and his station, on which he had generously expended considerable of his private means, was a model of neatness and order, and noted for the perfect condition of its appointments and the high character of its crew. His management, however, at the wreck of the Cortez gave the officers in charge of the Service no reason for satisfaction. A good keeper should have what might be called the foresight of vigilance. The day being rough and squally, and what might happen to a vessel skirting the shore being unknown, Keeper Van Alstine would have shown wariness by starting out earlier with his apparatus and gained time in the march for the wreck when it had become declared as such. His worst fault, however, was in the strange halt on the banks of the wind-gap, which betrayed a lack of fertility of resource simply amazing in the master of a station. Irrespective of the hours wasted in the start, the time lost here in waiting for a punt gave volunteer effort the chance to snatch from him a rescue fairly within his power.

November 12.—The British schooner Snow Bird, of Toronto, Canada, bound from Toronto to Oswego, with a cargo of lumber and a crew of five men, stranded during a gale, abreast of Station No. 3, Ninth District, (Oswego, Lake Ontario,) as she was coming into the harbor. She was in tow of a tug, and the heavy sea broke the line, letting the vessel drift against the pier. The life-saving crew were on hand with a hawser, and got it fast to the vessel, but the sea was so strong they could not hold her to the pier, and she drifted onto the beach. As the vessel went round the pier, the life-saving crew sent a line over her with the heaving stick. By this means the whip and hawser, with the breeches-buoy, were got aboard and set up, and the crew were safely landed. On arriving at the station, the rescued sailors were provided with dry clothing and made comfortable. They remained and were provided for at the station two days. The vessel was abandoned on the beach, where she lay all winter. The underwriters subsequently sold her for five hundred dollars.

November 12.—The fishing-schooner Annie Claire, of Alpena, Michigan, with two men on board, was discovered by the patrol of Station No. 6, Tenth District, (Lake Huron,) drifting towards Thunder Bay Island, on to a lee shore. It was blowing a heavy gale from the southwest, and snowing, and the sea was heavy. As soon as possible, the life-boat was manned and went out to her. Her foresail had blown away, her rudder was disabled, and her anchor would not hold. The life-saving crew put their life-boat anchor to her to reinforce her own, and this held her until the gale was over. The two men were taken on board the life-boat, and to the station, where they were housed and succored one day and night. When the gale subsided, the life-saving

crew assisted the fishermen to repair their sails and get ready for sea. But for the assistance from the station the vessel would have been lost.

November 13.—The schooner R. J. Gibbs, of Marine City, Michigan, with a crew of six men and a cargo of general merchandise, attempted to make the harbor of Manistee, Michigan, in the evening during a heavy snow-storm. She did not see the sunken cribs at the end of the north pier until almost afoul of them, and then, in endeavoring to keep off, she missed the harbor and went on the beach. The crew of Station No. 5, Eleventh District, (Lake Michigan,) went out to her in the surf-boat, brought the end of her hawser to the pier, rigged purchases, and hove her off and took her into the harbor. They commenced work at 8 o'clock in the evening, and finished at 7 o'clock the following morning. It was bitter cold, and snowed and blew hard all night, the schooner's deck showing eight inches of snow in the morning.

November 14.—At 4 o'clock in the morning, during a storm, the patrol of Station No. 5, Fifth District, (Green Run Inlet, Maryland,) heard a steamer's whistle, and descried the vessel running dangerously near the beach. He burned a Coston signal in warning, and the vessel changed her course.

November 14.—The schooner John S. Higgins, of Provincetown, Massachusetts, with a cargo of fish and apples and a crew of three men, was wrecked in thick, stormy weather, on Dawson Shoal, a mile and a half southeast of Station No. 8, Fifth District, (Cedar Island, Virginia.) She was discovered at 6 P. M., by the patrol of the above-named station, standing close in-shore. He burned a red Coston signal, and reported her danger at the station. The crew were at once mustered, and the surf-boat was launched and pulled out through darkness, a high sea, and a heavy storm of wind and rain, to the vessel. She lay stranded, stern off shore, making no lee for the surf-boat, but, after considerable manœuvring the boat was got through the surf and brought alongside, and the keeper boarded the wreck, leaving the rest of the crew in the boat to look out for it. The three men were taken from the bowsprit into the boat, and at 8 P. M. were safely housed at the station. During the four succeeding days, the life-saving crew were engaged in saving as much of the cargo as they could, and in stripping the wreck for the benefit of the owners. The captain of the vessel, who was over seventy years of age, and his crew were sheltered and succored at the station four days.

November 14.—The keeper of Station No. 4, Eighth District, (Pass Cavallo, Texas,) saw a vessel lying at anchor about four miles east of Pass Cavallo Bar, flying a signal of distress. He launched and manned the surf-boat and went out to her. She proved to be the sloop Gertrude, of Galveston, with a crew of five men, and wanted a pilot. The keeper gave them the necessary directions for entering the Pass when wind and tide should permit, and no other help being needed, returned to the shore after a hard pull of three hours against the gale.

November 14.—The steam-barge Westford, of Bay City, Michigan, bound from Saginaw, Michigan, to Erie, Pennsylvania, with a cargo of pine lumber and a crew of twelve men, having also the schooner Seaman in tow, in endeavoring to make harbor at Fairport, Ohio, during a snow-storm, grounded on the bar. The crew of Station No. 7, Ninth District, (Fairport, Lake Erie,) immediately launched the surf-boat and went out to them. A tug arriving at the same time, the life-saving crew joined the crew of the tug which was short-handed, and assisted in taking the vessels into harbor.

November 16.—The schooner *Susan Jane*, of Tuckerton, New Jersey, bound from Tuckerton to New York, with a crew of six men and a cargo of charcoal and hay, stranded on a shoal one mile south of Station No. 23, Fourth District, (New Jersey,) at 10 A. M. The life-saving crew launched the surf-boat, and went out to her. The keeper and crew of the adjacent station, (No. 24,) also arrived and lay by in readiness to give assistance to the first-named crew should occasion arise. The sea was breaking heavily on both sides of the vessel, but the keeper, watching his opportunity, adroitly slipped up alongside. The captain, who was desirous of remaining as long as possible by his vessel, inquired of the keeper whether he thought he could board the vessel again at flood-tide, and being answered in the affirmative, he wanted his money and the clothing of the crew taken ashore, and threw them into the boat. The cook also jumped into the boat and was landed. At flood-tide, about 3 P. M., the water had filled the vessel so that the cabin stove was submerged. The captain signalled for assistance and the crew of No. 23 responded. As before, skilful manœuvring was requisite to get the surf-boat up to the schooner, and, as before, the boat of No. 24 lay by to render assistance in case the other should fill or capsize. All hands were taken off, and to the shore, in safety. As the tide rose the vessel pounded over the shoal, when the two life-saving crews boarded her, and succeeded in getting her into the inlet not much damaged. Her crew were sheltered at the station (No. 23) one night.

November 17.—The schooner *D. McClellan*, of Bay City, Michigan, with a cargo of stone and a crew of three men, at anchor in Tawas Bay, was in danger of getting iced in, and her crew endeavored to get her under way, but she was unmanageable and drifted ashore. The crew of Station No. 4, Tenth District, (Ottawa Point, Lake Huron,) went immediately out to her, and assisted in throwing over ½ part of her cargo, which enabled them to work her off under sail.

November 18.—The schooner *Clinton*, of Ellsworth, Maine, while lying at anchor in the harbor of Little Cranberry Island, and having no one on board, fouled her anchors, dragged ashore, and stranded at 7 P. M. Her condition being discovered at Station No. 4, First District, (Little Cranberry Island, Maine,) the crew left the station at 7.25 P. M., hastened to the wharf, a mile and a quarter distant, where they took a boat-anchor and seventy fathoms of cable, and went out to the vessel. They hove her off the rocks, made sail, and stood over to the west side of the harbor. In going about, she misstayed, and they let go her anchors, brought her up, and then she rode out the night. Two feet and a half of water was in her hold, which they pumped out, and kept her free till morning. At 8 A. M., November 19, they made sail and took her safely to wharf. She sustained but slight damage.

November 18.—The patrol of Station No. 31, Fourth District, (Peck's Beach, New Jersey,) from 8 P. M. to midnight, saw a steamer close in-shore, running into danger. He fired a red Coston signal, and the steamer at once changed her course and stood out to sea.

November 18.—The steamer *Ontonagon*, having in tow the barge *N. M. Standart*, of Marine City, Michigan, bound from Saginaw, Michigan, to Cleveland, with a cargo of lumber and a crew of six men, struck while endeavoring to get her tow into harbor, about one hundred and fifty yards east of Station No. 7, Ninth District, (Fairport, Lake Erie.) The life-saving crew immediately launched the surf-boat, and

ran a line attached to tackle from the shore to the barge. Meanwhile a tug went out and got a hawser to the steamer and attempted to float her. The life-saving crew, by means of the appliance above mentioned, were endeavoring to haul the barge over the bar into harbor, when a selvagee strap parted, and threw a large double block back upon the keeper's foot and badly crushed it. The hawser slackened and the barge drove to leeward of the channel and went ashore. Notwithstanding his severe injuries, the keeper caused the surf-boat to be manned, and went out to the barge and rescued its crew, who were much exhausted and in a perilous position. After taking the Standard's six men ashore, the surf-boat was pulled to two other barges, from which the steamer had let go before attempting the harbor. Their crews, however, did not accept the proffered help, as, although their crafts were leaking badly, they were not in imminent danger, and were momentarily expecting a tug to tow them in. The keeper made three trips with the surf-boat after his foot was crushed. Afterwards the life-saving crew assisted in saving the lumber. The vessel went to pieces.

November 18.—A man fell through the ice in the East River, at Two Rivers, Wisconsin. He saved himself from going under by resting his arms on the ice. One of the surfmen of Station No. 17, Eleventh District, (Two Rivers, Lake Michigan,) hearing the alarm given by the station lookout, went out at once to the middle of the river, where the man was, and lying down upon the ice beside him, drew him out and assisted him home.

November 19.—At 8 P. M., the schooner Paul and Thompson, of Perth Amboy, New Jersey, with a crew of six men, drifted ashore with the tide, in a fresh northeast wind, on the East Clump, Fisher's Island Sound, about eight miles west of Station No. 3, Third District, (Watch Hill, Rhode Island.) She was discovered at sunrise on the 20th, by the life-saving patrolman, and reported at the station. At 7.30 A. M., the life-boat was launched, and reached the vessel, under sail, at 9 o'clock. She was found lying easy, and full of water. The life-saving crew remained by her until a tug, with steam-pump, came to her assistance, when, finding their presence no longer needed, they returned to the station, arriving at 2.30 P. M.

November 20.—The Helen Maria, a small schooner, of Camden, Maine, laden with the sails, rigging, chains, and anchors of the wrecked schooner Addie Ryarson, while endeavoring to get under way during a strong gale and heavy sea, dragged her anchors and stranded on the northeast point of Whitehead Island. The crew of Station No. 5, First District, (Maine,) went out to her, ran out a kedge and line, and hove her off on the rising tide. This done, they took her through the passage into Seal Harbor, anchored her, rehung her rudder, which had unshipped while she was on the rocks, and furled her sails, leaving her in good condition.

November 20.—At dark the mercury at Station No. 6, Tenth District, (Thunder Bay Island, Michigan,) was only ten degrees above zero. A terrific gale was blowing from the west, ice-banks had formed from seven to ten feet high, and the mush of ice extended from the shore from ten to fifty rods. At 10 o'clock at night a distress whistle blew which started every man of the life-saving crew from his cot, and, at the same minute, the patrol came rushing into the station with the announcement that a tug was ashore about fifty yards distant. Keeper

John D. Persons at once saw that to launch the life-boat over the accumulations of ice on the banks was impossible. He therefore went for his skiff, half a mile distant, dragged it over ice-mounds and flood-wood, up abreast the tug and launched it. One man went with him out to the vessel, which was found to be the tug Aimee, of Alpena, Michigan. She was a complete mass of ice, in which the pilot-house particularly was so imbedded that it had to be chopped out to extricate Captain Howe, the master of the tug, who was inside. He and the engineer, Thaddeus Kneel, were the only persons on board. The captain, being on deck, was nearly frozen to death. The keeper took him ashore to the station, and gave him a change of clothing and warm drinks. After he got warmed up he wished to return to the tug, which he did, accompanied by the keeper. During this time the station crew had run the life-boat's anchor out astern of the tug, her own anchor being too small to hold her, and made other preparations to get her afloat. They then carried fourteen barrels of fish ashore to lighten her, and, after working four hours in the ice and water, the men very nearly freezing their hands, they got her off. As soon as she was afloat it was found she would not steer, and they had to anchor her in sixteen feet of water, directly in front of the station. The station crew then assisted the captain to fix his steering-gear. Meanwhile the wind had canted to the northwest, making the water smooth, being off land, but the lake was covered with ice. After the work was finished the captain and engineer came ashore to the station. All hands had something to eat and plenty of warm coffee. By this time it was 2 o'clock in the morning, (November 21,) and the tug was considered safe until daylight. But at 4 o'clock, the wind shifted to the southwest, blowing right on shore, and ten minutes after the change it blew terrifically. The captain and the engineer started immediately with Surfman Russell, who had a hard time getting them to the tug in the skiff, having ice and sea to contend with. The surfman boarded the tug and remained with the captain to assist him. Before she got steam and anchor up, the tug dragged so close to the shore that she pounded bottom, but her engine worked her off. The captain then found that his rudder was gone. It was now daylight, and the keeper was roused with the news that the tug was again in trouble. The sea by this time was very large, and there was the prospect of a hard time in getting the men off. The station crew mustered along the ice-banks with lines, some of them clad in Merriman suits, ready for action. The keeper knew that the life-boat could not be launched over the ice-banks, or, even if this were possible, forced through the slush-ice along the shore. In this exigency Surfmen McKenzie and William Steele volunteered to go out in the skiff belonging to the light-house keeper, and tell the captain that he must leave the tug before it was too late, as he could not depend on the life-boat. The tug during this time had drifted about half a mile from the station, and if she went any further would drift out on the lake away from the island, when all on board would surely perish. The crew hauled the light-house keeper's skiff about a quarter of a mile over ice and snow, and at a point abreast the tug, launched McKenzie and Steele over the ice-banks. With much difficulty the two men came within a short distance of the tug, but could not get alongside on account of drift-ice. They shouted to the captain to come ashore in the skiff, but he refused to leave the tug, and the men were obliged to put back without him. When they got

under the ice-banks the skiff filled, and it was with difficulty they were got up the terrible acclivity. Surfman Steele's hands were frozen, the hands and beards of both men were one solid mass of ice, and their clothes would stand alone. Things now began to look very desperate. A short time after the men came ashore, the keeper saw Surfman Russell get into the skiff alongside the tug, and in a few minutes he shook his arms in the air. The keeper knew then that the skiff was so filled with ice and water that she was no longer safe, and that the chance of coming ashore in her was gone. Very soon the tug's whistle began to blow and the men to make signals of distress. Surfman Russell and the captain had now been on board this floating iceberg for four hours, and were nearly frozen to death. The last and only chance to save them lay in using the light-house boat. She was about eighteen feet long, clinker-built, and very light. A desperate attempt was made to launch her, but eight men could not force her through the slush five boat lengths. They had to pull her back to the shore, and then drag her over ice-banks, flood-wood, and stones, sixty rods. The keeper put her in charge of Surfman McKenzie, and sent with him Ferris and Leonard, men who had served a lifetime in and around the surf. Then, going down the beach, he chose a landing place and got everything ready in case of an accident, anticipating the danger of making a landing. The boat was then, after great effort, launched over ice-banks seven feet high, and went through the surf very well, shipping little water. She would have been crushed if she had gone alongside of the tug, and the men brought her up only to the skiff which hung astern. The engineer came over the stern first, then Surfman Russell, and the captain last. At this moment three fishermen, from Sugar Island, who had seen the danger the tug was in, came over to the station to render whatever assistance they could. Two of them, J. Patrick and J. Martin, had formerly been members of life-saving crews. The third man was Samuel Bigold. While these three men watched operations from the shore, the boat left the tug, with the empty skiff in tow. All went right until the breakers were neared, when it was found necessary to let the skiff go. Just as this was done, the second breaker caught the boat, sent her a short distance with lightning rapidity, when she suddenly broached to, and capsized in about four feet of water. For a moment not a man was to be seen above the surface by those on shore, but presently up came the engineer, followed by Surfman McKenzie and Leonard. The captain, Surfman Russell and Ferris remained under the boat, and the situation was horrible. But instantly McKenzie and Leonard, with admirable presence of mind, turned the boat over and liberated the three men. They no sooner gained their feet, however, than Leonard was knocked down by the plunging boat, and with difficulty got up again. Ferris, also, when freed from the boat upon him, had much trouble in getting up. The engineer was the first to scramble over the ice-banks; the captain came next, helped up by Patrick, Bigold, Martin, and the others, on the banks. Surfman Russell was so weak and frozen that he could not make the ascent, and would have drowned had he not been seized by Ferris and Bigold, the latter jumping into the lake and dragging him to the ice-banks, where he was hauled up by the keeper, and then carried to the station by Surfmen Ferris and Martin, in a much exhausted condition. The boat was then pulled over the banks, and the men all started for the station, where they arrived heavily caked over with ice from head

to foot, and every one of them a monstrous object with this investiture, the result of four and a half hours' exposure in the extreme cold. On reaching the station they were all provided with dry clothes and restored with brandy and coffee.

The boat in which this rescue was effected was subsequently found to have been badly injured in the adventure, the stern crushed and several planks split by the capsize. The skiff which had been let go was swept away into the lake and lost.

The captain and engineer remained three days (until November 23rd) at the station, and were then rowed over to North Point, whence they walked to Alpena, their home. The tug became a total loss.

It would probably be impossible to adequately describe the bitter cold and wind which prevailed on this desolate and ice-piled island during the two days in which these services were rendered. As for the services themselves, the simple record shows their terrible demand upon what is brave, enduring, and unselfish in human nature, and the ample and noble measure in which that demand was supplied by the men engaged.

November 21.—At 12 M., the British schooner *Hercules*, of St. John, New Brunswick, bound from St. John to Cutler, Maine, in ballast, with a crew of four men, fouled her anchors and dragged ashore on the north side of Cross Island, while attempting to get under way during a strong wind. Fifteen minutes after, the crew of Station No. 2, First District, (Cross Island, Maine,) went out to her in the surf-boat with a large hawser belonging to the station. They then carried out both her anchors and ran the hawser from the vessel to a bluff to windward and endeavored to heave her off, but were unsuccessful. At the next tide they discharged her ballast, but were obliged to wait nine days (until November 30th) for a tide sufficiently high to float her. On that day they succeeded in getting her off, and took her into a creek where they reloaded her ballast, moored her in good shape, and gave her into the hands of her captain, who stated that had it not been for the assistance rendered by the life-saving crew he would have lost his vessel. Captain and crew were sheltered at the station during the nine days.

November 21.—At about half-past 8 in the evening, the steamer *James P. Donaldson*, of Marine City, Michigan, from Buffalo, with the barges *Bay City*, *George W. Wesley*, and *Eldorado* in tow, bound to ports on Lake Huron, when about a mile off the harbor of Erie, Pennsylvania, during the prevalence of a furious westerly gale and thick, blinding snow-storm on Lake Erie, cast the vessels of her tow adrift and left them to shift for themselves, while she steamed into the harbor. Strangely enough, she made no report, as far as can be learned, of the perilous condition of the people on board the barges, although in running in she passed within two hundred feet of the life-saving station at Erie, (No. 6, Ninth District,) near the entrance of the harbor, the crew of which observed her as she went by. There were nineteen people, all told, on board the barges; the *Bay City* and the *Wesley* having crews of six persons each, while there were seven on the *Eldorado*, one of the *Bay City's* crew being a woman. On being cast adrift the barges drove rapidly before the gale and grounded at a point four or five miles east of the harbor; the *Bay City*, which was coal laden, striking on a rocky reef, upwards of eight hundred feet from the mainland, where she bilged, while the other two having no cargo were carried nearly high and dry on the lake shore. The weather was thick and

stormy during all of the following day, and news of disaster did not reach the life-saving station until 1 o'clock in afternoon. At that time the sea was very high, and as the prospect of taking the people off by the surf-boat was extremely doubtful, the life-saving crew placed their beach apparatus, with cart, on board of a tug for conveyance across the harbor to Erie, where they procured two teams of horses and hurried as fast as the terrible condition of the roads, which were deeply covered with snow, would permit, to the scene of the disaster; reaching the place between 3 and 4 o'clock. They found that the crews of the Wesley and Eldorado were already on shore, the Eldorado's people having scrambled onto the rocks, from which point of vantage the Wesley's men were assisted ashore. This occurred at midnight, shortly after the vessels stranded. The people on the Bay City were less fortunate. Exposed to the fury of the storm, drenched to the skin, and nearly frozen, they kept anxious vigil during the long hours that intervened until the arrival of the life-saving crew. The apparatus was soon rigged, and the breeches-buoy put in successful operation, the woman coming in first and being followed by the rest as quickly as possible. The rescue of these six persons was accomplished none too soon, for they were in a wretched condition, and it was the opinion of all present that another hour's delay would have been fatal. When safely ashore they were conducted to the friendly shelter of a neighboring farm-house, and then the life-saving crew started back to the station, which was reached just before midnight, being compelled to leave their lines attached to the wreck until the subsidence of the storm. All three vessels were lost.

November 21.—The steam-tug Oswego, of Detroit, with a crew of ten men, having two barges in tow, from Tawas Bay to Cleveland, when about two miles from shore, and the same distance from Station No. 4, Tenth District, (Ottawa Point, Lake Huron,) became disabled in her machinery. They repaired damages and started up again, but the tow-line, being slack, got caught in the wheel, and they hoisted a signal of distress. The life-saving crew launched the surf-boat and went out to them. They found that the mate would not trust himself in the boat belonging to the vessel, the sea being heavy, and the captain wished him taken ashore to obtain a tug to tow them back into the bay. This service was rendered, but before the tug arrived the Oswego had cleared the line and gone inside. The weather was bitter cold, and but one of the life-saving crew escaped without either frozen hands or ears.

November 22.—The three-masted schooner Maggie E. Gray, of Baltimore, bound from Portsmouth, New Hampshire, to Baltimore, in ballast, with a crew of eight men, running too close to shore, stranded at 5 o'clock in the morning, on the east end of the Isaac's Shoals, four miles from Station No. 11, Fifth District, (Smith's Island, Virginia.) She was discovered by the patrol, and reported at the station. The boat was manned and pulled out to her. The captain refused to leave his vessel, and the life-saving crew returned to the station after having agreed to go out to her again in the evening. This they did, and remained until high water at 11 P. M., when she floated. The life-saving crew returned to the station at midnight, much exhausted, after a hard pull.

November 22.—The schooner Kate Miller, of Philadelphia, bound from Wilmington, Delaware, to Galveston, Texas, with a crew of seven men and a cargo of railroad-iron, sprung a leak on the voyage and attempted to put into Hatteras Inlet, North Carolina, for a harbor. While at anchor off the bar, in charge of a pilot, during a heavy north-

easterly gale, with a heavy sea, the leak increased so that the vessel was in danger of sinking. The cables were slipped and the vessel ran ashore in the breakers, about a mile south of the inlet. It was about 3 o'clock in the afternoon when she stranded. The crew and pilot, eight in all, landed in the schooner's yawl, and, after setting up a signal on an adjacent hill, took refuge in an old hut near the beach. The weather being thick and rainy, the wreck was not discovered from Station No. 23, Sixth District, (Hatteras Inlet, North Carolina,) about six miles distant, on the other side of the inlet, until the next morning at about half-past five. The life-saving crew started at once in their surf-boat, and after crossing the inlet landed on the inside and hauled the boat over to the surf-shore, from which point they pulled out to the vessel. They reached the wreck at 10 o'clock, and collecting the personal effects of her crew carried them ashore. As nothing further could be done on board, the keeper made preparations to convey the sailors across the inlet to the station. The wind was so strong that he could not pull against it with the surf-boat, so he engaged the services of a sail-boat, and by that means sent them over to the station, promising to follow as soon after as possible. By 1 o'clock in the afternoon he was able to start across with the surf-boat, the farther shore being reached at 3 o'clock, after a very hard pull. As the men were fagged out, and unable to get the boat any further, he beached her in a safe place inside the inlet, and then all hands walked to the station, where they arrived at 5 o'clock. They found the schooner's crew had arrived some hours previous. The latter were sheltered at the station for four days. The vessel rapidly settled in the sand and became a total loss, but a portion of the cargo was afterwards recovered by wreckers.

November 22.—The schooner *Ajax*, of and from Indianola, Texas, for Pensacola, Florida, with a crew of eight men, was lying at anchor, weather-bound, inside Pass Cavallo Bar. The wind was blowing a gale from the northeast. In swinging with the turn of the tide, at midnight, she fouled her anchor and dragged it, and before a second one could be let go, she drove ashore, the channel being very narrow. The point at which she grounded was some distance north of the extreme limit of the beat traversed by the patrolmen from the life-saving station located at the Pass, (No. 4, Eighth District, Texas,) and her position was not therefore discovered until daylight. When the life-saving crew boarded her soon afterwards, the tide was out and the sea smooth, and it was found impracticable to do anything that day towards floating her off. The following day they carried out the schooner's remaining anchor, with the aid of a lighter chartered by the captain, but could do nothing further on account of the low tides. On the 28th, the revenue-steamer *McLane* arrived, under command of Captain Shepard, assistant inspector for the district, with the view of making an attempt to haul her off. As the water was still very low, the *McLane* was unable to do anything; and as no danger was apprehended, and the steamer was on one of her regular cruises, she soon afterwards left. Finding they would have to wait the recurrence of higher tides, the life-saving crew busied themselves sounding the depth of water about the vessel, and in planting a twenty-two-hundred-pound anchor, with a heavy chain which the captain had obtained from Indianola for that purpose, his own anchors being too light. As the tide increased in volume, the station men assisted the schooner's crew in heaving on the ground-tackle,

moving her a few feet from day to day until she was finally floated off on December 18th, after being ashore twenty-six days. The life-saving crew then assisted in picking up the anchors and chain, and helped get the vessel under way and out of the harbor in pursuit of her voyage.

Excepting the use of the lighter, to lay the anchors, no other assistance than that of the life-saving crew was rendered on this occasion.

The captain stated that outside parties proposed to charge him \$3,000 to get the vessel off, which amount was thus saved to the owners.

November 22.—The schooner Negaunee, of Cleveland, bound from Buffalo to Chicago, with a crew of ten men and a cargo of coal, sprung a leak while laboring in a heavy sea, about two miles northeast of Fairport, Ohio. She set a signal of distress, and the keeper of Station No. 7, Ninth District, (Fairport, Lake Erie,) being disabled from injuries received at the wreck of the barge Standart, sent his crew with the surfboat in charge of Surfman No. 1, to render assistance. Arriving on board, they manned the pumps, the vessel having five feet of water in the hold, and worked with all their might from 10 o'clock in the morning until 11 at night. At 3 P. M., a large tug from Cleveland took the schooner in tow; and when they had proceeded about five miles another tug with a gang of men joined them. The men boarded the schooner, helped throw overboard her cargo, and assisted the life-saving men at the pumps. Half an hour after midnight they reached Cleveland. The life-saving crew took shelter for the night at Station No. 8. The next morning, November 23rd, they put their boat on board the cars, and the keeper of No. 8, furnishing them with means to pay their fare, they returned to Painesville by train, and thence reached their station at 1 P. M. Shortly after arriving at Cleveland, the schooner filled and sank in the harbor. She was subsequently raised. The captain stated that the life-saving crew were the means of saving his vessel.

November 23.—The British propeller Georgina, of St. Catharine's, Ontario, with a crew of twenty men and a cargo of nitro-glycerine and giant-powder on board, from Montreal for Fort William, Ontario, became disabled by the derangement of her machinery and drifted before a fresh westerly gale and heavy sea into Buffalo Bay, Lake Erie. Her anchors were let go, but, as they failed to hold, she was rapidly driving ashore off Hamburg, New York, when her distress-signal was discovered by people in the vicinity. The crew of the life-saving station at Buffalo, (No. 5, Ninth District,) several miles distant, were at once notified by telegraph, and they immediately engaged the services of a team and started with their boat and breeches-buoy apparatus, the men trudging along on foot; notifying, as they went, the master of the steam-tug Crowell and requesting his aid in saving the vessel. The tug steamed out of the harbor, and when, after a toilsome journey, the life-saving crew arrived at Hamburg, they found she had reached the scene, succeeded in making fast to the Georgina before she could strike, and towed her off shore to deep water, whence she was taken into the harbor for repairs. There can be no doubt that the prompt action thus taken was the means of averting a very serious disaster.

November 24.—The British schooner Maid of Llangollen, of and from St. John, New Brunswick, for Baltimore, with a crew of eight men and a cargo of lumber, ran on a reef, while trying to work out of Cranberry Island Harbor, and stranded. The crew of Station No. 4, First District, (Little Cranberry Island, Maine,) went out to her at 10 A. M., immediately after the occurrence, boarded her, assisted in run-

ning out her anchors, got her off, worked her south of the reef and out of the harbor, where they left her clear of danger. The captain expressed great gratitude for the timely assistance, as he believed that without it his vessel would have been lost.

November 25.—At half-past 3 o'clock in the morning, the crew of the schooner *Flying Mist*, of Chicago, bound from Escanaba, Michigan, to Chicago, with iron ore and seven men in crew, reported at Station No. 15, Eleventh District, (Milwaukee, Lake Michigan,) that their vessel was ashore near South Point, about seven miles below. Her captain went for a tug, and the keeper of the station, in the interval, took the crew to his house for breakfast. On the arrival of the tug, the surf-boat was launched, put in tow of it, and went out to the wreck, arriving at 6.45 A. M. The life-saving crew boarded the schooner, and, finding her leaking, helped her crew at the pumps. They had considerable difficulty to keep her afloat while being towed in, and, when inside, the captain ordered her to be run ashore to prevent her from sinking. This was done, and the life-saving crew got a steam-pump and put it to work on her. When she was free of water the tug towed her off. The following day the life-saving crew went out and recovered her anchor and thirty fathoms of chain, and put them aboard of her, after which she started for Chicago in tow of the tug.

November 27.—At 10 P. M., the British schooner *Eureka*, of Weymouth, Nova Scotia, with seven persons on board, and laden with hard wood, mistook the channel between Great Cranberry Island and South West Harbor, passed down the south side of the island, between the ledges, and stranded. The crew of Station No. 4, First District, (Little Cranberry Island, Maine,) boarded her and found her hard aground. At flood-tide they took her in charge, got her headed right, made sail on her, and, with the surf-boat, towed her out between the ledges clear of the island, and left her safe in deep water. This service occupied them until 8 o'clock in the morning of the next day.

November 27.—The schooner *Ovetta*, of New Haven, Connecticut, having a crew of eight men, and bound from New Haven to Rappahannock River, Virginia, stranded on Hereford Shoals, coast of New Jersey, at 1 o'clock in the morning. She was discovered by the men of Station No. 36, Fourth District, at daybreak. They at once boarded her with the surf-boat, and found the crew with their effects packed up and ready to abandon her, but as their yawl was badly stove, they were unable to do so. The life-saving crew encouraged them to try to save the vessel, went to work and carried out anchors, and, by half-past 1 in the afternoon, succeeded in heaving her afloat. Then, assisting in making sail, they piloted the schooner clear of the shoals, and left her in good shape. The captain of the *Ovetta* inserted the following acknowledgment in the local paper:

“SATURDAY, *November 27*, 1880.

“MR. EDITOR: Allow me space in your valuable columns to say a word in behalf of the Life-Saving Service, and Captain Cresse, with his gallant crew of Station No. 36. I left New Haven on November 25th, bound up the Rappahannock River, Virginia. We encountered thick snow on the 26th and 27th, and at 1 A. M. struck on the north side of Hereford Shoals. At the dawn of day a boat was discovered over the port bow, which proved to be the crew of No. 36. I had everything packed up to leave my vessel, but Capt. M. Cresse encouraged me to

try to get her off. His crew run my anchor out at 9 A. M., and at 1 P. M., hove the schooner afloat, and at 2 P. M., I was piloted over the bar by Captain Cresse. My vessel, I believe, would have been a total loss if I had not been assisted by the crew of No. 36, as I had no other assistance, and my boat being stove. The schooner was one year old, of 200 tons burden, and valued at \$8,000, with no insurance. The captain and crew of said life-saving station have my sincere thanks for their kind and timely assistance.

“Respectfully, yours,

“CAPTAIN HARVEY,

“*Schooner Ovetta, New Haven, Connecticut.*”

November 27.—Three of the crew of Station No. 11, Eleventh District, (Chicago, Lake Michigan,) on their way to supper, saw a man running towards the river, and fall or jump into it. They rushed to the spot, and one of the men took off his overcoat and held it down within the reach of the man, who had come to the surface after sinking once. He was not slow to catch at the chance for rescue. Holding firmly to the coat, he was drawn up, and taken out of the water by the three surfmen. The man's check-book had fallen from his pocket into the water, but floated until a skid was procured and held fast by two of the surfmen, while the third climbed down and recovered it.

November 28.—The schooner William Gilbert, of Big Sandy, New York, with a crew of three men and one passenger, arrived off Big Sandy Creek and hoisted a signal for a pilot, it being risky to come in on account of the shifting of the channel. The crew of Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) pulled out to her with the surf-boat, and piloted her in; after which, they cut a channel through the ice in the South Branch and assisted to haul her up, and moored her for the winter.

November 30.—The schooner Loella, of Portsmouth, New Hampshire, bound from Portsmouth to Bangor, in ballast, with a crew of three men, was becalmed, and drifted with the tide into a dangerous position near Whitehead light, at half-past 11 o'clock at night, and anchored to keep out of the breakers. Greatly alarmed at his position, the captain sent a boat ashore to seek assistance from Station No. 5, First District, (Whitehead Island, Maine.) Directly on receiving the summons, the life-saving crew went out to the schooner with the surf-boat, and, at the master's request, the keeper took the vessel in charge. Putting the surf-boat ahead, with a tow-line to hold her off the rocks and swing her head around, they hove up anchor, made sail, and ran her into Seal Harbor, where she was anchored in a safe place. The captain expressed his gratitude in the warmest terms, and declared that, without the assistance of the life-saving crew, his vessel would have been lost.

November 30.—The sloop C. E. Trumbull, of Rockport, Massachusetts, bound from New Bedford, Massachusetts, to Rockport, with a crew of six men, misstayed and stranded, during a violent gale, a mile east of Station No. 7, Second District, (Peakéd Hill Bar, Cape Cod.) The full particulars of this occurrence, which resulted in a serious disaster to the life-saving crew, wherein the keeper and two surfmen lost their lives, will be found on page 64 of this report.

November 30.—The surfman of Station No. 10, Second District, (Cape Cod,) on patrol in the early morning, saw, before daybreak, a

vessel running into danger towards the beach. He burned a red Coston signal, and the schooner at once hauled off, blowing her horn in token of having seen the warning. The air was thick with snow, and the vessel must have stranded had it not been for the timely signal.

December 1.—The brig *Nellie*, of New York, bound from Curaçoa to Bridgeport, Connecticut, with a cargo of salt and ten persons on board, two being passengers, was swept out of her course and wrecked at 6 o'clock in the morning, on The Tombstones, Fisher's Island, Long Island Sound, in a thick easterly snow-storm. Her situation was discovered through a rift in the snow, by the patrolman of Station No. 3, Third District, (Watch Hill, Rhode Island,) at 7.30 A. M., and immediately the life-boat was launched and run down to her, a distance of about seven miles, under sail. The life-saving crew anchored to windward and dropped alongside the brig, and took off the crew and the passengers, one of whom was a lady, a work which was accomplished with great difficulty, as the wind was blowing a gale and the sea was very heavy. After this much was done, the life-saving crew, assisted by that of the brig, had a hard fight to weather the island and make a landing on the lee side. It took the best pulling of all the men, and had it not been for a lull in the tempest, the keeper believes that, with all their efforts, they would have failed. The *Nellie's* steward and the male passengers were nearly perished with cold when they reached the shore.

December 2.—The fishing-sloop *William Tell*, of Somers Point, New Jersey, coming in from fishing off Atlantic City, with a crew of three men, while beating into the inlet against the tide and a strong wind, stood too close to Absecom Shoals, and was stranded at 11 A. M., one mile northeast of Station No. 27, Fourth District, (Atlantic City, New Jersey.) She was soon discovered by the crew of the above station, who launched the surf-boat and boarded her. They ran out her anchor, and succeeded in hauling her off on the rising of the tide.

December 5.—The schooner *Keystone*, of Oscoda, Michigan, bound from Buffalo to Oscoda, with a crew of seven men, anchored at Buffalo, New York, on November 6th, dragged away during a strong southwest gale and heavy sea, and stranded on the south pier-head. Preparations were made to get her off as soon as the water should be sufficiently high. On December 5th, under a westerly gale, the water arose four feet, and the keeper and crew of Station No. 5, Ninth District, (Buffalo, Lake Erie,) were called on for help, and assisted in hauling the vessel off and taking her into port, in the accomplishment of which they worked four hours in the wet and cold.

December 6.—The schooner *Mary Nan*, of and for Chicago, Illinois, from Pentwater, Michigan, with a cargo of railroad-ties and shingles, and having a crew of seven men, arrived in sight of the harbor of Two Rivers, Wisconsin, at about 10 o'clock in the morning, badly iced up and short of provisions, with a signal of distress flying. The weather was bitter cold, the thermometer registering 3° below zero. She was discovered by the crew of Station No. 17, Eleventh District, (Two Rivers, Lake Michigan,) who immediately launched their surf-boat and started to her assistance. Encountering heavy ice after leaving the harbor, they were obliged to make fast to the steam-tug *M. A. Gagnon*, which was also going out to the disabled vessel. Reaching the schooner, then about three miles from the shore, they assisted in passing her lines to the tug, and accompanied her into port, which was not

reached, on account of the ice, until evening. The station crew returned to their station at 7 P. M., suffering much from the exposure incident to the trip.

December 7.—The schooner Samuel Castner, of Philadelphia, from Providence, Rhode Island, to Philadelphia, in ballast, with a crew of six men, stranded at 3 o'clock in the morning, on the north side of Barnegat Inlet, a mile and three-quarters from Station No. 16, Fourth District, (New Jersey.) She was discovered by the patrol, who burned a Coston signal and reported at the station. The crew launched their boat and went out to her. Some time later the crew of No. 17 also boarded the vessel, and the two crews assisted in getting her afloat when the tide arose.

December 7.—The schooner Robert W. Brown, of Key West, bound from Philadelphia to Fortress Monroe, with a cargo of coal and a crew of seven men, got aground on Carter's Bar during a snow-squall. She was discovered by the crew of Station No. 10, Fifth District, (Cobb's Island, Virginia,) at 9 A. M. The surf-boat was immediately launched, and after a hard pull, against a high sea, succeeded in getting alongside the distressed vessel. She was pounding heavily and gradually surging ahead. The keeper offered to take the captain and crew ashore, but the offer was declined, the master hoping as the tide arose to force his vessel across the shoal into deep water. He said, however, that in case of necessity he would signal for assistance. The life-saving crew therefore returned to the station, but kept a sharp watch over the schooner. The wind blew hard, accompanied by frequent snow-squalls. In a little while a signal of distress was seen set in the vessel's rigging. The keeper a second time launched the surf-boat and pulled out to the schooner, which was found to have bilged and filled. The captain and crew, with their effects, were taken on board the boat and to the station, where, being wet, cold, and hungry, they were warmed and served with a plentiful hot meal. During the day the vessel rapidly broke up and became a total loss. The next day the surf-boat took the sailors to Cobb's Landing, whence they took passage to Norfolk.

December 11.—Two men who had gone from Westhampton to fish for cod, attempted, at 9.30 A. M., to return to shore abreast of Station No. 17, Third District, (Westhampton, Long Island,) but owing to the heavy sea they found it impossible to cross the outer bar. The keeper of the station, perceiving their peril, went out with his crew to their rescue in the surf-boat. The men were transferred from their own craft, which was left to its fate. The passage to the shore was made with difficulty, for in crossing the bar the keeper's skill found it impossible to prevent his boat from taking in a heavy sea which filled it. The men, however, were able to bail her out and made the shore in safety. The keeper says in his report: "During many years spent in surf-fishing, wrecking, and life-saving, I can truly say, this was the roughest time I ever saw any boat attempt to go off the beach in, and to the coolness and courage displayed by my men is due the credit for the success which attended our efforts."

December 12.—The tug Kitty Gaylord, of Ludington, Michigan, with a crew of four men, left port with two fish-boats in tow. The shore was lined with slush and snowy ice. After they had been out a few hours, the wind hauled round to the northwest and drove the ice in, packing it so that it was impossible for the tug and her tow to make port. Each of the fish-boats had two men on board; these the tug took

off, and their boats were left at anchor outside. The tug then attempted to steam inside, but when she was within about one hundred and fifty feet of the south pier she became wedged in the ice, and could move neither in nor out. The keeper of Station No. 7, Eleventh District, (Ludington, Lake Michigan,) secured a larger tug to go to the Gaylord's assistance, but after working an hour to get out to her, the attempt was abandoned. He then went to the station for lines, tackle, &c., and made communication between the tug and the shore by throwing to the vessel a five-ounce lead carrying a string. To this a heaving-line was attached, followed by a hawser. Five of the eight men were then landed, the others remaining on board to assist in the effort to save the tug. They worked at this from 5 until 11 P. M., heaving her a distance of two hundred and fifty feet through and up on to the ice, which reached to the bottom. During the night the wind shifted from off the land, and the ice drifted outside, and would have carried the tug with it had it not been for the help of the life-saving crew. On the morning of the 13th, the life-saving crew went to the tug, cut away the ice from under her, and let her down into the water, in doing which the rudder unshipped. The keeper bargained with the tug-master to ship the rudder if he would allow him the use of the tug to go in search of the fish-boats, which had broken from their anchorage. At noon, the tug having been put in order, they ran her south fifteen miles, and found both boats about half full of water. They were bailed out, a man placed in each to steer, and at 5.30 P. M., were safely towed into harbor.

December 19.—The schooner *Medora Francis*, of Chincoteague, Virginia, bound from Philadelphia to Chincoteague, with five men on board, and a cargo of coal and merchandise, stranded upon Fox Shoal, three miles southwest of Station No. 7, Fifth District, (Assateague, Virginia.) The life-saving crew went out to her assistance, ran out her kedge anchor, rendered whatever other help they could, and gave them instructions how to get into harbor when the tide arose. They then left them with an understanding that they were to be signalled for if needed. At 6 o'clock in the evening, the vessel floated and went safely into harbor.

December 29.—The British schooner *Elysia A.*, of St. John, New Brunswick, with a crew of seven men, and laden with salt, from St. Thomas, West Indies, for New York, stranded shortly before midnight of the 28th, on Dawson Shoal, off Watchapreague Inlet, about one mile southeast of Station No. 8, Fifth District, (Cedar Island, Virginia,) while running back to Hampton Roads for a harbor. The night was dark, the wind fresh from the northeast, and a heavy sea running. She made a signal of distress, by igniting a barrel of tar, which soon attracted the attention of the patrol from the station. He at once answered by burning his Coston hand-light, and then hastened back to the station and gave the alarm. The crew immediately mustered and went off in their surf-boat, the pull being both difficult and dangerous on account of the heavy breakers which were encountered for nearly the entire distance. They succeeded in rescuing the schooner's crew, and landed them safely at the station, where they arrived soon after 2 o'clock, or a little more than two hours after their vessel struck the shoal. The position of the people on board had been one of great peril, as their boat had been stove by the seas and rendered useless, and the storm was increasing, so that when they were taken off the sea was breaking on board. The same morning, at half-past eleven, the schooner was discovered to be on fire. The life-saving crew went off

again, although the gale had increased and a blinding snow-storm prevailed at the time, equipped with fire-buckets from the station, and succeeded in extinguishing the flames. The fire was caused by the schooner's crew having, in their haste to abandon her, neglected to wholly extinguish their alarm-signal when they took to the surf-boat. After the storm subsided, the station men pumped the vessel out and assisted in all the operations upon her until she was subsequently hauled off by a wrecking company, and taken into the inlet. The crew were afforded food and shelter at the station for six days.

December 30.—The bark Idaho, of New York, bound from Cienfuegos to New York, with a cargo of sugar, having eighteen men on board, seven of them being the crew of the wrecked schooner John L. Tracy, picked up at sea, over-ran her reckoning, and at 10 o'clock in the evening stranded, about one hundred and fifty yards from shore, and a mile east of Station No. 20, Third District, (Smith's Point, Long Island.) She was discovered by the patrol, who burned a Coston signal, and then hastened to report to the keeper. The crew were immediately mustered, and hastened to the scene with the beach apparatus, arriving abreast the vessel at 11.30 P. M. A shot-line was thrown over her by the Lyle gun, the breeches-buoy was speedily rigged, and at midnight one man was safely landed by its means. The captain and remainder of the crew refused to be taken ashore before morning. The next day, the crews of Stations Nos. 19 and 20 assisting, the crew of the John L. Tracy were landed. The captain and crew of the Idaho did not wish to come ashore. On the 2d of January the Idaho succeeded in getting afloat.

December 30.—The schooner George W. Rodgers, of Greenport, Long Island, bound from Atlantic City to New York, with a crew of five men and a cargo of codfish, while getting under way was drifted by the ice to the north shoals of Absecom Inlet and stranded, one mile from Station No. 27, Fourth District, (Atlantic City, New Jersey.) The life-saving crew launched the surf-boat and went out to her, but did not board her until the outgoing tide had slackened. They then ran out the schooner's anchor, and after hard heaving got her off without damage. Had not the work been accomplished opportunely, as it was, the next tide would have made her condition very perilous.

December 31.—At midnight the patrolman of Station No. 13, Second District, (Chatham, Cape Cod,) saw the running-lights of a vessel coming obliquely towards the beach. He immediately burned his Coston light and the vessel changed her course. Had it not been for the timely warning she must have stranded on the beach or outlying bars.

December 31.—The surf-boats of Stations Nos. 27 and 28, Fourth District, (at and near Atlantic City, New Jersey,) were manned and pulled out, in the midst of a gale and heavy sea, to offer assistance to the schooner Estella, bound from Martinique to New York, with a cargo of sugar and eight men on board, which had been dismasted, and had split her sails in the storm. The captain wanted no assistance except information regarding the locality of the vessel, and to send a telegram for a tug, which the keeper of No. 28, took ashore for him and sent from the signal-station.

December 31.—The schooner Charles Dennis, of Providence, with a crew of five men, bound from Port Richmond, Pennsylvania, to New Bedford, Massachusetts, with a cargo of coal, while at anchor off Fourteen-Foot Bank, Delaware Bay, several miles above Cape May, was cut through

by the ice and sank at 5.30 P. M. December 30th, the crew taking to their boat as she went down. Drifting with the floating ice and totally unmanageable, the boat was discovered by the lookout on the roof of Station No. 40, Fourth District, (Cape May, New Jersey,) at about 11.30 the next morning; with a signal of distress flying. The boat was about five miles distant from the New Jersey shore, and it was deemed impossible to reach her with the station surf-boat on account of the ice. The keeper therefore hurried to the U. S. Signal Station and telegraphed to Lewes, Delaware, reporting the facts, and asking that a steam-tug be dispatched to the assistance of the people in the boat. When the tide ebbed it seemed to bring the boat nearer to the station, and, as no tug had as yet hove in sight, the keeper decided to attempt the rescue with his surf-boat, hazardous though it might be. Taking provisions, blankets, and the medicine-chest in the boat, a start was made at 1.30 P. M. They succeeded, by dint of pulling and dragging the boat over the ice, which required much laborious effort, in reaching within half a mile of the schooner's boat, when a tug was descried steaming directly for her through the heavy ice-floes. The tug, which appeared to be a large and powerful one, made rapid progress towards the boat, while the advance of the life-saving crew was necessarily slow. It soon became evident to the latter that the tug would reach the people first, and that their safety was assured; so, coming to a halt, they watched until they were picked up, and the tug was headed back for the Delaware shore, and then betook themselves homeward to their station, the surf-boat having to be dragged nearly the entire distance on the ice.

December 31.—The schooner *Mary D. Ireland*, of Philadelphia, bound from Richmond, Virginia, to New York, with a crew of six men and a cargo of soft coal, stranded, three miles and a half north of Station No. 5, Fifth District, (Green Run, Maryland,) at half-past 1 o'clock in the morning. She was soon discovered by the life-saving patrol, who fired Coston signals in token of coming help, and then hastened to report at the station, reaching there at 2.30 A. M. The surf-boat was manned and launched, and arrived at the schooner at 4.30 A. M. The captain declined immediate assistance, and the life-saving crew returned to the station. At 8 A. M., the boat was launched a second time, went to the vessel, and took the captain ashore to telegraph for a tug. At 2.20 P. M., the boat was launched again, and took the captain out to his vessel. At this time, the weather having become threatening and the sea heavy, the life-saving crew boarded her, assisted in taking in and furling sails, and then having put their personal effects into the surf-boat, took the captain and crew ashore. The shipwrecked men were cared for at the station until the following day. In getting from and to the station the boat had to be dragged through broken ice and banks of snow, and two of the life-saving crew were frost-bitten. The vessel was got off by a wrecking-tug.

January 1, 1881.—At 7 P. M., the patrol of Station No. 22, Third District, (Blue Point, Long Island,) observed a steamer heading for the shore, and fired a Coston light in warning. She changed her course.

January 1.—At 7 P. M., the patrolman of Station No. 9, Fifth District, (Hog Island, Virginia,) discovered a vessel standing too near the beach. He showed his patrol light, and followed this with a Coston signal. The vessel tacked and stood off shore. At 11 P. M., another vessel, which was standing too near in, was likewise warned, and dropped her anchors.

January 1.—On this date, at 11 A. M., the crew of Station No. 10, Fifth District, (Cobb's Island, Virginia,) observed four men on Bone Island, making signals as though in need of assistance. The crew ran out the surf-boat and pulled across the inlet, a very difficult undertaking on account of the ice, and found that three of the men belonged to the crew of the schooner Elizabeth White, of New York, which left York River, Virginia, with a crew of five men and a cargo of railroad ties, for Philadelphia, and, while running for Hampton Roads for a harbor during a thick snow-storm, had been wrecked at 9 A. M. December 29th, on Carter's Shoal, about a mile east-southeast of Cobb's Island. The land could not be seen, although they knew it was not far off. Their vessel was an old one, and likely to soon go to pieces, so it was determined to attempt to reach the shore in their boat. The boat was lowered, and, after standing in far enough to sight the breakers on the beach, they skirted along them until smooth water was reached, and then made a landing in safety on what proved to be Ship Shoal Island. They were hospitably cared for by a family named Laugherty, residing on the island, until their supply of provisions gave out, and then Mr. Laugherty offered to aid them in reaching the Cobb's Island station, the condition of the ice in the sound rendering the journey to the main-land unsafe. It was under these circumstances that the station crew met the men as above described, on January 1st, the party having crossed from Ship Shoal Island to Bone Island, whence they signalled to Cobb's Island. The keeper offered to take the three men at once to the station, but as they preferred to wait and see Mr. Laugherty safely back across the inlet before proceeding further, it was proposed that the surf-boat should return to Cobb's Island for a supply of provisions for the Laugherty family, and that done, convey the crew of the schooner, including the two left behind on Ship Shoal Island, to the station for shelter. This plan was carried out, and the shipwrecked crew reached the station by 5 o'clock in the evening. They were afforded shelter at the station for three days, and were conveyed to the main-land when the condition of the ice in the sound permitted. The vessel proved a total loss, and not a vestige of her was afterwards seen.

January 1.—At 8 A. M. the tug M. A. Gagnon steamed out of the harbor of Two Rivers, Wisconsin, with six fishing-boats in tow, bound to the fishing-grounds some six miles off shore. At the time of their departure ice was scattered about in detached floes on the lake. The wind was southerly and blew rather fresh all day until towards evening, when it moderated. Meanwhile a heavy ground-swell and current crowded the field and slush-ice close in-shore and around the harbor piers, filling the channel with a densely packed mass that was almost impenetrable. An ice barricade or wall, four to seven feet in height, and extending fifty or sixty feet out from the shore, was filled up on either side of the entrance. The keeper of Station No. 17, Eleventh District, (Two Rivers, Lake Michigan,) aware of the absence of the fishermen, watched with anxiety for their return, and about dusk saw the tug with the boats in tow, several miles off shore, heading in. As darkness set in he displayed a lantern on the pier as a guide. The flotilla made good progress until 7 o'clock, when it stuck fast in the ice about one hundred feet from the entrance to the harbor. Besides the regular crew on board the tug, there were eighteen people in the boats. Three of the boats immediately tailed with the current and drift-ice close in

and around the outer end of the north pier. The keeper, with the assistance of a few citizens, managed to get hold of the tow-line, and by that means succeeded in hauling the three boats, in which were six of the men, in behind the pier to the solid ice on the shore, whence they were lifted and pulled up and over the ice-wall to the beach in safety. It was then 10 o'clock, the night black and gloomy, and the piers and shore a mass of slippery ice. As the current was slowly setting the remainder of the flotilla beyond reach, the captain of the tug hailed the keeper and requested him to try and get a line to his vessel. The keeper, with the assistance of one of his men, hastily procured one of the station lines, and, by means of a skiff, which they hauled down the pier and launched on the ice, ran it to the tug and thus held her fast. He then turned his attention to the fishermen yet remaining in the boats and succeeded in landing the entire number, twelve in all, on the end of the pier, from which point they assisted the keeper and those with him in warping the three boats, still fast to the tug, to a place of greater safety alongside the pier. At this time the captain of the tug appealed to the keeper for assistance in extricating his vessel. As the fishermen were safely ashore the excitement rapidly subsided, and the crowd of spectators began to disperse, and in a short time the keeper and one man of his crew, who had been present from the start, were the only persons left on the pier. In this dilemma the only course left them was to summon the rest of the life-boat crew, who were not aware, until called, of what had been going on. By way of explanation, it should be stated that, it being mid-winter, when lake navigation is virtually suspended, the station was closed. The lake crews are, however, subject to summons whenever in the interval between the close of one and the opening of the next season their services are required. The men were accordingly notified, and in response to the call mustered on the pier about midnight. Going on board the tug they clapped on the warp, and assisted by the engine, moved the vessel after much effort, a few feet at a time, through the pack and slush-ice, which formed a solid mass almost to the bottom. In this way they labored and pulled until 4 o'clock in the morning, (January 2nd,) when the steamer's fuel gave out. To meet the emergency the life-boat crew went ashore over the ice, obtained about half a cord of wood, carried it down on the pier, and conveyed it to the tug by means of the skiff. Having thus replenished the supply of fuel, they resumed their labors, and about 6 o'clock succeeded in placing the tug beyond the reach of the surging ice-floes and the danger of grounding on the sunken ice. The crew was then dismissed, and the keeper and his men dispersed to their homes to obtain much-needed rest. The work they had been engaged in was exceedingly laborious, and involved much hardship. Besides, it should be borne in mind that the darkness of the night rendered the obstacles to be overcome more numerous. Several of the men, including the keeper, slipped through the slush-ice repeatedly while operating with the skiff between the tug and the piers, and thus wet and cold, with their outer garments frozen stiff, they were glad when success crowned their efforts and the boat was brought safely into the harbor, and they could seek the shelter of their homes. It is abundantly evident, from the reports of the district officers, that, but for the efforts of the volunteers, and those employed by the Service, the sufferings of the fishermen would have been very great, and it is more than probable their boats, outfits, and catch of fish would have been lost.

January 2.—During the weather of December 29th and 30th, the schooner *Mary E. Turner*, of Norfolk, bound from Smithfield, Virginia, to New York, with a crew of five men and a cargo of pine wood, was blown off shore, and not being able to get an observation, stranded January 2, one mile southeast of Station No. 35, Third District, (Rock-away, Long Island.) Her situation was discovered very shortly after the occurrence by the patrolman, and reported at the station. She was boarded by the life-saving crew, who went out to her in the surf-boat, ran out her anchor, and then, making five trips with the surf-boat, took safely to shore the vessel's crew, their effects, and the cabin furniture. The captain and one man were frost-bitten. The crew were sheltered and succored at the station for a period of three days. The vessel was a total loss.

January 5.—The schooner *J. J. Clarke*, of Gloucester, Massachusetts, with a crew of six persons and a cargo of frozen herring, lost her course during a heavy snow-storm, and stranded at two o'clock in the morning, on the southeast point of Little Cranberry Island. The patrol of Station No. 4, First District, (Little Cranberry Island, Maine,) saw her come ashore. He immediately reported at the station, and twenty minutes later the life-saving crew boarded the schooner with the surf-boat. They ran out her anchor, and forty fathoms of chain. They then took the bedding, and other personal property of the crew, and three of the men ashore in the surf-boat, the captain and the other two men following in the schooner's boat. They were all sheltered at the station one day. The keeper dispatched a surfman with the schooner's captain to Baker's Island to procure men and boats to lighten the vessel, and to get an extra anchor and cable. When these arrived the life-saving crew went again to the vessel, helped to carry out the anchor and cable, and assisted to heave the vessel afloat. They then made sail on her, and took her clear of danger.

January 5.—Soon after boarding the *J. J. Clarke*, the same crew (Station No. 4, First District) saw a vessel's light going straight for the rocks near by. They immediately manned the surf-boat, rowed out towards her, and called to her to put her "helm hard down." She responded, and the vessel was saved by only half a minute from going on the rocks. She proved to be the schooner *Chocorua*, of Gloucester, Massachusetts, with a crew of five men, bound from Eastport to Gloucester.

January 6.—The schooner *Anson Stimson*, of Gloucester, Massachusetts, bound from San Domingo to New York, with a cargo of sugar and molasses, and having seven persons on board, one of them a passenger, stranded in a thick fog near Atlantic City, New Jersey, one and a quarter miles north of Station No. 28, Fourth District, at 11.15 o'clock at night. The vessel was simultaneously discovered by the two patrolmen of Stations Nos. 27 and 28, just as she came on shore, who burned a Coston light to let her people know that she was seen. Both then started to alarm the nearest station, No. 28, the man from No. 27 stopping a moment on the way to send a team of horses for the crew and surf-boat of his own station. As soon as word was received, the keeper of No. 28 manned and launched his surf-boat, the patrolman of the other station joining the crew, and proceeded to the wreck, which they boarded. Taking off the crew, they conveyed them to a house near by for the night, as they were too much exhausted to walk to the station. After getting the wrecked people under shelter, the life-saving

crew returned to the schooner, and brought away the clothing and other personal effects of the men, which they likewise landed in good condition, making in all eight trips. The captain of the schooner had died on the voyage and been buried at sea, and her crew were all sick with chills, two of them being in such a condition that they had to be assisted over the vessel's rail into the boat. Notwithstanding the thick weather and lateness of the hour, a number of ladies and gentlemen were on the beach to witness the rescue, which was accomplished in fifty-five minutes from the time the surf-boat left the station, although the vessel was a mile and a quarter distant. When the crew of No. 27 arrived, they found there was nothing for them to do. The vessel was a total loss.

January 7.—The schooner *Loretta Fish*, of Thomaston, Maine, bound from Savannah to Boston, with a crew of eight men and a cargo of lumber, stranded at 1 o'clock in the morning, a little more than a hundred yards from shore, a mile and a half east of Station No. 12, Third District, (Bridgehampton, Long Island.) She was discovered by the patrolman, who burned his Coston signal and hastened to the station to report. At 3.30 A. M., the life-saving crew arrived opposite the wreck with the Lyle gun, breeches-buoy, and gear, after a hard pull. Although it was high-tide and the sea was rugged, the vessel was lying easy, and in no immediate danger, so they waited for daylight and ebb-tide before proceeding with the rescue. At break of day they fired a shot, sending a line over the schooner, sent off the whip and hawser, rigged the breeches-buoy, and at 8 A. M. the eight men were all safely landed. Subsequently the personal property of the crew was also brought ashore by the apparatus. The rescued crew were taken to the station, where seven of them were succored one day, and four of them two days more. January 10th, during an easterly gale and high sea, the vessel began to break up and her cargo to drift ashore. The schooner was a total loss, but most of her cargo was saved.

January 7.—At 8 A. M., the lookout of Station No. 36, Third District, (Rockaway, Long Island,) discovered a small sloop, the *Neddy Rand*, fast in the ice, abreast the station. They boarded her, cut her free, and ran her into a safe harbor, where they kept her until her owners came for her.

January 10.—The patrolman of Station No. 27, Third District, (Oak Island, Long Island,) saw, at 4 o'clock in the morning, a schooner's sailing lights coming full on shore. He made haste to burn his Coston signal, and she immediately changed her course. The weather was extremely thick, and the vessel so close in that the patrolman heard her men cry "Breakers!" as they put the vessel about.

January 11.—The British ship *Nellie Murphy*, of Yarmouth, Nova Scotia, bound from Tuskent, Nova Scotia, to Norfolk, in ballast, with a crew of twenty men, misstayed in a gale and was carried ashore by the strong current abreast of Station No. 1, Sixth District, (Cape Henry, Virginia,) a little before midnight. She was almost immediately discovered by the patrol, who fired a Coston signal and at once reported at the station. The surf-boat was launched immediately, but the current was so strong that the attempt to reach the vessel was ineffectual. The life-saving crew then returned to land about three hundred yards to leeward of the ship. They put the boat on its carriage, hauled it two hundred yards to windward of the vessel and again launched it, and after a hard struggle reached the vessel in safety. The keeper boarded

her and offered the services of the life-saving crew to the captain. The offer was cordially received, but the captain would not consent to leave the vessel. The keeper then advised the services of a wrecking company, as the vessel was inside the outer reef and the wind and sea were steadily driving her further on shore. This was acceded to, and the keeper took a message to the British consul asking for the required assistance, and when leaving the vessel assured the captain that the life-saving crew would keep a close watch during the night and hasten to her immediately on being signalled for. The vessel was not got off until January 14th, communication in the meantime having been constantly kept up with her by the surf-boat. On the evening of that day she was towed into harbor by the wrecking company's tug. The captain of the ship wrote a letter expressive of his appreciation of the promptitude and watchfulness of the life-saving crew.

January 13.—The keeper of Station No. 1, Fourth District, (Sandy Hook, New Jersey,) being on the west shore of Sandy Hook with two of his crew, perceived a dark object in the bay, about two and a half miles away. The atmosphere was rather thick, and at first the character of the thing could not be determined, but, after watching for an hour, they decided it to be two men in a boat. The ice was heavy and rapidly closing in. The keeper took off his coat and used it to signal the ice-bound men, and in return received a signal from them. Knowing that a row-boat could not possibly make way through the ice, the keeper was debating the possibility of procuring a tug, when the United States steamer Ordnaunce was seen working her way through the ice to her pier on the west side of the Hook. A surfman was immediately dispatched to ask her commander if he would attempt the rescue. He took the messenger on board, put on a full head of steam, and ploughed through the ice-field to the distressed men and took them on board. They had been for hours trying to cut their way through the ice, and had become exhausted and discouraged before they saw the signal. They were taken to the station, given supper, a night's lodging and breakfast.

January 20.—The patrolman of Station No. 22, Third District, (Blue Point, Long Island,) saw a vessel standing into danger very near shore. He fired a Coston light and the vessel wore off and escaped stranding.

January 20.—The British bark *Kwasind*, of Sackville, New Brunswick, bound from Hamburg to Baltimore, with a cargo of salt and empty barrels, and a crew of seventeen men, stranded in a thick fog on Paramore's Beach about four miles south of Station No. 8, Fifth District, (Cedar Island, Virginia,) and three hundred and fifty yards from shore, at 10 o'clock in the evening. The following morning, the life-saving patrol saw her royals over the land, and judging by their position that a vessel must be ashore, he reported at the station. The surf-boat was launched immediately, and through a high surf was pulled for the distressed vessel. The life-saving crew were obliged to row two miles to seaward to get beyond a reef, and thence four miles down the beach. The wind was blowing fresh from the south-east with a heavy sea, causing the boat to labor and ship much water. After getting clear of the shoals the boat was kept off before the wind and sea, and made better weather under skilful handling. At 10.30 the boat reached the wreck and was rounded to under the stern of the vessel, but seeing that the people on board were in no immediate

danger, and that it was unsafe to attempt boarding, as the sea was breaking heavily on every side, the keeper told the master that he would board him as soon as practicable, and then to refresh his exhausted crew ran the boat upon the beach. At 1.30 P. M. the wind having veered to the southwest and the sea having fallen with the ebb-tide, the boat was again launched and the vessel boarded. The keeper offered to land the captain and crew, but after consultation with his men the captain concluded not to abandon his vessel, but to be taken ashore himself to secure the help of a wrecking vessel, to save, if possible, the bark and her cargo. The schooner *Rapidan* was engaged. The life-saving crew being much exhausted, and their hands badly blistered, were in poor condition to make the long pull back to the station; they therefore landed and left their boat in charge of the wreckers, and walked three miles to the inlet. Here they borrowed a boat and pulled to the station. They subsequently boarded the vessel on the 22d, 23d, and 24th of January, and took an account of the cargo for the protection of the revenue, and forwarded it to the collector of customs at Onancock. On the 26th the revenue steamer *Hamilton* boarded the vessel and took twelve of the crew to Lewes, Delaware. On the 1st of February during a heavy gale the vessel was so badly damaged that she was condemned, and was subsequently sold, with her cargo, at public auction.

January 21.—The steamer *Berks*, of Philadelphia, bound from Philadelphia to Boston, with a cargo of coal and a crew of fourteen men, sprang a leak off Montauk Point during the night, and arrived at Block Island the next morning. She showed a signal of distress, and the crew of Station No. 4, Third District, (Block Island, Rhode Island,) ran down to her with the surf-boat at 6 o'clock A. M. They boarded her, took her into the bay, pumped her out, and found and stopped the leak. The service occupied six hours and a half. At 12.30 P. M., the steamer proceeded on her way to Boston.

January 21.—The sloop *Wm. H. Mills*, of Little Egg Harbor, New Jersey, loaded with oysters, and having two men on board, had a hole cut through her bows by the ice off Sandy Hook, and was run ashore to escape sinking in deep water. She went on about 3 o'clock in the morning, and half an hour after was discovered by the patrolman of Station No. 1, Fourth District, (Sandy Hook, New Jersey.) He burned a red Coston light, hailed the vessel, and was answered by the crew. The sloop was lying so well up on the beach that the sailors left her without the aid of boat or apparatus, and accompanied the patrol to the station. At daylight the keeper and a part of the life-saving crew went to the sloop to see if anything could be done to save her. They found her so badly damaged that it was useless to make the attempt. The men were kept at the station one day and night, and then passes were obtained for them to go by railway to their home at Egg Harbor.

January 22.—The crew of Station No. 2, Fourth District, (Spermaceti Cove, New Jersey,) sighted wreckage about one and a half miles from the station in an east-northeast direction. They manned the boat, went out to the place, and found the remains of a small sloop completely broken up. The life-saving crew stripped her of a torn main-sail, and secured her spar and some rigging, all of which was taken ashore and cared for.

January 23.—The German ship *Geestemunde*, of Geestemunde, bound from Antwerp to New York, with a crew of nineteen men and a cargo

of pig-iron and barrels, stranded at noon a mile and a half west of Station No. 17, Third District, (Westhampton, Long Island.) She was seen by the life-saving crew as she struck. They immediately launched and manned the surf-boat, pulled out to the ship and boarded her, offering assistance. None was required, however, except information as to the position of the vessel, and the carrying of messages to and from the shore. After being aground thirty-seven hours the ship floated off without assistance.

January 25.—The British schooner Edmund, of St. John, New Brunswick, bound from Canning, Nova Scotia, to New York, with a crew of six men and a cargo of potatoes, stranded at 4.30 A. M., about two miles south of Station No. 12, Second District, (Orleans, Cape Cod.) She was discovered by the patrolman of the above station twenty minutes after, lying about one hundred yards from shore. He immediately reported her, and at a quarter-past 5 o'clock the surf-boat was launched and the life-saving crew boarded her. They assisted in running anchors and heaving at the windlass with the view of getting her off. Besides this, they were of service in carrying despatches to and from the shore and in conveying the insurance agent to the vessel. At 5.30 A. M. on the next day the schooner floated and the life-saving crew returned to the station after twenty-four hours' service, the result attained being largely due to their efforts.

January 25.—At 3.40 A. M., an unknown steamer was heard by the patrolman of Station No. 2, Third District, (Point Judith, Rhode Island,) blowing her whistle at short intervals, being apparently about five and a half miles north of the station. She also burned three green and red signals, each of which was answered with Coston signals by the patrol. Fifteen minutes later the boat was launched and pulled out to where the lights had been seen, but the steamer had disappeared.

January 25.—The schooner Seventy-Six, of San Francisco, bound from Port Townsend on a sailing voyage, with a crew of six men, dragged her anchors in Neah Bay and stranded near Station No. 1, Twelfth District, (Neah Bay, Washington Territory.) The keeper was present as soon as she struck the beach. A line was thrown on board with a heaving-stick, and a six-inch hawser was bent to the line by the vessel's crew, hauled ashore, and set up with heavy purchase blocks secured to the broadside of an old wreck firmly imbedded in the sand, thereby saving the stranded vessel from working ahead upon a tier of boulders standing above water from one to three feet, which would have totally wrecked her. It was near high-water when the vessel went on, and the sea, breaking heavily over her fore and aft, drove her well up on the beach. On the 26th, the life-saving crew, which at this station is composed of Indians, dug away the sand from under the bottom of the vessel on both sides, passed four gripes under the keel, a spar well under the bottom, firmly secured to the latter twenty-four oil-casks, and threw out all ballast to lighten the vessel. The vessel was worked off, having sustained some damage, and was towed to Seattle for repairs.

January 26.—The schooner Alfred Keen, of Rockland, Maine, bound from Richmond, Virginia, to Portland, Maine, with a cargo of coal and a crew of seven men, from being badly iced up became unmanageable, misstayed and stranded, at 4 o'clock in the morning, two miles west of Station No. 7, Second District, (Peakéd Hill Bars, Cape Cod.) The station patrolman discovered her half an hour afterward and reported

her at the station. The surf-boat was launched and pulled out to her and the captain and crew were taken ashore. A strong gale was blowing from the northwest, with a high sea, and the mercury was at zero. On the following day the vessel floated in over the bar at high-water and drove before the gale to a point a quarter of a mile east of the station, where she again brought up. The life-saving crew, accompanied by the captain of the schooner, kept watch on her as she drifted along, with no one on board, and as soon as she stopped, boarded her and carried all movable articles ashore. The vessel was subsequently condemned and sold, and afterwards gotten off and towed to Provincetown. The crew were sheltered at the station for two days.

January 31.—At 10.30 P. M., the patrolman of Station No. 29, Fourth District, (Great Egg Inlet, New Jersey,) prevented a steamer from running on the north shoals of Egg Harbor, by burning a Coston signal.

February 1.—The British steamer *Roraima*, of London, with a crew of twenty-one men and two passengers, bound from Demerara for New York, in ballast, stranded shortly before 7 o'clock in the morning, during the prevalence of a northeast snow-storm, just to the southward of Shark River Inlet, coast of New Jersey, about one hundred and fifty yards from the shore, and four hundred yards south of Station No. 7, Fourth District, situated on the north side of the inlet. The accident was discovered by the station crew almost as soon as it occurred, and by quarter past 7 the surf-boat was alongside, with an offer of assistance. The captain refused, emphatically, to accept the aid of the life-saving crew, or to permit them to carry a line to the shore and thus establish communication, expressing the belief that the steamer could be worked off the shoal by her own machinery. Under these circumstances, the station-men returned to the beach abreast of the vessel, where they remained on watch, prepared for any contingency that might require their services. Soon after their return they were joined by the crew of Station No. 8, situated two and a half miles south of the inlet, with their beach apparatus, they having had a long and laborious tug to reach the vicinity of the vessel in good season. Later in the day the mate of the steamer landed by one of her boats, and telegraphed to the consignees at New York. In coming ashore the sea was so heavy he was thrown violently into the surf, and narrowly escaped with his life. The surfmen conducted him to the nearest station, where every necessary attention, in the way of dry clothing and restoratives, was bestowed upon him. The *Roraima* was subsequently floated off by the Coast Wrecking Company and taken to New York.

February 1.—The patrolman of Station No. 34, Fourth District, (Townsend's Inlet, New Jersey,) discerned through the storm which was prevailing, the lights of a vessel close in and standing toward shore. He burned his Coston signal, whereupon the vessel tacked and stood away, thus escaping stranding.

February 2.—At 4 P. M., the schooner *John Roach*, of Greenport, Long Island, with eight men, on a fishing cruise, misstayed in the ice while endeavoring to make harbor, and stranded on the south shoal of Absecum Inlet, about half a mile southeast of Station No. 27, Fourth District, (Atlantic City, New Jersey.) The crew of the station, who had been watching her, launched the surf-boat and went to her assistance. They found her so badly iced up that her crew were unable to get anything clear by which to make the attempt to haul her off. The surf-boat returned to the station for a hawser. When it again reached the

schooner, she was taking in water so badly that her crew were obliged to leave her. They were taken to the station, where the seven men remained six days and the captain a portion of that time. The next three days the life-saving crew assisted in stripping the vessel. She was a total loss. The owner of the schooner, in a communication to the Department, states that but for the timely assistance of the life-saving crew, the crew of the vessel would all have perished.

February 3.—The Norwegian bark *Arendal*, of Arendal, bound from Cronstadt, Russia, to Philadelphia, laden with iron, having a crew of eleven men, a pilot, and the ship's agent on board, became fast in the ice two miles northeast of Station No. 2, Fifth District, (Rehoboth, Delaware,) and about the same distance off shore. She had lost one of her anchors and was out of water. There was danger of her being cut through by the ice, or of being carried out to sea without a supply of water. As soon as the ice cleared away between her and the beach, so that a landing could be made, the captain and crew came ashore in the ship's boat. The boat being overladen took in considerable water, the men were wet through, and one of them was frost-bitten. They were invited into the station, provided with a plentiful warm supper, and made as comfortable as possible for the night. The captain contracted with the Lewes Wrecking Company to get his vessel as soon as possible into a safe place. The next day the city ice-boat steamed down to the vessel. When she came in sight of the station, at about 2 P. M., the keeper had the surf-boat launched, all the crew's baggage put into it, and took on board five of the men. The captain of the bark and the remainder of her company manned their boat, and all went out to the vessel, which had been drifted by the ice during the night about seven miles south of the station. When within half a mile of her, they were obliged to haul up and lie to windward until the steamer got her clear of the ice, when they went alongside and the crew and their effects were put aboard. The life-saving crew returned to the station at 6.30 P. M., having been out four hours and a half.

February 4.—The schooner *William*, of Ellsworth, Maine, bound from Boston to Duxbury, Massachusetts, having a crew of three men and a cargo of vitriol and bone-dust, in attempting to enter Duxbury Bay after dark, was caught in the ice, and, before she could be extricated, was swept by the ebb-tide on Brown's Shoal, where she stranded at 9 P. M., three-quarters of a mile south-southwest of Station No. 4, Second District, (Gurnet Point, Massachusetts.) She had been observed by the station patrol when passing Gurnet Point, and as vessels frequently enter the harbor after dark, she received no unusual notice, the life-saving men merely watching for any signal she might make for a pilot. A moderate northerly breeze prevailed and the sky was clear when she stood in. It was supposed at the station, when the patrolmen reported the facts, that she had anchored, as she could be seen with the aid of the glasses lying head to the tide with her jibs down and the fore sail and main sail still set. She showed no light, and as the sky clouded over towards midnight, they saw her no more until morning, it being supposed by the keeper, who endeavored with the glasses to keep track of her, that she had gone up with the flood-tide, which made about 10 o'clock. At early dawn the next morning, the watch came to the station and reported the schooner stranded on Brown's Shoal. Immediately everybody at the station was astir, and getting out the surf-

boat, they were soon on the way towards her. Even then, in the dim morning light, her exact position was scarcely discernible from the station except with the glasses. Arriving alongside they found her full of water and one side completely submerged, although her main-sail was still up. There was no one on board, and as the boat was also gone it was supposed the crew had gone up the harbor. The life-saving crew pulled in the direction of Saquish Head in search of the boat, and not finding it there, returned to Gurnet Point, where they were met by one of their comrades left behind to care for the station, who reported the schooner's boat coming from the upper light-house toward the sunken vessel. They pushed off again and met the yawl half-way, and finding the people belonging to the schooner, brought them to the station. After all hands had breakfasted, the keeper dispatched one of his men to South Duxbury to report the wreck to the consignees of the vessel—the messenger having to travel eleven miles on foot to Duxbury, where he procured a team for the remainder of the distance, some three or four miles. The rest, with the schooner's crew, went out to the vessel to save what property they could, no other help being available on account of the frozen condition of the harbor. They stripped her of running-rigging and sails, and at noon returned to the station for dinner. While thus absent, the vessel careened over and her cargo commenced washing out. Thus lightened, she floated off the shoal and drifted with the tide up the bay to a point above Saquish Head, and then sank in deep water about three miles from the station—the locality being known as the Cowyard. The life-saving crew assisted from day to day in recovering property from the sunken schooner, and on the 7th, the condition of the ice permitting, they conveyed the wrecked crew to Plymouth, and procured passes to Boston for all but the captain, the latter remaining until the owners could be heard from concerning the disposition of the wreck. The captain, being without funds and unable to obtain other assistance, was compelled to accept the good offices of the station crew, who conveyed him to and from Plymouth each day after his men left for Boston, and otherwise rendered all the assistance in their power—the service being quite arduous on account of the ice in the harbor. After settling the affairs of the wreck, he left for home on February 7th, having partaken of the hospitalities of the station for seven days. His men had been similarly entertained for two days. The vessel and cargo became a total loss.

February 5.—At 11 o'clock at night, the patrolman of Station No. 30, Third District, (Short Beach, Long Island,) saw a schooner on the bar at Jones's Inlet, fired a Coston signal in token of coming help, and immediately reported to the station. The crew started out with the surf-boat to the assistance of the schooner, but when they were within a few yards of her she floated off. They returned to the station at 1 o'clock in the morning.

February 5.—The schooner Try Again, of Galveston, Texas, with hides and lumber, and having five persons on board, dragged her anchors and stranded on the west bank of Sabine Pass, two miles northwest of Station No. 1, Eighth District, (Texas,) at 10 o'clock at night, and was discovered at daylight the next morning. The life-saving crew immediately launched the surf-boat and went to her assistance. They ran out anchors, and in a short time had her afloat. They left one of their number on board to pilot the schooner at turn of tide to a safe anchorage.

February 8.—The Italian brig *Rosalia Starita*, of Naples, bound from Catania, Italy, to Baltimore, with a cargo of brimstone and a crew of twelve men, stranded, at 3 o'clock in the morning, about one mile north of Station No. 1, Sixth District, (Cape Henry, Virginia.) She was discovered by the patrolman, who burned a Coston signal and hastened to the station to report. The keeper had the surf-boat launched and manned, and, on arriving alongside the brig, offered assistance. A steam pilot-boat arrived and made an ineffectual effort to pull her off, and soon after the revenue steamer *Hamilton* came up. After carrying out an anchor, the life-saving crew took the hawser to the windlass and hove on it, the two steamers pulling on her at the same time. By this means she was soon floated off and towed into Hampton Roads.

February 10.—The British bark *Joanna H. Cann*, of Yarmouth, Nova Scotia, bound from Antwerp to Baltimore, in ballast, with a crew of seventeen men, stranded at 9 o'clock in the evening, about half-way between Stations Nos. 1 and 2, Sixth District, (Cape Henry, Virginia,) and two hundred and fifty yards from shore. Owing to the very dense fog, she was not discovered by the patrol on duty at the time, and probably would have escaped the vigilance of the next or midnight watch, had he not found several oars scattered along the beach. Looking intently seaward for some time, he managed to catch an occasional glimpse of a light, which most of the time was entirely obscured by the heavy fog. Assured that it was the light of a vessel, he burned a red Coston signal, and hastened back to the station. The surf-boat was quickly taken out, and drawn to the place indicated by the patrolman. The position of the vessel was with difficulty discerned, but the boat was launched and soon brought alongside. The keeper boarded her, and offered assistance, which was at first declined, because the captain thought he was on the Middle Ground between Capes Henry and Charles, and would get clear at high-water. The keeper showed him his mistake, and he gladly accepted the offer to send for assistance to the British consul and other parties interested. The vessel's crew remained on board, being in no immediate danger. The life-saving crew returned to the shore, and on arrival found the keeper and crew of Station No. 2 on the ground. As the weather threatened a storm, it was decided to rig the breeches-buoy and keep it in readiness for emergency. In doing this the crew of No. 2 assisted, as well as in keeping watch until the vessel was given up. The Baker Wrecking Company's tug was sent from Norfolk to try to get the bark afloat, but failing to free her of water with two steam-pumps, they sent a diver down, who found her keel was gone; so they gave the vessel up, and stripped her. In the performance of their duties upon the occasion of this disaster, the life-saving crews made twenty-two trips to the bark with the surf-boat.

February 11.—At 1 o'clock in the morning, the patrol of Station No. 1, Fifth District, (Cape Henlopen, Delaware,) discovered a brig standing in towards the beach and approaching rapidly. He burned a Coston signal, just in time to prevent her coming ashore. The vessel wore about and stood off the beach.

February 11.—The schooner *Garnock*, of Corpus Christi, Texas, bound from Orange, Louisiana, to Corpus Christi, with a crew of four men and a cargo of railroad-ties, parted her cables and stranded, on Pelican Island, a quarter of a mile from shore, and a mile and a half from Station No. 4, Eighth District, (Pass Cavallo, Texas,) at half-past

3 o'clock in the morning, the wind at the time blowing a gale from the northwest. At daylight, the stranded vessel was discovered by the patrol of the station and reported to the keeper. The surf-boat was immediately launched, and the schooner was boarded at 7 A. M. Just after leaving the station, the life-saving crew saw a signal of distress hoisted in the rigging. On boarding the vessel she was found to be leaking considerably, and the life-saving crew manned the pumps and kept them going until 2 P. M. At this time the rising tide caused the vessel to work, and it was concluded to stop pumping and let her fill again, so that she might lie easy. The life-saving crew returned to the station, accompanied by the crew of the vessel. The captain went to Indianola for lighters. On Monday, the 14th, the life-saving crew again boarded her, assisted her crew to lighten her deck-load, returning to the station at 10 o'clock in the evening. At 8 A. M. the following day, they again boarded her, pumped her out, and succeeded in getting her afloat at 1 P. M.; but a stiff norther came up, and the vessel's anchors not being sufficient to hold her, she dragged aground again. On the succeeding day they again boarded her, calked about her sternpost, pumped her out, picked up her anchors and ran them out anew. They hove on her until 10 o'clock in the evening, when the tide fell, and then, as she was leaking very little, they returned to the station. At daylight, February 17th, the vessel floated on the rising tide, and her crew took in her anchors and put into Saluria Bayou out of danger. The vessel was but little damaged, and her cargo was saved in good condition. Her crew were kept at the station four days.

February 12.—The schooner Edward H. Norton, of Wellfleet, Massachusetts, bound from Boston to Patuxent River, Maryland, in ballast, with a crew of five men, stranded during a dense fog and high southeast wind, half a mile north of Station No. 1, Third District, (Narragansett Pier, Rhode Island,) at 4 p. m. The patrolman, going out from the station towards the north at the hour named, met a man coming to announce the occurrence. The patrolman reported at once to the station. As soon as possible the life-saving crew were on the way with the mortar-cart and apparatus, and in fifteen minutes were abreast the wreck. The schooner had struck about seventy-five yards from shore, and had immediately thrown overboard a line attached to a spar, which the surfmen found within reach. By means of this line the life-saving crew sent aboard the whip and hawser. The breeches-buoy was soon rigged, and the five men were safely landed. They were sheltered and succored at the station four days. The vessel was afterwards got off, the life-saving crew assisting in the work.

February 12.—The Spanish brig Veloz, of Barcelona, Spain, bound from Porto Rico to New York, in ballast, with nine men in crew and one passenger, stranded two and a half miles north of Station No. 10, Fourth District, (Point Pleasant, New Jersey,) and half a mile south of Squan Inlet, in a thick fog. She was discovered by the patrolman at 12.40 P. M., who returned to the station and reported. The cart, with the life-saving apparatus, was immediately run out, a horse kept at the station harnessed to it, and all speed made to reach the wreck. After a hard pull of an hour the scene of disaster was reached. By means of the heaving-stick a line was thrown across the bow, and very soon the breeches-buoy was rigged. The crew, who were Spaniards, understood neither the language of the surfmen nor the method of rescue. The keeper and one of the surfmen, therefore, went on

board, and arrangements were made for the surfman to superintend operations on the vessel. The keeper then returned to land. The crew and passengers, with such of their effects as they could get, were safely landed, the breeches-buoy making in all twelve trips. Assistance in hauling the lines was rendered by a number of citizens and by one of the surfmen from Station No. 11. The vessel was a total loss. Four of the brig's men were kept at the station one night.

February 13.—At 2 P. M., the British bark *Beatrice*, of Annapolis, Nova Scotia, having thirteen people on board, including the captain's wife, and bound to Philadelphia from St. Thomas, West Indies, with a cargo of soda-ash, grounded on the Hen and Chickens Shoal, off Cape Henlopen, Delaware. The accident was caused by the absence of the buoys which usually mark the locality, they having been swept away by the ice. The crew of Station No. 1, Fifth District, (Cape Henlopen, Delaware,) witnessed the occurrence, and observing that she was unable to work herself off under her sails, which were thrown aback, a despatch was sent to Lewes for a tug to come to her assistance. They also hoisted signals, with the view of apprising the bark of what had been done, but received no answer. Immense masses of ice from the Delaware had lodged upon the beach, forming a barrier several feet high, extending from the point of the cape above to a distance of three miles south of the station, thus rendering the launch of the surf-boat extremely hazardous, if not impossible, and, as the people on the bark were in no immediate danger, the keeper deemed it imprudent to attempt to board her. Within an hour after sending the despatch a tug was seen approaching the bark, and very soon afterwards a second one came out. The position of the vessel was discovered from Station No. 2 (Rehoboth Beach) at half-past four, or soon after the tugs arrived upon the scene, and as the beach in that vicinity was free from ice, the crew at once went out in the surf-boat, arriving near the bark after dark, (7 P. M.) They found the incoming tide had caused the sea to break heavier on the shoals, rendering her situation one of more danger, besides preventing the approach of the tugs close enough to make fast to her. The arrival of the life-saving crew was therefore most opportune and acceptable. They passed a stout hawser from the tugs to the bark, and, going on board the latter, assisted in making it fast. When everything was in readiness, the tugs soon pulled her off into deep water, and then towed her to a safe anchorage off Lewes. The thumping to which she had been subjected, as the tide rose, caused her to leak badly, and it was more than probable she would have been wrecked but for the timely assistance rendered by the life-saving crew. Her captain was profuse in his acknowledgment of their services. After seeing the boat safely off, the life-saving men returned ashore, reaching their station at 9 P. M.

February 20.—The schooner *W. A. Watson*, of Pensacola, Florida, bound from Pensacola to Indianola, Texas, with a cargo of lumber and a crew of five men, anchored in the bay, inside of Pass Cavallo Bar, at dusk. About midnight the wind freshened, and she dragged her anchors. Her captain was awakened by the striking of the vessel, and hastened to the deck. She struck but once, however, and cleared the bar. The captain ordered another anchor let go, and awaited daylight. Early in the morning the schooner was discovered by the patrolman of Station No. 4, Eighth District, (Pass Cavallo, Texas,) about five miles distant, drifting rapidly down the beach before a stiff north wind.

As soon as he could report the surf-boat was launched, and just as the life-saving crew set out, a signal of distress was set in the schooner's fore-rigging. On boarding her, the keeper learned that the captain was ignorant of his whereabouts, that his anchors were gone, and that he wanted a pilot. The keeper informed him that he was at sea, loosed his sails, hove up his chains, and got the schooner under way. As the vessel was staunch and her sails new, the keeper advised her captain to go outside, if he could not make the way in, and showed him where the bar was. He also directed him how and when to set his flag for a pilot on reaching the bar. At 9 A. M. the life-saving crew returned to the station. The schooner succeeded in working up to the bar, obtained a pilot, and got into harbor at 2 P. M. Had it not been for the assistance of the life-saving crew the vessel must shortly have gone ashore.

February 23.—The schooner *Anna Brown*, of Perth Amboy, New Jersey, which had been laid up for the winter, and had no crew on board, was discovered by the patrol of Station No. 14, Fourth District, (Island Beach, New Jersey,) drifting with the floating ice and strong current down Ton's River into Barnegat Bay. She ran aground on Crow Shoals, about three-quarters of a mile from shore, and two miles from the above-mentioned station. As soon as she brought up, the life-saving crew started with the surf-boat and hawser, drawn by a team, to go to her assistance, and reaching the bay shore, half a mile distant, launched the boat. They pulled out to within half a mile of the vessel, when they were obliged to return on account of the ice driving down upon them in the strong northwest gale, threatening to crush the surf-boat. They left their boat and hawser on the shore, intending to attempt the passage again the following day. That night the bay froze over, and, as nothing could be done for the schooner, the life-saving crew carted the boat and hawser back to the station. On March 3d, the ice opened so that the schooner's crew went on board. They then set a signal of distress, and the crews of Stations Nos. 13 and 14 went out to her in their surf-boats. They found four feet of water in her hold, and, manning the pumps, worked them until the water was down two feet. At this time they discovered a hole in her starboard side. The crew of No. 14 left her, and when the tide had fallen returned again, taking with them the Merriman life-suit. The keeper of No. 13 clothed himself in the dress, got overboard, stopped the hole with oakum, and nailed a covering of boards over it, all hands in the meantime pumping and keeping her free. The life-saving men then cleared up her deck, took in her foresail and mainsail, which they had set to careen her over while being repaired, and left her in good order.

February 25.—The *Julie*, a small schooner of Somers Point, New Jersey, with two men, came to anchor off Atlantic City, about half a mile east-northeast of Station No. 28, Fourth District, (New Jersey,) and signalled for help. The crew of the station went to her in the surf-boat, and found her leaking badly. They put one of the life-saving crew on board to assist in pumping, and to pilot her into Absecon Inlet, which he did.

February 28.—The schooner *Walter B. Chester*, of Wellfleet, Massachusetts, with a cargo of coal and a crew of eight men, stranded during a very thick southeast storm, on the bar off the mouth of Shinnecock Inlet, one mile west of Station No. 15, Third District, (Long Island.) The disaster occurred at 4 o'clock in the morning, but was not discovered

until 9 A. M., when there was a break in the fog, which rendered her barely visible. At 10 A. M., the life-saving crew drew alongside the wreck with the surf-boat. The sea was running very high, and the tide set so strongly by the vessel that the utmost exertion and skill in handling the boat was required to prevent her being swamped while the wrecked crew were getting aboard, and several times the life-saving men had to drop off toward shore to prevent such an accident. The men were all taken off, however, and safely landed at 11 A. M. The crew of the adjacent station, No. 16, went also to the wreck with the beach apparatus, but arrived only in time to help land the surf-boat, after which they assisted in towing it up the inlet. The wrecked crew were sheltered and succored at the station five days, the ice in the bay being in such condition as not to permit them to cross to the main-land. The captain of the schooner, in a letter to the Life-Saving Office, gives high praise to the crew for the manner in which the rescue was effected.

March 3.—The British bark *Syringa*, of Scarborough, England, bound from Pernambuco, Brazil, to Philadelphia, with a cargo of sugar in bags and a crew of thirteen men, stranded on the outer bar of Green Run Inlet, three miles and a half north of Station No. 5, Fifth District, (Maryland.) The patrol discovered her at a little after 5 o'clock in the morning. He fired a Coston signal, and hastened to report at the station. At 6.10 A. M. the surf-boat was launched and manned, and after a hard pull of more than two hours arrived alongside the wreck, which was boarded by the keeper. The captain reported that he had run his vessel ashore to save the lives of his crew, as she was leaking badly and his men were so exhausted that they were unable longer to work at the pumps. He wished to send a dispatch to his consignees in Philadelphia; so the keeper took the mate and two seamen ashore for that purpose, and a messenger was sent on horseback to the signal-station at Ocean City. In launching to return to the vessel the surf-boat filled, was backed in shore again and bailed out, and then pulled a second time out to the bark. The vessel now was in such a condition that the captain determined to abandon her, and four men and their effects were taken into the surf-boat and conveyed to the shore opposite the wreck. The ship's long-boat, with three of the *Syringa's* crew and their baggage, accompanied the surf-boat on this trip. After landing the men the boat was again launched, and a third trip made to the vessel. This time the captain and one man, who were on the wreck, were taken into the boat and rowed down to the station, arriving at 11.10 A. M. The remainder of the crew walked from the point at which they had been put ashore, arriving at the station at noon. When the vessel was abandoned she had six feet of water in the hold. At 1 P. M. the wind increased to a gale, a high surf arose, and within an hour the vessel began to break up. At 5 P. M. the vessel went to pieces, and was swept away by the current, nothing of any value being cast ashore. The thirteen rescued men were succored at the station three days.

March 4.—The keeper and crew of Station No. 37, Third District, (Coney Island, New York,) in the midst of a heavy gale, launched the surf-boat at about 9 o'clock in the morning, and rescued a man and woman from the *Nereid Club* boat-house in Sheepshead Bay, the slender bridge which connected the house with the land having been destroyed, and the house, which is built on piles, being so rocked by the wind and sea as to threaten the safety of its two inmates. A couple of hours later the keeper and crew performed the notable feat of taking out the boat

through the tremendous sea breaking on Coney Island, and rescuing the sole survivor of the crew of the Italian bark *Ajace*. (See page 50.)

March 4.—The schooner *Albert C. Paige*, of Bridgeton, New Jersey, with a crew of seven men and a cargo of fish-oil, stranded, in thick, stormy weather, on Lloyd's Neck Point, five miles west of Station No. 38, Third District, (Long Island,) at a quarter-past four in the morning; but the place being beyond the scope of life-saving patrol, the occurrence was not known at the station until 1.30 P. M. The surf-boat was then immediately launched, and in an hour's time the vessel was boarded. The only assistance the life-saving crew could render was to take the captain ashore, and get him a conveyance to Northport, whence he could telegraph to his owners. The following day the life-saving crew again launched the boat and pulled out to the schooner, taking with them the captain, on his return from Northport. The schooner was subsequently hauled off by a steam-tug.

March 10.—The schooner *William Allen*, of Keyport, New Jersey, with a crew of seven men, bound from Baltimore to Hoboken, with a cargo of coal, stranded at 4 o'clock in the morning on the inner part of Chincoteague Shoals, and about a mile and a half southeast of Station No. 7, Fifth District, (Assateague Beach, Virginia.) She was soon discovered by the patrol of the station, who signalled to her with his Coston light, and then returned and gave the alarm. The weather was rainy, with a fresh gale from the southwest, the latter causing an ugly cross-sea. The surf-boat was launched, and after a hard pull the life-saving crew reached the vessel about daylight. They found her lying easy, although leaking, and, after assisting in stowing the sails and securing everything movable on deck, turned their attention to the best method of getting her off. It was decided by the captain to employ the services of a wrecking company from Chincoteague, and with that purpose in view he was landed on the beach by the station crew. Being unable to come to terms with the wreckers that day, he returned in the surf-boat to his vessel in the afternoon, the keeper promising to watch for any signals he might make during the night. The next day they brought him ashore again, when a contract was made with the wrecking company, and on the day following (12th) the schooner was hauled off, without material damage, and brought to an anchor abreast of the station. On the 13th she proceeded on her voyage in good shape, the master thankful to the life-saving crew for the assistance rendered.

March 13.—The *Hattie Rebecca*, of Newport, Rhode Island, a small schooner of eighteen tons, with three persons on board, left the harbor of New Shoreham, Block Island, on a pilot cruise. When a short distance outside the breakwater, the wind died out and the vessel lay becalmed. Anticipating no danger, two of her crew went ashore in their boat, leaving the other man in charge. The flood-tide and heavy swell setting on shore, soon brought the schooner so dangerously close to the breakers that he let go an anchor to hold her. This failed, however, and she was fast nearing the beach when seen by the crew of Station No. 4, Third District, (New Shoreham, Rhode Island,) who went off in their boat and towed her out of danger. But for the prompt assistance thus rendered she would have gone ashore and received considerable damage, with the possibility of total loss.

March 19.—The schooner *Vanguard*, of Gloucester, Massachusetts, bound from a fishing cruise to Portsmouth, New Hampshire, with ten

men and a cargo of fish, went ashore, at 10 o'clock at night, on Godfrey's Ledge, about four miles south of Station No. 7, First District, (Locke's Point, New Hampshire,) in a snow-storm. Her crew landed in their own boats. The evening patrol had passed the scene of disaster a short time before the occurrence on his return to the station. The next patrol going out discovered the wreck, and on examination, found her abandoned and breaking up. Observing a light in a small house near at hand he went thither and found the crew. He then returned to the station and reported, and at 5 o'clock in the morning, (March 20,) the keeper detailed four men to render the schooner's crew whatever help was possible in saving sails and rigging. This they did, and when the work was finished they conducted the sailors to the station, gave them breakfast, dried their clothing, and obtained a team to take them to Portsmouth.

March 19.—The Dutch barkentine N. N., of Amsterdam, from Samarang, Java, to New York, with a cargo of coffee and rattan, and a crew of seven men, stranded at half-past 10 o'clock at night on Long Beach, a mile and a half north of Station No. 23, Fourth District, (New Jersey,) and about two hundred yards from shore. Owing to the wash of the sea over the beach, the early night patrol was prevented from going the full length of his beat, and did not discover her. The tide having fallen some, the midnight watch, which consisted of two men, managed to cross the wash. One of them struggled through on foot, the other, thinking it safer, crossed in a small boat. About one mile north of the station they came upon wreckage, water-barrels, &c., and half a mile further on found the vessel ashore and heard her men shouting for help. The Coston signal failing, they waded into the surf as far as possible towards the vessel and called to her crew, endeavoring to make them understand that they would bring help to their rescue. They recrossed the tide-wash together, and one of them went to the light-house for a team while the other hurried on to alarm the life-saving crew. All hands were mustered, and the boat on its carriage was soon got out and on the way. The keeper sent a messenger ahead to encourage the wrecked crew to hold on and not attempt to land themselves. Good time was made, and the life-saving crew arrived just in season to prevent one, at least, of the sailors from leaping overboard and certainly losing his life. When the men who were toiling along dragging the boat-carriage had proceeded a short distance, the team overtook them, and thus reinforced, they were able to proceed faster. They arrived abreast of the vessel about 2 o'clock. The surf was very high and boisterous, but the surfmen equipped themselves with their life-belts and pulled for the wreck. They had scarcely brought up alongside before one of the sailors, all of whom were terribly frightened and crying loudly for help, leaped into the boat, endangering his own life and those of the life-saving crew. The keeper ordered the rest of the men to keep back until he could get in position to receive them. He soon succeeded in getting them into the boat, and landing all in safety, and making two more trips, saved their personal effects. While thus engaged, the crew of the adjacent station, No. 22, arrived with mortar and beach apparatus and assisted in the landing. At 4 A. M., the rescuers and the rescued were all at the station enjoying the comfort of a good fire and dry clothing. About sunrise the ship's long-boat came ashore stove in pieces, and soon after the vessel herself began breaking up and the beach was strewn with her cargo. The wrecked crew were succored at the station three days and two nights.

March 21.—The patrol of Station No. 6, Fifth District, (Pope's Island, Virginia,) discovered a steamer too near the breakers, and fired a Coston signal. The vessel heeded the warning and stood out to sea.

March 22.—At 2 o'clock in the morning, the patrol of Station No. 4, Fifth District, (Ocean City, Maryland,) discovered a steamer so near the shore that she was in danger of coming on. He burned a Coston signal, and she stood off and proceeded on her course.

March 23.—The patrolman of Station No. 9, Fifth District, (Hog Island, Virginia,) saw a vessel dangerously near the beach. He swung his lantern, and then fired a Coston signal, and the vessel wore away.

March 23.—The yacht Mary Jane, belonging to the Currituck Shooting Club, with one man on board, capsized and sank a mile and a quarter southwest of Station No. 9, Sixth District, (Poyner's Hill, North Carolina,) and a quarter of a mile from shore. One of the surfmen of the station, who was at the club-house on an errand at the time of the accident, took a small boat and went immediately out and rescued the man, and afterwards assisted in raising the vessel.

March 24.—The patrolman of Station No. 8, Fifth District, (Cedar Island, Virginia,) discovered in the evening a sloop standing toward the shoals, and into danger. He burned his Coston light, and she immediately tacked.

March 26.—The schooner Light of the East, of Boston, bound from New York to Boston, with a cargo of coal and a crew of six men, misstayed, and grounded on the Peaked Hill Bars, about six hundred yards from shore, and the same distance north of Station No. 7, Second District, (Cape Cod,) at 4 o'clock in the morning. She was reported, almost immediately, by the patrolman to the keeper of the station. The surf-boat was launched and pulled out to the schooner, and she was boarded at half-past four. The life-saving crew ran out her anchor, manned the windlass, and hove her head off shore; then setting all sail, and heaving at the windlass, forced her over the bar into deep water on the swelling tide, at a little after 9 o'clock. Although the weather was moderate when the vessel grounded, a strong wind soon sprang up, and it was only by the prompt assistance of the life-saving crew that she was saved; for had she been on the bar at the next tide she would have been a total wreck.

March 26.—The schooner L. T. Whitmore, of Rockland, Maine, laden with corn, bound from Alexandria, Virginia, to New York, and having on board a crew of seven men and one passenger, stranded on Brigantine Shoals, five miles northeast of Station No. 27, Fourth District, (Atlantic City, New Jersey, at 4.30 P. M. She was seen from the station when she struck, and the surf-boat was launched as quickly as possible. The vessel was reached at 6.25 P. M., and as nothing could be done for her relief that night, the captain urged the life-saving crew to remain on board until morning. As it would have been very dangerous, if not impossible, to return to the shore in the darkness against the wind and sea then prevailing, they did so. The next day the life-saving crew sounded for the best depth of water, assisted in throwing overboard about a thousand bushels of corn, and otherwise helped to get the vessel afloat, which was accomplished at half-past three in the afternoon.

March 28.—The morning patrol of Station No. 5, First District, (Whitehead Island, Maine,) on his return reported an empty yawl drifting out to sea, about two miles southwest of the station. The surf-boat was launched

and pulled out to it. On reaching the boat two of the surfmen were detailed to row it to the station. Two oars and a bailing-dish were in it, and the painter was dragging overboard, indicating that it had drifted away from some vessel. On return to the shore the yawl was hauled up, and the keeper sent postal cards to the inspector of customs and a prominent citizen at Truant's Harbor, requesting them to announce the fact of the finding. The following day two of the surfmen went to Truant's Harbor, and on inquiry learned that the yawl had been lost from the schooner Hannah Blashman, lying at anchor there. The captain sent three sailors back with the surfmen and took possession of the boat.

March 28.—The schooner Mabel Thomas, of New Haven, bound from Baltimore to Boston, with a cargo of coal and a crew of seven men, stranded on Turner's Shoal, five miles from Station No. 7, Fifth District, (Assateague, Virginia,) at 4 o'clock in the morning. Half an hour later she was discovered by the patrolman and reported at 5 A. M. The surf-boat was immediately launched, and the vessel was boarded at 6.15 A. M. She was pounding, but not in momentary danger. The life-saving crew ran out her kedge-anchor and manned the hawsers, and used every exertion to heave her off. They did not succeed, and at the request of the captain the keeper went ashore and engaged the help of a wrecking company. This assistance arrived at 5 P. M., and the next evening the schooner was floated and proceeded on her voyage with no material damage. It was fortunate that she got off when she did, for a few hours afterwards a heavy easterly storm arose which would have speedily broken her up.

March 30.—The steam-yacht Sprite, of Newark, New Jersey, with three men on board, broke her steering-gear and stranded in Barnegat Inlet, one mile west of Station No. 17, Fourth District, (New Jersey.) The crew of the station boarded her in their surf-boat. They found her without provisions, and took her crew to the station and gave them dinner. They returned again to the yacht, ran out her anchors, and made ready to get her off at high-tide. At supper time they returned, taking the yacht's men with them, and when their meal was over went again to the stranded vessel and succeeded in getting her off at 8.30 P. M.

March 31.—The keeper of Station No. 3, First District, (Crumple Island, Maine,) while a heavy fog hung over the coast, saw a vessel standing close in to the rocky shore. He burned a red Coston signal, and the vessel stood off.

March 31.—At half-past 4 in the morning, the patrolman of Station No. 17, Sixth District, (Pea Island, North Carolina,) discovered a schooner almost on the beach. He burned a red Coston signal, on which the vessel stood off shore and escaped stranding.

April 1.—A steamer was seen dangerously near the shore at night by a patrolman of Station No. 34, Fourth District, (Townsend's Inlet, New Jersey.) He fired a red Coston signal in warning, and the steamer kept off.

April 3.—The crews of Stations Nos. 25 and 27, Fourth District, (New Jersey,) went out in their surf-boats to the schooner William D. Carghill, of Rockland, Maine, which, with a cargo of lumber and a crew of four men, had stranded on Brigantine Shoals, about three miles south of Station No. 25, five miles east-northeast of Station No. 27, and three miles from shore, at half-past four in the afternoon. They assisted in getting the schooner off, and she went on her way without loss or damage, at 9 o'clock in the evening.

April 3.—Assistance was rendered to a boat's crew from the British steamship *Arethusa*. The *Arethusa* arrived off the Delaware Breakwater from Matanzas, Cuba, and sent a boat's crew in to Lewes, Delaware, to obtain orders to proceed to a port of discharge which there awaited her. Upon receiving the same, the boat, which was in charge of the mate, started at once on its return to the ship. The vessel lay well out in the offing, and as the boat's pull of several miles from Lewes had been a fatiguing one, and the prospect of finding the ship in the darkness was uncertain, it was deemed prudent to land upon the beach near Cape Henlopen light-house for the night. In coming through the surf the officer in charge was thrown overboard and his men had some difficulty in rescuing him. When safely ashore they proceeded to the light-house, where the mate, who was in a pitiable condition from wet and cold, was furnished with dry clothing and made comfortable. The rest of the boat's crew continued on to the life-saving station, (No. 1, Fifth District,) about a mile distant, for shelter. They were met by a surfman proceeding northward on patrol, who turned back and conducted them to the station, where they arrived at 8 o'clock. The station crew prepared supper, dried their wet clothing, and furnished them with beds. After breakfast the next morning, the sailors were conducted to the light-house to join their officer, who was now sufficiently recovered from the effects of his cold bath the previous evening and anxious to rejoin his ship. To facilitate their movements the keeper sent back to the station for his signal code, and signalled the steamer, which had anchored, to get under way and stand in and pick the boat up. The steamer answered the signal, and as soon as she approached near enough the life-saving crew assisted the sailors in launching their boat. After picking them up the steamer proceeded on her voyage.

April 4.—In the night a vessel too near in-shore was warned off by a Coston signal burned by the patrol of Station No. 10, Fifth District, (Cobb's Island, Virginia.)

April 4.—The schooner *Nellie Crowell*, of Hartford, Connecticut, bound from Baltimore to Wilmington, North Carolina, with a cargo of guano and a crew of eight men, stranded seven miles south of Hatteras Inlet, twelve miles from Station No. 23, Sixth District, (Hatteras, North Carolina,) about two hundred yards from shore. The disaster occurred at half-past 2 o'clock in the morning, but was not discovered until 5.30 P. M., when the schooner was perceived by the lookout on the station deck. The crew were immediately mustered, and started for the wreck with the beach apparatus. They hauled it two miles down the beach, to a point from which they intended to cross the inlet, but on arriving could get no boat to convey them on account of the heavy gale which was blowing from the northwest. This obliged them to return to the station and attempt the passage with the surf-boat. They left the station the second time at 7 P. M., and after a hard and tedious pull against heavy wind and sea, succeeded in reaching the wreck at midnight. They found the crew had been taken ashore by a party of oystermen at noon, and that they had been unable to save any of their clothing. The life-saving crew assisted the shipwrecked men to construct a camp, and then at the request of the captain of the schooner took him to Hatteras to arrange with a wrecking company for getting his vessel off. On the morning of the 5th, the life-saving crew visited the wreck and obtained the clothing of the crew, after which they returned to the station, arriving at 1 P. M. On the evening of April 6, four of the wrecked

crew sought shelter at the station, and four more the following day; four of the eight remained one day and night, and the other four were cared for five days. The vessel proved a total loss.

April 6.—The schooner *Hannah Champion*, of Somers Point, New Jersey, got under way to go out of Absecom Inlet, and not making calculation for leeway, drifted afloat of a buoy, and the buoy-chain became jammed between the schooner's rudder and stern-post. The crew of Station No. 27, Fourth District, (Atlantic City, New Jersey,) went to her assistance with the surf-boat at turn of tide. They swept the buoy-chain clear of the vessel, and took the buoy ashore and delivered it to the keeper of Absecom light.

April 7.—The patrolman of Station No. 13, Third District, (Southampton, Long Island,) saw a ship standing in-shore and but a short distance off. He burned a Coston signal, which was answered by the ship wearing off and escaping danger.

April 9.—The schooner *Alice T. Boardman*, of Calais, Maine, bound from New York to Boston, laden with iron, and having a crew of five men, misstayed at about 4 o'clock in the morning, and grounded on Peaké Hill Bars, about six hundred yards from shore, near Station No. 7, Second District, (Cape Cod.) The patrolman at once reported her to the keeper, and the life-saving crew boarded her. They ran out an anchor and manned the windlass and commenced heaving; but finding too little water to float the vessel, they threw over a part of the deck-load, set all sail, and again manned the windlass, and succeeded in working her off into deep water. Another tide on the bar would have wrought her destruction, which by the prompt assistance of the life-saving crew was averted.

April 10.—The patrolman of Station No. 5, First District, (Whitehead Island, Maine,) saw, at about 9 P. M., a vessel dangerously near a sunken ledge known as Heron Point Shoal. He heard evident preparations being made on board for anchoring in a very unsafe locality. He burned a Coston signal in warning which was answered by a shout and the vessel was turned away from the shoal. In a short time the wind changed and she went on her course.

April 10.—In the night, a patrolman of Station No. 7, Fifth District, (Assateague, Virginia,) discovered a vessel too near the shoals and warned her off by burning a red Coston signal.

April 12.—The steamer *Zenobia*, of Pascagoula, Mississippi, with a crew of six men and a cargo of lumber, in a leaky condition, struck several times in crossing Aranzas Bar, which caused her to leak worse, so that her crew were unable to keep her free. She was therefore run ashore abreast of the light-house inside the bar in smooth water. No signal of distress was made, but the keeper of Station No. 5, Eighth District, (Aranzas Pass, Texas,) went out to her assistance. The schooner *Star*, which was anchored near at hand, was brought alongside to receive a portion of the cargo. The crews of the schooners did the lightering, and the life-saving crew manned the pumps and worked them until 6 o'clock in the evening. By this time she was lightered sufficiently to bring the main leak above water, so that one man at the pump could keep her free, and was immediately got under way.

April 12.—An open boat, in which a man was rowing out to the Breakwater, at Chicago, was capsized by the force of the wind, at about half-past 3 o'clock in the afternoon. Three men of Station No. 11, Eleventh District, witnessed the accident and at once gave the alarm.

The surf-boat was launched immediately and pulled out to the capsized boat. In the meantime two fishing-boats which were nearer at hand had reached the skiff and rescued the man from his perilous position. On the arrival of the surf-boat he was transferred to it, and his skiff taken in tow. At the station he was provided with dry clothing, given restoratives, and cared for until the following day, when he was sufficiently recovered to return to his home.

April 14.—The ship *Transit*, of Bath, Maine, bound from Liverpool to New York, with a general cargo and a crew of sixteen men all told, stranded at 8.15 P. M. near Old Cranberry Inlet, about one mile north of Station No. 13, Fourth District, (New Jersey.) The weather was stormy, a fresh northeast gale with rain prevailing at the time. There was also a very high sea running. From the reports received it appears that the first or evening patrol from Station No. 13 discovered the ship standing on the in-shore tack. He was then on his way back to the station, and upon arriving there, reported what he had seen, adding that if she did not soon go about she would be ashore. This put the entire crew of the station on the alert, and before long they saw a rocket go up in the direction of the ship. An answering rocket soon shot up from the station, and the men started at once with the beach apparatus. The sand was soft and yielding, and the progress of the party, facing the storm, was extremely laborious. Horses could have been procured about two miles south of the station, but the keeper decided not to risk the delay of sending so far for them. Within three-quarters of an hour after the ship struck, the apparatus was abreast of her, the station crew being joined at the time by the patrolman from the next station north, (No. 12.) The ship lay on the outer bar and appeared to be rolling heavily in the surf. In the attempt to establish communication, several shots were fired, the first one falling short, while the second and third parted the line. By this time the crew of the next station south (No. 14) arrived. The fourth shot carried the line over the vessel, but, in the blinding darkness of the storm and the turmoil of slating sails and rigging, it was not noticed by the people on board. It soon chafed through and parted. The next two attempts were equally unavailing, the line attached to the fifth shot being cut by one of the sailors on the vessel by mistake, and the sixth shot parting the line. At midnight the party on the beach was reinforced by the remainder of the crew of Station No. 12. They brought their surf-boat and apparatus, with the aid of a team of horses. It seems that, not exactly comprehending the nature of the efforts for their relief, the sailors became impatient to land, and lowered one of their boats. Four men then started for the beach. As the boat was carried rapidly towards the shore, completely at the mercy of the waves, one of the men was spilled out and narrowly escaped drowning. Some of the life-savers rushed down into the surf, and with great effort rescued him, while others stood ready and grasped the boat, and before it could overturn, ran it high and dry, clear of the breakers. With the seventh shot communication was effected and the hawser sent off. The great distance of the ship from shore, and her continuous motion, rendered it impossible to haul the hawser sufficiently taut to enable them to bring the people ashore in the breeches-buoy in safety, so it was decided to use the life-car. While this was being rigged, the number of workers on the beach was augmented by the arrival of several men not belonging to the service. They turned to with a will, and aided the life saving crews

materially. The life-car was sent off, and the party on the beach stood awaiting the signal to "haul ashore," when the ship, which had been lying broadside to the beach, with her head to the north, suddenly swung around, head to the southward, and fouled everything, thus bringing the operations to a temporary standstill. It became necessary to cast off the gear from the ship, and haul it on the beach to clear it. This sudden movement of the ship brought her in over the bar and nearer to the shore. The dawn of day found the life-saving crews, after a difficult task in clearing the entangled gear, again ready with their apparatus. Under the more favorable conditions now existing, they were not long in sending off the breeches-buoy, the latter being now substituted for the life-car. The constantly-changing position of the vessel, however, compelled them to hold the hawser hand-taut while the breeches-buoy passed to and fro, it being simply impossible to set it up with a tackle, as the planting of the sand-anchor was out of the question. Notwithstanding the difficulties and delay thus involved, in thirty minutes from the time the gear was finally placed in position the entire ship's company were safely on the beach, the last man being brought in at half-past seven. They were housed at the station for two days, and then left for New York. The *Transit* was subsequently hauled off by a wrecking company, and taken to her port of destination. Two of the crew of Station No. 13 received painful injuries while engaged in the work of rescue.

April 15.—The schooner *Ariel*, of Ellsworth, Maine, bound from Ellsworth to Boston, with a crew of four men and a cargo of lumber, dragged her anchors in a northeast gale and snow-storm, and stranded on the north side of Spruce Head Island, about two miles northeast of Station No. 5, First District, (Whitehead Island, Maine.) She was quite hidden from the station, but was seen from the main-land by one of the surfmen, who went at once to the station to report, but owing to the fierceness of the storm, it took him nearly an hour to reach it. The keeper and four men manned the small boat and pulled to the south side of Spruce Head Island. Here they landed, took an eight-foot skiff, and carried it across the island to a point abreast of the schooner. Fortunately, she was lying so as to make a breakwater, under the lee of which it was possible to launch. The keeper started alone to board her. It required skilful management while the boat was alongside to prevent its being swamped by the seas, which occasionally swept in around its bow and stern. The keeper found there was no immediate danger to life, and that nothing could be done to relieve the vessel until low water permitted an examination. The men therefore returned to the station. When the tide fell in the evening, they again went to the *Ariel* and assisted the captain in a survey of her bottom, and ran lines to the shore to hold her in position, the captain deciding to communicate with the owners of vessel and cargo before doing anything further. The life-saving crew subsequently rendered additional service, by removing the deck-load, and in unsuccessful efforts to float the vessel. On the 19th, one of the owners arrived and took charge, and made arrangements for the discharge of the remainder of the cargo. The schooner was afterwards hauled off by men employed by the captain, and taken to Rockland for repairs.

April 15.—The schooner *Ganges*, of Ellsworth, Maine, bound from Wiscasset, Maine, to New Haven, Connecticut, with a cargo of lumber and a crew of four men, stranded during a heavy northeast gale

and snow-storm, about fifty yards from shore, and a mile and three-quarters from Station No. 4, Second District, (Gurnet Point, Massachusetts.) The disaster occurred a little before 10 o'clock in the morning, and was reported a few minutes after at the station. Two of the life-saving crew being absent on patrol, the keeper and three men started out with the mortar-cart and apparatus, while the fourth ran some distance to procure a horse. They had proceeded some way with the mortar-cart when they met the man with the horse. Hitching the animal to the cart they labored toilsomely through the snow—in the meantime meeting one of the patrolmen coming to report the wreck—until they reached the sandy shore. Here the horse gave out, and an ox-team was sent for, which was obtained, and arrived after a quarter of an hour's delay. When within half a mile of the wreck they met another of the patrolling surfmen on his way to the station, with three of the wrecked crew, the captain having refused to leave the beach. The oxen with the cart were now turned about for the station, the keeper giving directions that none of the sailors should be allowed to ride so long as they could keep upon their feet, as they were so chilled as to render exercise imperative. The keeper and life-saving crew went on towards the wreck until they met the captain of the schooner on his way to the station. Two of the men were now sent on to the scene of disaster to watch the schooner, and the keeper and the other two men returned to the station to get dinner, make the rescued men comfortable, and prepare to go out to save whatever was possible from the wreck at ebb-tide. On arriving it was found that two of the sailors had succumbed to exhaustion before reaching the station, and had been put into the cart. When they arrived they were stripped of their wet clothing, given stimulants from the medicine-chest, and made as comfortable as possible. The captain, on his coming, was treated in like manner. After dinner the keeper sent a messenger to Duxbury, on horseback, with telegrams to the owners of the vessel and cargo, and to the Associated Press. The remainder of the life-saving crew, the captain of the schooner, and one of the sailors who had left his pocket-book containing eighteen dollars on board, proceeded to the wreck. They hauled up on the bank some of her deck-load that was floating in the surf, and when the tide was sufficiently low went on board and stripped the schooner of everything but spars and standing rigging. The sailor found his pocket-book. An ox-team was procured and the stripped material was carted to the station in three loads, and piled up for the owners. The crew reached the station, well exhausted, at half-past seven in the evening. April 16th, the keeper took the captain to Duxbury in the surf-boat to transact business at the custom-house. On their return they found the agent for the cargo awaiting them. April 18th, the surf-boat was manned, and took the wrecked crew, excepting the captain, to Plymouth, where the keeper obtained for them a pass over the Old Colony Railroad to Boston, and a letter from the collector of the port to the captain of the Eastern steamboat, requesting for them a free passage to Ellsworth, Maine, their home.

The manner in which the rescue of the wrecked crew was effected was as follows: When, through the thick atmosphere, the two surfmen who were patrolling discovered the steamer, they made all possible haste and ran down abreast of her. She had come in on the crests of two immense breakers, which shivered her boat into kindling-wood, but threw her well up the beach. When the wrecked crew saw the

life-saving men coming, they bent to a piece of joist their lead-line with a three-inch line attached, and threw it overboard. The patrolmen ran into the surf, caught it and hauled it to land. One of the surfmen then left for the station to summon more assistance, and the remaining man carried the line over a bank formed by the sand, and having found a piece of scantling with a pointed end, he stuck it into the bank and made the line fast to it, which was at once hauled taut by those on board. The surfman then ran up the bank and made signs to the wrecked men that help was coming; but one of the sailors almost immediately attempted to come ashore by the rope and became entangled in a cod-line that had fouled with it. He would have drowned had not the surfman rushed into the surf, cut him clear, and pulled him ashore. The other three men followed, each in turn being assisted by the surfman, the captain coming last. The captain was very much exhausted, and the surfman had great difficulty in saving him. The undertow was strong, and took the surfman's feet from under him, while the captain, who had let go the line and was clinging to the surfman, drew the latter's neck across the line so that he was near losing his hold before he could regain his feet. The entire crew were at the station three days, and one of them for a period of six days. The master of the vessel, in his report of the wreck, made to the collector of customs, states that the crew owe their landing without loss of life to the life-saving men.

April 15.—The south patrol, from midnight to 4 o'clock in the morning, from Station No. 13, Second District, (Chatham, Massachusetts,) returned to the station at 2 o'clock and reported having found, on his way out, wreckage on the beach, and supposing, from the direction of the wind, that the vessel from which it came was north of the station, had turned about, expecting either to find the wreck itself or to meet the north patrol coming to report one. As he proceeded, however, the wreckage decreased, and he resumed his own patrol, and found the wreck about half a mile south of the station. He supplemented his report with the information that there was no possibility of any living thing being on board, since he could see, as she lay only about seventy-five yards from shore, that the sea was sweeping completely over her. The entire crew turned out at once, and, with lanterns, searched the beach to leeward of the wreck for any of her crew who might have been washed ashore. They found nothing, however, but a coat and a pair of mittens that indicated men having been aboard. At 4.30 A. M., at low water, the life-saving crew boarded her. She lay on a bar, heading directly off shore, with one anchor down ahead and broken. She was terribly smashed up, her upper works were entirely gone, and nothing indicating her name could be found. Whatever cargo she had was washed out, nothing remaining of it but a few fish-skins hanging about the broken timbers and washing in the surf. The bodies of all of her crew were subsequently cast ashore near Station No. 14, one not being found until the 24th, (nine days after the schooner was wrecked,) on Monomoy Beach, several miles distant southward. The vessel proved to have been the schooner J. G. Huntington, of Providence, Rhode Island, with a crew of six men and a cargo of mackerel and fish-skins, bound from Gloucester, Massachusetts, to New York city. The wreck was made the subject of an official investigation, which resulted in satisfactorily establishing the fact that the vessel must have been wrecked at sea, far beyond the scope of the Service.

April 16.—In the night, the patrolman of Station No. 11, Second District, (Cape Cod,) on his beat south, discovered a vessel in close proximity to the shore. He burned a Coston signal, and immediately the vessel bore away from land.

April 17.—At 9 o'clock in the evening, the patrolman of Station No. 38, Fourth District, (New Jersey,) burned a Coston signal to warn off a steamer which was running dangerously close to the beach.

April 17.—Two vessels, in danger of running onto Ship Shoals, were warned off shore by means of Coston lights in the hands of the patrolmen of Station No. 7, Fifth District, (Assateague, Virginia.)

April 18.—The south patrolman of Station No. 16, Sixth District, (Bodie's Island, North Carolina,) discovered a vessel running into danger at half-past eight in the morning. He burned a red Coston signal. The vessel heeded the warning and hauled off shore.

April 18.—During a freshet on this date, the crew of Station No. 14, Eleventh District, (Wisconsin,) pulled the scow *Restless* from the ends of the harbor piers at Racine into the harbor and moored her in a safe place.

April 18.—On the same day, the schooner *Belle* broke loose from her moorings and got badly jammed in the draw of the railroad bridge at Racine, breaking her rudder and fore-rigging and staving her yawl. The above-named crew hauled her out of her perilous position.

April 19.—The schooner *Maria Foss*, of Bangor, Maine, bound from Lynn, Massachusetts, to Bangor, in ballast, with a crew of four men, misstayed and stranded on Sheep Island Bar, about eight miles north-east of Station No. 5, First District, (Maine,) at half-past 3 o'clock in the afternoon. The place is not visible from the station, and she lay so far away that she could not be seen from the eastern shore of Whitehead Island, on which the station is located, except with the glass, and therefore was not discovered until she had been aground half an hour. It was then difficult to tell whether she was ashore or at anchor. At about half-past four the boat was launched and pulled out for her. She was found badly listed, but lying easy. The life-saving crew carried out her anchors, awaited the high tide, and hove the vessel off at half-past 3 the next morning. They then hoisted her sails, got her anchors, and turned her over to her master. They got back to the station at 5 o'clock, having been out all night.

April 19.—The evening patrol of Station No. 16, Third District, (Quogue, Long Island,) on his return beat, saw a schooner standing too close in-shore for safety. He fired a red Coston signal, and the schooner went about and stood off.

April 21.—The Norwegian bark *Dictator*, of Tvedestrand, bound from Boston, England, to Baltimore, in ballast, with a crew of thirteen men, stranded a little past 1 o'clock in the morning, three and a half miles south of Station No. 4, Sixth District, (Little Island, Virginia.) The south patrol, when near the limit of his beat, saw the bark standing close in to danger. He immediately attempted to warn her off with Coston signals, which failed to ignite, and in a few seconds she struck. He hastened back to the station, and, arriving at 2 A. M., gave the alarm. The surf-boat was run down abreast the station and launched. The passage through the breakers was very difficult, as the sea was running high and the current strong against them. When the breakers were cleared the pulling was easier, and they arrived alongside the bark at 3 o'clock. The keeper boarded her, and after consid-

erable difficulty, made her captain understand that he and his men were there to render whatever service was needed, gratuitously. There was, however, no immediate danger to life, and the life-saving crew remained on board until daylight, with their boat convenient for any emergency. At dawn they went ashore, and met the crew of Station No. 5, which had arrived with the beach apparatus. The two crews rigged the breeches-buoy and sent it aboard, to be in readiness if needed, and, at the captain's request, remained in alternate watches by the bark until April 26, when she was hauled off by a wrecking company's tug. They also rendered assistance by carrying messages to and from the vessel, both before and after the arrival of the wreckers.

April 23.—At 5 o'clock in the morning the patrolmen of Station No. 9, Second District, (Cape Cod,) while on their return beat, saw a fish-boat leave the shore to go out fishing, the surf being angry, and rough weather threatening. At about 7 A. M. the wind suddenly changed, and in half an hour a dense fog arose, and the surf had increased. Knowing that the fishermen could not land without capsizing, and it being impossible to tell where they would make the attempt on account of the fog, the keeper scattered his crew along the shore, within signaling distance of each other, with instructions to keep a sharp lookout. Each man was furnished with a line. About 8.30 A. M., as the fog lifted for a moment, the boat was seen on the outside of the bar. The signal was given and the men assembled at a point abreast of her. As soon as the two men in the fish-boat perceived the life-saving crew they started to pull in. When within twenty or thirty yards of the shore the boat was caught by a heavy roller and turned over, the two men being caught under her. A portion of the surfmen with lines attached to their bodies rushed into the surf, the other end of the lines being held by their comrades, grasped the gunwale of the boat, lifted it up, reached under and got hold of the men, and with great difficulty succeeded in hauling them from under it. The next sea threw them on the beach within reach of the surfmen on shore, who helped them on their feet. The rescued men were taken to the station and provided with dry clothing.

But for the instantaneous action of the surfmen these men must have drowned, for they were completely bewildered and blinded, and the next sea would have swept them away.

April 24.—The captain of a tug returning from the outer pier at Chicago reported to the keeper of Station No. 11, Eleventh District, (Chicago, Lake Michigan,) the body of a man floating at the entrance to the harbor. Four of the life-saving crew went out, and after a short search found the body, which was in an advanced stage of decomposition, and had evidently been in the water a great while. They took it in and turned it over to the city authorities.

April 26.—The pilot schooner Josephine, of Indianola, Texas, which was lying at her usual anchorage in Pass Cavallo, Texas, was carried by a heavy gale during the night to the west side of the Pass and stranded on Pass Cavallo Bar, one mile northeast of Station No. 4, Eighth District, and a quarter of a mile from shore. At daylight she was discovered by the patrol of the station, and at once reported. Her crew, who were on shore, were also notified and accompanied the life-saving crew to the vessel. They took out a part of her ballast, and on the falling of the tide returned to the station. At 2 o'clock in the morning of the 27th, they again boarded her, and, after relieving her of the remainder of her ballast, made an ineffectual effort to move her.

At high water on the 28th, another attempt with like result was made. On the 29th, they succeeded in moving her, and continued their efforts at every high tide until Wednesday, May 4th, when she floated off without damage.

April 26.—The schooner *Mary R. Ann*, of Sheboygan, Wisconsin, with two men on board, struck the end of the north pier at Manistee, Michigan, and stranded three hundred feet from shore, half a mile west of Station No. 5, Eleventh District, (Manistee, Lake Michigan,) at 1 o'clock in the morning, the weather being rough, and a high sea running. It was immediately reported at the station by the patrol, and the life-saving crew went out and hove her off after three hours' hard labor, and gave her safe into the hands of her captain. The crew were sheltered at the station until morning.

April 26.—The scow *Oregon*, 200 tons, owned by Cook Brothers, of Clifton, Oregon, and used as a boarding-house for about sixty fishermen employed in connection with the large canning establishment of that firm, dragged her anchors, drifted out of the bay, and stranded during the night on Peacock Spit, about one mile west of Station No. 3, Twelfth District, (Cape Disappointment, Washington Territory.) Upon learning the facts, the keeper of the station at once proceeded to the spot in the surf-boat, carrying necessary lines for heaving the vessel off. He obtained an anchor from the tug *Argonaut*, which had also come to the aid of the scow. The anchor was planted off shore with the hawser attached and the other end of the latter carried in to the vessel. Clapping a purchase on the hawser they hove it taut, and then, as the tide rose, by watching the seas, which were quite heavy, they succeeded in hauling her off into deep water. When safely afloat, the tug towed her into the harbor, the damage sustained being very slight. The position of the vessel when ashore was a dangerous one, on account of the high surf, and the owners had but little hope of saving her. Their appreciation of the service rendered by the life-saving crew was manifested by making them a handsome present.

April 27.—The patrolman of Station No. 9, Second District, (Cape Cod,) discovered through the thick fog a vessel's red port-light, indicating she was coming by the wind diagonally to the shore. He burned a red Coston signal in warning, and she immediately wore off. The vessel would soon have struck had she not seen the patrolman's signal.

April 27.—The steam-barge *Hilton*, of Manistee, Michigan, sprung a leak and became water-logged when off Little Point au Sable, on the 25th, and arrived off Port Sherman in tow of the tug *Messenger* on the 27th. When close enough in, the life-saving crew of Station No. 8, Eleventh District, (Muskegon, Lake Michigan,) manned their boat and ran lines from the vessel to the harbor piers and assisted in getting her safely inside. This done, they pulled outside again and picked up the vessel's yawl and other articles belonging to her which had been washed overboard as she approached the harbor in an almost completely submerged condition.

April 28.—The schooner *Addie L. Perkins*, of Castine, Maine, bound from Penobscot, Maine, to Boston, with a cargo of brick and a crew of four men, was seen by the patrolmen of Station No. 5, First District, (Whitehead Island, Maine,) to strike on Burnt Island Ledge, at the entrance of Seal Harbor. They reported immediately at the station, and the life-saving crew boarded her and assisted in throwing off her deck-load. The keeper took a message from her master to the

revenue steamer A. J. Dallas, which was lying in Seal Harbor, requesting that at flood-tide he would come to the assistance of the schooner. These things accomplished, the life-saving crew returned to the station and remained until flood-tide, when they went again to the schooner, and found the Dallas there. The vessel was towed off by the revenue steamer and taken safely into harbor. The life-saving crew anchored her, tried her pumps, and, finding her tight, returned to the station.

April 28.—The midnight patrol of Station No. 10, Fifth District, (Cobb's Island, Virginia,) saw a vessel too near the shore and warned her off by firing a red Coston signal.

April 28.—A scow, not named, of Chicago, with three boys, cruising about Chicago harbor, was observed by a surfman of Station No. 11, Eleventh District, (Lake Michigan,) to be drifting out into the lake. The surf-boat was immediately launched and pulled out to the rescue. The lads had but one sixteen-foot oar with which to propel their craft, and were utterly unable to manage her. The surfmen threw them a line and towed them safely to shore.

April 30.—At 4.45 A. M., the patrol from Station No. 2, Third District, (Point Judith, Rhode Island,) discerned the two masts of a sunken schooner, about a mile off shore, and another schooner lying to, a short distance from the sunken vessel. The patrolman, who was a mile or more down the beach, at once started back on a run to the station to give the alarm. Before he could arrive, however, the wreck was seen from the light-house by the light-keeper, and the latter immediately ran to the station, only a few yards distant, and hastily announced his discovery. Three surfmen immediately launched a boat and pulled out to the scene of disaster, while the keeper and another of his crew ran up the shore towards a yawl, which was approaching the shore about a mile and a half west of the station, and directed its occupants where to land. The yawl proved to belong to the schooner William Whitehead, of Providence, which was lying near the sunken vessel, and was bringing the captain of the latter ashore. He was in an exceedingly exhausted condition, and had to be assisted to the station by two of the station men. Dry clothing and stimulants were given him, and everything possible done for his recovery. When sufficiently recovered the captain stated that the wrecked schooner was the Palladium, of Harwich, Massachusetts, bound from New York for Providence, with a cargo of scrap-iron, and having a crew of three men. At 9 o'clock at night, April 29th, while the crew were all on deck at the pumps, the vessel having sprung a leak an hour or so previous, gave a sudden lurch, and plunged as if sinking. The men sprang for the davit-falls, but, before they could clear the yawl, the schooner went down and they were swept astern and sucked under. The captain came up near enough to the main boom to grasp it, but the others, one of whom was the captain's son, arose some distance off. The captain called to them, and asked if they had anything under them. The son replied, "Yes." He called out to them to swim to the boom, to which he was clinging. They were, however, quickly lost in the darkness, and as the water was icy cold, must soon have perished. The captain, by great effort, after having been several times washed from the boom, reached the rigging and clambered to the main cross-trees, a few feet above water. Here he remained all night watching for some passing vessel to come within hail and pick him up. He sighted several, but

they were too far away for his cries to be heard. At about daylight, April 30th, he was rescued by the crew of the William Whitehead, and, as above stated, taken ashore. After remaining about two hours at the station the bereaved man (impoverished also, as his all was invested in the part ownership of the schooner) was sufficiently recovered to leave for home. The keeper loaned him his own best suit of clothes, gave him ten dollars, obtained him a railroad pass, and got a neighbor to convey him to the station. One of the surfmen also gave him five dollars. The vessel was a total loss, but a portion of the cargo was recovered by a wrecking company with the aid of divers.

April 30.—In the evening, a patrolman of Station No. 34, Fourth District, (Townsend's Inlet, New Jersey,) saw a three-masted schooner standing into danger close to shore. He burned a Coston signal, and the vessel stood off.

May 1.—The schooner Shekinah, of Bridgeton, New Jersey, bound from Malden, New York, to Cape May, New Jersey, with a cargo of stone flagging and a crew of five men, stranded on the south bar of Cold Spring Inlet, at 10.30 A. M., two and a quarter miles from Station No. 39, Fourth District, (New Jersey.) The life-saving crew went out to her in the surf-boat, and succeeded in getting her afloat at 1 P. M.

May 1.—At noon the lookout of Station No. 3, Ninth District, (Oswego, Lake Ontario,) reported two yachts, the Dora and the Rival racing on the lake. The Rival broke her mast short off at the partners. The keeper of the station manned his boat, went out, and towed her into the harbor. She had thirteen persons on board.

May 1.—At 6.30 A. M., the schooner Ahnapee, of Milwaukee, Wisconsin, with five men on board, anchored off Hamlin, Michigan. Soon the wind and sea so increased in violence that the vessel dragged her anchor and was in danger of stranding. The crew of Station No. 6, Eleventh District, (Grand Point au Sauble, Lake Michigan,) launched the surf-boat, went out to the schooner, ran a line to the piers, then went on board and manned the windlass and hove her into the harbor, returning to the station at noon.

May 2.—At 1 P. M., the schooner William Gilbert, of Big Sandy, New York, bound from Oswego to Big Sandy, with a crew of four men and one passenger, was seen by the lookout of Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) standing toward the creek, and possibly into danger. The keeper immediately had the supply-boat launched, went out and sounded the channel, and placed temporary buoys for guidance. At 3 P. M., the schooner hove to off the mouth of the river and signalled for a pilot, it not being safe to attempt coming in alone on account of the shifting of the channel. The keeper again launched the boat, went out with three of the life-saving crew, boarded the vessel a mile outside, took charge of her and piloted her safely in and one mile up the river.

May 4.—The schooner G. D. Norris, of Chicago, bound from Jacksonport, Wisconsin, to Chicago, with a crew of eight men, drifted on a reef, May 2d, in the vicinity of Jacksonport, in consequence of a sudden shift of wind from north to east, and having little or no offing. The vessel was released from her position the next day by a tug, and after a sail of seventy-five miles, hove in sight of Station No. 17, Eleventh District, (Two Rivers, Lake Michigan,) on May 4th. The second mate landed in the schooner's yawl about one mile north of the station, which he reached about 11.30 A. M., and reported the schooner leaking badly and in need

of a tug. A tug was immediately dispatched, while the keeper and his men proceeded at once in the surf-boat to the vessel, which they boarded about noon. They immediately went to work to relieve the sailors, who were worn out at the pumps, there being at that time about four feet of water in the hold. The life-saving crew remained at the pumps four hours while the vessel was towed to Manitowoc, when it was found they had gained five inches on the leak. The keeper then aided the master of the distressed vessel in securing the services of six men to relieve the station crew, who returned to their post of duty—five miles distant—at 5.30 P. M., having worked hard all the afternoon.

May 5.—The British schooner *Flora*, of Picton, Ontario, bound from Mill Point, Ontario, to Little Salmon Creek, New York, with a cargo of “headings” and a crew of six men, stranded near the mouth of the creek a few rods west of Station No. 2, Ninth District, (Lake Ontario,) at 11.45 A. M., while carrying all sail. The crew of the station launched the surf-boat, went at once to the schooner, and commenced lightering her. The weather was threatening, and the vessel, although lying on a gravel-bed, was very near to rocks, on which she might be thrown. At 5 A. M. the next day, the life-saving crew had the schooner afloat and under way, homeward bound, having worked all night, a part of the time in a driving rain, to save the vessel and crew from their perilous position.

The following card of thanks was published in an Oswego paper:

“RELIEF AND THANKS.

“*To the Editor of the Times:*

“I, the undersigned, wish personally, and in behalf of other parties interested, to thank the neighbors and friends who, on the afternoon and night of the 5th instant, helped to unload the schooner *Flora* at Mexico Point, and especially Captain Parker and his gallant crew of the life-saving station, who worked all night, and a part of the time in a cold, driving rain, thus relieving the vessel and crew from a dangerous situation, and who also, on the day previous, saved for me a flat-boat loaded with shingle-bolts, which, by a sudden rise of the wind, was water-logged and sunk while yet half a mile from port. The men who were polling her down the lake escaped with a cold bath, while the timber went adrift, but, by the timely aid of Captain Parker and his men, every stick was saved and landed in good shape, and the scow raised and towed to port.

“Again I wish to assure the boys that their services (for which they decline any remuneration) are most gratefully appreciated.

“WILLIAM ADAMS.

“ARTHUR, N. Y.”

May 6.—The steamer *Roanoke*, with a crew of twenty-five persons all told, left Buffalo, on a trip to Chicago, at 6 o'clock in the evening of May 5th, and soon after she had cleared the harbor, stuck fast in a field of ice which blocked the lower end of Lake Erie. Being unable to extricate herself, she whistled for Buffalo harbor tugs to come to her assistance. The ice was moving with the current towards Niagara River and carrying the steamer with it. Several tugs responded, but before anything could be accomplished the steamer grounded about midnight on Horse-shoe Reef, at the head of the river. The tug *B. F. Bruce*, in her efforts to relieve the *Roanoke*, also grounded on the same reef. The move-

ments of the vessels had been closely watched by the patrol from Station No. 5, Ninth District, (Buffalo, Lake Erie,) and as soon as he observed the accident an alarm was given and the surf-boat was at once launched and pulled through the ice to the stranded vessels. As the night was rainy and misty and very dark, the tugs found it impossible to do anything under the circumstances, and further operations had to be suspended until daylight. The life-saving crew therefore returned to their station, taking with them the crew of the Bruce, ten in number. A vigilant watch was kept from the station, and at half-past nine the same morning they took advantage of the favorable condition of the ice and again went off in company with the tugs. The station men rendered good service by running hawsers from the Bruce and Roanoke to the assembled tugs, which succeeded in hauling them off the reef and out of danger. The Roanoke proceeded on her voyage apparently uninjured.

May 7.—The schooner Mary S. Ewing, of Bridgeton, New Jersey, bound from Newburgh, New York, to Cape May, New Jersey, with a cargo of flagstones and a crew of four men and one passenger, stranded on the south bar of Cold Spring Inlet, two and a quarter miles from Station No. 39, Fourth District, (New Jersey.) She was discovered at 3 P. M. by a surfman of the station, who mustered a crew (the station not being manned at this season) and went to the rescue in the surf-boat, taking a five-inch hawser belonging to the station. With the aid of this they worked the vessel off, and saved her and her cargo from total loss.

May 7.—The Fiat, a small schooner of Big Sandy, New York, bound from Oswego to Big Sandy, with a general cargo and a crew of four men, stranded about a quarter of a mile from shore and the same distance from Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) at 4 P. M. She was seen by the keeper of the station, and five minutes later he was alongside of her with the station supply-boat and four of his crew. The captain of the Fiat put out a stern anchor, and endeavored with the aid of the life-saving crew to heave her off. Not succeeding, he went for a schooner to lighten her, and in the meantime the life-saving crew returned home for supper. After this they went out again to the schooner and rigged a derrick and raised her bow up so that they were able to heave her astern and off the shoal without lightering. They then took her into the creek to a place of safety, made her fast, and returned to the station.

May 8.—The sloop Z. S. Wallingford, of Gloucester, Massachusetts, bound out from Newburyport, Massachusetts, on a fishing cruise, with four men, who were unacquainted with the harbor and current, drifted on the North Breaker, near the mouth of the river, about three miles north of Station No. 1, Second District, (Plum Island, Massachusetts,) at noon. At 2 P. M., the wind came out from the northeast in a heavy squall, with thick fog and light rain. The keeper of the station, who was in the vicinity and knew there would not be time to go to the station for the surf-boat, obtained a seine-boat and three of the station surfmen, (the station was not in operation at this season) and went out to the vessel. Owing to the heavy sea, they had considerable trouble in boarding her, and also in getting her anchors out the length of the cables. At flood-tide laboring heavily she swung around to her anchors in deep water. The life-saving crew at once put sail upon her, which had scarcely been done when she was discovered to be sinking. The hawsers that held her to her anchors were immediately cut and an

attempt was made to sail her up the river, but when she had proceeded a short distance inside it became necessary to run her on the flats to prevent her from sinking in deep water. At low tide it was discovered that two planks were started on the port side. She was temporarily repaired with canvas placed over the leak, pumped out, and proceeded to Gloucester. Her anchors and cable were recovered by the life-saving crew the following day.

May 8.—The sloop *Clara*, of Chicago, having on board a crew of two men and eleven excursionists, out on the lake for a sail, was struck by a heavy puff of wind which carried away her mast rendering her instantly unmanageable. She was about half a mile south of Station No. 11, Eleventh District, (Chicago, Lake Michigan,) when the accident occurred, and was seen by one of the surfmen and at once reported. The surf-boat was launched immediately and went out to her. The keeper and two surfmen boarded the sloop and assisted in taking in the mast, sail, and rigging; after which they took her in tow of the surf-boat safely into port.

May 10.—The schooner *Advance*, of Chicago, bound from Manistee, Michigan, to Chicago, with a cargo of pine shingles and a crew of seven men, collided with the schooner *Fleetwing*, about seven miles out from Manistee, and when about four miles southwest of Station No. 4, Eleventh District, (Point au Bec Scies, Lake Michigan,) became water-logged. The weather was foggy, and did not clear up until May 12th, when between 10 and 11 A. M. the lookout of the station reported a vessel about six miles to the northward, with only the peak of her foresail set, drifting north before the wind, and a propeller standing towards her. It was soon observed that the propeller changed her course and came south. The keeper launched a small boat, pulled out to meet the propeller, and asked what was the matter with the schooner. The people on the steamer stated that her port bow was stove in, she was water-logged, and had been abandoned by her crew. The keeper returned to shore and sent a surfman to Frankfort for a tug. In the meantime, while the cook was preparing a hasty dinner, the crew got ready the surf-boat, putting on board axes, hammers, cold-chisels, and such tools as might be serviceable. A little before noon the boat was manned and pulled out to the schooner then seven miles distant. They found her deserted; her large anchor overboard hanging by the chain, which was fouled round the windlass. The jib-boom was carried away and sails and gear were hanging and washing about forward, the water was up over the top of the windlass, and altogether it was, to use the keeper's expression, "a bad mess to clear up." But after a couple of hours' hard work the schooner was made ready for the tug. The life-saving crew set the fore-stay-sail and foresail as well as they could, and the wind having changed, headed her up the lake for Frankfort. Between 5 and 6 P. M. the tug arrived and took the schooner in tow. At 9 o'clock in the evening she grounded outside the south pier at Frankfort and it became evident that her deck-load would have to be removed before the vessel could be got into the harbor. The life-saving crew went ashore for supper and returned to the schooner at 11 P. M. The tug having in the meantime procured a small scow, the life-saving crew immediately commenced lightering the deck-load, transferring it to the pier. By working all night, they succeeded at 9 o'clock on the morning of the 13th, in getting the vessel about three hundred feet inside of the end of the south pier. The previous evening the keeper

had telegraphed the captain at Manistee that his vessel was at Frankfort. As soon as the schooner was safe between the piers the keeper sent four of his crew back to the station with the surf-boat. The two remaining men he kept at Frankfort to look after the vessel until the arrival of her captain. At 3 P. M. he arrived and assumed charge. From him the keeper learned that after being run into by the Fleetwing, which was also somewhat damaged by the collision, the latter took the Advance in tow and endeavored to make the east shore. The Fleetwing, however, leaked so badly that her captain was obliged to let go the Advance, taking her crew on board and her yawl in tow, and stood in for the east shore until he reached shoal water, when the captain and crew of the Advance got into their yawl, pulled ashore, and returned to Manistee. The next day the captain with a tug went in search of his vessel, but, owing to its having drifted so far north, did not find it. When he received the keeper's telegram of its whereabouts, he was about starting on another search.

May 11.—The lookout of Station No. 6, Ninth District, (Erie, Lake Erie,) observed something floating on the water about a quarter of a mile west of the station. The small boat was launched and went out to the object. It proved to be the body of Joseph Heany, who was drowned on the 18th of November, 1880. They conveyed the body to Erie, and gave it over to the coroner.

May 11.—The steam-barge Alpena, of Milwaukee, with the barge Wenona in tow, arrived off the harbor of Fairport, Ohio, and signalled for a tug. There being no tug in port, the crew of Station No. 7, Ninth District, (Fairport, Lake Erie,) went out to the vessels and piloted them in.

May 11.—The side-wheel steamer Metropolis, of Bay City, Michigan, with a crew of twenty-six persons and fifteen passengers, stranded during thick, foggy weather, a quarter of a mile northeast of Black River Island, and eleven miles north of Station No. 5, Tenth District, (Sturgeon Point, Lake Huron,) at 10.35 A. M. The casualty was reported to the patrol of the above station, the same night, by a passenger who had been put ashore at Alcona. He hastened back to the station with the report, arriving at 10.55 P. M. The surf-boat was launched and manned immediately by all the crew except the south patrol, who had not yet returned. On arriving at the steamer, after an hour and three-quarters pull, they found her not in need of their assistance, her captain having sent his boat ashore and procured the assistance of a tug, which had landed the passengers. A tug and steam-pumps had also been sent for to clear her of water, her own pumps being unavailing. The life-saving crew returned to the station, arriving at a quarter-past ten on the morning of the 12th. May 14th, the patrol south on his return to the station, discovered through the glass a signal of distress flying from the stranded vessel. He at once called the keeper and crew, and after a hasty breakfast the boat was launched and pulled out. As they neared the vessel she made signals for them to hasten. They quickened stroke and learned on getting to the steamer, that her captain wished them to convey him to a steamer to procure sail-cloth and provisions. This they did, and then worked the remainder of the day running lines from the Metropolis to the tugs, and in other ways giving assistance. At 9 P. M., the life-saving crew left for the station, arriving there at midnight. May 16th, there was again a signal for assistance from the Metropolis. The surf was heavy,

with a head wind, and therefore the boat was loaded on a wagon, and drawn by a team of horses, started on its way to the wreck; but when they had proceeded about forty rods the wagon broke down. The crew then took the boat from the wheels, and, hitching the horses to it, dragged it to the lake and launched it. After two hours' hard rowing they reached Alcona. Here they procured another team and wagon, and proceeded with the boat to Black River, where they again launched and went out to the wreck. Their services were required to assist in towing a lighter, which was to be used in getting her off. They remained at the vessel, rendering assistance, until 10 P. M. the next day, (May 17th,) when they returned to the station, arriving at midnight. The vessel was got off.

May 12.—At 8.15 P. M., the schooner Ringgold, of Oswego, bound from Oswego to Big Sandy, New York, with a cargo of merchandise and a crew of two men, grounded on the rocks, in thick weather, half a mile west of Station No. 1, Ninth District, (Big Sandy Creek, Lake Ontario,) and about the same distance from the shore. The schooner was seen by a surfinan of the station, with a light set for assistance, and in ten minutes a boat was launched, manned by the crew, and went out to her. The vessel was found on the rocks, north of the channel entrance. She was thumping on the rocks, and must have sustained serious injury had not the life-saving crew succeeded in forcing her into the channel.

May 14.—The schooner Sarah Louise, of New York, bound from Boston to Calais, Maine, in ballast, with a crew of four men, dragged her anchors during a gale and stranded three miles north of Station No. 1, First District, (West Quoddy Head, Maine,) and about five hundred yards from shore. The keeper of the station took a boat and went out to her, but his offered assistance was refused, the captain giving as a reason that his vessel was all right, and that he would be able to get off with his own crew when the wind abated. The keeper therefore returned home. The wind continued to blow strong, and after a time the schooner began to leak badly. Her captain then sent ashore for assistance to get her afloat, and two surfinen of the life-saving crew, who lived near, taking with them another man, who was competent help, went aboard, assisted in getting her off and sailing her into a safe place, and left her, after eight hours' hard service.

May 15.—The schooner Blanche Hopkins, of Philadelphia, bound from Boston to Philadelphia, in ballast, with a crew of eight men, stranded in a thick fog on the north bar of Cold Spring Inlet, two and a half miles from Station No. 39, Fourth District, (New Jersey,) and half a mile from shore, about 3 o'clock in the morning. The station not being manned at this season of the year, the stranded vessel was not discovered until 9 A. M., when one of the disbanded crew saw her. He mustered the crew as quickly as possible, and in three-quarters of an hour the surf-boat, fully manned, was on its way to the schooner. Assistance was rendered by running hawsers and carrying out anchors, whereby the vessel was got off. The assistance rendered probably saved the vessel from total loss.

May 15.—A patrolman of Station No. 12, Tenth District, (Sucker River, Lake Superior,) saw a steam-barge with two vessels in tow too near the shore and apparently about to strike on Sucker River Point. He burned a red Coston signal. The steamer heeded the warning and had barely time to clear the point.

May 16.—The schooner Isaac P. Hazard, of Newport, Rhode Island, bound to New York, with a crew of three men, and laden with posts and rails, stranded near Station No. 38, Third District, (Eaton's Neck, Long Island Sound.) The disaster occurred in thick, foggy weather, and a rough sea, at half-past 2 o'clock in the morning. It being the inactive season, the station was not manned, but the keeper hearing of the wreck at 8 o'clock, collected as many of the regular crew as he could, filled vacancies with volunteers, and proceeded to the wreck with the surf-boat. They found the schooner bilged and the sea making a clear breach over her. They boarded her and took the two sailors ashore, the captain having landed himself before their arrival. They then returned twice to the wreck and succeeded in saving the personal effects of the crew and the cabin furniture. The vessel was lost.

May 17.—The schooner Maggie May, of Machias, Maine, out on a fishing cruise, with a crew of three men, dragged from her mooring in a heavy gale and stranded on a ledge about half a mile from shore, and four miles and a half from Station No. 3, First District, (Crumple Island, Maine,) about midnight. As the station was not manned at this season, she was not discovered until morning, when one of the life-saving surfmen saw her and reported to the keeper. The keeper manned a boat with volunteers and went immediately to her assistance. They got out anchors and cables, and when the tide flowed hove her off with the assistance of her men, and took her to a place of safety. Had it not been for this timely help the schooner would probably have been lost.

May 17.—The sloop-rigged barge J. A. McDougall, of East Saginaw, Michigan, laden with lumber, with a crew of seven men and the captain's wife and three children on board, bound from East Saginaw to Erie, Pennsylvania, in tow of a tug, encountered heavy weather, sprang a leak, and became water-logged about seven miles from shore and twenty-eight miles west-southwest of Station No. 6, Ninth District, (Erie, Lake Erie.) The tug running short of coal was obliged to let go, and proceeded to Erie, where the captain gave notice of the barge's condition to the keeper of the above-named station, and as soon as he could coal, took the life-saving crew and the surf-boat in tow and steamed back. The trip occupied three hours. They found the barge in a very bad condition, her decks being under water. The life-saving crew boarded her, hove up her anchors, got a line to the tug, and remained on board working the pumps until she reached port at 2 o'clock in the morning, her crew being too much exhausted to render service.

May 21.—The barkentine Freeda A. Willey, of Thomaston, Maine, bound from Pascagoula, Mississippi, to Boston, with a cargo of lumber and a crew of eight men, stranded in a thick fog, two hundred yards from shore, a mile and a half south of Station No. 9, Second District, (Cape Cod,) at 9 o'clock in the evening. At half-past 2 in the morning, while one of the station surfmen was walking along the beach looking out for any wreckage that might be thrown up by the easterly storm that was prevailing, he discovered the bark looming up in the fog, and as soon as he became assured that she was ashore, dispatched his son, who had accompanied him, to inform the keeper of the station, while he remained on the beach. Receiving the information, the keeper instantly started for the vessel, calling such of the crew as were on his way, as he passed, and sending word to the others, the station being closed at this season. Arriving abreast the vessel he found the wind

north-northeast, with a dense fog, and a heavy swell breaking on the shore, causing the ship to roll and pound. The keeper and surfman hastened back to the station, where they were soon joined by two of the life-saving crew and two volunteers who had been obtained. They ran out the small surf-boat and attempted to launch it, but after several efforts and repeated narrow escapes from swamping, were obliged to give it up. They then mounted the boat on its carriage, hitched the keeper's horse to it and went down the beach abreast the wreck, arriving after a tedious journey. The vessel making a partial shelter from the heavy breakers, they were enabled to board her immediately. The tide had by this time ebbed so that the ship lay easy, and the keeper advised the captain to procure a tug, run out an anchor, and try to float her off on the next tide. This he decided to do, and the keeper returned to the shore taking the captain with him. He then obtained a team and took the captain to the signal-station at Highland Lights, to telegraph to Boston for a tug, leaving the life-saving crew, all of whom by this time had arrived on shore, with directions to board the vessel and take off her crew should it be necessary before their return. On the return of the keeper and captain, they found the surf somewhat lower, and succeeded in launching the large surf-boat. They then ran two anchors from the bark off shore, and had a tug arrived in season, there is little doubt but the vessel could have been floated on the next tide. She did not come, however, until after high tide, and the surf being heavy, the bark was driven hard onto the beach. The underwriter's agent, who had in the meantime arrived, now put a gang of wreckers aboard to throw over her cargo. The life-saving crew returned to the shore, but remained on the beach all night to render assistance if necessary. About 1 o'clock in the night the ship was found to be leaking badly, and a number of the wreckers, fearing she would not hold together until daylight, made a signal, and the surf-boat went out, took eleven of them ashore, and returned them to the ship in the morning. At about 10 P. M., May 25th, the bark having been well lightened of her burden, was floated off by the wrecking steamer and taken to Boston. The station-crew were engaged the entire time, four days, in work on board the bark, in saving cargo from the surf and in transporting the wreckers to and fro, the vessel's boats having been stove in pieces.

May 23.—The schooner David F. Keeling, of Baltimore, bound from Charleston to Baltimore, with a cargo of lumber and a crew of seven persons, stranded in a fog near Station No. 1, Sixth District, (Cape Henry, Virginia,) at 10 P. M. The station was not at this time in operation, but the schooner's crew landing in their own boat, were taken to the station by the man in charge, where they were sheltered nineteen days while efforts were being made to get the vessel off. At the end of this time they were taken by a wrecking vessel to Norfolk, except the captain, who remained until the vessel was hauled off, June 23d, by the wrecking steamer and towed to Norfolk.

May 24.—The bark Cremona, of New York, bound from Marseilles, France, to New York, in ballast, with a crew of thirteen persons, together with the captain's wife and two children, on board, stranded in a thick fog a mile and a half from Station No. 10, Fourth District, (Point Pleasant, New Jersey,) and two hundred yards from shore, at 4.20 A. M. She was discovered at 5 o'clock in the morning by one of the life-saving surfmen from his house, the station being closed for the season. He ran to the

beach opposite the vessel, and called to her crew to remain on board and he would hasten to their rescue. He then reported to the keeper of the station, and the crew were speedily mustered. They manned a fishing surf-boat, which was a mile nearer the vessel than the station, and, pulling out through a heavy surf, reached the bark at 6 A. M. The captain's wife and two little children were first landed, and subsequently the boat made ten more trips, landing the thirteen men and their luggage, all in safety. The vessel, which was in charge of a pilot when she struck, was afterwards got off by a wrecking company.

May 25.—The patrolman of Station No. 12, Tenth District, (Sucker River, Lake Superior,) when one mile west of the station, discovered a vessel dangerously in-shore, so near that he heard talking aboard of her. He burned a Coston signal, and she wore off.

May 27.—At 8 A. M., the patrolman of Station No. 9, Tenth District, (Vermillion Point, Lake Superior,) reported a steamer too close in-shore. Although the fog was so dense he could not see her, he plainly heard the working of her engines. To warn her of her danger, the life-saving crew immediately pulled out to her in the surf-boat, and found it to be the propeller *India*, of Erie, Pennsylvania. The keeper gave the captain information regarding his position, and the vessel went her way.

May 29.—The schooner *Julia Elizabeth*, of Blue Hill, Maine, with a crew of four men and a cargo of lumber, the night being very dark and a light wind blowing, stranded on Watch Hill Reef at 11.30 P. M. She was discovered the following morning at 5 o'clock by one of the men of Station No. 3, Third District, (Watch Hill, Rhode Island.) The surfman boarded the schooner in a row-boat, and found no immediate assistance practicable. He then reported to the keeper, who at a later hour boarded her and assisted in removing sails, &c. He also offered shelter to the crew at the station, which was declined. The vessel was a total loss.

May 29.—At about 6 o'clock in the afternoon, the keeper of Station No. 5, Ninth District, (Buffalo, Lake Erie,) observed a commotion on and about the canal-boat *Franklin D. Tower*, which was lying in a slip on the opposite side of the harbor at Buffalo, and nearly abreast the station. Taking the station small boat he went at once to the canal-boat, with two of the life-saving crew. They found the master in the water holding on to a rope and crying out in great distress, "Save her! save my child!" They drew the man out, but the confusion was so great that they could not ascertain from any one where the girl had gone down. One of the surfmen dived three times in search of her, but without success. The grapnels were then used, and after about forty minutes the child was recovered, dead. The usual means of resuscitation were employed in vain for over two hours, when a physician who had arrived took charge and continued the effort, but without avail. The girl was fourteen years old, and fell into the water while crossing from one boat to another.

May 29.—The patrolman of Station No. 11, Tenth District, (Two Heart River, Lake Superior,) discovered a steamer almost ashore abreast of Little Two Heart River. He burned two Coston signals and fired four shots from a revolver, which caused the steamer to check and back off. A dense fog was prevailing.

May 30.—At 4 o'clock in the afternoon, a small sail-boat, with one man in it, was suddenly becalmed by the steamer *Norseman* passing to windward of it, in entering the harbor of Charlotte, New York. As

the steamer proceeded on her course, and the boat gradually fell astern, the wind passing around the steamer's stern struck the boat, which had by that time lost steerage-way, with sufficient force to capsize it. The accident was witnessed by the crew of Station No. 4, Ninth District, opposite which it occurred, and three of the surfmen immediately jumped into the dingy and pulled out and rescued the man from the water, towed his boat ashore, righted and bailed it, and turned it over to him in good order.

May 30.—At about 6 o'clock in the morning, one of the patrolmen from Station No. 9, Tenth District, (Vermillion Point, Lake Superior,) discovered through the fog, when about a mile and a half west of the station, a steamer lying to, in dangerous proximity to the shore. She was between two sand-bars or shoals, which extend for several miles parallel to the beach, and in such a position as to be unable to extricate herself without the aid of a pilot, or until the fog lifted. The facts were reported at the station by the patrolman, and the crew immediately launched a surf-boat and pulled alongside. She proved to be the steamer Samuel F. Hodge, of Detroit, Michigan, bound up the lake. The greatest depth of water where she lay was twelve feet, while on the bar outside of her it was but nine and a half; the steamer's draught being eleven and a half feet. The keeper advised the captain that his best course was to turn about and run back a mile or two to a point where there was deeper water on the bar, whence she could steam out into the lake and continue her voyage. Acting on this advice, the steamer was turned in the right direction, and the keeper pulled ahead in the surf-boat and sounded the channel, thus enabling her to pick her way clear of the shoal. When piloted in this way out of danger, she kept away on her course to her destination.

June 1.—The steamer Potomac, of Buffalo, bound from Buffalo to Milwaukee, with a crew of sixteen and a cargo of coal, in a thick fog, ran aground on a reef about ten miles below Erie, Pennsylvania, and two miles from land. Her captain went ashore in his own boat, hired a team to convey him to Erie, where he obtained the services of a tug, and went to the station (No. 6, Ninth District) for the life-saving crew. The latter went out with their surf-boat in tow of the tug. They ran lines between the vessels, and the tug made an unsuccessful attempt to haul the grounded steamer off, when it became evident that a portion of the cargo must be discharged. They then fell to work and threw overboard about four hundred tons of coal, a labor of twenty-four hours. The steamer was then pulled off.

June 2.—Frederick Riehl, aged fifteen years, fell off the harbor pier at Kenosha, Wisconsin, and would have been drowned but for the timely assistance of the life-saving crew. The keeper and crew of Station No. 13, Eleventh District, (Lake Michigan,) hearing cries of alarm made by the brother of the drowning boy, hastened to the rescue. Surfman John Mahoney arriving first, plunged into the lake at the spot where the struggling boy was last seen, he having gone down the third time, and by diving succeeded in bringing him to the surface. He and his charge were instantly drawn out of the water. The boy was to all appearance dead; but after fifteen minutes' application of the method for resuscitating the apparently drowned taught in the Service, he showed signs of life, and soon after breathing was restored. He was then taken to the station and succored until he was quite recovered, when he was provided with dry clothing and sent home.

June 4.—The propeller David Balentine, of Milwaukee, bound from Buffalo to Milwaukee, with a cargo of coal and a crew of seventeen men, encountered a heavy fog when two miles northwest of Station No. 6, Ninth District, (Erie, Lake Erie,) and ran ashore at midnight. She was discovered by the patrolman and quickly reported to the keeper; the life-saving crew pulled out to her in the surf-boat and found her lying easy, and that no assistance could be rendered until the arrival of a tug. They remained on board until the tug came, when they ran lines between the vessels, and assisted in discharging the propeller's cargo onto lighters, after which she was pulled off by the tug.

June 5.—The lookout of Station No. 6, Ninth District, (Erie, Lake Erie,) saw, at 2 o'clock in the morning, a signal of distress flying from a schooner about three miles northeast from the station. The surf-boat was immediately launched and rowed out to the vessel. She proved to be the schooner Charles Foster, of Milan, Ohio. While making sail a seaman had fallen from the top-gallant fore-castle and struck the hatch-combing, cutting his head badly and knocking out one of his eyes. The captain desired that he should be taken to Erie for treatment. He was taken in the surf-boat, and conveyed to a surgeon, as requested.

June 5.—The sail-boat Topsy, of Chicago, out on the lake with two men sailing for pleasure, capsized in consequence of mismanagement. The surfman on watch at Station No. 11, Eleventh District, (Chicago, Lake Michigan,) saw the accident and gave the alarm. The keeper had a skiff launched immediately, and sent two surfmen out in her to rescue the men, and then, with the remainder of the crew, went out in his sail-boat, righted the Topsy, towed her to the station, bailed her out, and returned her to the owner. The rescued men were taken to the station, provided with dry garments, and cared for until they were able to leave.

June 5.—Two men, residents of Racine, Wisconsin, went out in a boat for an afternoon sail on Lake Michigan. A fresh northerly wind prevailed, and when they were about a mile southeast of the harbor piers, the sea became so rough that the boat, which was very old, sprang a leak. The men were inexperienced in the handling of boats, and although they managed to reduce sail, were unable to beat back to Racine. The apparently unmanageable condition of the boat was discovered by the lookout at the Station at Racine (No. 14, Eleventh District) a few minutes before 5 o'clock. Three of the station crew immediately jumped into a boat lying near by and pulled out to the assistance of the two men. They were not long in getting the sail-boat under control, and although she was leaking badly, succeeded by skillful management in bringing her into the harbor at about 7 o'clock, and helped the men ashore. The boat soon afterwards sank at her mooring in the river. But for the timely assistance rendered by the station-crew, the boat would doubtless have gone down in the lake and the men been lost.

June 5.—The steam-yacht Emilie, of Perth Amboy, New Jersey, having a crew of six men, and five passengers on board, the latter consisting of her owner and friends, arrived at Sheboygan, Wisconsin, at noon in a leaky condition, having struck bottom twelve miles northeast of that port at 10 o'clock in the morning. The keeper of Station No. 16, Eleventh District, (Lake Michigan,) boarded the yacht immediately on her arrival and found all hands bailing with buckets, and the steam-siphon going. Seeing the vessel's condition, he proffered the use of the station

force-pump and suction-hose, which was gladly accepted. The pumps, manned by the station crew in regular reliefs, soon told on the leak, and it was found that the vessel could be kept free. The owner, failing in his efforts to have the yacht hauled out for repairs at Sheboygan, was compelled to proceed to Milwaukee, fifty-four miles distant, and besought the use of the pump to that port. Leaving two surfmen in charge of the station, the keeper and remainder of the crew assisted in coaling the vessel, and accompanied her to Milwaukee, which port was reached in the forenoon of the next day, after a run of six and a quarter hours, and the vessel was placed in the dry-dock. The labors of the life-saving crew, which had been unremitting during the entire twenty-four hours preceding, having ended, they returned to their station by steamer, the owner of the yacht defraying expenses.

June 6.—A raft of elm logs, valued at six thousand dollars, which was in tow of the tug *Stranger*, bound from Port Stanley, Ontario, to Cleveland, parted couplings and lost thirty sections of its make-up, which drove on the beach six miles east of Station No. 8, Ninth District, (Cleveland, Lake Erie.) The master of the tug *Lormon* notified the keeper that he desired the services of the life-saving crew, with the surf-boat, to assist in getting off the raft. The surf-boat was launched and towed out to the raft by the tug. The life-saving crew then assisted by running eight hundred feet of hawser through the surf and making it fast to the raft. The tug then pulled off a portion of it, the couplings giving way and leaving a part of the logs still on the beach. The surf by this time was making so heavily that the boat could not then again reach the raft, and the life-saving crew returned to their station. On the next day they again went out in tow of the tug to the beach, where the remnant of the raft still was lying, and again went through the surf and fastened the hawser, so that eight more sections were taken in tow to Cleveland. June 8th, the journey and assistance were repeated, and all of the raft that remained was secured and taken to its owners in Cleveland.

June 7.—The schooner *Sandalphon*, of New York, bound from New York to Boston, having on board a crew of four men and four passengers, and a cargo of coal and furniture, stranded in an easterly wind and thick fog, on Catacomb Reef, one mile and a half from shore and two miles and a half from Station No. 3, Third District, (Watch Hill, Rhode Island,) at 6.30 A. M., was discovered half an hour later, and at 8 A. M. the life-saving crew boarded her in the surf-boat. They hoisted her sails to keep her from rolling, ran out her anchor, manned the windlass, and with the assistance of the sails hove her off at 2 P. M. They then piloted her into Stonington harbor, furled her sails, and left her in good condition.

June 9.—The schooner *Joseph and Franklin*, of New York, bound from Norfolk to New York, with a cargo of lumber, went ashore near Station No. 1, Fifth District, (Cape Henlopen, Delaware,) at 4 p. m. Word was sent to the keeper of Station No. 2, and as the stations on that coast were closed for the season a crew composed of men belonging to the two stations was mustered as soon as possible. When they arrived abreast the wreck with their boat, it became evident there was no one on board, as she was almost submerged and the seas were making a clear sweep over her as she lay broadside to the beach. It was therefore decided to wait until low water, by which time the sea would subside some. Accordingly, about 7 o'clock in the evening, the crew went out and

boarded her. They found her full of water, in a very bad condition, and all her head-gear gone, it being evident from her appearance that she had been in collision with another vessel and abandoned. Thinking it possible that her crew might land somewhere near by, the life-saving crew remained on the beach all night and kept watch. The following morning, June 10th, a man arrived from Lewes, Delaware, with authority from the wreck-master to take charge of the vessel and cargo for the owners. Before anything could be done, however, the vessel began to break up, and in an hour had gone completely to pieces. The station crew, with others employed by the agent to save the cargo, succeeded in securing nearly the whole of it. It was afterward learned that the schooner's crew were taken off by the steamship Pottsville, with which she was in collision, and safely taken to port.

June 9.—The yacht Isabel, of Oswego, New York, with her master and six passengers on board, misstayed and ran into the new pier at Oswego, about a quarter of a mile west of Station No. 3, Ninth District, (Lake Ontario.) The lookout of the station saw the accident and reported it. The surf-boat was immediately launched and pulled out to the yacht. They found her bows broken in, her head-gear entirely gone, and her hold filled with water. The seven persons were taken on board the surf-boat, and the yacht was taken in tow into the harbor.

June 9.—The British schooner Lady Dufferin, of Port Burwell, Canada, bound from Port Colborne, Canada, to Cleveland, in ballast, with a crew of eight men, in attempting to get into harbor at Cleveland, missed the piers, fell off, and stranded about half a mile west of Station No. 8, Ninth District, (Lake Erie.) The weather was thick, with a northeast gale and heavy sea. She was discovered by the watch from the lookout of the station, and at once the surf-boat went to her assistance. On the arrival of the life-saving crew alongside the vessel, her captain requested the keeper to return to the station and procure an auger to scuttle the schooner. This was done, and on their return holes were bored in the centre-board box. The life-saving crew then left the vessel, promising to keep a good lookout on her, and to return when the weather moderated sufficiently to assist in pumping her out and in getting her off. The following day, they went aboard again, plugged the holes in the centre-board box, pumped the water out, and ran lines from the vessel to three tugs which had been engaged to pull her off. The vessel was but slightly damaged.

June 9.—The tug John Leatham, of Green Bay, Wisconsin, bound from Chicago to Sturgeon Bay, with a crew of seven men, and having a scow in tow, became disabled in her machinery four miles off Station No. 13, Eleventh District, (Kenosha, Lake Michigan.) She blew her whistle for assistance, and the crew of the station manned the surf-boat and went out to her immediately. They let go her anchor and then went for a tug, and had the Leatham and the scow both taken safely into Kenosha harbor.

June 10.—The schooner Alice Oakes, of and from Gardiner, Maine, with a crew of five men, and loaded with lumber, for New York, was stranded at 5 o'clock in the afternoon on the bar off Ipswich Beach, Massachusetts, during the prevalence of a fresh northeast gale, with thick weather. The point indicated is between and several miles distant from the life-saving stations at Plum Island (below Newburyport) and Davis Neck, near Annisquam light, Cape Ann, (Nos. 1 and 2, respectively, in the Second District.) The position of the schooner

was discovered from the shore soon after she struck, and despatches were sent from the nearest telegraph station to Newburyport and Gloucester for assistance, the message stating that the crew of the vessel had been driven into the rigging by the seas, which were drenching her fore and aft. It was quite late, however, before the messages were delivered, the keeper of No. 1 (Plum Island) not receiving notice until 11 o'clock. As the life-saving stations on that coast were closed and the crews off duty for the summer season, it became necessary for him to muster a crew of volunteers. This he succeeded in doing, and by half-past 11 he had a full complement of men for his boat, one of the number being an attaché of the Newburyport Herald, through which office the news had been conveyed to the keeper, and another being a regular member of the life-saving crew. A team was engaged to assist in transporting the apparatus from the station, but as it was not immediately available, the party started ahead on foot for the beach. It was a long and difficult journey at midnight, in a driving rain-storm, with the wind blowing a furious gale directly in their teeth. The team followed soon after, and upon reaching the station the wagon was loaded with the beach apparatus, consisting of the gun, breeches-buoy, lines, &c., and started down the shore, while the volunteers hauled the boat across the island and launched it in Plum Island River, and pulled south in search of the vessel, which, from the report received, they knew must be about fourteen miles away. Their object in sending the beach apparatus by wagon to the south end of the island was to have it conveniently near in case the necessities of the disaster should demand its use. It was about 2 o'clock in the morning when all hands arrived at the bluffs, and, as nothing could be seen of the vessel, still some miles distant, it became necessary to wait for daylight. They sought shelter until it was light enough to see whither they were going, and were made as comfortable as their drenched condition would permit at the house of a Mr. Emerson, near by, whose wife, he being absent, kindly entertained and furnished them with a hot breakfast as soon as it could be prepared. Thus refreshed, they took to the boat again, and pulled out into Ipswich Bay, and before long had the satisfaction of seeing the vessel for which they were in search, just visible through the gray and misty dawn, close in on the opposite shore, about four miles off. A sharp pull of half an hour brought them to the schooner. She lay on a spit of sand; and her crew were seen, as the boat approached, just going ashore; the receding tide having left her almost dry, so that they were enabled, by jumping over the stern, to reach the shore on foot. It was learned that the vessel had sailed from the Kennebec River the morning previous, and when off Cape Ann, and the crew were engaged shortening sail, she drove close in to the breakers on the shore. The anchor was let go to hold her, but the chain fouled on the windlass, and before it could be cleared she dragged stern on, each sea breaking over her bows and driving her further up on the beach. The crew passed anything but a comfortable night, lashed in the rigging and exposed to the full fury of the storm. They manifested considerable surprise at meeting the little band of men who, at a moment's notice, had come all the way from Newburyport to their rescue. Finding there was no need of their services, the little party, after resting for awhile, started back to the station, where they housed the boat and apparatus, and then returned to their homes. While matters were thus progressing the crew of the station at Davis

Neck (No. 2) were also on the alert. News of the disaster reached the keeper at about the same time word was received at Newburyport, and in such shape that it was deemed inexpedient to take the boat. Such of the members of the crew as could be found were mustered, and, with one volunteer, they hitched a team to the beach apparatus and started for the scene at midnight. The distance by road, which is very circuitous, to the point where the vessel stranded, is twenty-two miles. They reached her at half-past five in the morning to find the crew safely ashore, and that the boat from No. 1 had already been there and gone. The schooner was afterwards got off and taken into Ipswich Harbor for repairs, the damage being estimated at \$1,000, besides the loss of a considerable portion of her cargo.

June 10.—At a very early hour, during a northeast gale, a man who was searching the beach for lobster-traps that might have been driven up by the storm then raging, discovered a schooner lying at anchor just outside the shore breakers near High Pine Ledge, two miles north of Gurnet Point, Massachusetts, with a signal of distress flying. Believing that haste was imperative, he threw off his coat, regardless of the rain, and went with all possible speed to Station No. 4, Second District, (Gurnet Point.) He reached the station at about 5 o'clock and at once informed the keeper. The regular crew having been disbanded for the season, it was necessary to muster one of volunteers. The man who brought the information readily acceded to the keeper's request for assistance, and very soon a sufficient number of lobster-men, including two of the regular crew, were found to man the surf-boat. A hasty breakfast was partaken of, and at 5.50 A. M., the boat was launched and pulled out to the vessel, reaching her after nearly three hours' hard rowing. The sea ran very high, and a strong wind and flood-tide were against them, and it was only in the lulls of the storm that any headway could be made. On arriving at the schooner great caution was necessary to prevent the boat from swamping. The keeper, therefore, directed the captain to pay out a line astern, and by it the surf-boat was hauled alongside and the life-saving crew enabled to board her. She proved to be the schooner Louisa Smith, of Castine, Maine, with a cargo of granite and a crew of five men. She had a scope of forty-five fathoms of chain out, and her anchor was among the breakers. Her boat was stove and therefore useless. The life-saving crew put the vessel under close-reefed sails, buoyed and slipped the anchor, leaving it to be recovered after the subsidence of the storm, and worked her off into the "Cowyard," Duxbury Bay, arriving there about noon. After furling sails and making everything snug, they took the captain ashore to Saquish, from whence he could get conveyance to Plymouth, and then returned to the station a little before 2 o'clock in the afternoon. A few days later, the keeper assisted the crew of the schooner in recovering the anchor which they had slipped to save the vessel from wreck.

June 13.—The lookout of Station No. 3, Ninth District, (Oswego, Lake Ontario,) reported a boat with two boys on board, drifting out into the lake. The supply-boat was immediately launched and pulled out to the boat, which was taken in tow and pulled safely into harbor. The boys had lost their oars, and were about two miles from land when the life-saving crew reached them.

June 13.—A small skiff, with two boys out pleasuring, was blown off shore from Racine, Wisconsin, by a strong gale. The boys, unable to man-

age the boat, were seen from Station No. 14, Eleventh District, (Racine, Lake Michigan,) through the glass. Three surfmen were immediately detailed to man a fish-boat, (that being the most expeditious means of getting to them,) and run down to them under sail. They caught up with them four miles from land, found the skiff half full of water, and the boys exhausted from fright, lying down on the seats, having given themselves up for lost. They had but one whole oar, and to a broken one they had fastened a white coat and hoisted it as a signal of distress. The boys were pulled into the fish-boat, she was put under close-reefed canvas, and the skiff taken in tow, after which she beat her way back to port. The boys must soon have drowned had they not been rescued.

June 17.—The early morning watch of Station No. 6, Eleventh District, (Grand Point au Sable, Lake Michigan,) found the steam-barge Daisy Day, of Manitowoc, Wisconsin, on the beach near the piers at Hamlin, Michigan, she having gone aground in a fog. He ran to the station, gave the alarm, and the surf-boat was speedily launched for her assistance. After going to Hamlin for a tug, the life-saving crew went on board the barge and ran lines to the tug. They then boarded the barge, and threw part of her deck-load off, after which the tug pulled her off.

June 17.—A little boy named John Cutter, of Benton Harbor, Michigan, while fishing fell from the pier at St. Joseph into the lake. Members of the crew of Station No. 10, Eleventh District, (St. Joseph, Michigan,) who were out on the lake, went to the rescue, but the boy had been taken out by a nearer party before they arrived. He was unconscious and was turned over to the life-saving crew, who resuscitated him after forty-five minutes hard work. After breathing was restored he was taken to the station and put to bed until quite recovered.

June 19.—A man who had been rowing down the Genesee river in a skiff attempted to land on the pier at Charlotte, New York. He stepped on the gunwale of the boat, which slid from under him, and he fell into the river. Two of the crew of Station No. 4, Ninth District, (Charlotte, Lake Ontario,) went to his rescue in a skiff. They drew him from the river and took him to a house near by, where he was properly cared for.

June 20.—The Chalcedony, a small schooner of Machias, Maine, bound from Portland to Machias, with a general cargo and a crew of three men, stranded about an eighth of a mile from shore and four miles northwest of Station No. 4, First District, (Little Cranberry Island, Maine.) A surfman belonging to the station, who was in his skiff about a mile from the schooner, hastened to her, and assisted to put out her anchor, after which he helped to work her off, and get her to safe anchorage.

June 20.—At half-past 4 o'clock in the morning, the little schooner Robbie Knapp, of Holland, Michigan, went into St. Joseph for repairs, having sprung a leak at midnight, when forty miles off. The crew of Station No. 10, Eleventh District, (Lake Michigan,) helped put off part of her cargo of lumber, pumped her out, and found the leak.

June 22.—A lad eleven years of age, while fishing fell from the dock at Racine. He was rescued by the keeper of Station No. 14, Eleventh District, (Lake Michigan,) taken to the station, furnished with dry clothing and sent home.

June 25.—At 7 o'clock in the evening, information was received at Station No. 15, Eleventh District, (Milwaukee, Wisconsin,) from a passing

tug that a steamer and a schooner, bound in to Milwaukee, were ashore about one mile north of North Point and five miles distant from the station. The accident occurred at 6 o'clock during the prevalence of a thick fog, and the first intelligence of it was obtained from some men from the steamer, who were approaching the harbor in one of their boats in quest of assistance. Several tugs started at once for the scene, one of them taking the station surf-boat in tow. The life-saving crew arrived alongside the stranded steamer at 8 o'clock, and at once ran her hawser to the tug *Welcome*, and then performed a similar service for the schooner by running her line to the tug *J. J. Hagerman*. This done, the assembled tugs soon succeeded in hauling both vessels off and assisting them into port, which was reached before 11 o'clock. They proved to be the propeller *New York*, of and from Buffalo, with the schooner *F. A. Georges*, of the same port, in tow, the former being laden with a general cargo, and the latter with coal. The crew of the steamer numbered twenty-six persons, while a crew of ten men were on board the schooner. The place where the vessel grounded is very rocky and dangerous, and there is no doubt the prompt action taken was the means of saving much valuable property.

In addition to the foregoing were the services rendered by the respective life-saving crews at the wrecks of the schooner *J. H. Hartzell*, on October 16th, 1880; the schooner *Granada*, on October 17th, 1880; the schooner *Edward Parke*, on October 28th, 1880; the schooner *Falmouth*, on November 21st, 1880; the bark *Josie T. Marshall*, on January 6th, 1881; the schooner *Daniel Goos*, on January 26th, 1881; the bark *Ajace*, on March 4th, 1881; and the schooner *A. B. Goodman*, on April 4th, 1881—these services being narrated in detail in the first part of this report, under the caption of "Loss of Life," mortality having been incident to the several disasters.

TABLE OF WRECKS

WITHIN THE FIELD OF OPERATIONS OF THE LIFE-SAVING SERVICE.

SEASON OF 1880-'81.

LIFE-SAVING SERVICE.—TABLE

DISTRICT No. 1.—EMBRACING COASTS

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1880.						
July 9	Hog Island Ledge	5	Sc. Eastern Light ..	Millbridge, Me.	Kelly	73
July 26	Near Whitehead Island	5	Sc. Cochecho	Camden, Me.	Young	50
Oct. 23	Fisherman's Island	3	Brig Kate Upham ..	St. John, N. B.	Harris	299
Nov. 8	One mile south of Whitehead Light.	5	Sc. Loella*	Portsmouth, N. H. .	Amee	67
Nov. 11	Northeast point of Whitehead Island, half mile from station.	5	Sc. Addie Ryarson ..	Lubec, Me.	Miller	178
Nov. 18	Hadlock's Beach, Little Cranberry Island.	4	Sc. Clinton	Ellsworth, Me.	Lufkin	37
Nov. 20	Northeast point of Whitehead Island.	5	Sc. Helen Maria ...	Camden, Me.	Elwell	46
Nov. 21	North side of Cross Island ..	2	Sc. Hercules	St. John, N. B.	Garrity ...	40
Nov. 24	Little Cranberry Island	4	Brig Maid of Langollen.	do	Sutherland ..	236
Nov. 27	South side of Little Cranberry Island.	4	Sc. Eureka	Weymouth, N. S. ..	Mitchel ...	94
1881.						
Jan. 5	Southeast point of Little Cranberry Island.	4	Sc. John J. Clark ..	Gloucester, Mass. .	Anderson ..	70
Jan. 28	North side of Cross Island Narrows.	2	Sc. Cora	Wiscasset, Me.	Huntington.	54
Mar. 19	Godfrey's Ledge, near mouth of Little River.	7	Sc. Vanguard	Gloucester, Mass. .	Cantainlion	40
Apr. 15	Lobster Cove, north side of Spruce Head Island.	5	Sc. Ariel	Ellsworth, Me.	Candage ..	100
Apr. 19	Sheep Island Bar	5	Sc. Maria Foss	Bangor, Me.	Hodgins ..	97
Apr. 28	Burnt Island Ledge, entrance of Seal Harbor.	5	Sc. Addie L. Perkins.†	Castine, Me.	Thompson ..	84
May 14	Round Shoal, Quoddy Bay ..	1	Sc. Sarah Louise ..	New York	Hickey	100
May 17	Long Ledge, Moos-a-bee Reach.	3	Sc. Maggie May	Machias, Me.	Kelly	8
June 20	Sperlin's Point, four miles northwest of station.	4	Sc. Chalcedony	do	Bryant	43
	Total					

DISTRICT No. 2.—EMBRACING

1880.						
July 20	Two miles northeast of station.	13	Bark Bertolotto Savona. §	Savona, Italy.	Rossi	489
Aug. 16	One hundred yards north of station.	10	Sc. Estella	Wellfleet, Mass. ...	Hawes	70
Aug. 29	Plymouth Beach	4	Sl. Black Diamond ..	Plymouth, Mass. ...	Diman	
Sept. 8	Squan Bar, one mile southwest of station.	2	Sc. Mary A	St. John, N. B.	Glaspy	66
Sept. 8	East end of Ipswich Beach, four miles from station.	2	Sc. Franklin || .....	Wiscasset, Me.	Greenleaf ..	68
Sept. 8	One-third of a mile south of station.	3	Sc. Adirondack	Boston, Mass.	Sullivan	59
Sept. 10	Rocky Hill Point, two miles north of station.	5	Sc. Wellington	Bucksport, Me.	Leach	171
Sept. 13	One and three-quarter miles north of station.	12	Sl. Highland Lass ..	Friendship, Me.	Landon	16
Nov. 8	One and a half miles southwest of station.	14	Sc. C. F. Baird	St. John, N. B.	McLennan ..	70

* Not wrecked, but in perilous position, from which life-saving crew extricated her. Captain of vessel believed she would have been lost without this assistance.

OF WRECKS, SEASON OF 1880-'81.

OF MAINE AND NEW HAMPSHIRE.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
Machias, Me.	Boston, Mass.	Lumber	\$1,500	\$800	\$2,300	\$1,900	\$400	4	4			
Boston, Mass.	Camden, Me.		1,000	1,000	2,000	1,000		4	4			
St. John, N. B.	New York	Deals, laths, &c.	8,000	3,800	11,800	4,100	7,700	10	10		10	20
Portsmouth, N. H.	Bangor, Me.		1,400		1,400	1,400		3	3			
New York	Pembroke, Me.	Iron ore	3,500	2,100	5,600	2,430	3,170	6	6		6	24
In Cranberry Island Harbor, Me.			600		600	560	40	(†)				
Whitehead Island, Me.	Rockland, Me.	Wreckage	900	300	1,200	1,190	10	5	5			
St. John, N. B.	Cutler, Me.		3,000		3,000	2,900	100	4	4		4	36
do	Baltimore, Md.	Laths and piling.	8,000	3,000	11,000	11,000		8	8			
Weymouth, N. S.	Boston, Mass.	Wood	4,000	300	4,300	4,300		7	7			
Eastport, Me.	Gloucester, Mass.	Fish	4,000	800	4,800	4,500	300	6	6		6	6
Cutler, Me.	Rockland, Me.	Wood	800	100	900	800	100	3	3			
Fish'g Grounds.	Portsmouth, N. H.	Fish	800	250	1,050	200	850	10	10		10	10
Ellsworth, Me.	Cambridge, Mass.	Lumber	1,000	1,000	2,000	1,300	700	4	4			
Lynn, Mass.	Bangor, Me.		1,200		1,200	1,200		4	4			
Penobscot, Me.	Boston, Mass.	Brick	2,000	2,400	4,400	4,100	300	4	4			
Boston, Mass.	Calais, Me.		2,000		2,000	1,700	300	4	4			
Jonesport, Me.	Fishing	Fish	400	50	450	450		3	3			
Portland, Me.	Machias, Me.	General	1,200	2,000	3,200	3,200		3	3			
			45,300	16,900	62,200	48,230	13,970	92	92		36	96

COAST OF MASSACHUSETTS.

Trapani, Italy	Gloucester, Mass.	Salt	10,000	2,000	12,000	10,800	1,200	12	12			
New York	Wellfleet, Mass.	do	1,200	600	1,800		1,800	4	4		4	16
Fishing	Plymouth, Mass.	Fish	100	2	102	80	22	2	2			
St. John, N. B.	Salem, Mass.	Bark	500	600	1,100	800	300	6	6			
Wiscasset, Me.	Weymouth, Mass.	Lumber	1,000	1,000	2,000	500	1,500	3	3			
Fishing	Boston, Mass.	Fish	3,000	500	3,500	3,400	100	14	14		14	14
Bangor, Me.	Greenwich, Conn.	Lumber	6,000	2,500	8,500	185	8,315	5	5		5	18
Chatham, Mass.	Boston, Mass.	Lobsters	500	80	580	580		2	2			
Norwalk, Conn.	St. John, N. B.		2,000		2,000	1,850	150	5	5			

† No one on board.

§ No assistance rendered by life-saving crew.

* Vessel got off by revenue-steamer Dallas.

|| Crew came ashore in their own boat.

DISTRICT No. 2.—EMBRACING

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1880.						
Nov. 28	Beetle's Rock, South Marsh- field, four miles south of station.	3	Sc. Fanny Fern*	Provincetown, Mass.	Nickerson.	9
Nov. 30	One mile east of station	7	Sl. C. E. Trumbull	Rockport, Mass.	Elwell.	100
1881.						
Jan. 25	Two miles south of station	12	Sc. Edmund	St. John, N. B.	Barnes	107
Jan. 26	Two miles west of station	7	Sc. Alfred Keen	Rockland, Me.	Henderson.	242
Jan. 30	Three miles southeast of sta- tion.	13	Sc. A. C. Watson†	St. John, N. B.	Starkey	111
Feb. 4	Brown's Island Shoals	4	Sc. William	Ellsworth, Me.	Staples	89
Mar. 26	Peak'd Hill Bar	7	Sc. Light of the East.	Boston, Mass.	Ober	137
Apr. 9	do	7	Sc. Alice T. Board- man.	Calais, Me.	Lunt	49
Apr. 15	One and three-quarter miles north of station.	4	Sc. Ganges	Ellsworth, Me.	Leach	94
Apr. 23	One-quarter mile north of sta- tion.	9	Fishing-boat		Rogers	
May 8	North Breakers, three miles north of station.	1	Sl. Z. S. Walling- ford.	Gloucester, Mass.	Nelson	10
May 21	Fox Bottom Hollow, Truro.	9	Bkne. Freeda A. Willey.	Thomaston, Me.	Willey	534
June 10	Essex Beach, fourteen miles south of station.	1	Sc. Alice Oakes‡	Gardiner, Me.	Ryder	146
June 10	High Pine Ledge, two miles north of station.	4	Sc. Louisa Smith	Castine, Me.	Webber	144
	Total					

DISTRICT No. 3.—EMBRACING COASTS

1880.						
Sept. 27	Northwest side of Block Island.	5	Brig Castalia*	Richmond, Me.	Libbey	516
Oct. 8	Jones' Inlet, Long Island	30	Sl. United States	Sayville, N. Y.	Degraff	5
Oct. 8	do	30	Sail-boat Bride of the Mine.	do	Hook	4
Oct. 20	Grove Point, Block Island	4	Tug S. W. Schuyler§	Albany, N. Y.	Bird	32
Oct. 21	Southwest point of Block Island.	5	Open boat	Block Island, R. I.	Steadman	
Oct. 24	One-half mile east of station	32	Bk. W. A. Holcomb	Bath, Me.	Dunton	953
Oct. 28	Sugar Reef, three miles west of Watch Hill.	3	Sc. J. W. Fish	St. George, Me.	Watts	205
Nov. 8	Fire Island Bar	25	Sl. Equator	Patchogue, L. I.	Reybert	8
Nov. 19	East Clump, Fisher's Island Sound.	3	Sc. Paul and Thomp- son. ||	Perth Amboy, N. J.	Brown	204
Dec. 1	Tombstones, Fisher's Island	3	Brig Nellie	New York	Price	195
Dec. 11	Abreast of station	17	Open boat	West Hampton, N. Y.	Raynor	
Dec. 30	One mile east of Smith's Point.	20	Bark Idaho	New York	Richardson	411
1881.						
Jan. 1	Abreast of station	19	Bark L. C. ||	Nantes, France		152
Jan. 2	One mile east of station	35	So. Mary E. Turner	Norfolk, Va.	Camp	112
Jan. 7	One and a half miles east of station.	12	Sc. Loretto Fish	Thomaston, Me.	Watts	316

* No assistance rendered by life-saving crew.

† In distress; relieved by life-saving crew and revenue-steamer Gallatin.

‡ Crew came ashore in their own boat.

COAST OF MASSACHUSETTS—Continued.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
Plymouth, Mass.	Marshfield, Mass.		\$150		\$150	\$100	\$50	3	3			
New Bedford, Mass.	Rockport, Mass.	Coal	3,000	\$100	3,100	3,100		6	6	4	4	
Canning, N. S.	New York	Potatoes	4,000	3,000	7,000	5,500	1,500	6	6			
Richmond, Va.	Portland, Me.	Coal	5,000	2,000	7,000		7,000	7	7	7	14	
St. John, N. B.	New York	Lumber	3,000	2,000	5,000	3,500	1,500	5	5			
Boston, Mass.	South Duxbury, Mass.	Vitriol and bonedust.	1,000	3,500	4,500		4,500	3	3	3	13	
New York	Boston, Mass.	Coal	4,000	800	4,800	4,800		6	6			
do	do	Iron	3,000	2,500	5,500	5,400	100	5	5			
Wiscasset, Me.	New Haven, Conn.	Lumber	2,000	1,500	3,500	1,500	2,000	4	4	4	15	
Fishing		Fish	20	20	40	30	10	2	2	2	2	
Gloucester, Mass.	Fishing		1,000		1,000	800	200	4	4			
Pascagoula, Miss.	Boston, Mass.	Lumber	35,000	12,000	47,000	37,400	9,600	8	8			
Gardiner, Me.	New York	do	7,000	2,500	9,500	7,500	2,000	5	5			
Frankfort, Me.	do	Stone	3,500	5,000	8,500	8,500		5	5			
			95,970	42,202	138,172	96,325	41,847	122	122	43	96	

OF RHODE ISLAND AND LONG ISLAND.

New York	Seville and Cadiz	General	20,000	30,000	50,000	49,800	200	9	9			
Tarrytown, N. Y.	Saville, N. Y.	Oysters	300	75	375	375		2	2	1	1	
do	do	do	250	60	310		310	3	3			
Newport, R. I.	New Shoreham, R. I.		2,500		2,500		2,500	3	3			
Block Island, R. I.	Fishing		30		30	30		1	1			
Hollo, Philippine Islands.	New York	Sugar	30,000	150,000	180,000		180,000	17	17	3	6	
Bangor, Me.	do	Ice	2,000	1,500	3,500	3,500		6	6			
Jersey City, N. J.	Islip, N. Y.	Coal	1,000	100	1,100	1,100		2	2			
Newport, R. I.	New York		5,000		5,000	5,000		6	6			
Curaçoa, W. I.	Bridgeport, Conn.	Salt	5,000	800	5,800		5,800	10	10			
West Hampton, N. Y.	Fishing	Fish	50	30	80	50	30	2	2			
Cienfuegos, Cuba.	New York	Sugar	8,000	10,000	18,000	18,000		18	18	1	1	
do	do	Railroad-iron.	(¶)					13	13			
Smithfield, Va.	do	Wood	1,200	1,000	2,200	200	2,000	5	5	5	15	
Savannah, Ga.	Boston, Mass.	Lumber	4,000	4,000	8,000	2,000	6,000	8	8	7	15	

§ No assistance by life-saving crew; crew landed in their own boat.

|| No assistance required from life-saving crew.
¶ Values not ascertained.

DISTRICT No. 3.—EMBRACING COASTS OF

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1881.						
Jan. 7	West end of Oak Island.....	27	Bark Josie T. Marshall.	Digby, N. S.....	Parker.....	1, 072
Jan. 23	One and a half miles west of station.	17	Ship Geestemunde.	Geestemunde, Germany.	Lutke.....	1, 133
Jan. 30	Three-quarters of a mile west of Shinnecock Light.	15	Str. Bristol.....	Bristol, England..	Symons...	1, 274
Feb. 12	One-half mile north of station.	1	Sc. Edward H. Norton.	Wellfleet, Mass...	Foster.....	57
Feb. 28	One mile west of station.....	15	Sc. Walter B. Chester.	do.....	Brown.....	429
Mar. 4	Eastern part of Rockaway Shoals.	37	Bark Ajace.....	Genoa, Italy.....	Morice.....	566
Mar. 4	Lloyd's Neck Point.....	38	Sc. Albert C. Paige.	Bridgeton, N. J...	Haley.....	379
May 16	Abreast of station.....	38	Sc. Isaac P. Hazard.	Newport, R. I....	Luther.....	40
May 29	Watch Hill Reef, Rhode Island.	3	Sc. Julia Elizabeth.	Blue Hill, Me.....	Candage..	105
June 7	Catumb Reef, two and a half miles west-southwest of station.	3	Sc. Sandalphon.....	New York.....	Price.....	93
	Total.....					

DISTRICT No. 4.—EMBRACING

1880.						
July 3	Shoals one mile south of station.	40	Sc. Electa Bailey...	Philadelphia, Pa..	Smith.....	344
July 12	Shoals two miles south of station.	40	Sc. Mabel Rose.....	do.....	Allen.....	388
Aug. 19	Off Atlantic City.....	28	Open boat, Albert Diston.	Atlantic City, N. J.	Bradford.....	
Aug. 25	One-quarter mile north of station.	4	Sl. Emma.....	Jersey City, N. J..	Letts.....	20
Sept. 4	do.....	27	Sc. James S. Hewitt.	Philadelphia, Pa..	Adams.....	204
Sept. 15	South point of North Beach, two miles south of station.	16	Sail-boat Mist.....	Waretown, N. J..	Holmes.....	
Sept. 18	South end of Anchorage Island.	23	Sc. Margaret Amelia.	Absecom, N. J....	Sooy.....	50
Sept. 25	Spermaceti Cove, one mile west of station.	2	Sl. Anneke.....	Atlantiville, N. J.		1
Sept. 28	One and one-half miles northeast of Barnegat Light.	16	Sc. C. H. Foster....	Boston, Mass.....	Coombs...	385
Oct. 3	East point of North Shoal, Great Egg Harbor Bar.	29	Sl. George Anderson.*	Somers Point, N. J.	Somers.....	4
Oct. 13	Little Beach, North Brigantine.	24	Sl. Lidie Jones.....	Tuckerton, N. J..	Conklin...	13
Oct. 16	Mouth of Tom's River.....	12	Sail-boat.....	Island Heights, N. J.	Wood.....	1
Nov. 1	Turtle Gut Bar.....	38	Sl. Little Moses....	Bridgeton, N. J..	Hoffman..	6
Nov. 11	Two hundred yards south of station.	11	Bark Formosa.....	Miramichi, N. B..	Stewart...	638
Nov. 16	do.....	11	do.....	do.....	do.....	638
Nov. 16	Shoal one mile south of station.	23	Sc. Susan Jane.....	Tuckerton, N. J..	Andrews..	49
Nov. 27	North side of Hereford Shoals.	36	Sc. Ovetta.....	New Haven, Conn.	Hervey...	128
Dec. 2	One mile northeast of station	27	Sl. William Tell....	Somers Point, N. J.	Watson...	24
Dec. 7	One and three-quarter miles northeast Barnegat Light.	16	Sc. Samuel Castner, jr.	Philadelphia, Pa..	Burroughs.	239

*No assistance required of life-saving crew.

RHODE ISLAND AND LONG ISLAND—Continued.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
Antwerp, Belgium.	New York		\$44,000		\$44,000	\$44,000		17	16	1	6	18
do	do	Iron and barrels.	25,000	\$12,000	37,000	\$37,000		19	19			
Bristol, England.	do	Tin and coal.	100,000	80,000	180,000	175,000	5,000	48	48			
Boston, Mass.	Patuxent River		4,000		4,000	3,000	1,000	5	5		5	20
Philadelphia, Pa.	Boston, Mass.	Coal	16,000	3,000	19,000	25	18,975	8	8		8	40
Antwerp, Belgium.	New York	General	11,320	9,201	20,521	6,124	14,397	14	11	3	1	1
Boston, Mass.	do	Fish-oil	16,000	6,000	22,000	22,000		7	7			
Connecticut.	do	Posts and rails.	4,000	150	4,150	150	4,000	3	3			
Bangor, Me	Orient, L. I.	Lumber	2,000	550	2,550	550	2,000	4	4			
New York	Boston, Mass.	Coal and furniture.	1,500	500	2,000	2,000		8	8			
			303,150	308,966	612,116	325,904	286,212	238	224	14	37	117

COAST OF NEW JERSEY.

Gardiner, Me.	Philadelphia, Pa.	Ice	12,000	1,500	13,500	13,500		7	7			
Boston, Mass.	do		20,000		20,000	20,000		7	7			
Atlantic City, N. J.			100		100	100		1	1			
Jersey City, N. J.	Fishing Banks.		2,000		2,000	1,500	500	8	8		6	6
Boston, Mass.	Philadelphia, Pa.		16,000		16,000	14,500	1,500	6	6			
Ware town, N. J.	Barnegat Inlet.		1,000		1,000	990	10	7	7			
Fish'g Grounds	Absecom, N. J.	Fish	2,000	50	2,050	2,050		8	8			
Atlantieville, N. J.	Sandy Hook, N. J.		75		75	75		2	2		2	2
Boston, Mass.	Philadelphia, Pa.		15,000		15,000	11,000	4,000	7	7			
Somers Point, N. J.			400		400	380	20	2	2			
New York	Tuckerton, N. J.	Coal	800	75	875	700	175	2	2		2	4
Sea Side Park, N. J.	Island Heights, N. J.		25		25	15	10	1	1			
Philadelphia, Pa.	Cape May, N. J.	Coal	400	43	443	343	100	2	2			
New York	Charleston, S. C.		25,000		25,000		25,000	14	14		14	52
do	do							21	21		21	21
Tuckerton, N. J.	New York	Charcoal and hay.	1,800	507	2,307	1,735	572	6	6		5	5
New Haven, Conn.	Virginia		8,000		8,000	8,000		6	6			
Fishing off Atlantic City, N. J.			1,200		1,200	1,200		3	3			
Providence, R. I.	Philadelphia, Pa.		10,000		10,000	10,000		6	6			

†Twenty-one men, part of vessel's crew, and wreckers taken ashore by life-saving crew.

DISTRICT No. 4.—EMBRACING COAST

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1880. Dec. 30	One mile northeast of station	27	Sc. George W. Rogers.	Greenport, N. Y.	Scott	42
1881. Jan. 6	{ One and one-quarter miles north of station No. 25 }	27	} Sc. Anson Stimson.	Gloucester, Mass.	McLane	224
Jan. 21		28		} Sl. Wm. H. Mills.	Little Egg Harbor.	Parker	12
Jan. 28	One mile east of station	17	Sc. Chas. M. New- ins.	New York	Tuttle	384
Feb. 1	South point of beach, Shark River Inlet.	7	Str. Koraima	London, England.	Trattles	761
Feb. 2	South Shoals, Absecom Inlet.	27	Sl. John Roach	Greenport, N. Y.	Darby	30
Feb. 12	One-half mile south of Squan Inlet.	10	Bg. Veloz	Barcelona, Spain	Zugasti	145
Feb. 23	Crow Shoals, two miles northwest of station.	14	Sc. Anna Brown	Perth Amboy, N. J.	Harvey	43
Mar. 1	Quarter mile south of station.	2	Sc. Elizabeth A. Baizley.*	Philadelphia, Pa.	Lewis	373
Mar. 19	One and one-half miles north of station.	23	Bkne. N. N.	Amsterdam, Hol- land.	Van Duz- venbode.	181
Mar. 26	Brigantine Shoals	27	Sc. L. T. Whitmore.	Rockland, Me.	Campbell.	295
Mar. 30	Barnegat Inlet	17	St.-yacht Sprite	Newark, N. J.	Taylor	12
Apr. 3	Brigantine Shoals	25	Sc. W. D. Cargill	Deer Isle, Me.	Low	141
Apr. 14	One mile north of station	13	Ship Transit	New York	Hagen	1, 132
May 1	South Bar, Cold Spring Inlet.	39	Sc. Shekinah	Bridgeton, N. J.	Shaw	84
May 7	South Bar, Cold Spring Inlet.	39	Sc. Mary S. Ewing.	do.	Ewing	59
May 15	North Bar, Cold Spring Inlet.	39	Sc. Blanche Hop- kins.	Philadelphia, Pa.	Bowman	634
May 24	One and one-half miles south of Squan Inlet.	10	Bark Cremona	New York	Gove	608
June 9	One and a quarter miles north of station.	19	Open boat	Harvey Cedars, N. J.		
	Total					

DISTRICT No. 5.—EMBRACING COAST BETWEEN

1880. Oct. 4	Abreast of station	2	Fishing-boat	Rehoboth City, Del.	Burbage	
Oct. 22	{ Southeast end of Hog Isl'd Shoals }	9	} Bark Giambattis- ta Primo }	Genoa, Italy	Dagnino	516
Oct. 27		10		} Brig Zetland	Richibucto, N. B.	Keating	288
Nov. 7	Point of Cape Henlopen, little north of light-house.	1				
Nov. 7	Four miles southwest of sta- tion.	11	Sc. Sallie Coursey	Wilmington, Del.	Pardee	179
Nov. 14	Dawson shoal, one and a half miles south of station.	8	Sc. John S. Higgins	Provincetown, Mass.	Cook	47
Nov. 22	East end of Isaac Shoals	11	Sc. Maggie E. Gray	Baltimore, Md.	Crockett	406
Dec. 7	Two and a half miles east of station.	10	Sc. Rob't W. Brown	Key West, Fla.	Miller	177
Dec. 19	Fox Shoal, three miles south- west of station.	7	Sc. Madora Frances	Chincoteague, Va.	Hudson	24
Dec. 26	One hundred yards west of railroad pier, Lewes.	1	Bark W. T. Har- ward.†	Yarmouth, N. S.	McCullom	666
Dec. 26	Iron pier, Lewes	1	Str. Wanderer†	Newburyport, Mass.	Taylor	36

* No assistance required of life-saving crew.

OF NEW JERSEY—Continued.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
Atlantic City, N. J.	New York	Fish	\$1,600	\$200	\$1,800	\$1,800		5	5			
{ Macoris, San Domingo	{ ..do	{ Sugar, molasses, &c.	17,000	18,000	35,000		\$35,000	7	7			
Little Egg Harbor.	do	Oysters	800	450	1,250		1,250	2	2		2	2
Mobile, Ala	do	Rosin	10,000	5,000	15,000	14,775	225	7	7			
Demerara, S. A.	do		150,000		150,000	150,000		23	23			
New York	Fishing		2,200		2,200	50	2,150	8	8		7	42
Porto Rico, W. I.	New York		3,500		3,500		3,500	10	10		4	4
New York	Tom's River, N. J.	Gas-lime	2,500	100	2,600	2,500	100	3	3			
Charleston, S. C.	New York	Phosphate rock.	10,000		10,000	10,000		7	7			
Samarang, Java.	do	Coffee and rattan.	5,000	100,000	105,000	2,000	103,000	7	7		7	21
Alexandria, Va.	do	Corn	8,000	11,000	19,000	18,400	600	8	8			
Newark, N. J.	Tom's River, N. J.		3,000		3,000	3,000		3	3		2	2
St. John, N. B.	Philadelphia, Pa.	Lumber	4,000	1,800	5,800	5,800		4	4			
Liverpool, England.	New York	General	20,000	25,000	45,000	40,000	5,000	16	16		12	24
Malden, N. Y.	Cape May City, N. J.	Flagstones.	4,000	600	4,600	4,600		5	5			
Newburgh, N. Y.	Cape May, N. J.	do	6,000	800	6,800	6,700	100	5	5			
Boston, Mass.	Philadelphia, Pa.		35,000		35,000	35,000		8	8			
Marseilles, France.	New York		15,000		15,000	7,000	8,000	16	16			
Harvey Cedars, N. J.	Barnegat Inlet, N. J.		30		30	30		2	2			
			413,430	165,125	578,555	387,743	190,812	262	262		84	185

CAPE HENLOPEN AND CAPE CHARLES.

Rehoboth City, Del.	Fishing		80		80	80		1	1			
Ipswich, Eng.	Baltimore, Md.		34,000		34,000	34,000		13	13		13	26
Miragoane, Hayti.	Delaware Breakwater.	Logwood	4,000	7,000	11,000	11,000		8	8			
Georgetown, S. C.	Rondout, N. Y.	Lumber	8,000	3,400	11,400		11,400	6	6		6	18
Boston, Mass.	Norfolk, Va	Fish and apples.	1,000	800	1,800	200	1,600	3	3		3	12
Portsmouth, N. H.	Baltimore, Md.		12,000		12,000	12,000		8	8			
Philadelphia, Pa.	Fort Monroe	Coal	4,000	750	4,750		4,750	7	7		7	7
do	Chincoteague, Va.	Merchandise.	1,500	1,000	2,500	2,500		5	5			
Calais, Me.	Delaware Breakwater.		20,000		20,000		20,000	14	14			
Newburyport, Mass.	Apalachicola, Fla.		3,000		3,000		3,000	5	5			

†No assistance rendered by life-saving crew.

DISTRICT No. 5.—EMBRACING COAST BETWEEN

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1880.						
Dec. 29	Dawson Shoals, Va	8	Sc. Elysia A	St. John, N. B	Holmes	88
Dec. 29	Carter's Shoal, Cobb's Isl'd, Va.	10	Sc. Elizabeth White.	New York	Lear	126
Dec. 31	Three and a half miles north of station.	5	Sc. Mary D. Ireland.	Philadelphia, Pa ..	Corson	265
1881.						
Jan. 20	North end of Paramore Beach.	8	Bark Kwasind	Sackville, N. B....	Sprague	984
Jan. 26	Carter's Shoal, Cobb's Isl'd, Va.	10	Bark John Eills*	St. John, N. B	Simpson	762
Jan. 28	Turner's Shoal, off Chincoteague.	7	Sc. D. Ellis	Rockland, Me	Torrey	70
Feb. 3	Off Rehoboth City	2	Brig Arendal	Arendal, Norway ..	Nilson	529
Feb. 13	Hen and Chickens Shoals	2	Bark Beatrice	Annapolis, N. S	McCallum	522
Mar. 3	Three and a half miles north of station.	5	Bark Syringa	Scarboro', Eng	Nicholson	379
Mar. 3	Isaac Shoals, Va.	11	Sc. Henrietta*	Norfolk, Va	Larkin	33
Mar. 10	Southwest side of Ship Shoal, off Assateague Island.	7	Sc. William Allen	Perth Amboy, N.J.	Stealman	316
Mar. 28	Turner's Shoal, off Chincoteague.	7	Sc. Mabel Thomas	New Haven, Conn.	McKenzie	335
Apr. 30	Middle Ground, off Cape Charles.	11	Sc. Kendrick Fish*	St. George, Me	Wall	144
May 15	Extreme point of Cape Henlopen.	1	Bkne. Hazelwood	Aberystwith, Eng.	Daniel	354
May 21	Two miles north of station	3	Sc. Sarah E. Walter*	New York	Weed	17
June 9	.....do	1	Jos. and Franklins .....	.....do	Lippincott	155
	Total					

DISTRICT No. 6.—EMBRACING COAST

1880.						
Nov. 5	Two hundred and fifty yards south of station.	1	Str. Sandringham ..	Glasgow, Scotland.	McKay	737
Nov. 16	One mile from bar, on south side of Oregon Inlet.	16	Sc. Mary J. Fisher.	Philadelphia, Pa ..	Camp	140
Nov. 22	One mile south of Hatteras Inlet.	23	Sc. Kate Miller; .....	.....do	Scull	349
1881.						
Jan. 11	Abreast of station	1	Ship Nettie Murphy	Yarmouth, N. S. ...	Raymond	1,373
Feb. 8	One mile north of station	1	Brig Rosalia Starita.	Naples, Italy	Maresca	422
Feb. 10	{ Between stations Nos. 1 } { and 2	{ 1 } { 2 } { 2 }	{ Bark Joanna H. } { Cann	{ Yarmouth, N. S. } {	{ Tooker	{ 1,169
Mar. 2	Cape Henry	1	Sc. L. S. Levering; ..	Wilmington, Del ..	Corson	299
Mar. 23	Hog Island Channel, Currituck Sound.	9	Yacht Mary Jane ..	Currituck, N. C. ...	Greaves	3
Apr. 4	Outer edge of inner shoal, Cape Hatteras.	22	Sc. A. B. Goodman.	Seaford, Del	Seward	122
Apr. 6	North side of Oregon Inlet Bar.	16	Str. Resolute|| .....	Norfolk, Va	Baker	124
Apr. 21	{ Midway between stations } { Nos. 4 and 5	{ 4 } { 3 }	{ Bark Dictator	{ Tvedstrand, Nor- } { way	{ Christen- } { sen	{ 578
May 23	Abreast of station	1	Sc. David F. Keeling.¶	Baltimore, Md	Owens	209
	Total					

* No assistance rendered by life-saving crew.

† Collided with steamer Pottsville and drifted ashore.

; Got off with assistance of steam-tug and revenue-steamer Hamilton.

CAPE HENLOPEN AND CAPE CHARLES—Continued.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
St. Thomas, W. I.	New York.....	Salt.....	\$3,000	\$1,200	\$4,200	\$1,500	\$2,700	7	7	..	7	42
York River, Va.	Philadelphia, Pa.	Railroad-ties.	3,000	1,155	4,155	.....	4,155	5	5	..	5	15
Richmond, Va.	New York.....	Coal.....	10,000	2,000	12,000	12,000	.....	6	6	..	6	6
Hamburg, Germany.	Baltimore, Md.	General...	30,000	7,000	37,000	250	36,750	17	17	..	..	..
Waterford, Ireland.	Hampton Roads.	.....	20,000	.....	20,000	20,000	.....	12	12	..	..	..
Norfolk, Va. ...	New York.....	Corn.....	2,000	2,100	4,100	.....	4,100	4	4	..	4	12
Cronstadt, Russia.	Philadelphia, Pa.	Old railroad-iron.	10,000	20,000	30,000	28,000	2,000	13	13	..	13	13
St. Thomas, W. I.	do.....	Soda ash	15,000	13,255	28,255	25,255	3,000	13	13	..	..	..
Pernambuco, Brazil.	do.....	Sugar	10,000	35,000	45,000	.....	45,000	13	13	..	13	39
Norfolk, Va. ...	Isaac Shoals, Va.	.....	1,000	.....	1,000	700	300	6	6	..	..	..
Baltimore, Md.	Hoboken, N. J.	Coal.....	10,000	1,900	11,900	11,900	.....	7	7	..	..	..
do.....	Boston, Mass.	do.....	20,000	2,200	22,200	22,100	100	7	7	..	..	..
New York.....	Rappahannock River.	.....	3,000	.....	3,000	3,000	.....	4	4	..	..	..
Trinidad, Cuba.	Delaware Breakwater.	Sugar....	6,000	30,000	36,000	36,000	.....	10	10	..	..	..
Norfolk, Va. ...	New York.....	.....	1,400	.....	1,400	1,300	100	3	3	..	..	..
do.....	do.....	Lumber...	4,000	1,500	5,500	1,000	4,500	7	7	..	..	..
.....	.....	.....	235,980	130,260	366,240	188,785	177,455	204	204	..	77	190

BETWEEN CAPE HENRY AND CAPE FEAR.

Galveston, Texas.	Liverpool, England.	Cotton....	75,000	160,000	235,000	230,000	5,000	18	18	..	18	40
Pungo River, N. C.	Philadelphia, Pa.	Lumber...	7,000	5,000	12,000	11,820	180	5	5	..	..	..
Wilmington, Del.	Galveston, Tex.	Railroad-iron.	12,000	40,000	52,000	25,000	27,000	8	8	..	5	20
Tusket, N. S. ...	Norfolk, Va. ...	.....	75,000	.....	75,000	75,000	.....	20	20	..	..	..
Catania, Italy.	Baltimore, Md.	Brimstone.	30,000	12,000	42,000	42,000	.....	12	12	..	..	..
{ Antwerp, } { Belgium. }	do.....	.....	65,000	.....	65,000	600	64,400	17	17	..	..	..
Philadelphia, Pa.	Alexandria, Va.	Coal.....	8,000	2,000	10,000	9,600	400	7	7	..	..	..
Curruck Beach, N. C.	Poplar Branch, N. C.	.....	200	.....	200	200	.....	1	1	..	..	..
Baltimore, Md.	Newbern, N. C.	Guano....	7,000	10,000	17,000	.....	17,000	5	4	1	4	8
Norfolk, Va. ...	Hatteras Inlet.	Wrecking materials.	8,000	6,000	14,000	13,700	300	8	8	..	..	..
{ Boston, } { England. }	Baltimore, Md.	.....	25,000	.....	25,000	25,000	.....	13	13	..	..	..
Charleston, S. C.	do.....	Lumber...	5,000	3,000	8,000	5,000	3,000	7	7	..	7	143
.....	.....	.....	317,200	238,000	555,200	437,920	117,280	121	120	1	34	211

§ No assistance required of life-saving crew.
¶ Crew landed in their own boat.

|| Got off without assistance.

DISTRICT No. 7.—EASTERN

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1881. June 2	One and a half miles south-east of station.	5	Str. Canonbury.....	London, England..	Taylor	1, 098

DISTRICT No. 8.—EMBRAC

1880. Nov. 3	Two miles north of Pass Cavallo Bar.	4	Sc. Mary.....	Indianola, Texas..	Dyer.....	30
Nov. 4	Cylinder Channel.....	4	Sc. Stony Brook....	Galveston, Texas..	Leithead ..	60
Nov. 22	One mile north of Pass Cavallo Bar.	4	Sc. Ajax.....	Indianola, Texas..	Northup ..	319
1881. Jan. 26	Three miles southwest of light-house, Matagorda Island.	4	Sc. Daniel Goos	Boston, Mass.....	Norman ...	150
Feb. 5	West bank of Sabine Pass ..	1	Sc. Try Again.....	Galveston, Texas..	Sterling ...	15
Feb. 11	Pelican Island, one mile northeast of Pass Cavallo Bar.	4	Sc. Garnock.....	Corpus Christi, Texas.	Kelly.....	73
Apr. 26	One mile north of Pass Cavallo Bar.	4	Sc. Josephine.....	Indianola, Texas..	Farwell ...	14
	Total.....					

DISTRICT No. 9.—EMBRACING

1880. July 18	One mile east of station.....	4	Yacht Fanchon	Charlotte, N. Y ...	Cramer.....	
July 20	One mile east of harbor, Charlotte, N. Y.	4	Yacht Storm.....	do.....	Van Voorhes.	
Aug. 2	One-half mile west of station.	6	Fish-boat.....	Erie, Pa.....	Pfister.....	
Aug. 7	Near mouth of Big Sandy Creek.	1	Open boat.....	Big Sandy, N. Y ..		
Aug. 16	Bar at mouth of Big Sandy Creek.	1	Sc. Fiat.....	do.....	Jenkins ..	38
Sept. 7	Four and a half miles north-east of station.	9	Fish-boat Eudora ..	Point au Pelée, Canada.	Bartran ..	
Sept. 10	Near entrance to harbor, Charlotte, N. Y.	4	Sc. Isabella.....	Napanee, Ontario ..	Ure.....	50
Sept. 21	Beach near Buffalo harbor ..	5	Open boat.....	Bay City, Mich.....	Bennett ..	
Sept. 24	Bar outside of harbor, Fairport, Ohio.	7	Sc. Helvetia.....	Buffalo, N. Y.....	Winslow ..	800
Sept. 30	One-half mile north of Port Ontario.	2	Sc. Volunteer.....	Hammond, N. Y ..	Hermens ..	52
Oct. 4	One-half mile east of station.	3	Sc. Sea Bird.....	Kingston, Canada.	Cameron ..	160
Oct. 5	One hundred and twenty rods east of station.	9	Sc. H. A. Lamars ..	Cleveland, Ohio ...	Moore.....	88
Oct. 6	Two miles northwest of station.	6	Sc. George Sherman.	do.....	Deott.....	323
Oct. 22	West Pier, Cleveland, Ohio ..	8	Sc. Josephine.....	Montreal, Canada ..	McLeod ..	200
Oct. 22	do.....	8	Sc. A. Muir.....	St. Catharine's, Canada.	Kean.....	300
Oct. 26	Bar at mouth of Big Sandy Creek.	1	Sc. Mist.....	Oswego, N. Y.....	Tift.....	13

* No one on board.

COAST OF FLORIDA.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
			Dolls.	Dolls.	Dolls.	Dolls.	Dolls.					
Sidney, Cape Breton.	Havana, Cuba.	Coal.....	225,000	12,000	237,000	233,400	3,600	18	18			

ING COAST OF TEXAS.

Orange, La....	Corpus Christi, Texas.	Railroad-ties.	2,000	1,500	3,500	2,900	600	3	3			
Galveston, Texas.	do.....	Railroad-iron.	1,500	4,000	5,500		5,500	5	5	5	25	
Indianola, Tex.	Pensacola, Fla.		15,000		15,000	15,000		8	8			
Galveston, Texas.	Corpus Christi, Texas.	Railroad-iron.	7,000	15,900	22,900		22,900	8	5	3	4	12
Beaumont, Tex.	Galveston, Tex.	Hides and lumber.	800	500	1,300	1,300		5	5			
Orange, La....	Corpus Christi, Texas.	Railroad-ties.	3,000	1,800	4,800	4,700	100	4	4	4	16	
Pilot-vessel Cavallo.	used at Pass		2,000		2,000	2,000		2	2			
			31,300	23,700	55,000	25,900	29,100	35	32	3	13	53

LAKES ONTARIO AND ERIE.

Lying at anchor.			200		200	180	20	(*)				
Charlotte, N.Y.	On pleasure trip.		300		300	300		2	2			
Fish'g Ground.	Erie, Pa.....	Fish.....	300	90	390	290	100	2	2			
Fishing.....	Big Sandy, N. Y.		30		30	30		3	3			
Trent, Ont....	do.....	Lumber...	3,000	545	3,545	3,545		4	4			
Sandusky, Ohio.	Point au Pelée Isl'd, Canada.		100		100	80	20	3	3			
Whitby, Ont..	Sodus Point, N. Y.	Iron ore...	1,000	400	1,400		1,400	4	4			
			30		30	30		4	4			
Escanaba, Mich.	Fairport, Ohio.	do.....	40,000	4,000	44,000	44,000		10	10			
Brockville, Canada.	Oswego, N. Y.	Hop-poles.	1,000	800	1,800	800	1,000	4	4			
Trenton, Canada.	do.....	Lumber...	2,000	1,900	3,900	3,400	500	11	11	11	11	
Marblehead, Ohio.	Cleveland, Ohio.	Limestone.	2,500	84	2,584	784	1,800	5	5			
Marquette, Mich.	Erie, Pa.....	Iron ore...	8,000	4,000	12,000	12,000		8	8			
Port Colborn, Ontario.	Black River		5,000		5,000	4,500	500	7	7	4	4	
do.....	Cleveland, Ohio.		15,000		15,000	14,800	200	8	8			
Oswego, N. Y.,	Big Sandy Creek, N. Y.	Miscellaneous.	600	270	870	862	8	2	2			

† Boat belonged to schooner Seminole, bound from Bay City to Buffalo.

DISTRICT No. 9.—EMBRACING LAKES

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1880.						
Oct. 30	Six and a half miles west of Charlotte, N. Y.	4	Sc. Odd Fellow.....	Toronto, Canada..	Robertson.	62
Oct. 31	Government new pier, Oswego, N. Y.	3	Sc. Tranchemontague.	Montreal, Canada.	Sherwood.	133
Nov. 5	Bar at mouth of Big Sandy Creek.	1	Sc. Mist.....	Oswego, N. Y.....	Tift.....	13
Nov. 6	At Pier-head, Buffalo, N. Y.	5	Sc. Mohawk.....	Au Sable, Mich...	Morrison..	565
Nov. 6	South Pier-head, Buffalo, N. Y.	5	Sc. Keystone.....	Oscoda, Mich....	Harper....	700
Nov. 7	One-half mile east of harbor, Oswego.	3	Sc. Wood Duck...	Frenchman's Bay, Canada.	Marks....	77
Nov. 10	One mile southwest of station.	6	Sc. George M. Mowbray.*	Montreal, Canada.	Micilwan..	40
Nov. 12	Four and a half miles north of station.	1	Sc. Cortez.....	Oswego, N. Y.....	Farrell....	309
Nov. 12	Abreast of station.....	3	Sc. Snow Bird.....	Toronto, Canada..	Beard.....	82
Nov. 14	Bar outside of harbor, Fairport, Ohio.	7	St.-barge Westford	Bay City, Mich....	Wilde.....	302
Nov. 18	One hundred and fifty rods east of station.	7	Bge. N. M. Standart.	Marine City, Mich.	Hall.....	332
Nov. 20	Five miles east of station....	6	Sc. Eldorado †.....	St. Clair, Mich....	Slyfield....	489
Nov. 20	.....do.....	6	Sc. George W. Wesley. †	.....do.....	Sanderson.	280
Nov. 20	.....do.....	6	Sc. Bay City.....	Bay City, Mich....	Shepard... 306	
Nov. 21	New Breakwater, Buffalo....	5	Sc. Falmouth.....	Oswego, N. Y.....	Murray.... 234	
Nov. 22	Two miles northwest of Fairport Light.	7	Sc. Negaunee.....	Cleveland, Ohio...	Holmes... 641	
Nov. 23	Off Hamburg, Lake Erie...	5	Str. Georgina.....	Saint Catharine's, Canada.	Horne..... 450	
1881.						
May 1	One mile north of station....	3	Yacht Rival.....	Oswego, N. Y.....	Mulligan.. 3	
May 5	Thirty rods west of station..	2	Sc. Flora.....	Picton, Canada....	Ostrander. 87	
May 6	Horseshoe Reef, head of Niagara River.	5	Str. Roanoke.....	Buffalo, N. Y.....	Bogert.... 1,069	
May 6	.....do.....	5	Str. B. F. Bruce....	.....do.....	Mack..... 35	
May 7	Bar of Big Sandy Creek.....	1	Sc. Fiat.....	Big Sandy Creek, N. Y.	Jenkins... 38	
May 12	Near entrance of Big Sandy Creek.	1	Sc. Ringgold.....	Oswego, N. Y.....	Durand... 6	
May 17	Twenty-eight miles west-southwest of station, off Ashtabula, Ohio.	6	Sloop James M. Dougal.	East Saginaw, Mich.	Makey.... 415	
May 30	Abreast of station.....	4	Sail-boat.....	Rochester, N. Y....	.....
June 1	Ten miles east-southeast of station.	6	Str. Potomac.....	Buffalo, N. Y.....	Mansfield. 1,108	
June 4	North shore of Presque Isle..	6	Str. David Balentine.	Milwaukee, Wis....	Madden... 972	
June 6	Six miles east-northeast of station.	8	Raft of logs.....	.....	.....
June 9	Government new pier, Oswego, N. Y.	3	Yacht Isabel.....	Oswego, N. Y.....	Cummings. 3	
June 9	One-half mile from station...	8	Sc. Lady Dufferin..	Port Burwell, Ontario.	McPherson 315	
	Total.....					

*Crew came ashore in their own boat.

ONTARIO AND ERIE—Continued.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
Port Hope, Ontario.	Charlotte, N. Y.	Shingles ..	\$1,000	\$1,006	\$2,006	\$506	\$1,500	4	4			
Brighton, Ontario.	Oswego, N. Y.	Rye	6,000	7,200	13,200		13,200	6	6		6	6
Oswego, N. Y.	Big Sandy Creek, N. Y.	Coal	600	102	702	702		2	2			
Buffalo, N. Y.	Au Sable, Mich.	.....	16,000		16,000	16,000		7	7			
.....do.....	Oscoda, Mich.	.....	25,000		25,000	20,000	5,000	7	7			
Frenchman's Bay, Canada.	Oswego, N. Y.	Barley	2,500	3,600	6,100	1,740	4,360	5	5		5	10
Montreal, Canada.	Fort Williams, Lake Superior.	Nitro-glycerine.	2,000	12,000	14,000	12,000	2,000	6	6			
Milwaukee, Wis.	Oswego, N. Y.	Wheat	12,000	21,000	33,000		33,000	8	8			
Toronto, Canada.	.....do.....	Lumber	3,800	1,440	5,240	1,500	3,740	5	5		5	10
Saginaw, Mich.	Erie, Pa. ....	.....do.....	20,000	8,000	28,000	28,000		12	12			
.....do.....	Cleveland, Ohio	.....do.....	3,000	3,000	6,000	1,000	5,000	6	6		3	3
Buffalo, N. Y.	St. Clair, Mich.	.....	10,000		10,000		10,000	7	7			
.....do.....	Saginaw, Mich.	.....	8,000		8,000		8,000	6	6			
.....do.....	Bay City, Mich.	Coal	9,000	1,500	10,500		10,500	6	6			
Toledo, Ohio	Oswego, N. Y.	Wheat	15,000	20,000	35,000		35,000	7	6	1		
Buffalo, N. Y.	Chicago, Ill.	Coal	30,000	6,500	36,500	35,200	1,300	10	10			
Montreal, Canada.	Fort Williams, Lake Superior.	Nitro-glycerine and powder.	20,000	32,000	52,000	51,800	200	20	20			
Lake Ontario.	On pleasure trip.	.....	360		300	300		25	25			
Mill Point, Ontario.	Little Salmon Creek, N. Y.	Headings ..	3,500	600	4,100	4,100		6	6			
Buffalo, N. Y.	Chicago, Ill.	.....	50,000		50,000	50,000		25	25			
.....do.....	Relief of str. Roanoke.	.....	6,000		6,000	6,000		10	10			
Oswego, N. Y.	Big Sandy Creek, N. Y.	Miscellaneous.	3,000	360	3,360	3,360		4	4			
.....do.....	.....do.....	.....do.....	300	80	380	380		2	2			
East Saginaw, Mich.	Erie, Pa.	Lumber	12,000	8,250	20,250	18,750	1,500	11	11			
In Charlotte Harbor, N. Y.	.....	.....	50		50	50		1	1			
Buffalo, N. Y.	Milwaukee, Wis.	Coal	35,000	6,000	41,000	35,000	6,000	16	16			
.....do.....	.....do.....	.....do.....	65,000	6,500	71,500	71,500		17	17			
Port Stanley, Ontario.	Cleveland, Ohio	.....	6,000		6,000	5,900	100					
Oswego, N. Y.	Texas, N. Y.	.....	300		300	250	50	7	7			
Port Colborn, Ontario.	Cleveland, Ohio	.....	10,000		10,000	9,500	500	8	8			
.....do.....	.....	.....	454,410	151,227	605,637	459,139	146,498	333	332	1	34	44

†Crew got ashore without assistance.

DISTRICT No. 10.—EMBRACING

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1880. July 19	Port Austin Reef	2	Sc. George W. Holt.	Detroit, Mich	Hoose	266
Aug. 15	Whiskey Reef, three and a half miles southeast of station.	2	Barge Eleanor*	Bay City, Mich	Hazen	188
Aug. 18	Eight miles west-southwest of station.	8	Sc. Cortez	Oswego, N. Y	Farrell	309
Aug. 18	Hammond's Bay	8	Sc. Dreadnaught	Cheboygan, Mich	Dodd	34
Nov. 6	Nine miles north of station, South Reef of Black River.	5	Sc. John Kelderhouse.	do	Mullen	500
Nov. 12	Four miles southwest of station.	6	Sc. Annie Claire	Alpena, Mich	Crowly	6
Nov. 17	Opposite old light-house, Tawas Bay.	4	Sc. D. McClellan	Bay City, Mich	Trudo	29
Nov. 20	Fifty rods above station	6	Str. Aimie	Alpena, Mich	House	10
1881. May 11	One-quarter mile northeast of Black River.	5	Str. Metropolis	Bay City, Mich	Robinson	425
	Total					

DISTRICT No. 11.—EMBRAC

1880. July 16	Three-quarters of a mile west of station.	5	Sc. Jesse Winter	Sheboygan, Wis	Henneberry.	56
July 29	One-half mile north of North Point Light-house.	15	Str. James Fisk, jr.	Buffalo, N. Y	Reed	1,095
Aug. 1	Entrance of harbor, Chicago, Ill.	11	Sl. Fleetwing	Chicago, Ill	Klein	5
Aug. 20	Four and a half miles east of station.	15	Row-boat Pinafore	Milwaukee, Wis	Runkel	
Aug. 26	Eight miles south of station.	16	Sc. Hannah ETTY	do	Olson	60
Sept. 21	South of pier, Muskegon harbor.	8	Sc. Penobscot	do	Bradley	257
Sept. 25	One mile southwest of station.	17	Sc. Resumption	Marquette, Mich	Keelin	294
Oct. 11	Ten rods north of North Pier.	10	Sc. Magdalena†	Chicago, Ill	Nelson	74
Oct. 12	Racine Reef	14	Sc. Kearsarge	do	Disher	154
Oct. 12	North Point, seven miles north of station.	15	Sc. Red, White, and Blue.	Milwaukee, Wis	Coleman	447
Oct. 16	One mile south of Frankfort Harbor.	4	Sc. J. H. Hartzell	Detroit, Mich	Jones	253
Oct. 16	Entrance to Racine Harbor.	14	Sc. Trio	Chicago, Ill	Smith	70
Oct. 17	Two miles north of station ..	8	Sc. Granada	Muskegon, Mich	Linklater	270
Oct. 27	Eight hundred yards east-southeast of harbor.	16	Sc. Belle Laurie	Green Bay, Wis	Lauras	53
Oct. 29	Three-quarters of a mile east of harbor, Milwaukee, Wis.	15	Barge Thomas A. Scott.	Erie, Pa.	Tadd	741
Nov. 1	Fifty feet north of North Pier, St. Joseph, Mich.	10	Sc. Nina Bailey	Milwaukee, Wis	Johnson	30
Nov. 7	North Pier, St. Joseph, Mich.	10	Sc. W. H. Willard	do	Lawrence	108
Nov. 10	One mile south of station	6	Sc. Mary Ellen Cook.	Hamlin, Mich	Williams	175
Nov. 11	One hundred and fifty feet north of North Pier, Grand Haven, Mich.	9	Sc. U. S. Grant	South Haven, Mich	Ludwig	81

*Crew taken off by another vessel.

†No assistance required from life-saving crew.

LAKES HURON AND SUPERIOR.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
Marquette, Mich.	Detroit, Mich.	Iron ore.	\$10,000	\$1,500	\$11,500	.....	\$11,500	11	11	.....	.....	.....
Bay City, Mich.	Cleveland, Ohio	Lumber	1,500	2,000	3,500	\$2,000	1,500	5	5	.....	.....	.....
Oswego, N. Y.	Milwaukee, Wis.	Coal	12,000	2,500	14,500	14,300	200	8	8	.....	.....	.....
Cheboygan, Mich.	Detroit, Mich.	.....	1,000	.....	1,000	950	50	4	4	.....	.....	.....
Chicago, Ill.	Buffalo, N. Y.	Corn	24,000	11,000	35,000	31,000	4,000	9	9	.....	.....	.....
Misery Point, Mich.	Alpena, Mich.	.....	100	.....	100	90	10	2	2	.....	2	2
Grindstone City, Mich.	Bay City, Mich.	Stone	300	75	375	320	55	3	3	.....	.....	.....
Sugar Island, Mich.	Alpena, Mich.	Fish	2,200	100	2,300	42	2,258	2	2	.....	5	12
Alpena, Mich.	Bay City, Mich.	Fish and iron.	25,000	200	25,200	20,200	5,000	41	41	.....	.....	.....
.....	.....	.....	76,100	17,375	93,475	68,902	24,573	85	85	.....	7	14

ING LAKE MICHIGAN.

Manistee, Mich.	Sheboygan, Wis.	Lumber	3,000	800	3,800	2,800	1,000	3	3	.....	.....	.....
Buffalo, N. Y.	Chicago, Ill.	Merchandise.	50,000	20,000	70,000	69,750	250	22	22	.....	.....	.....
Chicago, Ill.	On pleasure trip.	.....	250	.....	250	225	25	4	4	.....	.....	.....
Milwaukee, Wis.	do	.....	40	.....	40	40	.....	2	2	.....	.....	.....
Manitowoc, Wis.	Milwaukee, Wis.	Wood	2,000	300	2,300	25	2,275	5	5	.....	.....	.....
Chicago, Ill.	Muskegon, Mich.	.....	18,000	.....	18,000	17,625	375	7	7	.....	.....	.....
Kenosha, Wis.	Ford River, Mich.	.....	20,000	.....	20,000	20,000	.....	8	8	.....	.....	.....
Racine, Wis.	Paul's Pier, Wis.	.....	2,000	.....	2,000	1,975	25	4	4	.....	.....	.....
Traverse Bay, Mich.	Chicago, Ill.	Lumber	5,000	3,500	8,500	4,500	4,000	7	7	.....	7	14
Buffalo, N. Y.	Milwaukee, Wis.	Coal	18,000	3,500	21,500	20,500	1,000	8	8	.....	.....	.....
L'Anse, Mich.	Frankfort, Mich.	Iron ore.	14,000	3,000	17,000	.....	17,000	8	7	1	.....	.....
Chicago, Ill.	Portage, Mich.	Lumber	1,000	300	1,300	1,000	300	3	3	.....	.....	.....
Muskegon, Mich.	Chicago, Ill.	do	5,000	3,500	8,500	200	8,300	15	3	2	3	6
Ahnapee, Wis.	Milwaukee, Wis.	Cedar posts	2,000	1,100	3,100	2,950	150	2	2	.....	2	2
Chicago, Ill.	Erie, Pa.	Corn	20,000	18,000	38,000	.....	38,000	10	10	.....	.....	.....
Milwaukee, Wis.	St. Joseph, Mich.	.....	900	.....	900	.....	900	2	2	.....	2	2
Muskegon, Mich.	do	Lumber	3,000	1,000	4,000	1,000	3,000	4	4	.....	4	4
Hamlin, Mich.	Chicago, Ill.	do	14,000	2,250	16,250	16,250	.....	7	7	.....	.....	.....
Michigan City, Mich.	Grand Haven, Mich.	.....	2,000	.....	2,000	.....	2,000	4	4	.....	.....	.....

‡ The original number on board was seven, but two perished at sea the day before the vessel came ashore.

DISTRICT No. 11.—EMBRACING

Date.	Place.	No. of station.	Name of vessel.	Where owned.	Master.	Tonnage.
1880.						
Nov. 13	Five hundred feet south of South Pier, Manistee, Mich.	5	Sc. R. J. Gibbs	Marine City, Mich.	Loomis	176
Nov. 25	Six miles south-southeast of station.	15	Sc. Flying Mist	Chicago, Ill	Berry	316
Dec. 12	Ludington Harbor	7	Str. Kittie Gaylord.	Ludington, Mich ..	Didgurgis ..	14
1881.						
Jan. 1	Outer end of harbor piers, Two Rivers, Wis.	17	Str. M. A. Gagnon, with six fishing-boats in tow.	Two Rivers, Wis ..	Gagnon	18
Jan. 30	About seventeen miles north-east of station.	15	Str. St. Albans	Grand Haven, Mich	Casey	436
Apr. 12	Three hundred and fifty yards southeast of station.	11	Row-boat	Chicago, Ill .....	.....	.....
Apr. 26	North side of North Pier, Manistee, Mich.	5	Sc. Mary R. Ann	Sheboygan, Wis ..	Edwards	21
Apr. 28	East of Water-works, Chicago, Ill.	11	Scow	Chicago, Ill .....	.....	2
May 2	Reef near Jacksonport Pier, Wis.	17	Sc. G. D. Norris	do	Mohlman	262
May 8	Abreast of Exposition Building, Chicago, Ill.	11	Sl. Clara	do	Foreman	12
May 10	Seven miles west-southwest of Manistee, Mich.	4	Sc. Advance	do	Paulson	180
June 1	Three and one-half miles north of station.	12	Sc. Cascade*	do	Stubbs	227
June 5	Five hundred yards south of station.	11	Sl. Topsy	do	Whitney	1
June 5	One mile south of Racine	14	Sail-boat	Racine, Wis	Nehoda .....	.....
June 5	Twelve miles north of Sheboygan.	16	St.-yacht Emilie	Perth Amboy, N.J.	Henry	30
June 9	Four miles southeast of Kenosha.	13	Str. John Leatham ..	Green Bay, Wis	Packard	75
June 13	Four miles east of Racine Harbor.	14	Open boat	Racine, Wis .....	.....	.....
June 17	One-half mile south of station.	6	St.-bge. Daisy Day ..	Manitowoc, Wis ..	Jacobs	147
June 25	One mile north of North Point, Milwaukee, Wis.	15	Sc. F. A. George	Buffalo, N. Y	Bortwick	826
June 25	do	15	Str. New York	do	Moore	1,922
	Total .....	.....	.....	.....	.....	.....

DISTRICT No. 12.—EMBRAC

1880.						
Sept. 21	Off Rocky Point, Coos Bay ..	4	Str. Gussie Telfair ..	San Francisco, Cal.	Butler	413
Oct. 23	Five miles south of station ..	7	Bktn. Wm. H. Gawley.	Port Townsend, Wash. Ter.	Williams	483
Oct. 28	Humboldt Bay	5	Sc. Edward Parke	San Francisco, Cal.	Erlanson	148
1881.						
Jan. 25	Neah Bay	1	Sc. Seventy-six	do	Potts	38
Apr. 26	Peacock Spit, Fort Canby, Washington Territory.	3	Scow Oregon	Portland, Oregon ..	Taylor	204
	Total .....	.....	.....	.....	.....	.....

*No assistance required from life-saving crew.

LAKE MICHIGAN—Continued.

Where from.	Where bound.	Cargo.	Estimated value of vessel.	Estimated value of cargo.	Total.	Estimated amount saved.	Estimated amount lost.	No. of persons on board.	No. of persons saved.	No. of persons lost.	No. of persons succored at stations.	No. of days' succor afforded.
Chicago, Ill. . . .	Carp River . . .	General . .	\$9,000	\$3,000	\$12,000	\$11,850	\$150	6	6			
Escanaba, Mich	Chicago, Ill . .	Iron ore. . .	10,000	5,000	15,000	12,000	3,000	7	7			
Ludington, Mich.	Fishing	Fish	900	100	1,000	950	50	8	8			
Two Rivers, Wis.	Fish'g Grounds	Fish and fishing-gear.	4,000	1,400	5,400	5,350	50	18	18			
Milwaukee, Wis.	Ludington, Mich.	Flour and live-stock.	20,000	15,000	35,000	35,000		27	27	19	21	
Chicago, Ill . . .	Breakwater . . .		15		15	15		1	1	1	1	
Sheboygan, Wis.	Frankfort, Mich.		900		900	800	100	2	2	2	2	
Chicago, Ill . . .			12		12	12		3	3			
Jacksonport, Wis.	Chicago, Ill . . .	Lumber . . .	7,000	2,000	9,000	8,500	500	8	8			
Chicago, Ill . . .	Lake Michigan		600		600	525	75	13	13			
Manistee, Mich	Chicago, Ill . . .	Shingles . .	5,000	3,500	8,500	7,000	1,500	7	7			
Traverse Bay, Mich.	do	Posts	5,500	1,500	7,000	7,000		9	9			
Chicago, Ill . . .	On pleasure-trip.		25		25	25		2	2	2	2	
Racine, Wis. . . .	do		50		50	50		2	2			
Oswego, N. Y . .	Chicago, Ill . . .		10,000		10,000	9,850	150	11	11			
Chicago, Ill . . .	Sturgeon Bay, Wis.		10,000		10,000	9,800	200	7	7			
Racine, Wis. . . .	On pleasure-trip.		15		15	15		2	2			
Manitowoc, Wis.	Ludington, Mich.	Brick, hay, and flour.	10,000	1,000	11,000	10,850	150	13	13			
Buffalo, N. Y. . .	Milwaukee, Wis.	Coal	47,000	7,000	54,000	54,000		10	10			
do	Chicago, Ill . . .	Sugar and railroad iron	140,000	100,000	240,000	240,000		26	26			
			460,207	196,750	656,957	537,432	119,525	297	294	3	42	54

ING PACIFIC COAST.

Empire City, Oregon.	San Francisco, Cal.	Coal	55,000	1,500	56,500	56,500	41	41				
Port Madison, Wash. Ter.	do	Lumber . . .	10,000	6,000	16,000	16,000	15	15				
San Pedro, Cal.	Humboldt, Cal.	Grain	14,000	500	14,500	13,400	1,100	9	7	2		
Port Townsend, Wash. Ter.	Sealing		5,200		5,200	3,700	1,500	6	6			
Clifton, Oregon.	Astoria, Oregon		2,000		2,000	1,900	100					
			86,200	8,000	94,200	19,000	75,200	71	69	2		

†No assistance rendered by life-saving crew.

RECAPITU

Districts.	Total number of disas- ters.	Total value of vessels.	Total value of cargoes.
District No. 1	19	\$45,300	\$16,900
District No. 2	23	95,970	42,202
District No. 3	25	303,150	308,966
District No. 4	38	413,430	165,125
District No. 5	26	235,980	130,260
District No. 6	12	317,200	238,000
District No. 7	1	225,000	12,000
District No. 8	7	31,300	23,700
District No. 9	46	454,410	151,227
District No. 10	9	76,100	17,375
District No. 11	39	460,207	196,750
District No. 12	5	86,200	8,000
Aggregate	250	2,744,247	1,310,505

LATION.

Total amount of property involved.	Total amount of property saved.	Total amount of property lost.	Total number of persons on board.	Total number of persons saved.	Total number of persons lost.	Number of shipwrecked persons succored at stations.	Total number of days' succor afforded.	Number of disasters involving total loss of vessels.
\$62,200	\$48,230	\$13,970	92	92	.....	36	96	3
138,172	96,325	41,847	122	122	.....	43	96	6
612,116	325,904	286,212	238	224	.....	14	37	11
578,555	387,743	190,812	262	262	.....	84	185	6
366,240	183,785	177,455	204	204	.....	77	190	11
555,200	437,920	117,280	121	120	.....	1	34	3
237,000	233,400	3,600	18	18	.....	.....	.....	.....
55,000	25,900	29,100	35	32	.....	3	13	2
605,637	459,139	146,498	333	332	.....	1	34	11
93,475	63,902	24,573	83	85	.....	7	14	2
656,957	537,432	119,525	297	294	.....	3	42	2
94,200	19,000	75,200	71	69	.....	2	54	2
4,054,752	2,828,680	1,226,072	1,878	1,854	.....	24	407	66

APPROPRIATIONS AND EXPENDITURES.

STATEMENT

SHOWING THE

APPROPRIATIONS AND EXPENDITURES FOR THE MAINTENANCE OF
THE LIFE-SAVING SERVICE FOR THE FISCAL YEAR ENDING JUNE 30,
1881.

Appropriation—Life-Saving Service, 1881.

For salary of one superintendent for the life-saving stations on the coasts of Maine and New Hampshire, District No. 1.	\$1,000	00
For salary of one superintendent for the life-saving stations on the coast of Massachusetts, District No. 2.....	1,000	00
For salary of one superintendent for the life-saving stations on the coasts of Rhode Island and Long Island, District No. 3.....	1,500	00
For salary of one assistant superintendent for the life-saving stations on the coasts of Rhode Island and Long Island, District No. 3.....	500	00
For salary of one superintendent for the life-saving stations on the coast of New Jersey, District No. 4.....	1,500	00
For salary of one superintendent for the life-saving stations on the coasts of Delaware, Maryland, and Virginia, District No. 5.....	1,000	00
For salary of one superintendent for the life-saving stations on the coasts of Virginia and North Carolina, District No. 6.	1,000	00
For salary of one superintendent for the houses of refuge on the coast of Florida, District No. 7.....	1,000	00
For salary of one superintendent for the life-saving and life-boat stations on the coast of the Gulf of Mexico, District No. 8.....	1,000	00
For salary of one superintendent for the life-saving and life-boat stations on the coasts of Lakes Ontario and Erie, District No. 9.....	1,000	00
For salary of one superintendent for the life-saving and life-boat stations on the coasts of Lakes Huron and Superior, District No. 10.....	1,000	00
For salary of one superintendent for the life-saving and life-boat stations on the coast of Lake Michigan, District No. 11.....	1,000	00
	\$12,500	00
For salary of 196 keepers of life-saving and life-boat stations, and of houses of refuge, at \$400 each.....	78,400	00
For pay of crews of experienced surfmen, employed at life-saving and life-boat stations, at a rate not to exceed forty dollars per month each, during the period of actual employment.....	376,960	00
For compensation of volunteer crews of life-boat stations for actual and deserving service rendered upon each occasion of disaster, at such rate, not to exceed ten dollars for each person, as the Secretary of the Treasury may determine, and for pay of volunteer crews for drill and exercise.	5,000	00
Total.....	472,860	00

Expenditures.

Salary of superintendent of life-saving stations in District No. 1, from July 1, 1880, to March 31, 1881.....	\$750	00
Salary of superintendent of life-saving stations in District No. 2, from July 1, 1880, to March 31, 1881.....	750	00

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Salary of superintendent of life-saving stations in District No. 3, from July 1, 1880, to March 31, 1881	\$1, 125 00	
Salary of assistant superintendent of life-saving stations in District No. 3, from July 1, 1880, to March 31, 1881.....	375 00	
Salary of superintendent of life-saving stations in District No. 4, from July 1, 1880, to March 31, 1881	1, 125 00	
Salary of superintendent of life-saving stations in District No. 5, from July 1, 1880, to March 31, 1881	750 00	
Salary of superintendent of life-saving stations in District No. 6, from July 1, 1880, to March 31, 1881	750 00	
Salary of superintendent of houses of refuge in District No. 7, from July 1, 1880, to March 31, 1881	750 00	
Salary of superintendent of life-saving and life-boat stations in District No. 9, from July 1, 1880, to June 30, 1881.....	1, 000 00	
Salary of superintendent of life-saving and life-boat stations in District No. 10, from July 1 to October 20, 1880, and from December 6, 1880, to June 30, 1881.....	875 00	
Salary of superintendent of life-saving and life-boat stations in District No. 11, from July 1 to September 30, 1880, and from May 10 to June 30, 1881.....	392 84	
	<hr/>	\$8, 642 84
Pay of 179 keepers, Districts Nos. 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, and 12, quarter ending September 30, 1880	17, 761 55	
Pay of 185 keepers, Districts Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, quarter ending December 31, 1880.....	17, 836 93	
Pay of 179 keepers, Districts Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, quarter ending March 31, 1881	17, 894 49	
Pay of 40 keepers, Districts Nos. 9, 10, 11, and 12, quarter ending June 30, 1881	3, 899 96	
	<hr/>	57, 392 93
Pay of surfmen in District No. 1, from September 1, 1880, to March 31, 1881.....	12, 880 00	
Pay of surfmen in District No. 2, from September 1, 1880, to March 31, 1881.....	27, 076 12	
Pay of surfmen in District No. 3, from September 1, 1880, to March 31, 1881.....	66, 123 87	
Pay of surfmen in District No. 4, from September 1, 1880, to March 31, 1881.....	71, 760 00	
Pay of surfmen in District No. 5, from September 1, 1880, to March 31, 1881.....	20, 240 00	
Pay of surfmen in District No. 6, from September 1, 1880, to March 31, 1881.....	41, 948 36	
Pay of surfmen in District No. 8, from October 7, 1880, to April 30, 1881.....	6, 080 49	
Pay of surfmen in District No. 9, from July 1 to December 15, 1880, and from April 11 to June 30, 1881.....	16, 053 29	
Pay of surfmen in District No. 10, from July 1 to December 31, 1880, and from April 11 to June 30, 1881.....	17, 961 48	
Pay of surfmen in District No. 11, from July 1 to November 15, 1880, and from April 25 to June 30, 1881.....	29, 655 62	
Pay of surfmen in District No. 12, from November 15, 1880, to April 30, 1881.....	2, 981 79	
Pay of surfmen in District No. 1, for services at wrecks which occurred at periods when crews were not required to reside at the stations.....	45 00	
Pay of surfmen in District No. 2, for services at wrecks which occurred at periods when crews were not required to reside at the stations.....	6 00	
Pay of surfmen in District No. 4, for services at wrecks which occurred at periods when crews were not required to reside at the stations.....	84 00	
Pay of surfmen in District No. 11, for services at wrecks which occurred at periods when crews were not required to reside at the stations.....	51 00	
	<hr/>	312, 947 02
Pay of volunteer surfmen in District No. 9, for drill and exercise	684 00	

Pay of volunteer surfmen in District No. 9, for services at wrecks	\$238 00	
Pay of volunteer surfmen in District No. 12, for services at wrecks	118 00	
		<u>\$1,090 00</u>
Total expenditures from appropriation, Life-Saving Service, 1881.....		330,072 79
Balance of available funds, July 1, 1881		92,787 21
		<u>472,860 00</u>

The amount required to pay the compensation of the officers and employes in Districts Nos. 1, 2, 3, 4, 5, 6, 7, and 8, for the quarter ending June 30, 1881, was not issued to the superintendents for disbursement until after July 1, 1881. The expenditure will appear in the proper place in the next annual report.

Appropriation—Life-Saving Service, contingent expenses, 1881.

For fuel for 196 stations and houses of refuge; repairs and outfits for the same; supplies and provisions for houses of refuge and for shipwrecked persons succored at stations; travelling expenses of officers under orders from the Treasury Department; and contingent expenses, including freight, storage, repairs to apparatus, medals, labor, stationery, advertising, and miscellaneous expenses, that cannot be included under any other head of life-saving stations on the coasts of the United States	\$65,000 00	
For deficiency appropriation as above, "including the rebuilding of the stations at Pea Island, North Carolina, and Brazos Santiago, Texas, and the renewal of apparatus and supplies for said stations"	12,000 00	
		<u>\$77,000 00</u>

Expenditures.

Apparatus	\$4,225 98
Books, charts, stationery, advertising, &c	956 75
Compensation for special services, labor, &c	2,362 04
Equipments	2,948 74
Erecting guide-boards on Florida coast	367 50
Freight, packing, storage, telegraphing, &c	1,229 99
Fuel and water for stations	5,389 01
Furniture, supplies, &c	14,965 53
Lithographing and engraving	575 20
Medals	1,789 99
Medicines	3 00
Rebuilding, repair, and improvement of stations	19,065 27
Recording deeds	21 80
Removal of stations	1,862 00
Rent of offices of inspector and superintendents	414 00
Repairs of apparatus and equipments	464 23
Sites for stations	380 00
Stables and forage for horses kept at stations for hauling boats and apparatus	690 07
Subsistence of persons rescued from wrecked vessels	166 92
Transporting apparatus to and from wrecks where horses are not kept ..	172 50
Travelling expenses of officers	5,508 52
	<u>63,559 04</u>
Total expenditures from appropriation, Life-Saving Service, contingent expenses, 1881	13,440 96
Balance of available funds July 1, 1881	
	<u>77,000 00</u>

At the beginning of the fiscal year there remained on hand, available from the appropriations of the preceding year, the following:

	Life-Saving Service, 1880.	Life-Saving Service, contingent ex- penses, 1880.
Unexpended balance July 1, 1881	\$83,336 15	\$12,426 51
To which repayments have been made as follows	445 86	2 06
Total available funds	83,782 01	12,428 57

The expenditures from these balances during the last year, made in payment of indebtedness standing over from the preceding year, were as follows:

Life-Saving Service, 1880, available as above		\$83,782 01
Pay of surfmen in Districts Nos. 1, 4, and 6, for services at wrecks when crews were not required to reside at stations ..	\$99 00	
Pay of volunteer surfmen in Districts Nos. 9, 11, and 12	316 00	
Pay of six surfmen in District No. 4, from April 16 to April 30, 1880	120 00	
Pay of Lewis Truax for services in taking charge of Station No. 11, District No. 4, from June 1 to June 30, 1880, during vacancy in keepership	16 50	
Amount paid D. P. Dobbins, superintendent Ninth Life-Saving District, balance found due upon settlement of his accounts ..	9 00	
Amount paid the heirs of the six surfmen who perished at Point aux Barques, being balance due each for services rendered from April 1 to April 23, 1880, as follows:		
Mrs. Annie Pottinger, widow of Surfman James Pottinger	\$30 67	
Mrs. Elizabeth Deegan, widow of Surfman Dennis Deegan	30 67	
James Dufty, as guardian of the three children of Surfman Robert Morrison	30 67	
Charles E. Thompson, as guardian of the two children of Surfman William I. Sayers	30 67	
Richard Petherbridge, father of Surfman Walter Petherbridge	30 67	
James Nantau, father of Surfman James Nantau	30 67	
		184 02
Pay of Surfman John Peterson, from May 1 to June 30, 1880, at Life-Saving Station No. 16, District No. 11	80 00	
		824 52
Balance unexpended July 1, 1881		82,957 49
		83,782 01
Life-Saving Service, contingent expenses, 1880, available as heretofore stated		\$12,428 57
Apparatus	\$18 29	
Equipments	25 00	
Freight, packing, storage, telegraphing, &c	255 46	
Furniture, supplies, &c	8,116 12	
Hire of surf-boats	5 00	
Medical services rendered to injured keeper	7 00	
Rebuilding, repair, and improvement of stations	2,209 56	
Recording deeds	5 50	
Rent of offices	168 00	

Repairs of apparatus and equipments.....	\$37 84	
Sites for stations.....	25 00	
Stables and forage for horses.....	45 12	
Subsistence of persons rescued from wrecked vessels.....	25 86	
Transportation of apparatus to and from wrecks.....	20 00	
Travelling expenses of officers.....	187 34	
		\$11, 151 09
Balance unexpended July 1, 1881.....		1, 277 48
		<u>12, 428 57</u>

There also remained unexpended at the beginning of the fiscal year, from appropriations of 1879, the following:

	Life-Saving Service, 1879.	Life-Saving Service, contingent ex- penses, 1879.
Balances unexpended and available July 1, 1880.....	\$11, 165 31	\$851 36
Reappropriated by act June 16, 1880, as follows: "The proper accounting officers of the Treasury Department are hereby directed, without involving the payment of any money from the Treasury, to credit Bushrod Birch, disbursing clerk, with the sum of one hundred and six dollars and sixteen cents in his account for expenditures under the appropriation for 'Life-Saving Service contingent expenses' for the fiscal year eighteen hundred and seventy-eight, [eighteen hundred and seventy-nine.] * * * being the amounts of certain vouchers filed by them, [him] but remaining unadjusted because said appropriations are exhausted".....		106 16
Total amounts available for fiscal year 1881.....	11, 165 31	957 52

During the last fiscal year no expenditures were made from the appropriation, "Life-Saving Service, 1879," and the balance on hand, \$11,165.31, was carried to the surplus fund and covered into the Treasury June 30, 1881.

The expenditures during the year from appropriation, "Life-Saving Service, contingent expenses, 1879," were as follows:

Life-Saving Service, contingent expenses, 1879, available as above stated.....		\$957 52
Repairs to Station No. 9, District No. 9.....	\$9 23	
Balance unexpended and carried to surplus fund, June 30, 1881.....		\$948 29

The total net expenditures for the maintenance of the Life Saving Service during the fiscal year ending June 30, 1881, were, therefore, as follows:

Life-Saving Service, 1881.....	\$380, 072 79	
Life-Saving Service, 1880.....	824 52	
		380, 897 31
Less repayments to the appropriation, Life-Saving Service, 1880.....	445 86	
Net expenditures.....		\$380, 451 45
Life-Saving Service, contingent expenses, 1881.....	63, 559 04	
Life-Saving Service, contingent expenses, 1880.....	11, 151 09	
Life-Saving Service, contingent expenses, 1879.....	9 23	
		<u>74, 719 36</u>

Less repayment to the appropriation, Life-Saving Service, contingent expenses, 1880	\$2 06
Net expenditures	\$74,717 30
Total net expenditures of the Service	455,168 75

There remained standing to the credit of the respective appropriations at the close of the fiscal year ending June 30, 1881, available as heretofore stated, the following balances :

Life-Saving Service, 1880	\$82,957 49
Life-Saving Service, 1881	92,787 21
Life-Saving Service, contingent expenses, 1880	1,277 48
Life-Saving Service, contingent expenses, 1881	13,440 96

The foregoing statement of the net expenditures of the Life-Saving Service for the fiscal year ending June 30, 1881, differs from the expenditures by warrants in the following particulars :

Net expenditures by warrants	\$456,549 90
From which deduct the amount of the following items:	
Item of expense payable from appropriation, Life-Saving Service, 1880, unexpended by warrant until the fiscal year 1881, as stated upon page 176, of the report for 1880	\$78 00
Amounts in hands of disbursing clerk, June 30, 1881:	
Life-Saving Service, 1881	446 00
Life-Saving Service, contingent expenses, 1881	1,591 48
	2,115 48
Less amount in hands of disbursing clerk June 30, 1880	734 33
Total amount of differences	1,381 15
Net expenditures from the appropriations for the year	455,168 75

To the foregoing statement of expenditures for the maintenance of the Life-Saving Service may be added the following:

<i>Appropriation</i> —Salaries Office Life-Saving Service	\$21,820 00
EXPENDITURES.	
Compensation of officers and employés in office of Life-Sav- ing Service	\$21,775 92
Amount in hands of disbursing clerk unexpended	44 08
	\$21,820 00

INSTRUCTIONS TO MARINERS IN CASE OF SHIPWRECK.

INSTRUCTIONS TO MARINERS IN CASE OF SHIPWRECK,

WITH

INFORMATION CONCERNING THE LIFE-SAVING STATIONS UPON THE
COASTS OF THE UNITED STATES.

Prepared by LIEUTENANT C. H. MCLELLAN, U. S. R. M., *Assistant Inspector*
Life-Saving Stations, under the Direction of the General Superintendent.

GENERAL INFORMATION.

Life-saving stations, life-boat stations, and houses of refuge are located upon the Atlantic and Pacific seaboard of the United States, the Gulf of Mexico, and the Lake coasts, as shown in the list of stations following, the latitude and longitude being given so far as determined.

All stations on the Atlantic coast from the eastern extremity of the State of Maine to Cape Fear, North Carolina, are manned annually by crews of experienced surfmen from the 1st of September until the 1st of May following.

Upon the Lake coasts the stations are manned from the opening until the close of navigation, and upon the Pacific coast they are open the year round, but, with the exception of Stations Nos. 3 and 7, are not manned, depending upon volunteer effort from the neighboring people in case of shipwreck.

All life-saving and life-boat stations are fully supplied with boats, wreck-gun, beach apparatus, restoratives, &c.

Houses of refuge are supplied with boats, provisions, and restoratives, but not manned by crews; a keeper, however, resides in each throughout the year, who after every storm is required to make extended excursions along the coast with a view of ascertaining if any shipwreck has occurred and finding and succoring any persons that may have been cast ashore.

Houses of refuge are located exclusively upon the Florida coast, where the requirements of relief are widely different from those of any other portion of the seaboard.

Most of the life-saving and life-boat stations are provided with the International Code of Signals, and vessels can, by opening communication, be reported or obtain the latitude and longitude of the station where determined, information as to the weather probabilities in most cases, or, if crippled or disabled, a steam-tug or revenue-cutter will be telegraphed for, where facilities for telegraphing exist, to the nearest port, if requested.

All services are performed by the life-saving crews without other compensation than their wages from the Government, though, in view

of the meagreness of their pay, they are not prohibited from receiving such rewards for labor performed or risks incurred at wrecks as owners or masters of vessels or other persons may see fit to voluntarily bestow upon them, but *they are strictly forbidden to solicit such rewards.*

Destitute seafarers are provided with food and lodgings at the nearest station by the Government as long as necessarily detained by the circumstances of shipwreck.

The station crews patrol the beach from two to four miles each side of their stations four times between sunset and sunrise, and if the weather is foggy the patrol is continued through the day.

Each patrolman carries Coston signals. Upon discovering a vessel standing into danger, he ignites one of them, which emits a brilliant red flame of about two minutes' duration, to warn her off, or, should the vessel be ashore, to let her crew know that they are discovered and assistance is at hand.

If the vessel is not discovered by the patrol immediately after striking, rockets or flare-up lights should be burned, or, if the weather be foggy, guns should be fired to attract attention, as the patrolman may be some distance away on the other end of his beat.

Masters are particularly cautioned, if they should be driven ashore anywhere in the neighborhood of the stations, especially on any of the sandy coasts where there is not much danger of vessels breaking up immediately, to remain on board until assistance arrives, and under no circumstances should they attempt to land through the surf in their own boats until the last hope of assistance from the shore has vanished. Often when comparatively smooth at sea a dangerous surf is running which is not perceptible four hundred yards off shore, and the surf when viewed from a vessel never appears as dangerous as it is. Many lives have unnecessarily been lost by the crews of stranded vessels being thus deceived and attempting to land in the ships' boats.

The difficulties of rescue by operations from the shore are greatly increased in cases where the anchors are let go *after entering the breakers*, as is frequently done, and the chances of saving life correspondingly lessened.

INSTRUCTIONS.

RESCUE WITH THE LIFE-BOAT OR SURF-BOAT.

The patrolman, after discovering your vessel ashore and burning a Coston signal, hastens to his station for assistance. If the use of a boat is practicable, either the large life-boat is launched from its ways in the station and proceeds to the wreck by water, or the lighter surf-boat is hauled overland to a point opposite the wreck and launched, as circumstances may require.

Upon the boat reaching your vessel, the directions and orders of the keeper (who always commands and steers the boat) should be implicitly obeyed. Any headlong rushing and crowding should be prevented, and the captain of the vessel should remain on board, to preserve order, until every other person has left.

Women, children, helpless persons, and passengers should be passed into the boat first.

Goods or baggage will positively not be taken into the boat until all are landed. If any be passed in against the keeper's remonstrance he is fully authorized to throw the same overboard.

RESCUE WITH THE BREECHES-BUOY OR LIFE-CAR.

Should it be inexpedient to use either the life-boat or surf-boat, recourse will be had to the wreck-gun and beach apparatus for the rescue by the breeches-buoy or the life-car.

A shot with a small line attached will be fired across your vessel.

Get hold of the line as soon as possible and haul on board until you get a tail-block with a whip or endless line rove through it. This tail-block should be hauled on board as quickly as possible to prevent the whip drifting off with the set or fouling with wreckage, &c. Therefore, if you have been driven into the rigging where but one or two men can work to advantage, cut the shot-line and run it through some available block, such as the throat or peak-halliards block or any block which will afford a clear lead, or even between the ratlines, that as many as possible may assist in hauling.

Attached to the tail-block will be a tally-board, with the following directions in English on one side and French on the other:

“Make the tail of the block fast to the lower mast, well up. If the masts are gone, then to the best place you can find. Cast off shot-line, see that the rope in the block runs free, and show signal to the shore.”

The above instructions being complied with, the result will be as shown in Figure 1.

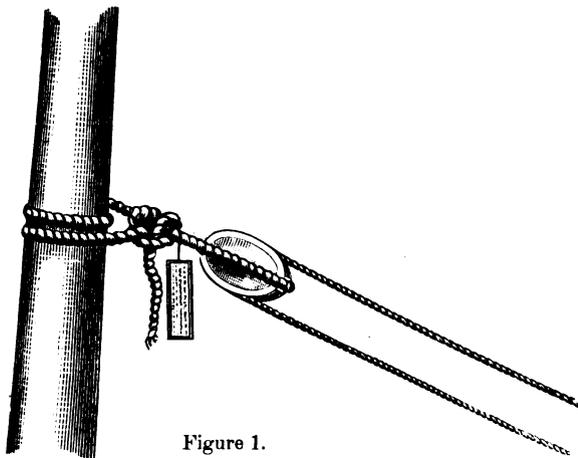


Figure 1.

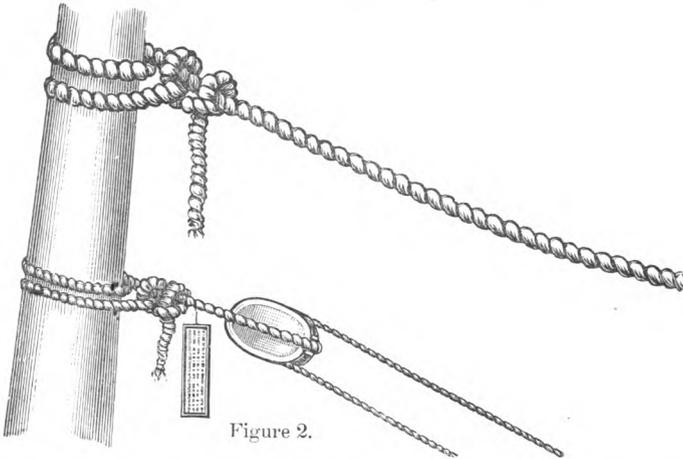
As soon as your signal is seen a three-inch hawser will be bent on to the whip and hauled off to your ship by the life-saving crew.

If circumstances will admit, you can assist the life-saving crew by manning that part of the whip to which the hawser is bent and hauling with them.

When the end of the hawser is got on board a tally-board will be found attached, bearing the following directions in English on one side and French on the other:

“Make this hawser fast about 2 feet above the tail-block; see all clear, and that the rope in the block runs free, and show signal to the shore.”

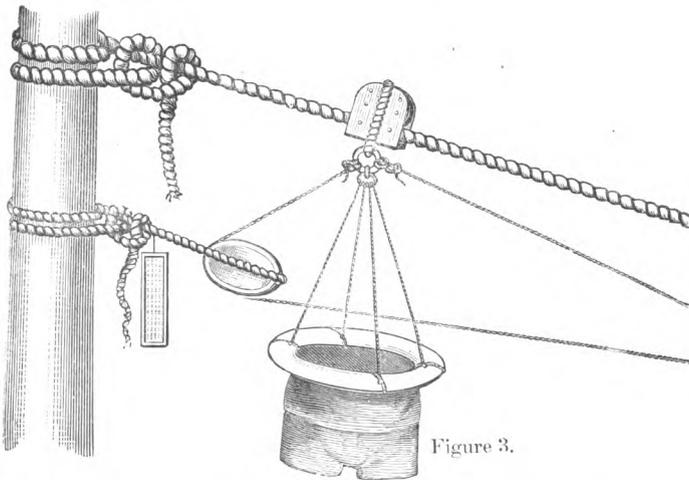
These instructions being obeyed, the result will be as shown in **Figure 2**.



Take particular care that there are no turns of the whip-line round the hawser before making the hawser fast.

When the hawser is made fast, the whip cast off from the hawser; and your signal seen by the life-saving crew, they will haul the hawser taut and by means of the whip will haul off to your ship a breeches-buoy suspended from a traveller-block, or a life-car from rings, running on the hawser.

Figure 3 represents the apparatus rigged, with the breeches-buoy hauled off to the ship.



If the breeches-buoy be sent, let one man immediately get into it, thrusting his legs through the breeches. If the life-car, remove the hatch, place as many persons into it as it will hold, (four to six,) and secure the hatch on the outside by the hatch-bar and hook, signal as

before, and the buoy or car will be hauled ashore. This will be repeated until all are landed. On the last trip of the life-car the hatch must be secured by the inside hatch-bar.

In many instances two men can be landed in the breeches-buoy at the same time, by each putting a leg through a leg of the breeches and holding on to the lifts of the buoy.

Children when brought ashore by the buoy should be in the arms of older persons or securely lashed to the buoy. Women and children should be landed first.

In signalling as directed in the foregoing instructions, if in the day-time, let one man separate himself from the rest and swing his hat, a handkerchief, or his hand; if at night, the showing of a light, and concealing it once or twice, will be understood; and like signals will be made from the shore.

Circumstances may arise, owing to the strength of the current or set, or the danger of the wreck breaking up immediately, when it would be impossible to send off the hawser. In such a case a breeches-buoy or life-car will be hauled off instead by the whip, or sent off to you by the shot-line, and you will be hauled ashore through the surf.

If your vessel is stranded during the night and discovered by the patrolman, which you will know by his burning a brilliant red light, keep a bright lookout for signs of the arrival of the life-saving crew abreast of your vessel.

From one to four hours may intervene between the burning of the light and their arrival, as the patrolman may have to return to his station, perhaps three or four miles distant, and the life-saving crew draw the apparatus or surf-boat through the sand or over bad roads to where your vessel is stranded.

Lights on the beach will indicate their arrival, and the sound of cannon-firing from the shore may be taken as evidence that a line has been fired across your vessel. Therefore, upon hearing the cannon, make strict search aloft, fore and aft, for the shot-line, for it is almost certain to be there. Though the movements of the life-saving crew may not be perceptible to you, owing to the darkness, your ship will be a good mark for the men experienced in the use of the wreck-gun, and the first shot seldom fails.

RECAPITULATION.

Remain by the wreck until assistance arrives from the shore, unless your vessel shows signs of immediately breaking up.

If not discovered immediately by the patrol, burn rockets, flare-up, or other lights, or, if the weather be foggy, fire guns.

Take particular care that there are no turns of the whip-line round the hawser before making the hawser fast.

Send the women, children, helpless persons, and passengers ashore first.

Make yourself thoroughly familiar with these instructions, and remember that on your coolness and strict attention to them will greatly depend the chances of bringing you and your people safely to land.

LIST OF LIFE-SAVING DISTRICTS AND STATIONS

ON THE

COASTS OF THE UNITED STATES.

LIFE-SAVING DISTRICTS AND STATIONS ON THE COASTS OF THE UNITED STATES.

FIRST DISTRICT.

EMBRACING COASTS OF MAINE AND NEW HAMPSHIRE.

No.	Name.	State.	Locality.	Approximate position.					
				Latitude, north.			Longitude, west.		
				°	'	"	°	'	"
1	West Quoddy Head ..	Me ...	Carrying Point Cove	44	48	25	66	58	25
2	Cross Island	Me ...	Off Machiasport	44	37	28	67	16	20
3	Crumple Island	Me ...	Off Jonesborough	44	28	30	67	37	00
4	Little Cranberry Island	Me ...	Off Mount Desert	Not determined.					
5	Whitehead Island	Me ...	Near Whitehead light	43	58	41	69	07	37
6	Biddeford Pool	Me ...	Fletcher's Neck	43	26	32	70	20	08
7	Locke's Point	N. H. .	Rye Beach	42	59	31	70	45	00

SECOND DISTRICT.

EMBRACING COAST OF MASSACHUSETTS.

1	Plum Island	Mass .	Near Newburyport, 3 miles distant. . .	42	47	05	70	48	41
2	Davis Neck	Mass .	Near Annisquam light	42	40	03	70	40	03
3	Scituate	Mass .	South end of fourth cliff	Not determined.					
4	Gurnett's	Mass .	8 miles northeast of Plymouth	42	00	10	70	35	50
5	Manomet Point	Mass .	7 miles southeast of Plymouth	41	55	29	70	32	18
6	Race Point	Mass .	½ mile northeast of Race Point light, Cape Cod.	42	04	12	70	13	58
7	Peak'd Hill Bar	Mass .	2½ miles northeast of Provincetown, Cape Cod.	42	04	34	70	08	54
8	Highlands	Mass .	¾ mile northwest of light, Cape Cod .	42	02	47	70	04	05
9	Parnet River	Mass .	3½ miles south of Highland light	41	59	59	70	00	53
10	Cahoon's Hollow	Mass .	2½ miles east of Wellfleet	41	56	38	69	58	40
11	Nauset	Mass .	1¼ miles south of lights	41	50	29	69	56	20
12	Orleans	Mass .	Abreast of Ponchet Island	41	45	31	69	55	31
13	Chatham	Mass .	2 miles north of Chatham light	41	42	12	69	56	34
14	Monomoy	Mass .	2 miles north of Monomoy light	41	36	00	69	58	41
15	Surfside	Mass .	2½ miles south of the town of Nantucket	41	14	33	70	08	36

THIRD DISTRICT.

EMBRACING COASTS OF RHODE ISLAND AND LONG ISLAND.

1	Narragansett Pier	R. I. .	Northern part of the town	41	25	59	71	27	04
2	Point Judith	R. I. .	Near light-house	41	21	38	71	28	54
3	Watch Hill	R. I. .	do	Not determined.					
4	New Shoreham	R. I. .	Block Island, east side, near landing .	41	10	30	71	33	07
5	Block Island	R. I. .	Block Island, west side, near Dicken's Point.	41	09	41	71	36	13
6	Montauk Point	N. Y. .	At the light	41	04	07	71	51	00
7	Ditch Plain	N. Y. .	3 miles southwest of Montauk light .	41	02	19	71	54	38
8	Hither Plain	N. Y. .	½ mile southwest of Fort Pond	41	01	33	71	57	26
9	Napeague	N. Y. .	Abreast Napeague Harbor	40	59	38	72	02	24
10	Amagansett	N. Y. .	Abreast of the town	40	58	05	72	07	24
11	Georgica	N. Y. .	1 mile south of East Hampton	40	56	35	72	11	19
12	Bridgehampton	N. Y. .	2 miles south of town	40	54	06	72	17	41
13	Southampton	N. Y. .	¾ mile south of town	40	52	13	72	23	07
14	Shinnecock	N. Y. .	3 miles from the head of Shinnecock Bay	40	50	40	72	27	30
15	Tyans	N. Y. .	4 miles east of Quogue	40	49	36	72	31	16

LIFE-SAVING DISTRICTS AND STATIONS ON COASTS OF THE UNITED STATES.

THIRD DISTRICT—Continued.

Embracing Coasts of Rhode Island and Long Island—Continued.

No.	Name.	State.	Locality.	Approximate position.					
				Latitude, north.			Longitude, west.		
				°	'	"	°	'	"
16	Quogue	N. Y.	½ mile south of the village	40	48	23	72	35	41
17	West Hampton	N. Y.	1½ miles southwest of Patunk village	40	47	52	72	39	01
18	Moriches	N. Y.	2½ miles southwest of Speonk village	40	46	25	72	42	49
19	Forge River	N. Y.	3½ miles south of Moriches	40	44	56	72	48	12
20	Smith's Point	N. Y.	A breast of the point	40	43	51	72	52	20
21	Bellport	N. Y.	4 miles south of the village	40	42	42	72	55	46
22	Blue Point	N. Y.	4½ miles south of Patchogue	40	40	40	73	01	15
23	Lone Hill	N. Y.	4½ miles south of Sayville	40	39	46	73	04	27
24	Point of Woods	N. Y.	5 miles south of Islip	40	38	55	73	08	11
25	Fire Island	N. Y.	East side Fire Island Inlet	40	37	34	73	13	36
26	Oak Island, east end	N. Y.		40	38	15	73	17	39
27	Oak Island, west end	N. Y.		40	37	16	73	22	24
28	Jones' Beach, east end	N. Y.		40	36	27	73	25	20
29	Jones' Beach, west end	N. Y.	6 miles south of South Oyster Bay	40	36	10	73	28	43
30	Short Beach	N. Y.	½ mile east of Jones' Inlet	Not determined.					
31	Discontinued								
32	Long Beach, east end	N. Y.	2 miles west of Jones' Inlet	40	35	18	73	35	47
33	Long Beach, west end	N. Y.	Near Lucy's Inlet	40	35	03	73	39	09
34	Hog Island, west end	N. Y.	Near Hog Island Inlet	40	35	22	73	43	50
35	Rockaway Beach	N. Y.	Near the village of Rockaway	40	35	25	73	46	55
36	do	N. Y.	West end	40	34	15	73	51	08
37	Coney Island	N. Y.	Manhattan Beach	40	34	21	73	56	06
38	Eaton's Neck	N. Y.	East side entrance to Huntington Bay, Long Island Sound.	40	57	12	73	23	45

FOURTH DISTRICT.

EMBRACING COAST OF NEW JERSEY.

1	Sandy Hook	N. J.	383 yards east of main light	40	27	42	73	59	34
2	Spermaceti Cove	N. J.	East of the upper end of cove	40	25	39	73	58	50
3	Seabright	N. J.	About a mile south of Navesink lights	40	22	46	73	58	11
4	Monmouth Beach	N. J.	3½ miles south of Navesink lights	40	20	30	73	58	07
5	Long Branch	N. J.	Near Green's Pond	40	16	36	73	58	43
6	Deal	N. J.	Near the town, 322 yards north of Great Pond	40	14	00	73	59	29
7	Shark River	N. J.	Near the mouth of Shark River	40	11	25	74	00	19
8	Wreck Pond	N. J.	2½ miles below Shark River	40	09	20	74	00	56
9	Squan Beach	N. J.	1 mile southeast of Squan village	40	06	52	74	01	43
10	Point Pleasant	N. J.	At the head of Barnegat Bay	40	03	58	74	02	20
11	Swan Point	N. J.	2½ miles below the head of Barnegat Bay	40	01	37	74	03	15
12	Green Island	N. J.	5 miles below the head of Barnegat Bay	39	59	06	74	03	33
13	Tom's River	N. J.	On the beach abreast of its mouth	39	56	15	74	04	30
14	Island Beach	N. J.		39	53	42	74	04	57
15	Forked River	N. J.		39	51	06	74	05	16
16	Island Beach	N. J.	North side of Barnegat Inlet	39	48	08	74	05	40
17	Barnegat	N. J.	South side of Barnegat Inlet	39	45	34	74	06	12
18	Loveladies Island	N. J.	On the beach abreast of the islands	39	43	47	74	07	01
19	Harvey Cedars	N. J.		39	40	23	74	08	13
20	Ship Bottom	N. J.		39	38	13	74	10	42
21	Long Beach	N. J.		39	35	03	74	13	03
22	Bond's	N. J.		39	31	59	74	15	16
23	Little Egg	N. J.	Near the light north of inlet	39	30	05	74	17	28
24	Little Beach	N. J.	South side of Little Egg Inlet	39	27	23	74	19	22
25	Brigantine	N. J.	5½ miles above Absecom light	39	25	23	74	20	02
26	Discontinued								
27	Atlantic City	N. J.	Near Absecom light	39	21	57	74	24	31
28	Absecom	N. J.	3 miles below the light	39	20	45	74	27	27
29	Great Egg	N. J.	6 miles below the light	39	19	02	74	30	51
30	Beazley's	N. J.	South side of the inlet	39	17	10	74	34	30
31	Peck's Beach	N. J.	3½ miles above Corson's Inlet	39	14	47	74	36	29
32	Corson's Inlet	N. J.	Near the inlet, north side	39	12	59	74	38	06
33	Ludlam's Beach	N. J.	3½ miles above Townsend's Inlet	39	09	42	74	40	41
34	Townsend's Inlet	N. J.	Near the inlet, north side	39	07	30	74	42	21
35	Stone Harbor	N. J.	3½ miles above Hereford Inlet	39	03	35	74	44	50
36	Hereford Inlet	N. J.	Near Hereford light	39	00	14	74	46	55
37	Turtle Gut	N. J.	6 miles above Cape Island City	38	58	39	74	50	34
38	Two-Mile Beach	N. J.	4 miles above Cape Island City	38	57	08	74	51	00
39	Cape May	N. J.	2 miles above Cape Island City	38	56	01	74	54	00
40	do	N. J.	Near the light	38	55	50	74	57	36
41	Bay Shore	N. J.	2½ miles west of Cape Island City	38	56	37	74	58	03

LIFE-SAVING DISTRICTS AND STATIONS ON COASTS OF THE UNITED STATES.

FIFTH DISTRICT.

EMBRACING COAST BETWEEN CAPE HENLOPEN AND CAPE CHARLES.

No.	Name.	State.	Locality.	Approximate position.	
				Latitude, north.	Longitude, west.
1	Cape Henlopen	Del.		38 46 38	75 04 43
2	Rehoboth Beach	Del.		Not determined.	
3	Indian River Inlet	Del.		38 36 40	75 04 30
4	Ocean City	Md.	Just north of town	Not determined.	
5	Green Run Inlet	Md.		38 03 15	75 13 15
6	Pope's Island	Md.		Not determined.	
7	Assateague Beach	Va.	A breast of Assateague light	37 54 10	75 19 35
8	Cedar Inlet	Va.	South end of Cedar Island	37 35 10	75 36 20
9	Hog Island	Va.	South end of Hog Island	37 26 45	75 41 00
10	Cobb's Island	Va.	South end of Cobb's Island	37 17 20	75 46 15
11	Smith's Island	Va.	South end of Smith's Island	37 06 20	75 55 00

SIXTH DISTRICT.

EMBRACING COAST BETWEEN CAPE HENRY AND CAPE FEAR.

1	Cape Henry	Va.		36 55 30	76 00 30
2	Seatack	Va.		Not determined.	
3	Dam Neck Mills	Va.		Do.	
4	Little Island	Va.		Do.	
5	False Cape	Va.		36 38 15	75 53 00
6	Deal's Island	N. C.		Not determined.	
7	Old Currituck Inlet	N. C.		Do.	
8	Jones' Hill	N. C.	Currituck Beach	36 22 00	75 49 00
9	Poyner's Hill	N. C.		Not determined.	
10	Caffey's Inlet	N. C.		Do.	
11	Paul Gamiel's Hill	N. C.		Do.	
12	Kitty Hawk	N. C.		Do.	
13	Kill Devil Hills	N. C.		Do.	
14	Nag's Head	N. C.	8 miles north of Oregon Inlet	35 55 30	75 36 15
15	Tommy's Hummock	N. C.		Not determined.	
16	Bodie's Island	N. C.	½ mile south of Oregon Inlet	35 47 30	75 32 00
17	Pea Island	N. C.		Not determined.	
18	Chicomicomico	N. C.	5 miles south of New Inlet	35 35 30	75 27 30
19	Cedar Hummock	N. C.		Not determined.	
20	Little Kinnakeet	N. C.		35 24 30	75 28 30
21	Big Kinnakeet	N. C.	6 miles north of Cape Hatteras light-house.	Not determined.	
22	Creed's Hill	N. C.	4½ miles west of Cape Hatteras light-house.	Do.	
23	Hatteras	N. C.	3 miles east of Hatteras Inlet	Do.	
24	Cape Lookout	N. C.	Station not yet built		
25	Cape Fear	N. C.	do		

SEVENTH DISTRICT.

EASTERN COAST OF FLORIDA.

1	Thirteen miles north of Indian River Inlet.	Fla.		Not determined.	
2	Gilbert's Bar	Fla.	Saint Lucie Rocks	Do.	
3	Orange Grove	Fla.		Do.	
4	Fort Lauderdale	Fla.		Do.	
5	Biscayne Bay	Fla.		Do.	

EIGHTH DISTRICT.

EMBRACING GULF COAST OF THE UNITED STATES.

1	Sabine Pass	Texas.		Not determined.	
2	Galveston, east end of island.	Texas.	Station not yet built		
3	Galveston, west end of island.	Texas.		Not determined.	
4	Pass Cavallo	Texas.		Do.	
5	Aranzas Pass	Texas.		Do.	
6	Brazos Santiago	Texas.		Do.	

LIFE-SAVING DISTRICTS AND STATIONS ON COASTS OF THE UNITED STATES.

NINTH DISTRICT.

EMBRACING LAKES ERIE AND ONTARIO.

No.	Name.	State.	Locality.
1	Big Sandy Creek	N. Y.	East side of mouth of Big Sandy Creek, Lake Ontario.
2	Salmon Creek	N. Y.	East side of mouth of Salmon Creek, Lake Ontario.
3	Oswego	N. Y.	Entrance of Oswego Harbor, Lake Ontario.
4	Charlotte	N. Y.	Entrance of Charlotte Harbor, Lake Ontario.
5	Buffalo	N. Y.	Buffalo Harbor, Lake Erie.
6	Presque Isle	Pa.	Entrance of Erie Harbor, Lake Erie.
7	Fairport	Ohio	Entrance of Fairport Harbor, Lake Erie.
8	Cleveland	Ohio	Entrance of Cleveland Harbor, Lake Erie.
9	Marblehead Point	Ohio	Marblehead Island, near Quarry Docks, Lake Erie.

TENTH DISTRICT.

EMBRACING LAKES HURON AND SUPERIOR.

1	Sand Beach Harbor	Mich.	Inside the harbor, Lake Huron.
2	Point aux Barques	Mich.	Near light-house, Lake Huron.
3	Port Austin	Mich.	One mile northwest of Grindstone City, Lake Huron.
4	Ottawa Point, (Tawas)	Mich.	Near light-house, Lake Huron.
5	Sturgeon Point	Mich.	Do.
6	Thunder Bay Island	Mich.	Do.
7	Middle Island	Mich.	North end of island, Lake Huron.
8	Forty-Mile Point	Mich.	Hammond's Bay, Lake Huron.
9	Vermillion Point	Mich.	Lake Superior.
10	7 miles west of Vermillion Point.	Mich.	Do.
11	Two-Heart River	Mich.	Near mouth of Two-Heart River, Lake Superior.
12	Sucker River	Mich.	Near mouth of Sucker River, Lake Superior.
13	Ship-Canal	Mich.	Near mouth of Portage Lake and Lake Superior Ship-Canal, Lake Superior; not yet built.

ELEVENTH DISTRICT.

LAKE MICHIGAN.

1	Beaver Island	Mich.	Near light-house.
2	North Manitou Island	Mich.	Near Pickard's wharf.
3	Sleeping Bear Point	Mich.	Station not yet built.
4	Point au Bec Scies	Mich.	Near light-house.
5	Manistee	Mich.	In the harbor.
6	Grand Point au Sable	Mich.	Near light-house.
7	Ludington	Mich.	In the harbor.
8	Muskegon	Mich.	In the harbor at Port Sherman.
9	Grand Haven	Mich.	Entrance of harbor.
10	Saint Joseph	Mich.	In the harbor.
11	Chicago	Ill.	Do.
12	Grosse Point	Ill.	Evanston, Ill., on Northwestern University grounds.
13	Kenosha	Wis.	In the harbor on Washington Island.
14	Racine	Wis.	In the harbor.
15	Milwaukee	Wis.	Near entrance of harbor.
16	Sheboygan	Wis.	Entrance of harbor.
17	Two Rivers	Wis.	Do.
18	Bayley's Harbor	Wis.	Station not yet built.

TWELFTH DISTRICT.

PACIFIC COAST.

1	Neah Bay	Wash. T.	On Indian reservation.
2	Shoalwater	Wash. T.	Near light-house boat-landing.
3	Cape Disappointment	Wash. T.	Baker's Bay.
4	Cape Arago	Oreg.	Coo's Bay, near light-house.
5	Humboldt Bay	Cal.	Near light-house.
6	Bolinas Bay	Cal.	
7	Golden Gate Park	Cal.	On beach in Golden Gate Park, San Francisco.
8	Point Concepcion	Cal.	Station not yet built.

ABSTRACTS
OF
RETURNS OF WRECKS AND CASUALTIES TO VESSELS
WHICH HAVE OCCURRED ON AND NEAR THE
COASTS AND ON THE RIVERS OF THE UNITED STATES,
AND TO
AMERICAN VESSELS AT SEA AND ON THE COASTS
OF FOREIGN COUNTRIES,
DURING THE
FISCAL YEAR ENDING JUNE 30, 1881.

WRECKS, CASUALTIES, AND COLLISIONS AT HOME AND ABROAD.

REMARKS EXPLANATORY OF THE WRECK STATISTICS FOR THE YEAR
1880-'81.

The following is the eighth annual statement of wrecks and casualties which have occurred on or near the coasts and on the rivers of the United States, and to American vessels at sea or on the coasts of foreign countries.

The statistics relating to disasters upon our own coasts are compiled from reports obtained and received through the officers of the customs, in compliance with the acts of June 20, 1874, and June 18, 1878.

Those relating to disasters which have occurred to American shipping in foreign waters are derived from reports received from our consular officers abroad and through the courtesy of officers of foreign governments; an interchange of such information having been effected, through the Department of State, with most other maritime nations.

In the preparation of the accompanying tables it has been found advisable, in order to facilitate reference, to make the following general divisions:

I. Disasters occurring on the Atlantic and Gulf coasts of the United States, embracing—

1. All casualties outside of, but in proximity to, the coast-line;
2. All casualties occurring in the bays and harbors adjacent to the coasts named;
3. All casualties occurring in or near the mouths of rivers emptying into the ocean or gulf.

II. Disasters occurring upon the Pacific coast of the United States, including those occurring in adjacent waters, as in the first division.

III. Disasters occurring on the great lakes, embracing—

1. All casualties occurring on Lakes Superior, Michigan, Huron, Saint Clair, Erie, or Ontario, reported by officers of the customs, whether in waters under the jurisdiction of the United States or of Great Britain;
2. All casualties occurring in rivers, straits, &c., connecting the several lakes named;
3. All casualties occurring in the harbors of any of said lakes, or in or near the mouths of rivers emptying into them, within the United States.

IV. Disasters occurring in rivers within the United States, embracing all rivers except those referred to in the foregoing division.

V. Disasters occurring to American shipping at sea or in foreign waters.

The disasters embraced in the foregoing divisions are classified as follows, viz:

1. *Foundering*—embracing foundering which resulted from the leaking or capsizing of vessels, but not those which resulted from collision, stranding, or striking any sunken wreck, or against piers, snags, or ice.

2. *Strandings*—embracing disasters resulting from running aground, striking a rock, reef, bar, or other natural object, although the vessel may have foundered as a result of such casualty.

3. *Collisions*—embracing all collisions between vessels only.

4. *Other causes*—embracing disasters resulting from various causes, as follows, viz:

Fire, irrespective of result;

Scuttling, or any intentional damage to vessel;

Collisions with fields or quantities of ice, although vessel may be sunk thereby;

Striking on sunken wrecks, anchors, buoys, piers, or bridges;

Leakage, (except when vessel foundered or went ashore for safety:);

Loss of masts, sails, boats, or any portion of vessel's equipments;

Capsizing, when vessel did not sink;

Damage to machinery;

Fouling of anchors;

Striking of lightning;

Explosion of boilers;

Breakage of wheels;

Also water-logged, missing, and abandoned vessels.

Since the publication of the annual statement for the fiscal year ending June 30, 1880, information has been received of the occurrence of disasters during that year to eighty-three American vessels and the loss of fifteen lives. The table annexed shows the nature of these casualties and the divisions in which they occurred:

	Foundering.	Strandings.	Collisions.	Other causes.	Total.	Totally lost.	Partially lost.	Lives lost on vessels damaged.	Lives lost on vessels not damaged.	Total number of lives lost.
Atlantic and Gulf coasts	11	9	8	28	7	21	1	1	1	1
Pacific coast	1	1	1	2	1	1	1	1	1	1
Great lakes	4	6	2	18	4	14	3	3	3	3
Rivers	1	2	9	12	1	11	2	1	3	3
At sea or in foreign waters	1	6	16	23	5	18	6	1	7	7
Total	1	23	17	42	83	18	65	12	3	15

Of the lives lost, reported above, six were lost on the schooner *Sallie S. Godfrey*, of Bridgeton, New Jersey, supposed to have foundered off Block Island, on the night of August 18, 1879, while on her passage from Philadelphia, Pennsylvania, to Danvers, Massachusetts; three were lost on the tug *George L. Lamont*, which capsized on Lake Michigan, March 14, 1880; two were scalded by the explosion of a boiler, and afterwards died; one was lost by the capsizing of a boat in the surf; one from a vessel in collision; one by falling overboard, and one by falling into the hold.

As the foregoing could not properly be included in the report for the fiscal year just closed, the General Summary Table of the previous year, amended so as to include the particulars furnished by the wreck reports mentioned above, is reprinted. The table will be convenient for comparison with the corresponding table in the statements of the present and other years.

Summary of disasters to vessels which occurred on and near the coasts and on the rivers of the United States, and to American vessels at sea and on the coasts of foreign countries, during the fiscal year ending June 30, 1880.

Nature of casualties.	Number of vessels.	Aggregate tonnage.	Wrecks involving total loss.	Casualties involving partial damage.	Number of lives lost.
Foundering:					
Atlantic and Gulf coasts	42	2, 721	31	11	12
Pacific coast	2	141	1	1	6
Great lakes	8	862	7	1	9
Rivers	13	4, 598	9	4	.....
At sea or in foreign waters	21	9, 026	20	1	37
Total	86	17, 348	68	18	64
Strandings:					
Atlantic and Gulf coasts	349	66, 049	126	223	21
Pacific coast	41	7, 506	23	18	.....
Great lakes	164	60, 756	31	133	10
Rivers	34	6, 580	7	27	.....
At sea or in foreign waters	75	33, 177	55	20	.....
Total	663	174, 068	242	421	31
Vessels collided:					
Atlantic and Gulf coasts	434	155, 057	17	417	41
Pacific coast	46	24, 854	.....	46	.....
Great lakes	188	78, 168	1	187	.....
Rivers	65	31, 368	6	59	.....
At sea or in foreign waters	58	28, 527	5	53	39
Total	791	317, 974	29	762	80
Other causes:					
Atlantic and Gulf coasts	211	46, 278	19	192	34
Pacific coast	25	11, 186	1	24	1
Great lakes	210	73, 252	13	197	19
Rivers	111	43, 573	29	82	40
At sea or in foreign waters	304	128, 603	45	259	160
Total	861	302, 892	107	754	254
Grand total	2, 401	812, 282	446	1, 955	*429

RECAPITULATION.

Atlantic and Gulf coasts	1, 036	270, 105	193	843	108
Pacific coast	114	43, 687	25	89	7
Great lakes	570	213, 038	52	518	38
Rivers	223	86, 119	51	172	40
At sea or in foreign waters	458	199, 333	125	333	236
Total	2, 401	812, 282	446	1, 955	*429

	Atlantic and Gulf coasts.	Pacific coast.	Great lakes.	Rivers.	At sea or in foreign waters.	Aggregate.
Total value vessels involved	\$15, 576, 015	\$2, 791, 175	\$8, 093, 050	\$3, 676, 750	\$7, 076, 885	\$37, 213, 875
Total value cargoes involved	5, 122, 320	809, 210	3, 483, 800	2, 765, 305	8, 932, 251	21, 112, 886
Aggregate	20, 698, 335	3, 600, 385	11, 576, 850	6, 442, 055	16, 009, 136	58, 326, 761
Total insurance on vessels	\$2, 337, 278	\$526, 950	\$3, 062, 265	\$1, 461, 200	\$2, 974, 756	\$10, 362, 449
Total insurance on cargoes	1, 940, 393	141, 460	2, 395, 905	1, 969, 105	5, 224, 057	11, 670, 920
Aggregate	4, 277, 671	668, 410	5, 458, 170	3, 430, 305	8, 198, 813	22, 033, 369
Total losses to vessels	\$1, 752, 586	\$369, 985	\$757, 775	\$595, 915	\$2, 320, 455	\$5, 796, 716
Total losses to cargoes	508, 280	117, 685	455, 495	620, 190	1, 437, 150	3, 138, 800
Aggregate	2, 260, 866	487, 670	1, 213, 270	1, 216, 105	3, 757, 605	8, 935, 516
Total tonnage vessels involved	270, 105	43, 687	213, 038	86, 119	199, 333	812, 282
Total tonnage vessels lost	27, 836	4, 467	10, 820	14, 022	51, 454	108, 599

* In addition to the number of lives lost, here reported, 173 were lost in cases where no other casualty occurred to the vessels, making the total number of lives lost 602.

As the tables, Nos. 1 to 64, inclusive, embrace all casualties involving losses as low as \$50, for the purpose of exhibiting their nature, causes, and localities, the character of vessels, loss of life, and other information of importance, the following table of disasters, involving damage amounting to \$500 and upward, (damage less than that amount to vessels and cargoes being considered unimportant in a pecuniary sense,) is subjoined, the corresponding table for the two previous years being also reprinted for the purpose of comparison:

Fiscal year ending June 30, 1879.

	Amount of losses.											Total.			
	\$500 to \$1,000.	\$1,000 to \$2,000.	\$2,000 to \$5,000.	\$5,000 to \$10,000.	\$10,000 to \$20,000.	\$20,000 to \$30,000.	\$30,000 to \$40,000.	\$40,000 to \$50,000.	\$50,000 to \$75,000.	\$75,000 to \$100,000.	\$100,000 to \$200,000.		\$200,000 to \$300,000.	\$300,000 and over.	Unknown.
Atlantic and Gulf coasts.....	125	119	105	52	33	10	3	2	3	.....	4	1	.....	49	506
Pacific coast.....	14	6	11	2	3	2	.....	2	.....	2	.....	1	.....	1	44
Great lakes.....	47	37	26	12	5	2	1	.....	1	.....	1	.....	.....	21	153
Rivers.....	15	17	26	8	8	3	1	2	1	2	.....	.....	.....	6	89
At sea or in foreign waters.....	71	56	78	67	48	28	8	6	10	4	4	3	2	25	410
Total.....	272	235	246	141	97	45	13	12	15	8	9	4	3	102	1,202

Fiscal year ending June 30, 1880.

	Amount of losses.											Total.			
	\$500 to \$1,000.	\$1,000 to \$2,000.	\$2,000 to \$5,000.	\$5,000 to \$10,000.	\$10,000 to \$20,000.	\$20,000 to \$30,000.	\$30,000 to \$40,000.	\$40,000 to \$50,000.	\$50,000 to \$75,000.	\$75,000 to \$100,000.	\$100,000 to \$200,000.		\$200,000 to \$300,000.	\$300,000 and over.	Unknown.
Atlantic and Gulf coasts.....	131	104	104	48	23	8	4	2	3	2	.....	1	.....	73	503
Pacific coast.....	17	7	12	10	10	1	.....	.....	1	.....	1	.....	.....	4	63
Great lakes.....	73	58	57	22	12	4	3	1	2	.....	1	.....	.....	36	269
Rivers.....	28	28	24	20	19	5	3	4	2	.....	1	.....	.....	14	148
At sea or in foreign waters.....	50	44	63	46	40	19	10	4	8	2	3	1	.....	27	317
Total.....	299	241	260	146	104	37	20	11	16	4	6	2	.....	154	1,300

Fiscal year ending June 30, 1881.

	Amount of losses.												Total.		
	\$500 to \$1,000.	\$1,000 to \$2,000.	\$2,000 to \$5,000.	\$5,000 to \$10,000.	\$10,000 to \$20,000.	\$20,000 to \$30,000.	\$30,000 to \$40,000.	\$40,000 to \$50,000.	\$50,000 to \$75,000.	\$75,000 to \$100,000.	\$100,000 to \$200,000.	\$200,000 to \$300,000.		\$300,000 and over.	Unknown.
Atlantic and Gulf coasts	91	106	77	37	23	12	6	5	2	3	3	1	1	62	429
Pacific coast	15	9	8	9	6	1	1	...	3	...	...	...	1	3	54
Great lakes	71	56	60	26	17	8	7	2	3	...	...	...	...	40	290
Rivers	24	29	44	20	13	6	3	4	7	3	...	1	...	10	164
At sea or in foreign waters	50	40	51	49	41	13	11	8	6	6	3	2	...	12	292
Total	251	240	240	141	100	40	28	19	19	12	6	4	2	127	1,229

The subjoined tables show, by localities, the total number of vessels meeting with casualties, the total value of such vessels and their cargoes, the total losses to both and the total tonnage involved, and the tonnage of vessels totally lost during the fiscal years, 1879-'80 and 1880-'81, with the percentage of increase or decrease of the latter compared with the former:

Total number of vessels involved.

	1879-'80.	1880-'81.	Per cent.
Atlantic	1,008	798	Decrease of 20.83 per cent.
Pacific	112	74	Decrease of 33.93 per cent.
Great lakes	552	545	Decrease of 12.7 per cent.
Rivers	211	238	Increase of 12.80 per cent.
At sea or in foreign waters	435	374	Decrease of 14.02 per cent.
Aggregate	2,318	2,029	Decrease of 12.47 per cent.

Total value of vessels and cargoes involved.

	1879-'80.	1880-'81.	Per cent.
Atlantic	\$20,308,770	\$18,425,550	Decrease of 9.27 per cent.
Pacific	3,299,385	3,032,165	Decrease of 8.10 per cent.
Great lakes	11,220,550	11,053,330	Decrease of 1.49 per cent.
Rivers	6,121,455	6,862,410	Increase of 12.10 per cent.
At sea or in foreign waters	14,700,540	13,238,630	Decrease of 9.94 per cent.
Aggregate	55,650,700	52,612,085	Decrease of 5.46 per cent.

Total loss to vessels and cargoes.

	1879-'80.	1880-'81.	Per cent.
Atlantic	\$2,220,130	\$3,317,460	Increase of 49.43 per cent.
Pacific	487,095	624,780	Increase of 28.27 per cent.
Great lakes	1,162,840	1,425,734	Increase of 22.61 per cent.
Rivers	1,168,675	1,852,640	Increase of 58.52 per cent.
At sea or in foreign waters	3,444,475	3,885,512	Increase of 12.80 per cent.
Aggregate	8,483,215	11,106,126	Increase of 30.92 per cent.

Total tonnage of vessels involved.

	1879-'80.	1880-'81.	Per cent.
Atlantic.....	264, 050	209, 518	Decrease of 20.65 per cent.
Pacific.....	41, 339	32, 873	Decrease of 20.48 per cent.
Great lakes.....	207, 304	182, 250	Decrease of 12.09 per cent.
Rivers.....	81, 649	81, 784	Increase of .17 per cent.
At sea or in foreign waters.....	179, 728	171, 861	Decrease of 4.38 per cent.
Aggregate.....	774, 070	678, 286	Decrease of 12.37 per cent.

Total tonnage of vessels totally lost.

	1879-'80.	1880-'81.	Per cent.
Atlantic.....	27, 236	36, 263	Increase of 33.14 per cent.
Pacific.....	4, 454	5, 420	Increase of 21.69 per cent.
Great lakes.....	9, 984	15, 697	Increase of 57.22 per cent.
Rivers.....	13, 864	17, 630	Increase of 27.16 per cent.
At sea or in foreign waters.....	46, 055	50, 575	Increase of 9.81 per cent.
Aggregate.....	101, 593	125, 585	Increase of 23.62 per cent.

On the 30th of June, 1881, the total number of registered, enrolled, and licensed vessels belonging to the United States were 24,065, with a total tonnage of 4,057,734; of this number 1,928 vessels, having a total tonnage of 641,198, met with casualties during the year, being 8 per cent. of the total number.

The following exhibit shows the number of steam and sailing-vessels, canal-boats, and barges registered, enrolled, and licensed, belonging to the United States on June 30, 1881; the number of each class which have met with disasters during the year, and the ratio of casualties to the number of vessels:

Comparative Table—Casualties to Vessels.

Classification.	Number of ves- sels belonging to the United States.	Number of casu- alties to ves- sels.	Ratio of casual- ties to number of vessels.
Steam-vessels.....	4, 860	495	As 1 to 9.82
Sailing-vessels.....	16, 760	1, 394	As 1 to 12.02
Canal-boats.....	1, 327	4	As 1 to 331.75
Barges.....	1, 118	35	As 1 to 31.94
Total.....	24, 065	1, 928	As 1 to 12.48

During the year, 672 vessels were reported as having met with collisions, but as two vessels were engaged in each collision, (though in a few instances three or more collided with each other in gales, &c.,) the actual number of casualties of this nature were a little less than one-half that number.

One hundred and one foreign vessels, having an aggregate tonnage of 37,088, met with disasters in American waters during the year. The nationalities of these vessels are given in certain of the accompanying tables.

In addition to the lives lost in the disasters to vessels, which are embraced in the tables, 192 persons perished, by drowning or by accident

on board, out of crews employed on 170 different vessels. In these cases neither vessels nor cargoes suffered damage, the persons drowned having been lost overboard or having perished by the capsizing of small boats in which they had left their vessels to attend fishing trawls or for other purposes. In some instances lives were lost by falling to the deck from aloft and by being struck by spars, tacklings, &c., falling or swinging, owing to the giving way of rigging. These vessels are not included in any of the tables except 63 and 64.

The following exhibit shows the number of persons on board vessels suffering casualties, the number of lives lost, the ratio of those lost to the number on board, and the ratio of lives lost to the number of casualties for the last six fiscal years:

Fiscal year.	Number of casualties.	Number of persons on board.	Number of lives lost.	Ratio of lives lost to number on board.	Ratio of lives lost to number of casualties.
1875-'76	2, 173	23, 602	*885	As 1 to 26. 67	As 1 to 2. 45
1876-'77	2, 062	28, 139	*817	As 1 to 34. 44	As 1 to 2. 52
1877-'78	1, 942	25, 133	*598	As 1 to 42. 03	As 1 to 3. 25
1878-'79	2, 942	27, 811	*743	As 1 to 37. 43	As 1 to 2. 82
1879-'80	2, 318	33, 339	*417	As 1 to 79. 95	As 1 to 5. 56
1880-'81	2, 029	30, 475	*605	As 1 to 50. 37	As 1 to 3. 35

* This number is exclusive of lives lost where vessels suffered no damage.

The above statement shows a general decrease in the number of lives lost in proportion to the number of persons on board vessels suffering casualty, and a similar decrease in the number of lives lost in proportion to the number of disasters. The decrease has been from 1 out of every 26.67 persons to 1 out of every 50.37 persons, and from 1 out of every 2.45 vessels to 1 out of every 3.35 vessels; a reduction of 47.05 per cent. in the one case and 26.86 per cent. in the other.

A still more remarkable exhibit is found in the following table, which is the same as the one above, except that it is confined to our own domain, the disasters occurring at sea and in foreign waters being excluded:

Fiscal years.	Number of casualties.	Number of persons on board.	Number of lives lost.	Ratio of lives lost to number on board.	Ratio of lives lost to number of casualties.
1875-'76	1, 808	19, 255	*650	As 1 to 29. 62	As 1 to 2. 78
1876-'77	1, 525	21, 688	*315	As 1 to 68. 85	As 1 to 4. 84
1877-'78	1, 531	20, 327	*399	As 1 to 50. 94	As 1 to 3. 83
1878-'79	1, 571	21, 898	*237	As 1 to 92. 40	As 1 to 6. 63
1879-'80	1, 883	28, 128	*187	As 1 to 150. 42	As 1 to 10. 07
1880-'81	1, 655	25, 881	*280	As 1 to 92. 43	As 1 to 5. 91

* This number is exclusive of lives lost where vessels suffered no damage.

Thus it appears that upon the coasts and rivers of the United States the loss of life has descended, since the fiscal year ending June 30, 1876, from 1 out of every 29.62 persons on board vessels suffering disaster to 1 out of every 92.43 persons, and from 1 out of every 2.78 such vessels to 1 out of every 5.91; a reduction of 67.95 per cent. in the one case and 52.96 per cent. in the other.

It will be seen that the regular diminution in the ratios from year to year is twice interrupted; first, in the fiscal year 1877-'78, and again in the last fiscal year. In the first instance the interruption is owing to

the exceptionally calamitous disasters to the steamers Huron and Metropolis, on the North Carolina coast, in which one hundred and eighty-three persons perished. It is shown in another part of this report that in one case the Life-Saving Service was inoperant, and in the other crippled, from causes explained. In the second instance, the increase is chiefly due to the wreck of the steamer Alpena, in a terrific storm in the middle of Lake Michigan, on October 16, 1880, by which sixty lives were lost. If this number be deducted from the two hundred and eighty lives lost during the year, the ratio of lives lost to the number of persons on board vessels would be as 1 to 117.37, and the ratio of lives lost to the number of casualties as 1 to 7.52, and the regular diminution would be nearly constant. The percentage of reduction would be 74.76 in the one case, and 63.03 in the other. It will hence be seen, upon examination of the above tables, that the reduction in the loss of life has been wholly in the United States, and this must be due entirely to the life-saving effort, inasmuch as there has been no material reduction in the number of casualties or in the number of persons exposed to peril.

TABLES.
ATLANTIC AND GULF COASTS.

TABLE 1.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the NUMBER and VALUE OF VESSELS and CARGOES and amount of LOSS to same where known.

Months.	Total value of ves- sels.		Number of ves- sels, value		Total value of car- goes.		Number of car- goes, value		Unknown whether laden or not.		Loss to vessels.		Number of vessels dam- aged, amount unknown.*		Loss to cargoes.		Number of cargoes totally lost, amount unknown.		Number of cargoes not damaged, or damage un- known.		
	Number.	Amount.	Number.	Value.	Number.	Amount.	Number.	Amount.	Number.	Value.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	
July.....	49	\$672,775	6		29	\$302,260	4		6		43	\$57,880	12		14	\$9,625	.....	.....	.....	.....
August.....	90	947,000	3		56	331,465	3		3		86	219,130	7		32	65,200	.....	.....	.....	.....
September.....	51	703,365	6		42	398,995	.....	.....	6		49	42,985	8		18	9,975	.....	.....	.....	.....
October.....	70	2,268,065	6		53	629,645	1		6		67	284,820	9		19	296,475	.....	.....	.....	.....
November.....	69	1,800,220	7		38	246,335	3		1		65	531,735	9		18	69,590	.....	.....	.....	.....
December.....	61	1,556,300	7		49	963,750	1		1		57	77,305	11		17	10,690	.....	.....	.....	.....
January.....	46	596,735	2		36	238,180	.....	.....	2		44	909,560	14		25	95,475	.....	.....	.....	.....
February.....	72	1,654,100	4		40	672,185	5		7		66	927,060	11		24	308,985	.....	.....	.....	.....
March.....	63	498,570	4		45	384,715	.....	.....	4		57	75,665	14		32	170,380	.....	.....	.....	.....
April.....	73	773,295	7		49	391,690	.....	.....	7		68	286,375	12		27	187,710	.....	.....	.....	.....
May.....	39	762,600	6		25	131,585	5		5		37	40,240	8		7	19,400	.....	.....	.....	.....
June.....	55	2,066,300	5		42	607,400	3		5		50	37,155	10		13	53,065	.....	.....	.....	.....
Total.....	736	13,538,375	62		497	4,867,175	25		60		689	2,069,890	109		237	1,227,570	343

* In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 2.

TABLE 2.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the number of VESSELS TOTALLY LOST, the number DAMAGED, aggregate TONNAGE of vessels totally lost, number of PASSENGERS and CREW, and number of LIVES LOST.

Months.	Number of disasters resulting in total loss to vessels.	Number of disasters resulting in partial damage to vessels.	Whether total or partial loss unknown.	Number of casualties resulting in no damage to vessels.	Total.	Total tons burden of vessels totally lost.	Total number of crew, including master, &c.	Total number of passengers.	Total number of lives lost.
July	10	33	6	6	55	1,623	424	678	.....
August	35	51	3	4	93	4,599	577	1,593	22
September	10	39	5	3	57	831	614	269	3
October	17	50	6	3	76	4,003	762	997	2
November	15	50	5	4	74	5,354	913	406	9
December	10	47	7	4	68	1,640	458	143	1
January	16	28	2	2	48	4,259	348	27	5
February	18	48	5	6	77	5,454	678	376	4
March	13	44	4	4	65	1,920	364	48	18
April	17	51	3	4	80	4,539	564	100	18
May	8	29	6	2	45	768	422	.....	.....
June	11	39	5	5	60	1,273	668	1,065	13
Total	180	509	62	47	798	36,263	6,792	6,224	95

TABLE 3.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the number of VESSELS and CARGOES INSURED and UNINSURED, and the AMOUNT of INSURANCE, where known.

Months.	Number of vessels and cargoes reported to be insured, and the amount of insurance.					Number of vessels and cargoes reported not insured.		Number of vessels and cargoes, whether insured or not, unknown.		Vessels in ballast.
	Vessels.		Cargoes.		Total amount of insurance.	Vessels.	Cargoes.	Vessels.	Cargoes.	
	Number.	Amount.	Number.	Amount.						
July	11	\$47,550	8	\$10,810	\$58,360	34	17	10	14	16
August	22	93,290	18	60,225	153,515	64	29	7	15	31
September	12	69,465	20	309,845	379,310	38	16	7	11	10
October	22	310,300	16	255,960	566,260	47	31	7	12	17
November	16	135,950	14	86,480	222,430	50	19	8	13	28
December	14	108,420	16	234,175	342,595	45	20	9	14	18
January	16	114,870	13	95,615	210,485	27	18	5	7	10
February	21	459,200	20	648,125	1,147,325	48	18	8	12	27
March	13	47,050	20	175,775	222,825	44	17	3	12	16
April	21	190,200	17	258,230	448,430	47	20	12	19	24
May	11	200,400	6	79,250	279,650	25	11	9	19	9
June	12	190,090	11	19,175	209,265	36	20	12	19	10
Total	191	1,966,785	179	2,273,665	4,240,450	505	236	102	167	216

TABLE 4.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, distinguishing the NATURE of each casualty.

Nature of casualty.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Foundered	16	3	2	2	3	1	2	2	1	1	3	36	
Stranded	13	29	18	17	31	23	22	23	21	27	16	14	254
Collided	32	28	22	39	26	30	8	38	26	34	26	30	339
Capsized			1	3			1		1			2	8
Damage to hull, masts, rigging, &c	4	10	7	2	3	3	2	3	5	6	1	2	48
Damage to machinery		1	1	6	3	2						1	14
Explosion of boilers							1	2					3
Fire	1	6	1	4	1	2	1	2		4			22
Ice							6	3		1			11
Sprung a leak	1	1	2	2	2	1	2	2				1	21
Struck by lightning	2	1									1		6
Struck wharf, bridge, sunken wreck, &c	1		2	1	1				2	3		3	13
Waterlogged	1					1				1		1	4
Miscellaneous		1	1	2	1	2	1	3	1	3		1	16
Total	55	93	57	76	74	68	48	77	65	80	45	60	798

TABLE 5.—Abstract of returns of disasters (excluding collisions) to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, distinguishing the CAUSE of each disaster.

Class and cause of disaster.	Foundering.	Strandings.	Other causes.	Missing vessels.	Total.
CLASS 1.—Causes connected with the weather :					
Calms, currents, and tides		19	4		23
Darkness		14	1		15
Fog, &c.	1	26	1		28
Gales, hurricanes, &c	20	91	51		162
Heavy sea, &c	3	15	11		29
Lightning			6		6
Total of Class 1	24	165	74		263
CLASS 2.—Causes connected with vessels, equipments, or stowage :					
Defective hull, masts, rigging, &c			8		8
Error in compass		6			6
Total of Class 2		6	8		14
CLASS 3.—Causes connected with navigation and seamanship :					
Errors of masters, officers, or crew	2	19	3		24
Errors of pilots		9			9
Total of Class 3	2	28	3		33
CLASS 4.—Causes connected with machinery or boilers :					
Damage to machinery			14		14
Explosion of boilers, &c			3		3
Total of Class 4			17		17
CLASS 5.—Other causes :					
Absence of light or buoys		11			11
Fire			20		20
Ice		5	21		26
"Inevitable accident"		5	1		6
Sprung a leak	8	9	5		22
Struck rock, wreck, bridge, &c		5	12		17
Want of pilot		1			1
Miscellaneous	1	12	5		18
Unknown	1	7	3		11
Total of Class 5	10	55	67		132
Aggregate	36	254	169		459

TABLE 6.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the number of vessels COLLIDED, and distinguishing the CAUSE of each disaster.

Cause of disaster.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Accidental.....	2	2										2	6
Bad management.....	4			2			2						8
Carelessness.....		6	2	2	2	2			4		2	2	20
Darkness.....	4	2		2	2	2		2		2			16
Error of judgment.....			3	3		2							9
Errors of pilots.....				2									4
"Fault of other vessel".....	14	2	6	15	10	12		10	6	6		2	91
Fault of tug towing.....													4
Fog.....	2	4	4	4	2		2	2	2	2		6	16
Heavy sea.....								2	2	2		12	10
High, baffling winds.....			4	2	4								4
Misunderstanding signals.....		2		2				2	2	2			28
Mistayed.....						2							2
Negligence.....					2		2		2				6
Stress of weather.....					2	2	2						6
Tides, currents, &c.....	2	6	2		2	2	2		2		4	2	20
Want of proper lights.....		4				2				2			10
Miscellaneous.....			4	2	2			2					10
Unknown.....	2			2		4					2	4	21
Total.....	32	28	22	39	26	30	8	36	26	34	26	30	339

TABLE 7.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the number of vessels and distinguishing their DESCRIPTION.

Description of vessels.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Barges.....		9		2	3		1			1		1	17
Barks.....	5	5	2	3	4	4	5	3	4	1	2	1	39
Barkentines.....													1
Brigs.....	3	3	2	3		6	1	5	1				24
Brigantines.....	1												2
Canal-boats.....		3						1					3
Ferry-boats.....									1				1
Schooners.....	31	46	39	35	43	43	27	38	43	52	30	43	470
Ships.....		3			3	1	1	2		1	2		13
Sloops.....	2	5	2	6	3	1	5		4	3	1	1	33
Steamers.....	10	14	7	20	14	9	6	20	7	12	10	12	141
Steamships.....	2	2	4	4	1	3	1	4	2	5			29
Yachts.....	1	1		1				1					4
Unknown.....		2	1	2	3	1	1	3	2	5		1	21
Total.....	55	93	57	76	74	68	48	77	65	80	45	60	798

TABLE 8.—Abstract of returns of disasters to foreign vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing NATIONALITY and DESCRIPTION, and distinguishing those TOTALLY LOST and those PARTIALLY DAMAGED.

Nationality and rig.	July.		August.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Janu-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.
	Total loss.	Partial loss.																									
British bark					1		1	1	1	1	1	1	2					1							5	6	11
British brig	1																								3	3	
British schooner	1				2		1	1	1	2	1	1	2					1		1					4	10	14
British ship																									1	1	2
British steamer	1																								1	1	2
British steamship					1																				1	1	2
Dutch barkentine																									1	1	2
French bark																									2	2	4
German bark																									1	1	2
Italian bark																									1	1	2
Norwegian bark																									2	2	4
Portuguese bark																									1	1	2
Russian bark																									1	1	2
Russian bark	1																								1	1	2
Spanish bark																									1	1	2
Spanish brig																									1	1	2
Total	1	7	2	2	4	1	2	1	4	2	6	3	3	3	2	3	4	2	1	2	2	2	1	1	18	38	56
Aggregate	8		4	4	3	5	8	6	6	5	6	3	2	2	2	2	2	3	2	2	2	2	2	2	56		

TABLE 9.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the TONNAGE and distinguishing the number of those TOTALLY LOST and those PARTIALLY DAMAGED.

Burden of vessels.	July.		Aug. ust.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Janu-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.	
	Total loss.	Partial loss.																										
Not exceeding 50 tons.....	4	6	8	18	3	7	8	7	4	4	14	4	14	6	3	15	5	15	5	15	3	5	3	8	56	134	190	
Over 50 and not exceeding 100 tons.....	1	10	14	11	5	12	3	16	1	7	1	10	1	10	3	9	2	6	4	20	2	9	3	14	40	134	174	
Over 100 and not exceeding 200 tons.....	1	7	9	1	13	2	8	5	8	3	3	3	8	3	5	8	3	11	3	7	2	5	3	6	37	99	136	
Over 200 and not exceeding 300 tons.....	2	8	2	1	1	2	1	6	1	5	1	3	2	2	2	2	1	8	5	5	3	2	3	2	3	13	48	61
Over 300 and not exceeding 400 tons.....	1	3	2	6	2	2	5	2	2	4	1	4	1	1	3	2	1	5	2	1	1	1	1	4	13	35	48	
Over 400 and not exceeding 500 tons.....	1	3	3	3	3	1	1	1	2	4	4	4	1	1	2	3	1	1	1	1	1	1	1	1	1	5	22	27
Over 500 and not exceeding 600 tons.....	1	1	2	2	2	2	1	1	1	2	2	1	1	1	1	1	1	1	1	2	3	3	2	2	5	16	21	
Over 600 and not exceeding 700 tons.....	1	1	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	12	14	
Over 700 and not exceeding 800 tons.....	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	15	15	
Over 800 and not exceeding 900 tons.....	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	6	
Over 900 and not exceeding 1,000 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4	
Over 1,000 and not exceeding 1,100 tons.....	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	12
Over 1,100 and not exceeding 1,200 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7
Over 1,200 and not exceeding 1,300 tons.....	1	1	1	1	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Over 1,300 and not exceeding 1,400 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Over 1,400 tons.....	1	1	1	2	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21
Unknown.....	4	4	2	5	1	1	6	1	4	4	4	4	2	2	3	3	3	3	6	6	2	2	3	3	4	40	40	
Total.....	10	45	35	58	10	47	17	59	15	59	10	58	16	32	18	59	13	52	17	63	8	37	11	49	180	618	798	
Aggregate.....	55	93	57	76	74	68	48	77	65	80	45	60	798															

NOTE.—In the columns of "Partial loss" in this table are included the casualties in which the vessels sustained no damage, for the number of which see appropriate column in Table 2.

TABLE 10.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the number of vessels and distinguishing AGE.

Age.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Not exceeding 3 years.....	4	12	2	4	2	7	4	4	3	5	4	3	54
Over 3 and not exceeding 7 years.....	10	16	7	11	15	7	2	15	2	6	6	3	118
Over 7 and not exceeding 10 years.....	10	9	5	4	7	9	7	9	6	6	6	4	87
Over 10 and not exceeding 14 years.....	2	17	10	16	11	9	4	11	14	15	2	7	128
Over 14 and not exceeding 20 years.....	2	14	14	13	14	13	10	17	5	10	2	2	140
Over 20 and not exceeding 25 years.....	2	6	2	7	6	4	4	2	5	6	6	6	59
Over 25 and not exceeding 30 years.....	4	7	5	6	5	7	4	6	4	13	3	3	74
Over 30 and not exceeding 35 years.....	1	5	3	3	4	3	1	1	5	3	3	3	38
Over 35 and not exceeding 40 years.....	2	1	2	1	1	2	1	1	1	3	1	1	13
Over 40 and not exceeding 45 years.....	1	1	1	1	1	1	1	1	1	1	1	1	9
Over 45 and not exceeding 50 years.....	1	1	1	1	1	1	1	1	1	1	1	1	9
Over 50 years.....	1	1	1	1	1	1	1	1	1	1	1	1	9
Unknown.....	7	6	1	8	6	6	5	5	10	6	6	5	71
Total.....	55	93	57	76	74	68	48	77	65	80	45	60	798

TABLE 11.—Abstract of returns of disasters to vessels on the ATLANTIC and GULF coasts during the year ending June 30, 1881, showing the number of vessels and distinguishing their CARGOES.

Cargoes.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Ballast.....	16	31	10	17	28	18	10	27	16	24	9	10	216
Coal.....	5	13	7	13	8	6	6	3	6	4	5	8	84
Cotton and cotton-seed.....	1	1	1	1	1	1	1	1	1	1	1	1	6
Fish, oysters, &c.....	3	3	5	6	5	7	10	4	4	6	6	4	63
Fruit, coffee, &c.....	1	1	1	1	1	1	1	1	1	1	1	1	6
Grain.....	1	1	1	2	1	1	2	1	3	2	1	2	15
Guano, &c.....	1	1	1	1	1	1	2	1	3	2	1	1	13
Hides, &c.....	1	1	1	1	1	1	1	1	1	1	1	1	1
Ice, &c.....	4	5	1	4	1	1	1	1	1	1	1	1	17
Iron and iron-ore.....	1	2	1	3	2	1	3	5	3	3	1	1	21
Lime, cement, &c.....	1	2	1	1	1	1	1	1	3	3	1	3	10
Live stock, &c.....	1	1	1	1	1	1	1	1	1	1	1	1	2
Logwood, &c.....	1	1	1	1	1	1	1	1	1	1	1	1	3
Lumber, &c.....	8	13	12	6	8	13	4	7	3	8	7	9	98
Merchandise, (general).....	3	6	4	9	9	5	2	7	3	7	2	8	65
Naval stores.....	1	2	1	1	1	1	1	1	1	1	1	1	3
Petroleum.....	1	1	1	1	1	1	1	1	1	1	1	1	2
Phosphates.....	1	1	1	1	1	1	1	1	1	1	1	1	7
Provisions, &c.....	1	1	1	1	1	1	1	1	1	1	1	1	4
Salt.....	2	2	1	1	1	3	1	1	1	1	1	1	7
Sand, plaster, &c.....	1	1	1	1	1	1	1	1	1	1	1	1	5
Stone, brick, &c.....	2	1	1	1	1	1	1	3	3	4	2	1	15
Sugar, molasses, &c.....	1	1	1	1	1	1	1	4	5	1	1	1	15
Whale-oil, &c.....	1	1	1	1	1	1	1	1	1	1	1	1	2
Wood, &c.....	2	2	1	4	1	1	3	1	2	1	1	3	19
Miscellaneous.....	1	2	5	3	2	2	1	7	2	4	6	4	39
Unknown.....	6	3	5	5	5	7	2	5	4	7	6	5	60
Total.....	55	93	57	76	74	68	48	77	65	80	45	60	798

TABLE 12.—*Summary—ATLANTIC and GULF coasts.*

Nature of casualties.	Number of vessels.	Total number of tons.	Laden.	Ballast.	Unknown whether laden or not.	Total loss.	Partial and unknown loss.*	Number of passengers.	Number of crew.	Total on board.	Total number of lives lost.
Foundering	36	4,218	30	6	.....	27	9	40	154	194	20
Strandings	254	53,505	189	65	.....	106	148	892	1,869	2,761	41
Vessels collided	339	109,509	190	89	60	17	322	3,943	3,295	7,238	17
Other causes	169	42,286	113	56	.....	30	139	1,349	1,474	2,823	17
Total	798	209,518	522	216	60	180	618	6,224	6,792	13,016	95

*In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 2.

PACIFIC COAST.

TABLE 13.—Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the NUMBER and VALUE of VESSELS and CARGOES and amount of LOSS to same where known.

Months.	Total value of ves- sels.		Total value of car- goes.		Number of vessels, value unknown.	Loss to vessels.		Loss to cargoes.		Number of vessels dam- aged, amount unknown.*	Loss to cargoes.		Number of cargoes not known, or damage un- known.
	Number.	Amount.	Number.	Amount.		Number.	Amount.	Number.	Amount.		Number.	Amount.	
July.....	5	\$108,000	4	\$17,600	.....	5	\$36,400	2	\$7,400	.....	2	\$7,400	2
August.....	4	119,000	4	11,850	.....	4	4,700	2	4,830	.....	2	4,830	2
September.....	3	70,500	3	11,550	.....	3	63,250	2	10,950	.....	2	10,950	1
October.....	7	63,000	6	31,000	.....	7	37,300	4	9,700	.....	4	9,700	2
November.....	5	305,500	5	130,105	.....	5	2,805	1	1,140	.....	1	1,140	4
December.....	7	51,300	2	1,645	.....	7	45,300	1	173	.....	1	173	1
January.....	8	53,550	6	6,300	.....	7	18,520	3	885	.....	3	885	3
February.....	6	281,000	3	152,000	1	5	2,750	2	.....	.....	2	.....	5
March.....	4	27,000	4	32,900	.....	4	7,150	1	900	.....	1	900	2
April.....	10	242,300	5	94,685	1	10	30,500	3	13,500	.....	3	13,500	3
May.....	5	373,400	1	101,080	.....	5	3,275	1	500	.....	1	500	4
June.....	7	506,200	2	250,700	1	7	72,850	1	250,000	.....	1	250,000	2
Total.....	71	2,200,750	3	831,415	3	69	394,770	5	300,010	.....	21	300,010	31

* In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 14.

TABLE 14.—Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the number of VESSELS TOTALLY LOST, the number DAMAGED, aggregate TONNAGE of vessels totally lost, number of PASSENGERS and CREW, and number of LIVES LOST.

Months.	Number of disasters resulting in total loss to vessels.	Number of disasters resulting in partial damage to vessels.	Whether total or partial loss unknown.	Number of casualties resulting in no damage to vessels.	Total.	Total tons burden of vessels totally lost.	Total number of crew, including master, &c.	Total number of passengers.	Total number of lives lost.
July	1	4			5	1,147	63		
August	1	3			4	49	38	126	1
September	2	1			3	533	42	45	
October	3	4			7	629	60	9	3
November		5			5		59	2	
December	5	2			7	1,180	46	2	1
January		7		1	8		44		
February		5	1	1	7		96	3	
March	2	2			4	81	27	11	
April	5	2	1		11	313	81	78	
May		5	1		6		123		
June	3	4			7	1,488	113	1	
Total	22	47	3	2	74	5,420	792	277	5

TABLE 15.—Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the number of VESSELS and CARGOES INSURED and UNINSURED, and the AMOUNT of INSURANCE, where known.

Months.	Number of vessels and cargoes reported to be insured, and the amount of insurance.					Number of vessels and cargoes reported not insured.		Number of vessels and cargoes, whether insured or not, unknown.		Vessels in ballast.
	Vessels.		Cargoes.		Total amount of insurance.	Vessels.	Cargoes.	Vessels.	Cargoes.	
	Number.	Amount.	Number.	Amount.						
July	4	\$42,665	1	\$1,600	\$44,265	1	2		1	1
August	2	9,500	1	3,600	13,100	2	3			
September	3	21,500	1	8,000	29,500	2	2			
October	3	8,850			8,850	4	6			1
November	2	22,500			22,500		4		1	
December	5	26,100			26,100		5			5
January	1	28,000	1	800	28,800	5	5			5
February	1	40,000			40,000	5	5	1		3
March	3	15,300	1	10,000	25,300	1	1			1
April	5	18,300	2	88,685	106,985	5	5	1		5
May	1	60,000	1	15,000	75,000	1	1	4		1
June	3	90,500	1	110,000	200,500	2	1	2		4
Total	37	381,215	9	237,685	618,900	29	32	8	11	22

TABLE 16.—Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, distinguishing the NATURE of each casualty.

Nature of casualty.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Foundered		1											1
Stranded	3	1	2	5	1	6	5	1	2	7		2	35
Collided					2		2	4	2	4		2	20
Capsized				2							1		3
Damage to hull, masts, rigging, &c.	1	1			1	1		1					5
Damage to machinery	1	1	1								1		6
Fire												2	2
Miscellaneous							1					1	2
Total	5	4	3	7	5	7	8	7	4	11	6	7	74

TABLE 17.—Abstract of returns of disasters (excluding collisions) to vessels on the PACIFIC coast during the year ending June 30, 1881, distinguishing the CAUSE of each disaster.

Class and cause of disaster.	Foundering.	Strandings.	Other causes.	Missing vessels.	Total.
CLASS 1.—Causes connected with the weather :					
Calms, currents, and tides		6	1		7
Fog, &c		9			9
Gales, hurricanes, &c		12	4		16
Heavy sea	1	4	1		6
Total of Class 1	1	31	6		38
CLASS 3.—Causes connected with navigation and seamanship :					
Errors of masters, officers, or crew		1			1
Total of Class 3		1			1
CLASS 4.—Causes connected with machinery or boilers :					
Damage to machinery			6		6
Total of Class 4			6		6
CLASS 5.—Other causes :					
Fire			2		2
Sprung a leak			1		1
Struck rock, sunken object, &c		2	1		3
Miscellaneous		1	2		3
Total of Class 5		3	6		9
Aggregate	1	35	18		54

NOTE.—Class 2 includes disasters arising from causes connected with vessels, equipments, or stowage. No casualties are reported in this class.

TABLE 18.—*Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the number of vessels COLLIDED, and distinguishing the CAUSE of each disaster.*

Cause of disaster.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Accidental												2	2
Carelessness										2			2
"Fault of other vessels"									2				4
Fault of tug towing										2			2
Fog, &c.								2					2
High winds						2							2
Stress of weather					2								2
Tides and currents											2		2
Unknown								2					2
Total					2		2	4	2	4	4	2	20

TABLE 19.—*Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the NUMBER of vessels and distinguishing their DESCRIPTION.*

Description of vessels.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Barks	1			1	1	1	1	1	1			1	8
Barkentines				1									1
Brigs	1												1
Schooners		3	1	4	2	5	6	1	3	5	1		31
Scows										1			1
Ships	1							2			2		6
Sloops						1				2		2	5
Steamers	1	1	2	1	1		1	3		2	3		18
Steamships	1				1							1	3
Total	5	4	3	7	5	7	8	7	4	11	6	7	74

TABLE 20.—Abstract of returns of disasters to foreign vessels on the PACIFIC coast during the year ending June 30, 1881, showing NATIONALITY and DESCRIPTION, and distinguishing those TOTALLY LOST and those PARTIALLY DAMAGED.

Nationality and rig.	July.		August.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Janu-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.
	Total loss.	Partial loss.																									
British barks.....																											3
British ships.....																											2
British steamers.....																											1
Total.....																											5
Aggregate.....																											5

TABLE 21.—Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the TONNAGE and distinguishing the number of those TOTALLY LOST and those PARTIALLY DAMAGED.

Burden of vessels.	July.		August.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Jann-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.
	Total loss.	Partial loss.																									
Not exceeding 50 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
Over 50 and not exceeding 100 tons																											9
Over 100 and not exceeding 200 tons																											6
Over 200 and not exceeding 300 tons																											9
Over 300 and not exceeding 400 tons																											10
Over 400 and not exceeding 500 tons																											12
Over 500 and not exceeding 600 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Over 600 and not exceeding 700 tons																											4
Over 700 and not exceeding 800 tons	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	13
Over 800 and not exceeding 900 tons																											3
Over 900 and not exceeding 1,000 tons																											3
Over 1,000 and not exceeding 1,100 tons																											1
Over 1,100 and not exceeding 1,200 tons																											1
Over 1,200 and not exceeding 1,300 tons																											1
Over 1,300 and not exceeding 1,400 tons																											1
Over 1,400 tons																											1
Unknown																											10
	1	4	1	3	2	1	3	4	5	5	2	8	7	2	2	2	5	6	6	3	4	6	3	4	22	52	74
Total																											
Aggregate	5	4	3	3	7	7	8	7	4	11	6	7	4	7	7	4	11	6	6	7	7	6	7	4	22	52	74

NOTE.—In the columns of "Partial loss" in this table are included the casualties in which the vessels sustained no damage, for the number of which see appropriate column in Table 14.

TABLE 22.—Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the number of vessels and distinguishing AGE.

Age.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Not exceeding 3 years	1	1					1	3	1	4		1	12
Over 3 and not exceeding 7 years		1		2	3	1	3		1			4	18
Over 7 and not exceeding 10 years			1								1		2
Over 10 and not exceeding 14 years	2	1	1	3	1	3	3	1	1	1			16
Over 14 and not exceeding 20 years	2	1	1	1	1	1	1	1	1	1	2	1	13
Over 20 and not exceeding 25 years						1							2
Over 25 and not exceeding 30 years		1				1				1			3
Over 30 and not exceeding 35 years												1	2
Over 35 and not exceeding 40 years						1							1
Over 40 and not exceeding 45 years							1						1
Over 45 and not exceeding 50 years													
Over 50 years				1				1		1	2		5
Unknown													
Total	5	4	3	7	5	7	8	7	4	11	6	7	74

TABLE 23.—Abstract of returns of disasters to vessels on the PACIFIC coast during the year ending June 30, 1881, showing the number of vessels and distinguishing their CARGOES.

Cargoes.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Ballast	1			1		5	2	2	1	5	1	4	29
Coal	2		1								1	1	5
Grain		1		1	2			1		1	1		7
Lumber, &c	1	1		4	2	5	1	1		2			18
Merchandise, (general)		1	1		1			2	3	2	1	2	13
Stone, brick, &c		1											1
Wood, &c				1									1
Miscellaneous	1		1			1					1		4
Unknown								1		1	1		3
Total	5	4	3	7	5	7	8	7	4	11	6	7	74

TABLE 24.—Summary—PACIFIC coast.

Nature of casualties.	Number of vessels.	Total number of tons.	Laden.	Ballast.	Unknown whether laden or not.	Total loss.	Partial and unknown loss.*	Number of passengers.	Number of crew.	Total on board.	Total number of lives lost.
Foundering	1	17	1				1		2	2	1
Strandings	35	9,038	23	12		21	14	46	280	326	2
Vessels collided	20	17,590	11	6	3		20	85	288	373	
Other causes	18	6,228	14	4		1	17	146	222	368	2
Total	74	32,873	49	22	3	22	52	277	792	1,069	5

*In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 14.

GREAT LAKES.

TABLE 25.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the NUMBER and VALUE of VESSELS and CARGOES and amount of LOSS to same where known.

Months.	Total value of ves- sels.		Total value of car- goes.		Number of vessels, value	Number of vessels, value	Unknown whether laden or not.	Loss to vessels.		Number of vessels dam- aged, amount unknown.*	Loss to cargoes.		Number of cargoes totally lost, amount unknown.	Number of cargoes not damaged, or damage un- known.
	Number.	Amount.	Number.	Amount.				Number.	Amount.		Number.	Amount.		
July.....	36	\$549,500	26	\$236,095	3	3	33	\$48,300	6	7	\$5,555	22		
August.....	51	631,200	30	228,265	3	6	44	59,060	13	15	13,360	23		
September.....	46	736,900	30	158,865	7	7	43	81,825	10	8	10,465	29		
October.....	151	2,280,800	121	794,500	2	3	136	403,584	17	76	156,865	50		
November.....	111	1,541,965	81	793,780	2	7	105	284,165	13	36	198,350	54		
December.....	1	8,000	1	1,650			2	21,965	1	1	600			
January.....	2	28,000	1	15,000			3	9,250		1	15,000			
February.....	3	33,000	1	26,000						1	26,000			
March.....														
April.....	6	88,800	3	28,400			5	3,550		1	1,000		2	
May.....	60	1,138,500	42	443,655	1	9	52	43,665	15	10	19,640		42	
June.....	40	1,100,700	22	189,755	1	6	38	20,045	8	3	3,500		26	
Total.....	507	8,137,365	358	2,915,965	9	41	461	975,399	84	159	450,335		248	

* In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 26.

TABLE 26.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the number of VESSELS TOTALLY LOST, the number DAMAGED, aggregate PERCENTAGE of vessels totally lost, number of PASSENGERS and CREW, and number of LIVES LOST.

Months.	Number of disasters resulting in total loss to vessels.	Number of disasters resulting in partial damage to vessels.	Whether total or partial loss unknown.	Number of casualties resulting in no damage to vessels.	Total.	Total tons burden of vessels totally lost.	Total number of crew, including master, &c.	Total number of passengers.	Total number of lives lost.
July	2	31	3	3	39	728	356	896	24
August	10	34	5	8	57	1,619	416	110	9
September	7	36	7	3	53	1,460	399	17	4
October	22	114	3	14	153	5,978	1,279	78	78
November	19	86	7	6	118	4,877	927	70	13
December				1	1		8		
January	1	1			2	436		6	
February		3			3		7		
March									
April		5		1	6		50		
May	2	50	9	6	67	599	531	14	
June		38	6	2	46		444	17	
Total	63	398	40	44	545	15,697	4,438	1,208	128

TABLE 27.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the number of VESSELS and CARGOES INSURED and UNINSURED, and the AMOUNT of INSURANCE, where known.

Months.	Number of vessels and cargoes reported to be insured, and the amount of insurance.					Number of vessels and cargoes reported not insured.		Number of vessels and cargoes, whether insured or not, unknown.		Vessels in ballast.
	Vessels.		Cargoes.		Total amount of insurance.	Vessels.	Cargoes.	Vessels.	Cargoes.	
	Number.	Amount.	Number.	Amount.						
July	20	\$271,500	11	\$174,600	\$446,100	16	11	3	7	10
August	23	213,900	11	161,200	375,100	28	20	6	2	13
September	30	305,835	13	113,400	419,235	16	15	7	2	16
October	78	1,190,100	47	547,075	1,737,175	74	71	1	2	27
November	66	690,800	41	551,985	1,242,785	43	34	9	15	28
December						1	1			
January	2	17,500	1	14,000	31,500					1
February			1	26,000	26,000	3				2
March										
April	1	10,000	1	25,000	35,000	5	2			3
May	37	577,450	28	341,925	919,375	21	13	9	11	15
June	18	350,500	10	100,100	450,600	17	10	11	9	17
Total	275	3,627,585	164	2,055,285	5,682,870	224	177	46	67	137

TABLE 28.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, distinguishing the NATURE of each casualty.

Nature of casualty.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Foundered		7	2	6	3			1			1	1	21
Stranded	7	6	7	50	31						13	8	122
Collided	18	26	29	34	35					4	42	2	216
Capsized	1												1
Damage to hull, masts, rigging, &c	3	4	6	33	16						2	2	66
Damage to machinery, &c	3	2	2	1	3						2	3	16
Fire	1	2	1	1	6		1						12
Ice					6		1	2			1		10
Scuttled				1									1
Sprung aleak	3	3	2	1	1					1	1		12
Struck bridge, pier, sunken wreck, &c	1	3	1	7	8					1	4	3	28
Struck by lightning		2											2
Waterlogged	1	1		1	3							1	8
Miscellaneous	1	1	3	18	6	1							30
Total	39	57	53	153	118	1	2	3		6	67	46	545

TABLE 29.—Abstract of returns of disasters (excluding collisions) to vessels on the GREAT LAKES during the year ending June 30, 1881, distinguishing the CAUSE of each disaster.

Class and cause of disaster.	Foundering.	Strandings.	Other causes.	Missing vessels.	Total.
CLASS 1.—Causes connected with the weather:					
Calms and currents		3	2		5
Darkness, &c		4	2		6
Fog, &c		22			22
Gales, hurricanes, &c	11	64	89		164
Heavy seas	3	8	17		28
Lightning			2		2
Total of Class 1	14	101	112		227
CLASS 3.—Causes connected with navigation and seamanship:					
Errors of masters, officers, or crew		3	3		6
Errors of pilots		2	3		5
Total of Class 3		5	6		11
CLASS 4.—Causes connected with machinery or boilers:					
Damage to machinery			16		16
Total of Class 4			16		16
CLASS 5.—Other causes:					
Absence of light or buoys		5			5
Fire			12		12
Ice		1	10		11
Sprung aleak	6	1	7		14
Struck rock, wreck, bridge, &c		2	12		14
Miscellaneous	1	6	6		13
Unknown		1	5		6
Total of Class 5	7	16	52		75
Aggregate	21	122	186		329

NOTE.—Class 2 includes disasters arising from causes connected with vessels, equipments, or stowage. No casualties are reported in this class.

TABLE 30.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the number of vessels COLLIDED, and distinguishing the CAUSE of each disaster.

Cause of disaster.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Accidental.....		2											2
Bad management.....		2	7	5								2	16
Darkness.....	2	2		2	6						2		12
"Fault of other vessel".....	2	2		2	4						4		24
Fault of tug towing.....	4	6	2	6	2						6	10	42
Fog.....	4		6								25	8	46
High and baffling winds.....			2	15	11					2			30
Mistook lights.....			2	2									2
Misunderstanding signals.....		2										2	4
Narrow channel.....	2			2									4
Negligence.....		2	2										4
Stress of weather.....		2			4	2							6
Strong current.....			2							2			6
Want of proper lights.....	2		2										4
Miscellaneous.....	2	2			2							2	8
Unknown.....					4						2		6
Total.....	18	26	29	34	35					4	42	28	216

TABLE 31.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the number of vessels and distinguishing their DESCRIPTION.

Description of vessels.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Barges.....	1	2		1							2	1	7
Barks.....				2	11						1	1	15
Brigantines.....			1	2									4
Canal-boats.....					1								1
Schooners.....	22	41	34	125	75	1		1		3	51	23	376
Scows.....				1	2								4
Steamers.....	15	13	14	22	25		2	2		3	12	17	125
Steamships.....					1								1
Steam-yachts.....	1												2
Unknown.....		1	4		3						1	1	10
Total.....	39	57	53	153	118	1	2	3		6	67	46	545

TABLE 32.—Abstract of returns of disasters to foreign vessels on the GREAT LAKES during the year ending June 30, 1881, showing NATIONALITY and DESCRIPTION, and distinguishing those TOTALLY LOST and those PARTIALLY DAMAGED.

Nationality and rig.	July.		August.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Janu-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.
	Total loss.	Partial loss.																									
British brigantines							1																			1	
British schooners			1	2			2	4	6	5																9	24
British steamers	1							1	1	1						2										1	3
Total	1	1	1	2			2	5	7	6						2										10	29
Aggregate	1	3		7			7	13							2											20	29

TABLE 33.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the TONNAGE and distinguishing the number of those TOTALLY LOST and those PARTIALLY DAMAGED.

Burden of vessels.	July.		August.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Janu-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.				
	Total loss.	Partial loss.																													
Not exceeding 50 tons	3	3	6	4	1	4	1	8	4	10	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	6	9	49		
Over 50 and not exceeding 100 tons	3	3	4	2	4	4	4	14	4	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	34	44	
Over 100 and not exceeding 200 tons	6	2	5	5	5	32	3	16	3	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	10	85	95	
Over 200 and not exceeding 300 tons	1	10	10	1	13	7	29	5	19	5	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	6	15	100	115	
Over 300 and not exceeding 400 tons	6	1	7	3	6	1	12	3	13	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	6	64	73	
Over 400 and not exceeding 500 tons	1	1	1	2	2	2	1	7	1	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	93	98	
Over 500 and not exceeding 600 tons	1	3	3	2	2	4	1	5	1	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	51	53	
Over 600 and not exceeding 700 tons	2	1	2	4	4	1	7	4	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	29	31	
Over 700 and not exceeding 800 tons	1	2	2	3	3	1	6	4	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	20	21	
Over 800 and not exceeding 900 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	11	12	
Over 900 and not exceeding 1,000 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	5	6	
Over 1,000 and not exceeding 1,100 tons	2	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	5	5	
Over 1,100 and not exceeding 1,200 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	9	9	
Over 1,200 and not exceeding 1,300 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3
Over 1,300 and not exceeding 1,400 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
Over 1,400 tons	2	2	5	4	4	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3
Unknown	2	2	5	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	28	28	28	
Total	2	37	10	47	7	46	22	131	19	99	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	46	63	482	545	
Aggregate	39	57	53	153	118	1	6	67	545	46	6	67	545	46	6	67	545	46	6	67	545	46	6	67	545	46	6	67	545		

NOTE.—In the columns of "Partial loss" in this table are included the casualties in which the vessels sustained no damage, for the number of which see appropriate column in Table 26.

TABLE 34.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the number of vessels and distinguishing AGE.

Age.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Not exceeding 3 years	4	3	2	10	6	.....	.....	.....	.....	.....	3	6	34
Over 3 and not exceeding 7 years	9	15	12	24	25	.....	.....	.....	.....	1	11	3	100
Over 7 and not exceeding 10 years	5	4	5	18	10	.....	1	1	.....	.....	17	12	73
Over 10 and not exceeding 14 years	9	15	16	40	37	.....	1	.....	.....	3	14	5	140
Over 14 and not exceeding 20 years	7	5	11	29	18	.....	.....	2	.....	1	8	11	92
Over 20 and not exceeding 25 years	2	5	2	14	10	1	.....	.....	.....	.....	6	2	42
Over 25 and not exceeding 30 years .....	.....	3	1	10	5	.....	.....	.....	.....	1	2	1	23
Over 30 and not exceeding 35 years	1	1	.....	6	1	.....	.....	.....	.....	.....	1	.....	10
Over 35 and not exceeding 40 years .....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2
Over 40 and not exceeding 45 years .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Over 45 and not exceeding 50 years .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Over 50 years .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unknown	2	5	4	1	6	.....	.....	.....	.....	.....	5	6	29
Total	39	57	53	153	118	1	2	3	.....	6	67	46	545

TABLE 35.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the number of vessels and distinguishing their CARGOES.

Cargoes.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Ballast.....	10	18	16	27	23	.....	1	2	.....	3	15	17	137
Coal.....	2	4	1	18	9	.....	.....	.....	.....	.....	12	4	50
Explosives.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2
Fish.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	2
Fruit, &c.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Grain.....	3	7	6	16	22	.....	.....	1	.....	.....	12	2	69
Iron and iron-ore.....	7	3	6	9	9	.....	.....	.....	.....	.....	7	6	47
Lime, &c.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Lumber, &c.....	7	14	8	42	26	1	.....	.....	.....	3	7	7	115
Merchandise, (general).....	3	.....	2	19	6	.....	.....	.....	.....	.....	2	2	34
Petroleum.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	1	3
Provisions, flour, &c.....	.....	.....	.....	2	1	.....	1	.....	.....	.....	1	.....	7
Salt.....	1	.....	2	2	1	.....	.....	.....	.....	.....	.....	.....	7
Stone, brick, &c.....	.....	.....	1	7	3	.....	.....	.....	.....	.....	.....	.....	11
Wood, &c.....	2	3	3	6	3	.....	.....	.....	.....	.....	1	1	19
Miscellaneous.....	1	1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	5
Unknown.....	3	6	7	3	7	.....	.....	.....	.....	.....	9	6	41
Total	39	57	53	153	118	1	2	3	.....	6	67	46	545

TABLE 36.—Abstract of returns of disasters to vessels on the GREAT LAKES during the year ending June 30, 1881, showing the number of vessels and distinguishing the LAKES and CONNECTING RIVERS on which they occurred.

Localities.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Lake Erie	2	6	2	9	39	.....	1	2	.....	.....	6	6	73
Lake Huron	12	5	2	3	2	.....	.....	.....	.....	2	9	3	44
Lake Michigan	16	32	40	114	53	1	1	1	.....	4	38	31	337
Lake Ontario	1	4	3	7	10	.....	.....	.....	.....	.....	3	.....	28
Lake Superior	1	1	.....	7	1	.....	.....	.....	.....	.....	2	2	14
Lake Saint Clair .....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Straits of Mackinac .....	.....	1	1	.....	2	.....	.....	.....	.....	.....	6	.....	10
Detroit River	5	.....	2	4	5	.....	.....	.....	.....	.....	.....	.....	18
Saint Clair River	2	2	3	5	.....	.....	.....	.....	.....	.....	1	.....	13
Saint Clair Flats Canal .....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Saint Mary's River .....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	4
Welland Canal .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Total	39	57	53	153	118	1	2	3	.....	6	67	46	545

TABLE 37.—Summary—GREAT LAKES.

Nature of casualties.	Number of vessels.	Total number of tons.	Laden.	Ballast.	Unknown whether laden or not.	Total loss.	Partial and unknown loss.*	Number of passengers.	Number of crew.	Total on board.	Total number of lives lost.
Foundering	21	5,014	14	6	1	13	8	30	152	182	76
Strandings	122	38,503	101	21	.....	31	91	54	948	1,002	6
Vessels collided	216	79,095	115	61	40	7	209	892	1,654	2,546	18
Other causes	186	59,638	137	49	.....	12	174	232	1,684	1,916	28
Total	545	182,250	367	137	41	63	482	1,208	4,438	5,646	128

*In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 26.

RIVERS.

TABLE 38.—Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, showing the NUMBER and VALUE of VESSELS and CARGOES and amount of LOSS to same where known.

Months.	Total value of ves- sels.		Total value of car- goes.		Number of vessels, value unknown.	Number of vessels laden or not.	Loss to vessels.		Loss to cargoes.		Number of cargoes totally lost, amount unknown.	Number of vessels dam- aged, amount unknown.	Loss to cargoes.		Number of cargoes not known, damaged, or damage un- known.
	Number.	Amount.	Number.	Amount.			Number.	Amount.	Number.	Amount.			Number.	Amount.	
July.....	16	\$261,400	10	\$170,660	1	1	16	\$66,010	4	\$99,070	4	2	4	\$99,070	6
August.....	14	196,500	8	141,930	1	1	13	61,650	6	80,905	6	1	6	80,905	4
September.....	25	517,700	15	251,870	1	1	34	97,195	8	57,520	8	1	8	57,520	7
October.....	19	178,000	11	162,600	2	2	18	54,270	6	79,400	6	2	6	79,400	7
November.....	21	517,300	14	199,450	1	1	30	133,325	10	77,780	10	2	10	77,780	5
December.....	14	253,100	12	50,990	1	1	14	40,440	8	18,570	8	3	8	18,570	5
January.....	22	530,500	14	378,975	2	2	21	129,040	1	104,800	1	3	1	104,800	8
February.....	23	737,700	11	454,440	2	2	22	62,400	2	95,200	2	2	2	95,200	7
March.....	24	489,500	13	388,450	2	2	22	182,135	9	210,765	9	3	9	210,765	6
April.....	21	241,500	2	104,240	1	1	20	68,415	4	46,790	4	3	4	46,790	10
May.....	15	240,250	7	63,845	2	2	14	45,660	4	28,000	4	3	4	28,000	8
June.....	13	125,800	8	185,780	2	2	12	10,300	2	3,000	2	3	2	3,000	8
Total.....	227	4,309,250	136	2,553,160	11	10	216	950,840	76	901,800	76	22	76	901,800	81

* In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 39.

TABLE 39.—Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, showing the number of VESSELS TOTALLY LOST, the number DAMAGED, aggregate TONNAGE of vessels totally lost, number of PASSENGERS and CREW, and number of LIVES LOST.

Months.	Number of disasters resulting in total loss to vessels.	Number of disasters resulting in partial damage to vessels.	Whether total or partial loss unknown.	Number of casualties resulting in no damage to vessels.	Total.	Total tons burden of vessels totally lost.	Total number of crew, including master, &c.	Total number of passengers.	Total number of lives lost.
July	3	13			16	2,174	355	255	
August	7	6	1	1	15	1,392	261	131	11
September	7	17		1	25	2,301	376	248	9
October	5	13		1	19	639	318	113	
November	5	15		2	22	1,806	413	383	
December	3	11			14	164	193	85	1
January	5	16	2	1	24	2,939	409	52	4
February	10	12		1	23	878	431	283	7
March	6	16		2	24	3,206	584	269	4
April	4	16	2	1	23	1,228	324	66	2
May	4	10	3	1	18	903	218	110	1
June		12	2	1	15		224	49	13
Total	59	157	10	12	238	17,630	4,106	2,044	52

TABLE 40.—Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, showing the number of VESSELS and CARGOES INSURED and UNINSURED, and the AMOUNT of INSURANCE, where known.

Months.	Number of vessels and cargoes reported to be insured, and the amount of insurance.				Total amount of insurance.	Number of vessels and cargoes reported not insured.		Number of vessels and cargoes, whether insured or not, unknown.		Vessels in ballast.
	Vessels.		Cargoes.			Vessels.	Cargoes.	Vessels.	Cargoes.	
	Number.	Amount.	Number.	Amount.						
July	7	\$91,500	5	\$121,000	\$212,500	9	4		1	6
August	5	121,000	3	136,150	257,150	9	6	1	1	5
September	8	49,000	9	115,000	164,000	17	5		1	10
October	10	78,200	7	142,200	220,400	7	3	2	3	6
November	8	123,000	9	153,200	276,200	12	5	2	5	7
December	6	107,000	1	20,000	127,000	8	7		1	1
January	8	90,700	6	245,000	335,700	13	4	3	6	8
February	7	308,500	6	172,200	480,700	16	3		3	11
March	14	356,100	9	336,800	692,900	10	3		4	9
April	9	60,700	5	77,500	138,200	12	7	2	4	7
May	5	70,500	4	45,000	115,500	8	2	5	6	6
June	4	53,500	4	170,000	223,500	9	4	2	2	5
Total	91	1,509,700	68	1,734,050	3,243,750	130	53	17	36	81

TABLE 41.—Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, distinguishing the NATURE of each casualty.

Nature of casualty.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Foundered		2	2	1	3	1		1			1		11
Stranded	1	2	1		4	2	1	1	1	3		1	19
Collided	2	4	4	6	6	2	6	2	9	6	10	6	63
Capsized										3			3
Damage to hull, masts, rigging, &c	1			1	1							2	6
Damage to machinery	4		1	1		2	1	1	1	4	1	1	17
Explosion of boiler, &c		1	4			1	3	2	1	1		1	14
Fire	1	2	5	3	2	2	1	2	5	2	1		26
Ice					2	2	11	12	2	2			31
Sprung aleak	1	1											2
Struck by lightning	2												2
Struck bridge, hidden obstruction, &c	4	1	8	7	4	2	1	2	5	2	1	4	41
Miscellaneous		2									1		3
Total	16	15	25	19	22	14	24	23	24	23	18	15	238

TABLE 42.—Abstract of returns of disasters (excluding collisions) to vessels on the RIVERS of the United States during the year ending June 30, 1881, distinguishing the CAUSE of each disaster.

Class and cause of disaster.	Foundering.	Strandings.	Other causes.	Missing vessels.	Total.
CLASS 1.—Causes connected with the weather :					
Currents, tides, &c		2	4		6
Darkness		1		1	1
Gales, hurricanes, &c	2	5	6		13
Heavy seas	1				1
Lightning			2		2
Total of Class 1	3	8	12		23
CLASS 2.—Causes connected with vessels, equipments, or stowage :					
Defective hull, masts, rigging, &c			1		1
Total of Class 2			1		1
CLASS 3.—Causes connected with navigation and seamanship :					
Errors of masters, officers, or crew	1	1	1		3
Errors of pilots		5	3		8
Total of Class 3	1	6	4		11
CLASS 4.—Causes connected with machinery or boilers :					
Damage to machinery			17		17
Explosion			14		14
Total of Class 4			31		31
CLASS 5.—Other causes :					
Absence of buoy			1		1
Fire			26		26
Ice		1	31		32
Sprung aleak	4	1			5
Struck rock, snag, sunken wreck, &c		1	30		31
Miscellaneous	1	1	8		10
Unknown	2	1	1		4
Total of Class 5	7	5	97		109
Aggregate	11	19	145		175

TABLE 43.—*Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, showing the number of vessels COLLIDED, and distinguishing the CAUSE of each disaster.*

Cause of disaster.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Bad management					2						2		4
Carelessness		2					2			2			6
Currents					2						2		6
Darkness			2	4						2			8
" Fault of other vessel "	2	2		2					2		2		12
Fault of tug towing					2		2						6
Fog			2					3					5
Ice						2	2						4
Misunderstanding signals								2	2				2
Negligence								2					2
Stress of weather										2	4		6
Unknown												2	2
Total	2	4	4	6	6	2	6	2	9	6	10	6	63

TABLE 44.—*Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, showing the number of vessels and distinguishing their DESCRIPTION.*

Description of vessels.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Barges	1	1	2	1	1		1		2		2	1	12
Barks							1						1
Brigs				1									1
Brigantines											1		1
Schooners	5	2	5	6	4	2	4	2	2	4	3	4	43
Ships							1						1
Sloops	1				2		1	1		1	1		7
Steamers	8	11	18	11	15	12	15	19	20	17	9	10	165
Steamships	1						1	1			1		4
Unknown		1								1	1		3
Total	16	15	25	19	22	14	24	23	24	23	18	15	238

TABLE 45.—Abstract of returns of disasters to foreign vessels on the RIVERS of the United States during the year ending June 30, 1881, showing NATIONALITY and DESCRIPTION, and distinguishing those TOTALLY LOST and those PARTIALLY DAMAGED.

Nationality and rig.	July.		August.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Janu-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.
	Partial loss.	Total loss.																									
British barres																											1
British barke							1																				1
British ships														1													1
Total							1							2													3
Aggregate				1									2														3

TABLE 46.—Abstract of returns of disasters to vessels on the Rivers of the United States during the year ending June 30, 1881, showing the TONNAGE, and distinguishing the number of those TOTALLY LOST and those PARTIALLY DAMAGED.

Burden of vessels.	July.		August.		Septem-ber.		Octo-ber.		Novem-ber.		Decem-ber.		Janu-ary.		Febru-ary.		March.		April.		May.		June.		Total.		Aggregate.		
	Total loss.	Partial loss.																											
Not exceeding 50 tons	1	1	1	3	3	1	3	2	4	2	2	2	2	4	3	1	1	1	3	1	1	1	2	3	14	24	38		
Over 50 and not exceeding 100 tons	1	2	3	2	2	4	2	2	2	2	2	2	2	3	3	3	3	1	1	4	4	1	1	3	9	30	39		
Over 100 and not exceeding 200 tons	2	3	3	6	4	3	2	4	2	2	1	1	1	2	2	1	1	3	3	4	1	1	1	3	9	30	42		
Over 200 and not exceeding 300 tons	1	2	2	1	2	4	3	4	2	2	1	1	1	2	2	1	1	3	3	1	1	1	1	1	5	16	21		
Over 300 and not exceeding 400 tons	1	2	1	1	2	1	2	1	1	1	2	2	1	2	1	2	1	1	1	1	1	1	1	1	6	14	20		
Over 400 and not exceeding 500 tons	3	2	2	2	1	2	1	2	1	1	1	1	1	2	1	1	1	1	2	2	1	1	1	2	1	3	15	18	
Over 500 and not exceeding 600 tons	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	13	
Over 600 and not exceeding 700 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	16	
Over 700 and not exceeding 800 tons	2	2	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	9	
Over 800 and not exceeding 900 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	9	
Over 900 and not exceeding 1,000 tons	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	9	
Over 1,000 and not exceeding 1,100 tons	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	9	
Over 1,100 and not exceeding 1,200 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	7	
Over 1,200 and not exceeding 1,300 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	7
Over 1,300 and not exceeding 1,400 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	9
Over 1,400 tons	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	6	
Unknown	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	6
Total	3	13	7	8	7	18	5	14	5	17	3	11	5	19	10	13	6	18	4	19	4	14	15	59	179	238			
Aggregate	16	15	15	25	19	22	14	24	23	24	23	18	238																

NOTE.—In the columns of "Partial loss" in this table are included the casualties in which the vessels sustained no damage, for the number of which see appropriate column in Table 39.

TABLE 47.—Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, showing the number of vessels and distinguishing AGE.

Age.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Not exceeding 3 years	3	1	6	6	3	6	4	8	5	7	4	3	56
Over 3 and not exceeding 7 years	3	4	7	2	2	2	6	5	4	1	3	5	44
Over 7 and not exceeding 10 years	5	1	2	3	6	1	4	3	10	3	3	2	43
Over 10 and not exceeding 14 years	3	1	4	5	2	1	3	3	1	3	1	2	28
Over 14 and not exceeding 20 years	1	2	2	1	5	5	5	2	1	4	4	1	32
Over 20 and not exceeding 25 years	1	1	2	2	2	2	2	1	1	1	1	1	5
Over 25 and not exceeding 30 years	1	2	2	1	2	2	2	1	1	1	1	1	8
Over 30 and not exceeding 35 years	1	1	1	1	1	1	1	1	1	1	1	1	2
Over 35 and not exceeding 40 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Over 40 and not exceeding 45 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Over 45 and not exceeding 50 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Over 50 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Unknown	3	2	2	2	2	2	2	2	2	5	3	2	19
Total	16	15	25	19	22	14	24	23	24	23	18	15	238

TABLE 48.—Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, showing the number of vessels and distinguishing their CARGOES.

Cargoes.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Ballast	6	5	10	6	7	1	8	11	9	7	6	5	81
Coal	1	3	3	2	2	2	2	1	4	3	3	1	14
Cotton and cotton-seed	1	1	1	2	2	2	2	2	3	1	1	1	16
Explosives	1	1	1	1	1	1	1	1	1	1	1	1	1
Fish, oysters, &c	1	1	1	1	1	1	1	1	1	1	1	1	1
Fruit, nuts, &c	1	1	1	1	1	1	1	1	1	1	1	1	1
Grain	2	1	1	1	1	1	1	1	1	2	2	1	12
Guano	1	1	1	1	1	1	1	1	1	1	1	1	2
Hides, furs, &c	1	1	1	1	1	1	1	1	1	1	1	1	1
Ice	1	1	1	1	1	1	1	1	1	1	1	1	1
Iron and iron-ore	1	1	1	1	1	1	1	1	1	1	1	1	1
Lime, &c	1	1	1	1	1	1	1	1	1	1	1	1	1
Lumber, &c	1	1	1	1	1	1	1	1	2	1	1	1	10
Merchandise, (general)	3	2	5	2	4	4	5	4	4	3	2	2	38
Naval stores	1	1	1	1	1	1	1	1	1	1	1	1	1
Phosphates	1	1	1	1	1	1	1	1	1	1	1	1	1
Provisions, &c	1	1	1	1	1	1	1	1	1	1	1	1	1
Railroad stock	1	1	1	1	1	1	1	1	1	1	1	1	1
Salt	1	1	1	1	1	1	1	1	1	1	1	1	1
Sand	1	1	1	1	1	1	1	1	1	1	1	1	1
Stone, brick, &c	1	1	1	1	1	1	1	1	1	1	1	1	1
Sugar, molasses, &c	1	1	1	1	1	1	1	1	1	1	1	1	1
Wood	1	1	1	1	1	1	1	1	1	1	1	1	1
Miscellaneous	1	1	2	3	3	2	2	1	2	2	3	2	20
Unknown	1	1	2	3	3	2	2	1	2	2	3	2	10
Total	16	15	25	19	22	14	24	23	24	23	18	15	238

TABLE 49.—Abstract of returns of disasters to vessels on the RIVERS of the United States during the year ending June 30, 1881, distinguishing the RIVERS on which they occurred.

Rivers.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Arkansas			1	1						1			3
Atochafalaya, Louisiana							1						1
Bayou Bartholomew, Louisiana										1			1
Black, South Carolina						1							1
Big Sandy, Kentucky									1	1			2
Cape Fear, North Carolina							3						3
Chowan, North Carolina								1				1	2
Christiana Creek, Delaware						1							1
Coheco, New Hampshire					1								1
Columbia							2	3					5
Connecticut					1			1	3	1			6
Cumberland									1			1	2
Delaware	1		3	4			2	2			3		15
Des Plaines, Illinois			1										1
Hatchie, Tennessee			1		1								2
Housatonic			1	4	1								6
Hudson	1	2	4	4	3	1			3			2	20
Illinois									1				1
James							3						3
Kennebec											1		1
Kentucky						1			1				2
Mattaponi, Virginia											1		1
Merrimac				1									1
Mississippi	5	4	7	3	7	3	2	6	7	6	3	4	57
Missouri	2			1				4	1	2	2		12
Monongahela							1						1
Muskingum, Ohio				1									1
Nanticoke, Maryland	1												1
Ohio	2		5		2		7	1	2	3	4	4	30
Ouachita, Louisiana				1				1	1				3
Pascagoula, Mississippi			1										1
Pearl, Mississippi						1							1
Penobscot	1				1								2
Perdido, Florida							1						1
Piscataqua												1	1
Potomac	2	2			3	4		1		2		2	16
Rappahannock									2				2
Red, Dakota		2											2
Red, Louisiana		1	1	2					2	1			7
Rio Grande			1										1
Salvine, Texas								1					1
Saint John's, Florida		1					1						2
Saint Lawrence		1		1									2
San Joaquin, California								1			2		3
Schuylkill							1						1
Tar, North Carolina						1							1
Taunton, Massachusetts					1								1
Wabash	1	1								1	1		4
White, Arkansas							1						1
Willamette, Oregon			1										1
Yazoo, Mississippi									1				1
York, Virginia					1								1
Total	16	15	25	19	22	14	24	23	24	23	18	15	238

TABLE 50.—Summary—RIVERS.

Nature of casualties.	Number of vessels.	Total number of tons.	Laden.	Ballast.	Unknown whether laden or not.	Total loss.	Partial and unknown loss.*	Number of passengers.	Number of crew.	Total on board.	Total number of lives lost.
Foundering	11	1,035	4	7		6	5	13	45	58	
Strandings	19	5,071	12	7		3	16	204	258	462	
Vessels collided	63	25,555	36	17	10	6	57	762	990	1,752	4
Other causes	145	50,123	95	50		44	101	1,065	2,813	3,878	49
Total	238	81,784	147	81	10	59	179	2,044	4,106	6,150	52

* In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 39.

AT SEA OR IN FOREIGN WATERS.

TABLE 51.—Abstract of returns of disasters to American* vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the NUMBER and VALUE of VESSELS and CARGOES and amount of LOSS to same where known.

Months.	Total value of ves- sels.		Total value of car- goes.		Number of vessels, value unknown.	Unknown whether laden or not.	Loss to vessels.		Loss to cargoes.		Number of vessels dam- aged, amount unknown. [†]	Number.	Amount.	Number of cargoes total- ly lost, amount unknown.	Number of cargoes not damaged, or damage not known.
	Number.	Amount.	Number.	Amount.			Number.	Amount.	Number.	Amount.					
July.....	11	\$289,000	9	\$60,000	.....	.....	11	\$196,615	5	\$33,500	.....	5	\$33,500	.....	4
August.....	34	945,935	24	702,360	1	1	33	440,000	17	195,275	.....	17	195,275	.....	10
September.....	31	651,700	25	336,265	6	.....	30	223,360	13	82,055	.....	13	82,055	.....	13
October.....	54	1,203,500	45	1,210,270	9	.....	53	436,785	30	146,165	.....	30	146,165	.....	25
November.....	23	330,500	17	354,630	6	.....	32	130,250	9	122,920	.....	9	122,920	.....	11
December.....	44	812,000	38	583,105	6	.....	43	265,760	21	166,345	.....	21	166,345	.....	19
January.....	27	394,700	17	359,350	10	.....	25	101,810	1	38,350	.....	1	38,350	.....	12
February.....	29	486,200	25	702,000	4	.....	28	155,400	12	313,000	.....	12	313,000	.....	15
March.....	34	432,700	30	584,090	4	.....	31	138,177	16	80,640	.....	16	80,640	.....	17
April.....	51	648,500	40	1,199,395	7	.....	48	185,935	7	243,985	.....	7	243,985	.....	32
May.....	12	534,650	10	229,200	.....	.....	12	56,825	3	12,800	.....	3	12,800	.....	8
June.....	10	78,100	6	110,260	.....	.....	9	21,960	5	97,600	.....	5	97,600	.....	1
Total.....	360	6,807,485	286	6,431,145	27	13	345	2,332,877	151	1,552,635	28	151	1,552,635	8	167

* In the totals of casualties presented in the following thirteen tables are included, in order to show the whole number of vessels in collision, eight foreign vessels which have collided with American vessels at sea or in foreign waters during the year.

† In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 52.

TABLE 52.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the number of VESSELS TOTALLY LOST, the number DAMAGED, aggregate TONNAGE of vessels totally lost, number of PASSENGERS and CREW, and number of LIVES LOST.

Months.	Number of disasters resulting in total loss to vessels.	Number of disasters resulting in partial damage to vessels.	Whether total or partial loss known.	Number of casualties resulting in no damage to vessels.	Total.	Total tons burden of vessels totally lost.	Total number of crew, including master, &c.	Total number of passengers.	Total number of lives lost.
July.....	5	6	.....	.....	11	3,798	126	74	.....
August.....	18	15	.....	1	35	7,051	452	74	152
September.....	9	21	.....	1	31	3,868	406	33	20
October.....	14	39	.....	1	55	9,893	713	36	49
November.....	6	16	.....	1	24	3,076	233	5	13
December.....	17	26	.....	1	45	4,731	452	40	15
January.....	8	18	.....	2	30	2,562	328	76	10
February.....	9	19	.....	1	29	5,363	313	.....	18
March.....	11	20	.....	2	36	3,499	388	4	22
April.....	12	36	.....	2	55	5,196	502	8	20
May.....	3	9	.....	1	13	1,278	192	122	.....
June.....	2	7	.....	.....	10	260	91	.....	6
Total.....	114	232	.....	11	374	50,575	4,195	399	325

TABLE 53.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the number of VESSELS and CARGOES INSURED and UNINSURED, and the AMOUNT of INSURANCE, where known.

Months.	Number of vessels and cargoes reported to be insured, and the amount of insurance.					Number of vessels and cargoes reported not insured.		Number of vessels and cargoes, whether insured or not, unknown.		Vessels in ballast.
	Vessels.		Cargoes.		Total amount of insurance.	Vessels.	Cargoes.	Vessels.	Cargoes.	
	Number.	Amount.	Number.	Amount.						
July.....	8	\$67,500	3	\$12,100	\$79,600	3	4	.....	2	2
August.....	21	590,610	16	486,800	1,077,410	11	6	.....	3	5
September.....	21	289,045	14	246,550	535,595	9	9	.....	1	4
October.....	36	582,960	22	325,615	908,575	16	12	.....	3	7
November.....	13	113,500	9	266,300	379,800	10	3	.....	1	3
December.....	26	241,800	20	288,730	530,530	18	6	.....	1	4
January.....	18	119,100	8	144,715	263,815	8	5	.....	4	8
February.....	16	126,100	13	479,200	605,300	11	6	.....	2	8
March.....	20	130,755	19	393,750	524,505	10	4	.....	6	11
April.....	33	213,670	28	576,395	790,065	13	5	.....	9	17
May.....	9	345,700	2	2,275	347,975	3	2	.....	1	7
June.....	5	19,455	3	103,000	122,455	5	2	.....	1	4
Total.....	226	2,840,195	157	3,325,430	6,165,625	117	64	.....	31	105

TABLE 54.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, distinguishing the NATURE of each casualty.

Nature of casualty.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Foundered		4	1	1	1	3	2	2	6	3			23
Stranded	6	6	7	9	4	3	2	3	3	4	3		50
Collided	2	2	2	2	2	4	6	2	4	4	4	2	34
Abandoned			2	2		3	1	2	1	4	1		14
Capsized		2	1	2	1								7
Damage to hull, masts, rigging, &c	2	9	9	22	10	18	11	11	11	29	3	3	138
Damage to machinery		1		2			1				1		6
Fire	1	1		1		1						1	6
Never heard from		6	2	3	1	1		1	2	1			17
Sprung aleak	2	3	4	8	3	5	4	4	4	2	1	1	41
Struck by lightning												1	1
Struck sunken object, pier, &c													1
Waterlogged		1							1	1			2
Miscellaneous			5	3	2	4	3	4	4	7		1	28
Unknown						1							33
Total	11	35	31	55	24	45	30	29	36	55	13	10	374

TABLE 55.—Abstract of returns of disasters (excluding collisions) to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, distinguishing the CAUSE of each disaster.

Class and cause of disaster.	Foundering.	Strandings.	Other causes.	Missing vessels.	Total.
CLASS 1.—Causes connected with the weather:					
Calms, currents, and tides		8	1		9
Darkness		1			1
Fog, &c		2			2
Gales, hurricanes, &c	18	22	188		228
Heavy seas, storms, &c	3	5	29		37
Lightning			1		1
Total of Class 1	21	38	219		278
CLASS 2.—Causes connected with vessels, equipments, or stowage:					
Defective chart		2			2
Defective mast, rigging, &c			2		2
Error of chronometer		1			1
Error of compass		1			1
Total of Class 2		4	2		6
CLASS 3.—Causes connected with navigation and seamanship:					
Errors of masters, officers and crew		4	1		5
Errors of pilots		2			2
Total of Class 3		6	1		7
CLASS 4.—Causes connected with machinery or boilers:					
Damage to machinery			6		6
Total of Class 4			6		6
CLASS 5.—Other causes:					
Fire			5		5
Sprung aleak					
Struck rock, pier, wreck, &c	1				1
Miscellaneous		1	2		3
Unknown	1		7	8	16
Total of Class 5	2	2	22	17	43
Aggregate	23	50	250	17	340

TABLE 56.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the number of vessels COLLIDED, and distinguishing the CAUSE of each disaster.

Cause of disaster.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Accidental.....													2
"Fault of other vessel".....							2		2		2		2
Fog.....			2					2	2				2
High winds.....					2		2						2
Stress of weather.....							2						2
Want of proper lights.....						2							2
Unknown.....		2		2		2							6
Total		2	2	2	2	4	6	2	4	4	4	2	34

TABLE 57.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the number of vessels and distinguishing their DESCRIPTION.

Description of vessels.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Barks.....	1	10	4	12	6	7	6	7	15	7	3	1	79
Barkentines.....			1	1		1				1			4
Brigs.....	2	5	6	7	3	5	1	2	6	10	1		48
Brigantines.....				1									1
Schooners.....	4	11	13	18	12	26	15	15	14	32	7	9	176
Ships.....	3	3	3	12	2	2	4	5	1	3			38
Sloops.....			1				1						2
Steamers.....		3	1	3		2	2				1		12
Steamships.....	1	3	2	1	1	1	1			1	1		12
Unknown.....						1				1			2
Total	11	35	31	55	24	45	30	29	36	56	13	10	374

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TABLE 58.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the TONNAGE, and distinguishing the number of those TOTALLY LOST and those PARTIALLY DAMAGED.

Burden of vessels.	July.		August.		September.		October.		November.		December.		January.		February.		March.		April.		May.		June.		Total.		Aggregate.	
	Total loss.	Partial loss.																										
Not exceeding 50 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
Over 50 and not exceeding 100 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
Over 100 and not exceeding 200 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
Over 200 and not exceeding 300 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21
Over 300 and not exceeding 400 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
Over 400 and not exceeding 500 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
Over 500 and not exceeding 600 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
Over 600 and not exceeding 700 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Over 700 and not exceeding 800 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
Over 800 and not exceeding 900 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6
Over 900 and not exceeding 1,000 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
Over 1,000 and not exceeding 1,100 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Over 1,100 and not exceeding 1,200 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
Over 1,200 and not exceeding 1,300 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9
Over 1,300 and not exceeding 1,400 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Over 1,400 tons.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Unknown.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Total.....	5	6	18	17	9	32	14	41	6	18	17	28	8	32	9	20	11	25	12	43	3	10	2	8	114	260	374	
Aggregate.....	11		35	31	55	24	45	30	29	36	55	13	10	374														

NOTE.—In the columns of "Partial loss" in this table are included the casualties in which the vessels sustained no damage, for the number of which see appropriate column in Table 52.

TABLE 59.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the number of vessels and distinguishing AGE.

Age.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Not exceeding 3 years	1	2	1	6	8	1	3	6	6	2	2	2	36
Over 3 and not exceeding 7 years	2	9	7	11	7	10	5	6	7	9	2	2	75
Over 7 and not exceeding 10 years	3	3	4	3	5	8	3	5	2	15	2	2	53
Over 10 and not exceeding 14 years	5	3	9	17	4	3	5	2	2	3	3	2	69
Over 14 and not exceeding 20 years	7	5	10	3	10	8	7	2	2	10	3	3	68
Over 20 and not exceeding 25 years	3	1	3	2	1	4	1	4	6	2	2	2	26
Over 25 and not exceeding 30 years	2	2	4	2	3	1	4	1	1	2	2	1	21
Over 30 and not exceeding 35 years	1	1	1	1	1	1	1	1	1	1	1	1	6
Over 35 and not exceeding 40 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Over 40 and not exceeding 45 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Over 45 and not exceeding 50 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Over 50 years	1	1	1	1	1	1	1	1	1	1	1	1	1
Unknown	4	4	4	4	4	4	4	4	4	4	4	4	13
Total	11	35	31	55	24	45	30	29	36	55	13	10	374

TABLE 60.—Abstract of returns of disasters to American vessels AT SEA or in FOREIGN WATERS during the year ending June 30, 1881, showing the number of vessels and distinguishing their CARGOES.

Cargoes.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Asphalt	1	1	1	1	1	1	1	1	1	1	1	1	2
Ballast	2	5	4	7	3	4	8	2	2	5	2	4	48
Coal	1	1	4	5	1	4	1	1	3	2	1	1	24
Cotton, cotton-seed, oil, &c	1	1	2	2	1	3	1	1	2	2	2	1	11
Fish, oysters, &c	1	2	2	1	2	2	1	1	1	1	1	1	9
Fruit, nuts, coffee, &c	1	1	2	2	1	3	3	2	3	3	1	1	14
Grain	1	1	3	1	2	2	2	2	2	3	2	2	7
Guano	1	1	1	1	1	1	1	1	2	3	2	2	8
Hides, furs, &c	1	1	1	1	1	1	1	1	1	1	1	1	2
Iron and iron-ore	1	1	2	2	1	1	1	1	1	2	1	1	10
Ice	2	1	1	1	1	1	1	2	1	3	1	1	10
Live stock	1	1	1	1	1	1	1	1	1	1	1	1	4
Logwood, &c	1	1	2	1	1	2	1	1	4	4	1	1	13
Lumber, &c	1	9	4	9	2	10	5	6	2	8	1	3	60
Merchandise, (general)	1	7	8	6	3	3	2	2	1	3	1	2	38
Naval stores	1	1	1	1	1	1	1	1	1	1	1	1	2
Nitrate of soda	1	1	1	1	1	1	1	1	1	1	1	1	1
Petroleum	1	1	1	1	1	2	1	1	1	1	1	1	4
Phosphates	1	1	1	1	1	2	1	1	2	2	1	1	4
Provisions	1	1	2	2	1	2	1	1	1	1	1	1	7
Railroad stock	1	1	1	1	1	1	1	1	1	1	1	1	1
Salt, &c	1	1	1	1	1	3	1	2	3	1	1	1	14
Stone, brick, &c	1	1	1	1	1	1	1	1	1	1	1	1	2
Sugar, molasses, &c	1	2	1	3	2	1	1	3	8	9	2	2	31
Whale-oil, &c	1	1	2	2	1	1	1	4	4	2	1	1	11
Wood, &c	1	1	1	1	1	1	1	1	1	1	1	1	5
Miscellaneous	2	2	2	2	1	1	2	3	3	2	2	2	19
Unknown	1	1	1	1	1	1	1	1	2	3	1	1	13
Total	11	35	31	55	24	45	30	29	36	55	13	10	374

TABLE 61.—*Summary*—AT SEA or in FOREIGN WATERS.

Nature of casualties.	Number of vessels.	Total number of tons.	Laden.	Ballast.	Unknown whether laden or not.	Total loss.	Partial and unknown loss.*	Number of passengers.	Number of crew.	Total on board.	Total number of lives lost.
Founderings	23	9, 719	18	5	.....	23	.....	30	264	294	96
Strandings	50	28, 934	38	12	.....	34	16	13	663	676	11
Vessels collided	34	13, 623	15	7	.....	2	32	47	343	390	9
Other causes	267	119, 585	242	24	1	55	212	309	2, 925	3, 234	209
Total	374	171, 861	313	48	13	114	260	399	4, 195	4, 594	325

* In this column are included the casualties in which no damage was sustained by the vessels, for the number of which see appropriate column in Table 52.

TABLE 62.—GENERAL SUMMARY.

Nature of casualties.	Number of vessels.	Aggregate tonnage.	Laden.	Ballast.	Unknown whether laden or not.	Wrecks involving total loss.	Casualties involving partial and unknown damage.	Number of passengers.	Number of crew.	Total on board.	Number of lives lost.*
Foundering:											
Atlantic and Gulf coasts.....	36	4, 218	30	6	.....	27	9	40	154	194	20
Pacific coast.....	1	17	1	.....	.....	.....	1	.....	2	2	1
Great lakes.....	21	5, 014	14	6	1	13	8	30	152	182	76
Rivers.....	11	1, 035	4	7	.....	6	5	13	45	58	.....
At sea or in foreign waters.....	23	9, 719	18	5	.....	23	.....	30	264	294	96
Total.....	92	20, 003	67	24	1	69	23	113	617	730	193
Strandings:											
Atlantic and Gulf coasts.....	254	53, 505	189	65	.....	106	148	892	1, 869	2, 761	41
Pacific coast.....	35	9, 038	33	12	.....	21	14	46	280	326	2
Great lakes.....	132	38, 503	101	21	.....	31	91	54	948	1, 002	6
Rivers.....	19	3, 071	12	7	.....	3	16	204	258	462	.....
At sea or in foreign waters.....	50	25, 934	38	12	.....	34	16	13	663	676	11
Total.....	480	135, 051	363	117	.....	195	285	1, 209	4, 018	5, 227	60
Vessels collided:											
Atlantic and Gulf coasts.....	339	109, 509	190	89	60	17	322	3, 943	3, 205	7, 238	17
Pacific coast.....	20	17, 500	11	6	3	.....	20	85	288	373	.....
Great lakes.....	216	79, 095	115	61	40	7	209	892	1, 654	2, 546	18
Rivers.....	63	25, 555	36	17	10	6	57	762	990	1, 752	4
At sea or in foreign waters.....	34	13, 623	15	7	12	2	32	47	343	380	9
Total.....	672	245, 372	367	180	125	32	640	5, 729	6, 570	12, 299	48
Other causes:											
Atlantic and Gulf coasts.....	169	42, 286	113	56	.....	30	139	1, 349	1, 474	2, 823	17
Pacific coast.....	18	6, 228	14	4	.....	1	17	146	222	368	2
Great lakes.....	186	59, 638	137	49	.....	12	174	232	1, 684	1, 916	28
Rivers.....	145	50, 123	95	50	.....	44	101	1, 065	2, 813	3, 878	48
At sea or in foreign waters.....	267	119, 585	242	24	1	55	212	1, 309	2, 925	3, 234	209
Total.....	785	277, 860	601	183	1	142	643	3, 101	9, 118	12, 219	304
Grand total.....	2, 029	678, 286	1, 398	504	137	438	1, 591	10, 152	20, 323	30, 475	*605

* In addition to the number of lives lost here reported, 192 lives were lost in cases where no other casualty occurred to the vessels, making the total number of lives lost 797.

RECAPITULATION.

Nature of casualties.	Number of vessels.		Aggregate tonnage.	Laden.		Ballast.	Unknown whether laden or not.	Wrecks involving total loss.	Casualties involving partial and unknown damage.	Number of passengers.	Number of crew.	Total on board.	Number of lives lost.*
	Atlantic and Gulf coasts.	Pacific coast.		Unknown or not.	Wrecks involving total loss.									Casualties involving partial and unknown damage.	Number of passengers.	Number of crew.	Total on board.	Number of lives lost.*
Atlantic and Gulf coasts.....	798	522	209,518	522	916	60	180	618	9	6,294	6,792	13,016	95
Pacific coast.....	174	49	32,873	49	32	3	52	352	1	277	792	1,069	5
Great lakes.....	543	367	182,290	367	137	41	63	462	1,208	4,438	5,646	128	
Rivers.....	238	147	51,784	147	81	10	39	179	2,044	4,106	6,150	32	
At sea or in foreign waters.....	374	313	171,861	313	48	13	114	260	389	4,195	4,584	325	
Total.....	2,029	1,398	678,286	1,398	504	127	438	1,591	10,152	20,323	30,475	* 605	
	Atlantic and Gulf coasts.	Pacific coast.	Aggregate.	Great lakes.	Rivers.	At sea or in foreign waters.	Aggregate.						
Total value vessels involved.....	\$13,538,375	\$2,900,750	\$16,439,125	\$8,137,365	\$4,209,250	\$6,807,485	\$14,933,225						
Total value cargoes involved.....	4,867,175	831,415	5,698,590	2,915,965	2,553,160	6,431,145	17,018,860						
Aggregate.....	18,425,550	3,032,165	21,457,715	11,053,330	6,862,410	13,268,630	32,612,085						
Total insurance on vessels.....	\$1,966,785	\$381,215	\$2,348,000	\$3,627,585	\$1,509,700	\$2,840,195	\$10,325,490						
Total insurance on cargoes.....	2,273,665	237,685	2,511,350	2,055,285	1,734,050	3,325,430	9,626,115						
Aggregate.....	4,240,450	618,900	4,859,350	5,682,870	3,243,750	6,165,625	19,951,595						
Total losses to vessels.....	\$2,089,890	\$334,770	\$2,424,660	\$975,399	\$950,840	\$2,332,877	\$6,673,776						
Total losses to cargoes.....	1,227,570	300,010	1,527,580	459,335	901,800	1,552,635	4,432,350						
Aggregate.....	3,317,460	634,780	3,952,240	1,425,734	1,852,640	3,885,512	11,106,126						
Total tonnage vessels involved.....	\$209,518	\$32,873	\$242,391	\$182,250	\$51,784	\$171,861	\$678,286						
Total tonnage vessels lost.....	36,283	5,420	41,703	15,697	17,630	50,575	123,585						

* In addition to the number of lives lost here reported, 192 lives were lost in cases where no other casualty occurred to the vessels, making the total number of lives lost 797.

TABLE 63.— *wrecks and casualties on and near the coasts and on the rivers of the United States, and to American vessels at sea or in foreign waters, involving LOSS OF LIFE, during the year ending June 30, 1881, in four divisions, viz: (1) Foundering; (2) Stranding; (3) Collisions; and (4) Casualties from other causes; showing in each case, when known, the DESCRIPTION of the VESSEL and the CARGO, the number of LIVES LOST, and the DATE and PLACE of disaster, &c.*

(1.) FOUNDERINGS.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether resulting in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.
1880. Aug. 12	J. S. Sellers	American steamer	186	Employed as a ferry-boat in Laguna del Madre, Tex. Contra Costa, Cal.	San Francisco, Cal.	Total	Wool, hides, and skins.	3	Point Isabel Harbor, Tex.
20	Energetic	American schooner	17	Corpus Christi, Tex.	Lake Charles, La.	Partial	Bricks	1	San Francisco Bay, Cal.
22	Welcome	do	30	New York City	Havana, Cuba	Total	Ballast	4	Gulf of Mexico.
29	City of Vera Cruz	American steamer	1,874	Cedar Keys, Fla.	New York City	do	General merchandise	68	Off the coast of Florida.
29	Rose Eppinger	American schooner	293	Portland, Me.	Boston, Mass	do	Lumber	2	18 miles north of Cape Canaveral, Fla.
Sept. 20	L. W. Pierre	do	66	Herring Bay, Md.	Baltimore, Md	do	Bricks	3	Sandwich Bay, Mass.
Oct. 12	Anna Jones	do	19	Grand Haven, Mich	Chicago, Ill	Partial	Oysters	1	Off Tally's Point, Chesapeake Bay, Michigan.
16	Alpena	American steamer	653	Ludington, Mich.	do	Total	Unknown	60	Lake Michigan.
16	Ann Maria	American schooner	236	Escanaba, Mich.	do	Partial	Lumber	1	20 miles off Twin Rivers Point, Lake Michigan.
16	David A. Wells	do	311	Toledo, Ohio	Buffalo, N. Y.	Total	Iron-ore	8	7 miles north of Chicago, Ill.
Nov. 4	Morning Star	do	498	Guadeloupe, W. I.	Jamaica, W. I.	do	Wheat	7	Off Fort Burwell, Canada, Lake Erie.
17	Addie R. Warner	do	134	Philadelphia, Pa.	Chesapeake Bay	do	Ballast	1	Outer harbor of Point-a-Pitre, Guadeloupe, W. I.
18	Mamoose	American sloop	9	Galveston, Tex.	Corpus Christi, Tex.	Partial	Oysters	3	Off Cranberry Beach, Chesapeake Bay.
1881. Jan. 26	Daniel Goos	American schooner	150	Sierra Leone, Africa.	Boston, Mass	Total	Railroad-iron	3	Matagorda Bay, Texas, (3 miles southwest of light-house.)
Feb. 14	Hazard	American bark	337	St. Croix, W. I.	New Haven, Conn.	do	Hides	7	Off Sankaty Head light-house, Mass.
Mar. 8	George	American brig	115	do	do	do	Sugar and molasses.	4	At sea.

TABLE 63.—*Wrecks and casualties on and near the coasts and on the rivers of the United States, &c.*—Continued.

(1.) FOUNDERINGS—CONTINUED.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether result- ing in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.
1881.									
Apr. 15	Carrie S. Degle	American schooner.	75	Gloucester, Mass.	Western Banks, N. F.	Total	Ballast.	12	Western Banks, N. F.
Apr. 29	Palladium	do	70	New York City	Providence, R. I.	do	Scrap-iron	2	1 mile off Point Judith, R. I.
June 29	J. F. Tull	do	15	Crisfield, Md.	Cherrystone, Va.	do	Ballast.	3	Off Fox Island, Tangier Sound, Chesapeake Bay.

Totals: Vessels, 19; tonnage, 5, 117; total losses, 15; partial losses, 4; lives lost, 193.

(2.) STRANDINGS.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether result- ing in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.
1880.									
Aug. 12	Laurel	American schooner	71	Corpus Christi, Tex.	Galveston, Texas.	Total	Ballast.	4	Padre Island, Texas.
18	Little Weeks	do	32	Orange, Texas	do	do	do	3	Do.
30	Long Reach	American brig	305	Apalachicola, Fla.	Philadelphia, Pa.	do	Lumber	4	12 miles south of Mosquito In- let, Fla.
Sept. 4	Eric the Red	American ship	1,580	New York City	Melbourne, Australia	do	General	4	Southwest coast of Australia.
7	Jane Bell	American schooner	374	Escaaba, Mich.	Ashabua, Ohio	do	Iron-ore	2	8 miles southwest of Asha- bua, Ohio, Lake Erie.
26	Gertrude	do	70	Milwaukee, Wis.	Other Creek, Mich.	do	Wood	1	Mouth of Other Creek, Mich., Lake Michigan.
Oct. 1	Three Sisters	do	62	San Francisco, Cal.	Gualala, Cal.	do	Bark	1	Gualala, Mendocino County, Cal.
9	Devonshire	American bark	643	Baltimore, Md.	Bordeaux, France	do	Tobacco and staves.	1	Entrance of Bordeaux River, France.
17	J. Hazard Hartzell	American schooner	253	La Anse, Mich.	Frankfort, Mich.	do	Iron-ore	1	1 mile south of Frankfort, Mich., Lake Michigan.
17	Granada	do	270	Muskegon, Mich.	Chicago, Ill.	do	Lumber	*4	Near Muskegon, Mich., Lake Michigan.
Nov. 15	Coringa	American bark	777	Bangkok, Siam	Samarang, Java	Partial.	Rice	3	Cape Patani, coast of Siam.
23	L. & D. Fisk	American schooner	246	New York City	Port Royal, S. C.	Total	Phosphate	6	Outer Diamond Shoal, N. C.
Dec. 11	Azorean	American bark	487	New Bedford, Mass.	St. Michael's, Azores Islands.	do	Lumber and fish.	1	Bay of Fayal, Azores Islands.
26	Helen Merriam	American schooner	74	Monterey, Cal.	Santa Cruz, Cal.	do	Poles and rail- road-ties.	1	1/2 mile northwest of Sequel, Cal.

1881.	Josie T. Marshall	British bark	1,072	Antwerp, Belgium	New York City	do	Ballast	1	West end of Oak Island, Long Island, N. Y.
Jan. 6	La Belle	American schooner	23	New Orleans, La	Mandeville, La	Partial	Merchandise	1	Mandeville, Lake Pontchartrain, La.
Feb. 9	Emma L. Hall	American brig	365	Cardenas, Cuba	New York City	do	Crude sugar	2	Bonnet Shoal, N. Y.
May 4	Ajajap	Italian bark	566	Antwerp, Belgium	do	Total	Grano	13	Rockaway Shoals, N. Y.
Apr. 4	A. B. Goodman	American schooner	122	Baltimore, Md	New Bern, N. C	do	Grano	1	Inner Diamond Shoal, near Cape Hatteras, N. C.
15	John G. Huntington	do	155	Gloucester, Mass	New York City	do	Fish	6	Cape Hatteras, N. C.
19	Victoria	American ship	1,349	Amsterdam, Holland	San Francisco, Cal	do	Steel rails	2	Duke of York Island, South America.

Totals: Vessels, 21; tonnage, 8,867; total losses, 18; partial losses, 3; lives lost, 60.
 * The "Granada" was capsized and water-logged, and two of her crew perished the day before she drifted ashore. These two are not included in the total of this column, but are included in the table of loss of life from other causes.

(3.) COLLISIONS.

1880.	Mamie	American steam-yacht	15	Mouree, Mich	Detroit, Mich	Partial	Ballast	17	Detroit River.
July 22	Treaty	American schooner	19	Booth Bay, Me	Fishing	Total	do	3	Off entrance Damariscotta River, Me.
Aug. 14	General Sheridan	American steamer	54	Weehawken, N. J	New York City	Partial	do	1	New York Harbor, N. Y.
Oct. 15	William Wellhouse	American scow	84	Marblehead, Ohio	Toledo, Ohio	Total	Stone	1	Opposite Manhattan Mills, Lake Erie.
Dec. 2	Girard Chestnut	American schooner	23	Kent County, Md	Baltimore, Md	do	Oysters	1	Potapasco River.
20	Christiana	do	40	Savannah, Ga	Fishing Banks, Fla	Partial	Ballast	1	45 miles southeast of Tybee Bar, Ga.
1881.	John Zithloesent	American bark	856	Hamburg, Germany	Philadelphia, Pa	Total	Salt	5	Off Tolkestone, England.
Jan. 7	Stella McCloskey	American steamer	14	Pittsburgh, Pa	Manchester, Pa	No dam-	Ballast	3	Ohio River.
Feb. 2	David E. Wolf	American schooner	123	Baltimore, Md	Norfolk, Va	Total	Railroad-iron	3	OFF York Spit, Chesapeake Bay.
28	Clatsop Chief	American steamer	78	Portland, Oreg	Helen, Cal	do	Ballast	4	Williamets Bar, Oregon River.
Mar. 21	Elizabeth Frances	American schooner	30	Baltimore, Md	North Point Creek, Md.	Partial	do	1	Mouth of North Point Creek, Md., Chesapeake Bay.
Apr. 5	Fred Brown	do	93	New York City	Boston, Mass	Total	Generals	7	Off Wellfleet, Cape Cod, Mass.
13	Levin A. Insley	do	44	Potomac River	Baltimore, Md	Partial	Oysters	1	Off Point Lookout, Md., Chesapeake Bay.
May 22	No name	Scow	Unknown	Unknown	Unknown	No dam-	Ballast	2	Below Flint Island, Ohio River.
June 2	do	Ferry scow	70	Buffalo, N. Y	Buffalo Creek	do	do	1	Buffalo Creek, N. Y.
21	Fannie L. Nye	American schooner	70	Provincetown, Mass.	Fishing	Partial	do	3	25 miles off Highland Light, Mass.

Totals: Vessels, 16; tonnage, 1,549; total losses, 7; partial losses, 6; no damage, 3; lives lost, 52.
 * In collision with British schooner Jane C. Woodruff.
 † In collision with British steamer Idlewild.

TABLE 63.—*Wrecks and casualties on and near the coasts and on the rivers of the United States, &c.—Continued.*

(4.) OTHER CAUSES.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether result or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.	Nature of casualty.
1880.										
July 4	Solon H. Johnson	Am. str.	120	Montreal, Can	Rochester, N. Y.	No damage.	Ballast	1	Beauharnois Canal, Can	Fell overboard from aft gangway.
4	No name	Row-boat		In Philadelphia Harbor, Pa.		do		4	Delaware River, nearly opposite Petty's Isl'd.	Row-boat was over-loaded.
5	J. C. Osgood	Am. str.	51	In Manistee Harbor, Mich.		do	Ballast	1	Manistee Harbor, Mich.	Fell overboard.
6	Lizzie Wyman	Am. brig.	288	New York City	Brunswick, Ga.	do	do	1	Off Chincoteague, Va.	Jumped overboard in a fit of phrensy.
6	Mary Emma	Am. sch.	23	Baltimore, Md.	Bear Creek, Md.	do	do	1	Lazaretto Light, Patuxco River, Md.	Fell overboard from rail.
9	J. Duval	do	132	Kewanee, Wis.	Chicago, Ill.	Partial.	Bark	7	East of Two Rivers Point, Lake Michigan.	Capsized in a squall.
15	Augustus Ford	do	184	Sandusky, Ohio.	Presque Isle, Mich.	No damage.	Coal and merchandise.	1	Midway of Belle Isle, Detroit River.	Fell overboard while walking rail.
16	Cuba	Am. str.	1,526	Buffalo, N. Y.	Chicago, Ill.	do	Salt and iron.	1	5 miles north of Sleeping Bear Point, Mich., Lake Mich.	Knocked overboard by foresheet.
16	Adam Bowlby	Am. sch.	114	Antigua, W. I.	Jacksonville, Fla.	do	General.	1	Las Nuevitas Bay, Cuba	Unknown.
21	Chester	Am. str.	327	Annapolis, Md.	Baltimore, Md.	do	Ballast.	1	Off North Point, Patuxco River, Md.	Jumped overboard while drunk.
24	Rome	Am. bark.	814	St. Simon's Island, Ga.	West Hartlefield, Eng.	do	Lumber.	1	At sea	Struck by falling block.
24	Harford Belle	Am. sch.	40	Baltimore, Md.	Bush River, Md.	do	Empty cans.	1	Baltimore, Md.	Fell overboard.
25	James D. Parker	Am. str.	505	Cincinnati, Ohio	Memphis, Tenn.	do	Unknown.	2	Roséclaire, Ill., Ohio River.	Lost from small boat.
26	Hattie M. Crowell	Am. sch.	431	Orient, L. I.	Baltimore, Md.	do	Fertilizing material.	1	Lat. 40° 06' N., long. 73° 08' W.	Fell overboard.
27	Dora	Am. str.	198	Ounalaska, Alaska	San Francisco, Cal.	do	Furs	1	Lat. 39° 08' N., long. 126° 41' W.	Washed overboard in a gale.
29	General McClellan	Am. ship.	1,583	San Francisco, Cal	New York City	do	General.	1	At sea.	Lost overboard in a gale.
29	C. J. Kershaw	Am. str.	1,394	In Chicago Harbor, Ill.		do	Ballast	1	Chicago, Ill.	Fell into hold.
30	Sprite	Row-boat		In Portland Harbor, Me.		do		1	Portland Harbor, Me	Capsized in a squall.

—	Achilles	Am. brig..	374	Potomac River....	Arroya, Porto Rico, W. I.	do	Sugar and molasses.	1	Barbadoes, W. I.	Unknown.
Aug. 1	Freddie L. Hamlin.	Am. sch ..	51	San Francisco, Cal.	Baltimore, Md.	do	Wood.....	1	Off Fort Carroll, Patapsco River.	Fell overboard.
2	Anastasia Cushman.	do	51	Chicago, Ill.	Fishing.....	do	Shells and skins.	1	30 miles south of Rosario, Lower California.	Capsizing of boat.
2	Ganges	do	367	New Orleans, La..	Port Huron, Mich.	do	Corn.....	1	Goodrich, Mich., Lake Huron.	Falling of cross-trees.
9	Bonnie Lee	Am. str.	316	Pataxent River, Md.	Shreveport, La.	Total	General merchandise.	10	Leannor Point, Red River, La.	Explosion of boiler.
11	William H. Vickery.	Am. sch ..	25	Baltimore, Md.	Baltimore, Md.	No damage.	Tobacco and wheat.	1	2 miles below Sandy Point, Chesapeake Bay.	Fell overboard.
11	Arintha Lamdon	do	20	Port Hope, Ont.	Crisfield, Md.	do	Ballast.....	1	Off Cove Point, Chesapeake Bay.	Do.
12	Norseman	Brit. str.	295	Indianola, Tex.	Charlotte, N. Y.	do	do	1	Entrance to Charlotte Harbor, N. Y.	Fell overboard while climbing ladder to hurricane-deck.
12	Amedeo Ist	Am. sch ..	12	Georgetown, D. C.	Galveston, Tex.	Total	Fish.....	2	Padre Island, Tex	Capsized in a hurricane.
13	Lemuel Hall	do	522	Corpus Christi, Tex.	New Bedford, Mass.	No damage.	Coal.....	1	10 miles south of Shinnecock L. I.	Fell from aloft.
13	Noesuch	do	62	Muskogon, Mich.	Orange, Tex.	Total	Ballast.....	6	Supposed off Mustang Island, Tex.	Missing.
15	Vermont	do	81	San Francisco, Cal.	Milwaukee, Wis.	No damage.	Lumber.....	1	10 miles off Milwaukee, Lake Michigan.	Fell overboard; supposed to have been in aft.
15	Melancthon	Am. bark ..	298	In Chicago Harbor, Ill.	Portland, Oreg.	do	General merchandise.	1	Near San Francisco Bar, Cal.	Fell from top-sail yard on deck.
16	Edna	Am. sch ..	38	New Orleans, La..	Algiers, La.	do	Gravel.....	1	Chicago Harbor, Ill.	Fell overboard from yawl.
16	Hattie	Am. ferry-boat.	177	Buffalo, N. Y.	Duluth, Minn.	do	Ballast.....	1	Algiers, La., Mississippi River.	Fell overboard while trying to jump ashore.
18	John B. Wilbor	Am. sch ..	413	Honolulu, Sandwich Islands.	Towing vessel into harbor.	do	do	1	Duluth, Minn.	Fell into hold.
20	E. D. Holton	Am. str.	25	Port Blakely, Wash. Ter.	Port Blakely, Wash. Ter.	do	do	1	Manochee River, Milwaukee, Wis.	Thrown overboard by fouling of tow-line.
21	Martha Rideout ..	Am. bark ..	922	Peoria, Ill.	Excursion	do	do	1	Lat. 46° 46' N., long. 130° 32' W.	Fell overboard.
23	Maggie P	Am. str.	105	Calais, Me.	Bridgeport, Conn.	do	do	1	Above Peoria, Ill., Illinois River.	Supposed to have walked overboard.
24	Arrow	Am. sch ..	69	Havana, Cuba	New York City	Partial.	Lumber.....	1	Of Milwaukee, Wis., Lake Michigan.	Lost overboard.
25	Mabel	do	186	New York City	Hoboken, N. J.	Total	Asphaltum	1	Bridgeport, Conn.	Struck by lightning.
26	Emma F. Lewis	do	85	Pensacola, Fla.	Brazil, S. A.	No damage.	Ballast.....	6	At sea	Missing.
26	Gamma	do	162	Paducah, Ky.	Wabash River.	Total	Lumber.....	1	Hoboken, N. J.	Fell into hold.
28	Miriam	Am. bark ..	598	New Orleans, La..	New York City	do	do	13	At sea	Missing.
28	John S. Bransford.	Am. str.	251	do	do	do	Corn.....	1	Wabash River	Steamer struck log and sunk.
29	New Orleans	do	1,440	do	do	Partial.	Cotton, rice, &c.	1	Lat. 27° 45' N., long. 79° 30' W.	Washed overboard in a hurricane.

TABLE 63.—*Wrecks and casualties on and near the coasts and on the rivers of the United States, &c.—Continued.*

(4.) OTHER CAUSES—CONTINUED.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether resulting in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.	Nature of casualty.
1880. Aug. 29	Marine City.....	Am. str.	696	Alcona, Mich.	Toledo, Ohio	Total	Lumber and fish.	9	3 miles from Alcona, Mich., Lake Huron.	Fire.
30	Alfred	Am. bark	584	Pascagoula, Miss.	Trinidad Island, Spain. . . . .	. . . do	Lumber.	13	At sea.	Missing.
30	Passaic	Am. str.	845	Buffalo, N. Y.	Bay City, Mich.	No damage.	Ballast.	1	Near Charity Islands, Lake Huron.	Fell overboard at night.
31	Joe D. Dudley . . . . .	. . . do	35	Marquette, Mich.	Munising, Mich. . . . .	. . . do . . . . .	. . . do	1	Munising, Mich.	Do.
—	San Salvador	Am. steam-ship.	971	Truxillo, Honduras.	Nuevitas, Cuba	Total	Cattle	29	At sea.	Missing.
—	Emma C. Litchfield	Am. bark	483	St. Mary's, Ga.	Buenos Ayres, S. A. . . . .	. . . do	Lumber.	10	. . . do	Do.
Sept. 3	Alfred	Am. brig.	294	Baltimore, Md.	Paysandu, Uruguay, S. A.	Partial.	General.	1	. . . do	Washed overboard in a hurricane.
3	Minnesota	Am. str.	482	La Crosse, Wis.	St. Louis, Mo.	No damage. . . . .	. . . do	1	1 mile above Clarksville, Mo.	Crushed by falling stage.
5	Benj. T. Crocker	Am. sch	74	Port Hawkesbury, N. S.	Provincetown, Mass. . . . .	. . . do	Fish	1	Bradelle Bank, Gulf of St. Lawrence.	Fell overboard from bowsprit.
7	Rip Van Winkle	Am. str.	37	Portland, Oreg.	St. Helen's, Oreg.	Partial.	Ballast.	1	Willamette River.	Explosion of boiler.
7	Galatea	Am. sch	94	San Francisco, Cal.	Bodega, Cal.	No damage.	General.	1	Off Bodega, Cal.	Fell overboard while reefing flying-jib.
8	White Fawn	Am. str.	16	In Perth Amboy Harbor, N. J.	Perth Amboy, N. J. . . . .	. . . do	Ballast.	1	Perth Amboy, N. J.	Bursting of steam-pipe.
9	Jennie R. Morse	Am. sch	408	New York City	Charleston, S. C. . . . .	. . . do	Iron and hay.	1	Off Cape Hatteras, N. C.	Knocked overboard by spanker.
9	Frederick Gerring, jr. . . . .	. . . do	71	Gloucester, Mass.	Fishing Banks . . . . .	. . . do	Fish	1	40 miles southeast of Cape Sable, Jr.	Washed overboard in a gale.
9	American Yacht . . . . .	. . . do	29	Annapolis, Md.	Baltimore, Md. . . . .	. . . do	Oysters	1	Off Sandy Point, Chesapeake Bay.	Washed overboard while securing yawl.
10	Welcome R. Beebe . . . . .	. . . do	406	Savannah, Ga.	New Haven, Conn. . . . .	. . . do	Lumber.	1	Off Cape Henlopen	Fell overboard from jib-boom while taking in sail.
11	Virginia S. Lawson . . . . .	. . . do	46	Diamond Creek, Va.	Baltimore, Md. . . . .	. . . do	Wood.	1	Near head of Diamond Creek, Va.	The man was engaged in loading wood on schooner from a scow, when the scow sunk with him.

11	John H. Williams	Am. do	York River, Va	do	do	Lumber	1	Sharp's Island, Chesapeake Bay, 7 miles south-southeast of Pilot Island, Lake Michigan. Lat. 12° 19' S., long. 34° 15' W.	Knocked overboard by jibing of fore-boom. Lost overboard in a squall at night.
18	Chayahoga	Am. do	Fayette, Mich	Chicago, Ill	Partial	Railroad-ties	1		
19	Quotakatop	Am. barkentine	Glasgow, Scotland	Fejee Islands	No damage	Machinery, coal, and liquors.	1		Dragged overboard by spanker-sheet.
24	Florence Meyer	Am. str.	Cincinnati, Ohio	New Orleans, La	Total	General	5	Good Hope, La., Mississippi River.	Struck hidden obstruction and sunk.
24	Susan Ellen	Am. sch.	Potomac River	Philadelphia, Pa	No damage	Wood	1	Off Poole's Island, Chesapeake Bay.	Knocked overboard by foresail.
25	Ida	Am. do	Chicago, Ill	Manistee, Mich	do	Ballast	1	Parting of main lift 5 miles west of Point au Sable, Lake Michigan.	Washed overboard by heavy sea.
25	Nellie Swift	Am. do	Provincetown, Mass.	Grand Bank	do	Fish and fish-oil	1	Grand Bank	Bursting of steam-pipe.
25	Maggie Harper	Am. str.	Louisville, Ky	Carrollton, Ky	Partial	General	2	One mile below Carrollton, Ky., Ohio River.	Fell from stage while slushing foremast.
27	Wm. P. Davis	Am. sch	Pungo River, N. C	Port Deposit, Md	No damage	Lumber	1	Hatteras Inlet, N. C.	Fell overboard from guard.
29	Viola	Am. str.	Rock Island, Ill	do	do	Ballast	1	4 miles above Fairport, Iowa.	Bursting of steam-pipe.
30	Penn Wright	Am. do	Clinton, Iowa	Stillwater, Minn	Partial	do	1	5 miles below Bellevue, Iowa, Mississippi River.	
30	Annie Moiles	Am. do	Bay City, Mich	Au Sable, Mich	No damage	do	1	Saginaw Bay, Lake Huron.	Fell overboard.
—	Tampico	Am. sch	New York City	Antigua, W. I	Total	General	6	At sea	Missing.
—	Minnie G. Loud	Am. do	Baltimore, Md	St. Thomas, British W. I	do	Coal	9	do	Do.
Oct. 1	Challenge	Am. do	Milwaukee, Wis	Ludington, Mich	No damage	Ballast	1	1 mile from Ludington, Mich., Lake Michigan.	Washed overboard.
2	E. H. Coffin	Am. str.	New York Harbor	Santa Cruz, Cal	do	do	1	New York Harbor, N. Y.	Fell overboard from rail.
3	Enterprise	Am. sch	Santa Cruz, Cal	Umpqua, Ore	do	Machinery	1	15 miles southwest of Cape Gregory, Ore.	Fell overboard from deck-load.
6	City of Stockton	Am. str.	Stockton, Cal	San Francisco, Cal	do	Wheat, flour, and produce.	1	3 miles southwest of Pinola Point, Cal.	Fell overboard.
7	Rob Roy	Am. sch	Racine, Wis	Pine Lake, Wis	do	Ballast	1	20 miles east of Milwaukee, Wis., Lake Michigan.	Do.
9	Ambrose Light	Am. brig.	Horse Island, Me	Wilmington, N. C	Partial	Ice	1	At sea	Washed overboard while furling jib.
12	James C. Clark	Am. sch	Baltimore, Md	Potomac River	No damage	Ballast	1	Off St. George's Island, Potomac River.	Fell overboard from rail.
12	Santa Cruz	Am. str.	Anaheim, Cal	Uneneme, Cal	do	General	1	San Francisco, Cal	Fell overboard from wharf while loading vessel.
13	George Peabody	Am. sch	San Francisco, Cal	Cruising	do	Ballast	1	San Francisco Bay, Cal.	Fell overboard while furling jib.
13	Martha N. Haile	Am. do	New York City	Baltimore, Md	do	Iron-ore	1	15 miles off Hog Island.	Knocked overboard by spanker-gaff.

TABLE 63.—*Wrecks and casualties on and near the coasts and on the rivers of the United States, &c.*—Continued.

(4.) OTHER CAUSES—CONTINUED.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether resulting in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.	Nature of casualty.
1880. Oct. 14	Maxim.....	Am. sch.....	117	Caspar, Cal.....	San Pedro, Cal.....	No damage.	Lumber.....	1	Santa Barbara Channel, Cal.	Fell overboard while stepping from deck-load to rail.
15	Enterprise.....	.....do.....	190	Umpqua, Oreg.....	San Francisco, Cal.....	.....do.....	.....do.....	1	Lat. 41° 22' N., long. 126° 20' W.	Knocked overboard by gaff.
16	David Vance.....	.....do.....	775	Buffalo, N. Y.....	Racine, Wis.....	Partial.....	Coal.....	3	Near Manitow Island, Lake Michigan.	Washed overboard by heavy sea.
16	Levi Grant.....	.....do.....	205	Muskegon, Mich.....	Chicago, Ill.....	.....do.....	Lumber.....	1	20 miles northeast of Milwaukee, Wis.	Do.
17	Granada*.....	.....do.....	239	.....do.....	.....do.....	Total.....	.....do.....	4	Near Muskegon, Mich., Lake Michigan.	Do.
18	Benjamin Dickerman.....	Am. bark.....	433	Havana, Cuba.....	Boston, Mass.....	.....do.....	Sugar.....	1	Off Hatteras, N. C.....	Lost overboard in a gale.
19	Hattie S. Williams.....	Am. sch.....	808	Somerset, Mass.....	Georgetown, D. C.....	No damage.	Unknown.....	1	Alexandria, Va.....	Frightened and jumped overboard.
20	Charlotte W. White.....	Am. ship.....	1,411	St. John, N. B.....	Liverpool, Eng.....	Total.....	Deals.....	19	At sea.....	Missing.
20	Charles H. Marshall.....	.....do.....	1,683	Antwerp, Belgium.....	New York City.....	No damage.	Iron and barrels.....	1	Off Eddystone Light, English Channel.	Fell overboard.
24	State of New York.....	Am. str.....	1,417	Stonington, Conn.....	.....do.....	Partial.....	Merchandise.....	1	Near Cornfield Point Light-ship, Long Island Sound.	Lost overboard.
25	Wm. L. Burroughs.....	Am. sch.....	513	Cap e Haytien, Hayti.....	Philadelphia, Pa.....	No damage.	Logwood.....	1	At sea.....	Struck by falling block.
27	Exhorter.....	Am. ship.....	1,370	Bombay, India.....	Rotterdam, Holland.....	Partial.....	Linseed.....	3	.....do.....	Washed overboard in a hurricane.
28	Oncenta.....	Am. sch.....	424	Buffalo, N. Y.....	Toledo, Ohio.....	No damage.	Ballast.....	1	20 miles off Port Burwell, La. de Erie.	Fell overboard at night.
28	Edward Parke.....	.....do.....	148	San Pedro, Cal.....	Eureka, Cal.....	Partial.....	Grain and merchandise.....	2	Humboldt Bar, Cal.....	Capsized in breakers.
28	Hamilton Fish.....	Am. ship.....	1,628	Bremenhaven, Germany.....	New York City.....	No damage.	Unknown.....	1	At sea.....	Lost overboard in a gale.
—	J. H. Stickney.....	Am. sch.....	270	Baltimore, Md.....	Charleston, S. C.....	Total.....	Coal.....	7	.....do.....	Missing.
—	Wm. P. Cox.....	.....do.....	138	Philadelphia, Pa.....	Wilmington, N. C.....	.....do.....	.....do.....	6	Off Frying-Pan Shoals N. C., (supposed.)	Do.
—	Europa.....	Am. bark.....	367	New York City.....	Barbadoes, W. I.....	.....do.....	Breadstuffs.....	11	At sea.....	Do.

Nov. 1	Messenger	Am. str	445	St. Joseph, Mich.	Chicago, Ill.	No dam- age.	Fruit	1	30 miles west-southwest of St. Joseph, Mich. Lat. 35° 30' N., long. 57° 30' W.	Fell overboard from upper deck.
4	Spotless	Am. bktn	418	Baltimore, Md.	Rio Janeiro, Brazil	do	Flour	1	Fell overboard from rail.	
5	E. M. Carrington	Am. sch	121	Muskegon, Mich.	Milwaukee, Wis.	Total	Lumber	5	25 miles east of Milwaukee, Wis., Lake Michigan.	Waterlogged in heavy weather.
6	William Smith	do	44	do	St. Joseph, Mich.	No dam- age.	do	1	7 miles north of South Haven, Lake Michigan.	Knocked overboard by jibbing of fore-boom.
8	Rosa Bell	do	132	In Grand Haven Harbor, Mich.	do	do	Unknown	1	Grand Haven, Mich.	Jammed between vessel and dock.
10	Ancon	Am. steam-ship	1,541	Port Harford, Cal.	San Diego, Cal.	do	General	1	5 miles south of Point San Luis, Cal.	Fell overboard while climbing to hurricane-deck.
11	Sandy Hook	Am. sch	107	Wilmington, N. C.	New York City	Partial	Lumber	1	Off Cape Fear, N. C.	Lost overboard in a gale.
12	Frank Moffat	Am. str	123	Lying at Port Huron, Mich.	do	No dam- age.	Ballast	1	Port Huron, St. Clair River.	Fell overboard at night.
19	Delos de Wolf	Am. sch	299	Chicago, Ill.	Muskegon, Mich.	do	do	1	23 miles west of Long Point, Ontario, Lake Erie.	Struck by falling lumber.
19	Fulton	Am. barge	256	Detroit, Mich.	Tonawanda, N. Y.	do	Lumber	1	30 miles west of Long Point, Ontario, Lake Erie.	Fell overboard.
20	Beesie E. Dickin-son.	Am. sch	375	Wisconsin, Me.	Charleston, S. C.	do	Ice	1	Off Frying-Pan Shoals, N. C.	Knocked overboard by boom.
20	Serene	Am. bark	550	Baltimore, Md.	Rio de Janeiro, S. A.	do	General	1	Lat. 22° 15' S, long. 38° 30' W.	Fell from aloft, struck rail and fell overboard.
21	Falmouth	Am. sch	234	Toledo, Ohio	Oswego, N. Y.	Total	Wheat	1	New Breakwater, Buffalo, N. Y., Lake Erie.	Sunk with the vessel, which struck break-water.
22	A. C. Lyons	do	267	New York City	Baltimore, Md.	No dam- age.	Ballast	1	Hampton Roads, Va.	Fell overboard.
23	Saginaw	Am. str	707	Port Austin, Mich.	Detroit, Mich.	do	General	1	Port Huron, Mich.	Fell overboard from gang-plank.
24	George G. Green	Am. sch	673	Lisbon, Portugal	Baltimore, Md.	No dam- age.	Wheat	1	Lat. 39° N, long. 69° W.	Washed overboard in a gale.
26	Wild Goose	Am. str	70	Charleston, W. Va.	Paint Creek, W. Va.	do	General	2	Kanawha River, W. Va.	Bursting of steam-pipe.
28	Renshaw	Am. brig	275	Buenos Ayres, S. A.	Mauritius Island, Indian Ocean.	Partial	Mules	1	At sea	Lost overboard in a gale.
28	Louisa A	Am. sch	122	New York City	Nuevitas, Cuba	No dam- age.	Ballast	1	Off Sandy Hook, N. J.	Fell overboard.
29	M. A. Achorn	do	308	Boston, Mass.	Baltimore, Md.	do	do	1	Abreast of Back River, Chesapeake Bay.	Fell overboard while furling outer jib.
30	C. Matthews	do	138	Bangor, Me.	New York City	do	Deals	1	Near Pollock Rip Buoy.	Knocked overboard by main-boom.
-	Albert Russell	Am. bark	762	New York City	Melbourne, Aus- tralia.	do	General	1	Long. 39° E., lat. 43° S.	Lost in a hurricane.
-	Clara G. Loud	Am. sch	280	do	Wilmington, N. C.	Total	Salt	7	At sea	Missing.

* This disaster is not included in the total of the number of vessels of this table, but is embraced in the table of strandings. Two of the four lives were lost when the vessel stranded, and are not included in the totals of this table, but are included in the total of the table of strandings.

TABLE 63.—*Wrecks and casualties on and near the coasts and on the rivers of the United States, &c.—Continued.*

(4.) OTHER CAUSES—CONTINUED.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether resulting in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.	Nature of casualty.
1880 Dec. 1	John McCullough.	Am. sch.	72	In San Francisco Harbor, Cal.	.....	No damage.	Ballast.....	1	San Francisco, Cal.	Struck by piece of fire-wood, thrown from wharf into hold.
2	Governor Perkins	do	73	Cambria, Cal.	San Francisco, Cal.	Total	Grain.....	5	Off coast of California.	Missing.
11	Malay	Am. barkentine.	743	Departure Bay, B. C.	do	No damage.	Coal.....	1	Off Columbia River, Oreg.	Fell overboard in a gale.
12	Virginia S. Lawson.	Am. sch.	46	Potomac River, Va.	Baltimore, Md.	do	Oysters.....	1	Off Kent Point, Chesapeake Bay, Md.	Knocked overboard by jilting of main-boom.
17	Tam O'Shanter	do	108	Baracoa, Cuba	Charleston, S. C.	do	Fruit.....	1	Lat. 32° 45' N., long. 79° 30' W.	Fell overboard while furling main-top sail.
18	City of Augusta	Am. str.	2,870	New York City	Savannah, Ga.	do	General.....	1	Off Governor's Island, N. Y.	Jumped overboard, (reason unknown.)
22	James Chester	Am. bark	995	Port Gamble, W. Ter.	San Francisco, Cal.	do	Lumber.....	1	At sea	Washed overboard by heavy sea.
22	Ida Schmaner	Am. sch.	215	Coos Bay, Oreg.	do	do	Coal and lumber.	1	Off Crescent City, Cal.	Do.
22	Martha	Am. str.	10	In Wilmington Harbor, Del.	.....	Partial.	Ballast.....	1	Christiana Creek, Del.	Explosion of boiler.
24	City of New York	do	3,020	San Francisco, Cal.	Honolulu, Sandwich Islands.	No damage.	Unknown.....	2	Pacific Ocean	Washed overboard in a gale.
25	Ella T. Little	Am. sch.	249	Philadelphia, Pa.	Galveston, Tex.	do	Coal.....	1	75 miles northwest of Cape Hatteras, N. C.	Washed overboard by heavy sea.
26	Mary J. Russell	do	210	Jacksonville, Fla.	New York City	do	Lumber.....	1	Lat. 36° 58' N., long. 71° 38' W.	Washed overboard in a gale.
27	E. C. Knight	do	72	Philadelphia, Pa.	Cruising	do	Ballast.....	1	Cape Henlopen, 5 miles from breakwater.	Slipped on icy deck and fell overboard.
—	Sasaruli	do	121	Saint Domingo City, Hayti.	New York City	Total	Miscellaneous.	8	At sea	Missing.
1881, Jan. 1	Astral	Am. barge.	115	In New York Harbor.	.....	No damage.	Unknown.....	1	Gowanus Canal, Brooklyn, N. Y.	Explosion of boiler of tug "George B. McClellan" while lying alongside.
1	D. Ellis	Am. sch.	88	New York City	Norfolk, Va.	do	Salt.....	1	65 miles east of Winter Quarter Light, Va.	Washed overboard by heavy sea.

5	Nokomis	do	54	Baltimore, Md	Savannah, Ga	Partial	Ballast	1	Off Tybee Island, Ga	Washed overboard in a gale.
6	Caprice	do	70	Cruising		No damage	do	3	Off Sandy Hook, N. J	One fall overboard; two lost from small boat while attempting the rescue of the former. Struck on the head by sack of wool falling from sling while loading vessel.
7	Nicoline	do	69	Lying in San Francisco Bay, Cal.		do	Dyeewood	1	San Francisco, Cal.	Knocked overboard by fore-boom.
7	Precursor	do	74	San Francisco, Cal.	Cuffey's Cove, Cal.	do	Ballast	1	25 miles west of Cuffey's Cove, Cal.	Washed overboard.
9	Tam O'Shaunter	Am. ship	1,603	New York City	San Francisco, Cal.	do	General	1	At sea	Lost overboard in a hurricane.
12	Dirigo	Am. brig	367	Falmouth, Eng	New York City	Partial	Ballast	1	do	Lost overboard in a gale.
14	Mary A. Trainer	Am. sch	198	Jacksonville, Fla.	New London, Conn.	do	Lumber, ties, and cotton-seed.	1	Off Phenix Island, Md	Small boat capsized while conveying men on board.
16	Cassandra Adams	Am. bark	1,127	Departure Bay, B. C.	Wilmington, Cal.	No damage	Coal	6	Wilmington Harbor, Cal.	Missing.
16	No name	Am. fish-boat	2	Wilmington, Cal.	Catalina Island, Cal.	Total	Ballast	2	Between Wilmington and Catalina Island, Cal., (encompassed.)	Fell from starboard yard-arm to deck.
19	Hyperton	Am. brig	306	Portland, Me.	Cienfuegos, Cuba	No damage	Lumber and cooperage	1	Lat. 33° 30' N., long. 67° 40' W.	Fell overboard while taking in main-sail.
21	William C. Bee	Am. sch	350	St. Augustine, Fla.	New York City	do	Lumber	1	At sea	Explosion of boiler.
22	Mintie	Am. str	49	Pertido River		Total	Ballast	3	3 miles east of Nune's Ferry, Pertido River.	Fell overboard from bowsprit.
23	Orient	Am. sch	94	Baracoa, Cuba	Charleston, S. C	No damage	Unknown	1	Lat. 29° 10' N., long. 78° 40' W.	Fell from aloft to deck.
25	Hayes	do	194	Coos Bay, Oreg	San Francisco, Cal.	do	Coal and lumber	1	San Francisco, Cal.	Fell overboard.
27	General Pierson	Am. str	465	Memphis, Tenn.		do	Unknown	1	Mississippi River	Do.
27	Sarah Frances	Am. sch	33	Lying at Baltimore, Md.		do	Ballast	1	Baltimore, Md.	Fell overboard in a gale.
28	Martha C	do	79	Gloucester, Mass.	Cape Negro Bank, N. S.	do	Fish	1	At sea	Rupture of steam-dome.
Jan. 28	Bengal Tiger	Am. str	314	Pittsburgh, Pa.	Louisville, Ky	Partial	Ballast	1	9 miles above Cincinnati, Ohio River.	Washed overboard by heavy sea.
30	Theresa	Am. sch	227	New York City	Para, Brazil	do	Assorted	1	At sea	Explosion of boiler.
Feb. 2	Carrie	Am. str	75	Petersburg, Va	Havre de Grace, Md	do	Ballast	4	Baltimore, Md	Fell overboard.
2	Lizzie	Am. sch	72	Gloucester, Mass.	Fishing	No damage	Fish	1	Fishing Banks, Mass	Washed overboard by heavy sea.
3	Semiramis	Am. ship	1,186	Baltimore, Md	Antwerp, Belgium	do	Wheat	1	At sea	Shipped from sacks of guano and fell overboard.
3	G. Gundry Jordan	Am. str	228	Port Jackson, Fla.	Columbus, Ga	do	General merchandise	1	Port Jackson, Fla.	

TABLE 63.—*Wrecks and casualties on and near the coasts and on the rivers of the United States, &c.—Continued.*

(4.) OTHER CAUSES—CONTINUED.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether resulting in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.	Nature of casualty.
1881. Feb. 4	George R. Congdon	Am. sch.	458	Georgetown, D. C.	New York City	No damage.	Naval stores	1	Lat. 36° N., long. 73° 42' W.	Fell overboard from mizzen-rigging.
6	Jennie Middleton	do	283	Coosaw, S. C.	Baltimore, Md.	do	Phosphate rock.	1	At sea	Fell overboard while furling main-jib.
8	Charles E. Madden	Am. str.	11	In New York Harbor, N. Y.		Partial.	Ballast.	1	Off Governor's Island, New York Harbor.	Bursting of steam-pipe.
10	Ostrich	Am. sch.	47	Baltimore, Md.	Plum Point, Chesapeake Bay.	No damage.	do	1	Off Plum Point, Chesapeake Bay.	Thrown overboard from derrick by sudden lurch of vessel.
12	Charles Lawrence	do	435	do	New York City	do	Coal	1	Sandy Point, Md., Chesapeake Bay.	Knocked overboard by sparker.
12	Benjamin Franklin Hayes	Am. barge	42	Yonkers, N. Y.	do	do	Oat-meal	1	New York Harbor.	Fell overboard.
15	do	Am. sch.	194	Humboldt, Ore.	San Francisco, Cal.	No damage.	Lumber	1	Humboldt Bay, Cal.	Fell overboard from main-boom.
15	Assumption	Am. steam-ship.	338	New Orleans, La.	Thibodeauxville, La.	Partial.	Ballast.	2	New Orleans, La.	Explosion of boiler.
19	Fair Play	Am. str.	116	Monroe, La.	Saline River, Ark.	Total.	Cotton	1	Monroe, La., Ouachita River.	Fire.
19	Charles Dennis	Am. ship.	1,710	New York City	Yokohama, Japan.	Partial.	General and case oil.	6	Lat. 50° 58' S., long. 121° 20' E.	One washed overboard; five lost from small boat while endeavoring to rescue him.
20	Otago	do	875	Shanghai, China	Port Townsend, Wash., Ter.	No damage.	Ballast.	1	Lat. 37° N., long. 166° 52' E.	Fell from aloft and struck rail.
22	Ocean King	Am. sch.	80	Gloucester, Mass.	Grand Bank	do	do	1	Lat. 45° 8' N., long. 54° 25' W.	Washed overboard by heavy sea.
28	Minnie	Am. str.	42	Baltimore, Md.	Onancock, Va.	Partial.	do	2	Off Deal's Island, Chesapeake Bay.	Bursting of boiler-tube.
—	Nellie Speer	do	224	Louisville, Ky.	Pittsburgh, Pa.	No damage.	Unknown	1	Above Catlettsburg, Ky.	Walked overboard, (missing.)
—	Harry Lee	Am. sch.	32	Pensacola, Fla.	Cruising	Total.	Ballast	5	At sea.	Vessel's boat washed from cranes by heavy sea; man inside of boat.
Mar. 1	Daniel Webster	Am. bark	327	New Bedford, Mass.	Whaling cruise	Partial.	do	1	Near Crozett's, Indian Ocean.	

2	Kate Williams	do	Boston, Mass	Total	Sugar	9	At sea	Missing.
3	Caledonia	Am. sch	Peole's Island, Md	Nodam- age.	Ballast	1	Off Fort Carroll, Patap- sco River, Md.	Fell overboard while drunk.
3	Rebecca Florence	do	Baltimore, Md	do	Leather resid- uum.	1	Lat. 38° 30' N., long. 74° 05' W.	Fell overboard while making sail.
4	Mattie A. Hand	do	Philadelphia, Pa.	do	Lumber	1	Lat. 34° 44' N., long. 75° 43' W.	Caught by a rope and thrown overboard.
4	Carrie Hogan	Am. str.	Vicksburgh, Miss.	Total	Cotton	1	Phillip's Landing, Yazoo River, Miss.	Fire.
4	Lavinia	Am. sch	New York City	Partial.	Sand	2	Off Barron Island, N. Y.	Capsized in a gale.
5	David Owen	Am. brig	Charleston, S. C.	Nodam- age.	Sugar	1	Lat. 30° N., long. 79° W.	Fell from aloft to deck.
7	H. C. Winship	Am. sch	River Landings	do	Guano	1	70 miles from Charles- ton, S. C.	Do.
8	Mytic	Am. str.	Grand Bank	do	Assorted	1	Near Alexandria, Va	Bursting of steam-pipe.
8	Miet	Am. sch	Fernandina, Fla.	do	Fish	2	Grand Bank	Capsizing of dory.
12	William Wilber	do	San Francisco, Cal.	do	Ballast	1	At sea	Fell overboard while reefing mizzen-sail.
13	Jessie Nickerson	do	Gloucester, Mass	do	Lumber	1	Off Possession Point, Puget Sound.	Fell overboard.
15	Fleur-de-lis	do	St. Louis, Mo.	Total	Ballast	2	Newburyport Bar, Mass.	Capsizing of dory while going to attend fraiw.
17	John Means	Am. str.	Limerick, Ireland	do	do	3	Plum Point, Mississippi River.	Explosion of boiler.
26	Charles Dennis	Am. brig	Savannah, Ga.	Nodam- age.	Unknown	1	At sea	Washed overboard in a gale.
30	Jennie Hulbert	do	do	Partial.	Ice	1	do	Fell from aloft in a hur- ricane.
—	John Slusman	Am. sch	do	Total	Phosphate	7	do	Missing.
Apr. 2	George P. Rust	do	St. George's Bank	Nodam- age.	Unknown	1	do	Fell overboard from main-boom.
5	Alice Raymond	do	Norfolk, Va.	do	Ballast	1	Off Marblehead Harbor, Mass.	Thrown overboard by sudden lurching of vessel.
5	Edward Stanley	do	New Bedford, Mass.	Partial.	Lime	1	Point Gammon, Mass	Lost overboard in a gale.
9	Pedro Varela	do	Fishing	Nodam- age.	Ballast	1	Off Bermuda Islands	Fell overboard in a gale.
12	Daisy	Am. str.	Opposite shore Mississippi River.	Total	do	2	Opposite St. Louis, Mis- sissippi River.	Capsizing.
12	William J. Lamb din.	Am. sch	New Bern, N. C.	do	Fertilizers and machinery.	5	At sea	Missing.
12	Lizzie	Am. sloop	Galveston Island, Tex.	Nodam- age.	Bricks	1	Between Red Fish Bar and Half Moon, Tex.	Thrown overboard by breaking of tiller.
14	Ricardo Barras	Am. sch	New York City	do	Unknown	1	Off Hatteras, N. C.	Lost overboard in a gale.
15	John A. Becker man.	do	Pensacola, Fla.	Partial.	Ice and hay	1	Lat. 34° 38' N., long. 74° 19' W.	Thrown overboard by lurch of vessel.
18	Mary E. Dautels	do	St. George's Bank	Nodam- age.	Fish	1	St. George's Bank	Washed overboard by heavy sea.

TABLE 63.—*Wrecks and casualties on and near the coasts and on the rivers of the United States, &c.—Continued.*

(4.) OTHER CAUSES—CONTINUED.

Date of disaster.	Name of vessel.	Description of vessel.	Tons.	Port sailed from.	Port bound to.	Whether resulting in total or partial loss.	Nature of cargo.	No. of lives lost.	Place of disaster.	Nature of casualty.
1881 Apr. 24	Dakota	Am. steam ship.	2,135	Victoria, B. C.	San Francisco, Cal.	No damage.	General merchandise.	1	At sea	Either fell or threw herself overboard.
25	Libbie Conger	Am. str.	324	St. Louis, Mo.	St. Paul, Minn.	do	Unknown	1	Mississippi River.	Fell overboard at night.
27	No name	Am. fish- ing skiff.				do	do	4	Lake St. Clair, Mich.	Capsizing of boat.
May 6	Mary Emmor	Am. sch.	52	New York City	W. a. h. a. p. r. e. a. g. u. e., V. a.	do	General	1	Horseshoe Reef, near Sandy Hook, N. J.	Unknown.
10	Trustee	do	281	San Francisco, Cal.	Shoal Water Bay, Wash. Ter.	do	Ballast	1	Lat. 37° 10' N., long. 125° 36' W.	Fell overboard from jib-boom.
23	Japan	do	192	Ludington, Mich.	Chicago, Ill.	do	Lumber	1	Chicago, Ill., Lake Michigan.	Fell from main-boom while taking in sail.
24	Rob Roy	do	117	Pentwater, Mich.	Milwaukee, Wis.	do	Ballast	1	Milwaukee, Wis.	Fell into hold while sweeping deck.
26	Tropic	Am. steam ship.	380	Port Antonio, Jamaica, W. I.	Philadelphia, Pa.	Partial.	Fruit and coconuts.	1	Philadelphia, Pa.	Fire; suffocated in the engine-room.
26	Iron Age	Am. str.	869	Wyandotte, Mich.	Escanaba, Mich.	No damage.	Ballast	1	Wyandotte, Mich., Detroit River.	Fell through hatchway.
27	Magnolia	Am. barge	267	Baltimore, Md.	Chester, Pa.	do	Barrels	1	Chester, Pa., Delaware River.	Fell overboard while in a fit.
28	Josie	Am. str.	238	Dubuque, Iowa	St. Paul, Minn.	do	Ballast	1	Red Wing, Minn., Mississippi River.	Fell overboard.
28	S. Anderson	Am. sch.	282	Muskegon, Mich.	Chicago, Ill.	do	Lumber	1	7 miles west of Waukegan, Ill., Lake Michigan.	Fell overboard from foremast-head.
29	General Pierson	Am. str.	485	Lying at Memphis, Tenn.		do	Unknown	1	Memphis, Tenn., Mississippi River.	Fell overboard, supposed to have been asleep.)
31	Maria H. Nelson	Am. sch.	39	At anchor at San Francisco, Cal.	San Francisco, Cal.	do	Ballast	1	San Francisco, Cal.	Fell overboard while trying to clear a line.
June 2	Jacob Brandon	Am. str.	65	New York City	Sandy Hook, N. J.	do	do	2	Inside of Sandy Hook, N. J.	Blow out in furnace.
4	Veronica	Am. bark	409	New Bedford, Mass.	Madeira Islands	do	Miscellaneous.	1	Near Azores Islands	Jumped overboard while insane.
4	Isabel	Am. sch.	76	New York City	Falmouth, Jamaica	Total	General	1	At sea	Capsizing of vessel in a whirlwind.

5	Nelson.....	do	463	Prentiss Bay, Mich	Buffalo, N. Y.	No dam- age.	Lumber	1	Off Dunkirk, N. Y.	Fell overboard.
7	Minnie.....	Am. str	123	Green Bay, Wis.	Sturgeon Bay, Wis	do	Unknown	1	6 miles south of Sturgeon Bay, Lake Michigan.	Do.
8	John H. Hanna	do	377	New Orleans, La.	Trenton, La	Partial.	General	8	14 miles above New Orleans, La., Mississippi River.	Collapse of boiler-fines.
8	City of Stockton	do	486	San Francisco, Cal	Stockton, Cal	No dam- age.	do	1	San Francisco, Cal.	Jumped overboard while drunk.
12	Miami Belle	Am. sch	269	Chicago, Ill.	Cheboygan, Mich	do	Ballast	1	Abreast of Racine, Wis., Lake Michigan.	Fell from aloft to deck.
12	B. and J. Baker	Am. str	213	Norfolk, Va.	Cape Henry, Va	do	do	3	Off Cape Henry, Va.	Explosion of boiler.
13	Protection	do	60	In Chicago Harbor, Ill.	Chicago, Ill.	do	do	1	Chicago, Ill.	Fell overboard while jumping from house of vessel to rail.
13	Ostrich	Am. sch	285	Little Suamico, Wis.	Chicago, Ill.	do	Lumber	1	Mouth of Chicago River.	Knocked overboard by jibing of fore-boom.
14	Eustace	do	184	San Francisco, Cal.	Mazatlan, Mexico.	Total	Powder and merchandise.	2	At sea.	Cook killed the captain and set fire to the vessel, with which he was blown up.
22	Governor's Island	Am. str	29	Charleston, S. C.	Chappel's Land in g. Cooper River, S. C.	No dam- age.	Ballast	1	15 miles above Charleston, S. C., Cooper River.	Fell overboard from port-rail.
23	Webster Sanborn	Am. sch	100	Conception Bay, N. F.	Fishing	do	Fish	2	Western edge of Grand Bank.	Capsizing of dory while attending trawls.
26	Laura L. Davis	Am. str	501	Dubuque, Iowa	St. Louis, Mo.	do	Unknown	1	St. Louis, Mo.	Fell overboard from hurricane-deck.
28	Phaeton	do	66	Maysville, Ky	Vanceburg, Ky	Partial.	Lumber	5	Above Maysville, Ky., Ohio River.	Explosion of boiler.
29	B. F. Leach	Am. sch	50	Crisfield, Md.	Great Wicomico River, Va.	do	Ballast	2	Off Foxes Island, Va., Chesapeake Bay.	Capsized in a storm.

Totals: Vessels, 238; tonnage, 81,380; total losses, 34; partial losses, 37; no damage, 167; lives lost, 492.

TABLE 64.—*Summary of Wrecks and Casualties on or near the Coasts and on the Rivers of the United States, and at Sea or in Foreign Waters, during the year ending June 30, 1881, involving loss of life.*

Nature of casualties.	Number of vessels.	Tonnage.	Total loss.	Partial loss.	No damage to vessels.	Number of lives lost.
Foundering	19	5,117	15	4	.....	193
Strandings	21	8,867	13	3	.....	60
Vessels collided	16	1,549	7	6	.....	52
Other causes	238	81,380	34	37	167	492
Total	294	96,913	74	50	170	797

NOTE.—In this table are included 192 lives lost in cases where no damage was sustained by the vessel or cargo meeting with such casualty; for example, seamen lost overboard in gales; falling from mast and rigging; knocked overboard by sails and spars; drowned by upsetting of small boats, &c. Shown in Table 63.

TABLE 65.—*Principal places on the Coasts of the United States where vessels have Stranded during the last ten years.*

ATLANTIC AND GULF COASTS.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Absecom, N. J.	1			3	2				5		11
Ajax Reef, Fla.			1								1
Alden Rock, Portland, Me.					1		1				2
Allen Island, Penobscot Bay, Me.								1			1
Alligator Reef, Fla.										1	1
Amagansett, Long Island											2
Amazeen Island, N. H.				1							1
American Shoal, Florida Reefs.			1					2			3
Anastacia Island, Fla.	1		1	1							3
Anchorage Island, Little Egg Harbor, N. J.									2	1	3
Annisquam Light, (¼ mile east of,) Mass.							1				1
Aranas, Tex.	1		1		1	1		1		1	6
Asbury Beach, N. J.							1				1
Ash Island, Muscle Ridge Channel, Me.							1				1
Ash Island Point, Me.							1				1
Ash Point, Lark Ledges, Me.									1		1
Assateague Island, Va.					1		2				3
Assawoman Inlet, Va.			1								1
Atlantic City, N. J.						1		1		4	6
Atlanticville, N. J.								1			1
Avery's Ledge, Mass.			1			1				2	4
Back River Shoals, Chesapeake Bay							1		3		4
Badger's Island, Portsmouth Harbor, N. H.										2	2
Baker's Island Bar, Mount Desert, Me.					2			1			3
Baker's Island Shoals, Mass.									1		1
Bald Rock, Frenchman's Bay, Me.										1	1
Bang's Island, Me.		1			1					1	2
Bantam Ledge, Penobscot Bay, Me.							1	2		1	4
Barrancas, Fla.										1	1
Barnegat, N. J.	2		3	2	3	2	1	3	2	5	23
Barnegat Light, (4 miles south of,) N. J.						1					1
Barnegat Light, (6 miles south of,) N. J.						1		2			3
Bar Harbor, Mount Desert, Me.						1					1
Barren Island, N. Y.										1	1
Barrett's Point, N. Y.					1						1
Barter's Island, Southeast Bay, Me.				1							1
Bartlett's Reef, Conn.			1				2	2			5
Bass Island, Cape Porpoise, Me.					2						2
Bass Rip, (off Sankaty Head,) Mass.										1	1
Bass River Breakwater, Cape Cod, Mass.	1					1					2
Bating Hollow Beach, Long Island						1					1
Bayou Lafourche, La.								1			1
Bayou Reef, South Pass, La.				1							1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Bay View, Cape Ann, Mass.				1						1	2
Beach Haven, N. J.					1						1
Beach Island, Penobscot Bay, Me.			1								1
Beacon Ledge, Portsmouth, N. H.							2				2
Bear Island, Me.									1		1
Bears's Shoal, Cape Cod, Mass.			1								1
Beaufort, N. C.	1			2	1	1			4		9
Beaufort, S. C.			1				1				2
Beaver-Tail Point, R. I.	1		1	1	1	1					5
Bedloe's Island Reef, New York Bay.								1	1		2
Bedloe's Island, (rock 1 mile west of,) New York Bay.										1	1
Beermore Ledge, Cape Ann, Mass.						1					1
Berkley Flats, Norfolk, Va.								4			4
Big Dauphin Island, Mississippi Sound.									1		1
Billingsgate Shoal, Cape Cod Bay, Mass.								2			2
Birch Point, Sheepscoot River, Me.								1			1
Birch Point, Weskeag River, Me.					1						1
Bird Island, Galveston Bar, Tex.								1			1
Biscayne Bay, Fla.									1		1
Bishop and Clerk's Shoal, Mass.				1		2		1			4
Black Head, (off,) Me.							1				1
Black Island, Me.				1							1
Black Ledge, New London, Conn.					1	1			1		3
Black Rock, New London, Conn.					2	2					4
Black Rock, Newburyport, Mass.								1			1
Black Rock, Rye Beach, N. H.									1		1
Black Rock, West Quoddy Bay, Me.									1	1	2
Blackwell's Island, N. Y.			1				1		1		3
Block Island, R. I.		2		4	3	1	4			1	15
Block Island, (Grove Point,) R. I.									1	1	2
Block Island Breakwater, R. I.									1		1
Block Island, (northeast end of,) R. I.								1			1
Block Island, (northwest part of,) R. I.								1			1
Block Island, (southeast point of,) R. I.							1				1
Block Island, (southwest shore of,) R. I.						2		2			4
Block Island, (west side,) R. I.								4			4
Blue Rock, R. I.								1			1
Bluff Island, Saco Bay, Me.					1						1
Bodkin Bar, Chesapeake Bay, Md.			1			1				1	3
Body's Island, N. C.			1								1
Bogue Inlet, N. C.						1					1
Bogue Island, N. C.				1		1					2
Boisibert Island, Me.				1							1
Bolivar Beach, Tex.					1					1	2
Bombay Hook, Delaware Bay.							1				2
Bonnet Point, Narragansett Bay, R. I.							1			2	2
Boon Island, Me.		1	1						1		3
Boon Island Ledge, Me.								3			3
Booth Bay, Me.			1	1			1				3
Boston, Mass.									1		1
Bowdoinham Bar, Me.								1		1	2
Bower's Beach, Delaware Bay, Del.							1				1
Brace's Cove, Cape Ann, Mass.								2			2
Brace's Cove Point, Cape Ann, Mass.							1				1
Brandywine Shoal, Delaware Bay.			2	3	1	1		2	2		11
Branford Reef, Long Island Sound.						1	1				2
Brant Island, Pamlico Sound, N. C.					1						1
Brant Point, Cape Cod, Mass.								1			1
Brazos Bar, Tex.		1			1		1	3			6
Brazos de Santiago, Tex.				4				1		2	7
Breaking Ledge, Me.				1							1
Brenton's Reef, R. I.		1	1			1		1	2		6
Brewster Breakwater, Mass.								1			1
Brewster Islands, Boston Harbor, Mass.								2			2
Brewster's Reef, Fla.			1								1
Bridgehampton Beach, Long Island, N. Y.						1				1	2
Brigadier Island, Penobscot Bay, Me.							1				1
Brigantine Beach, N. J.		2	6	1	2	1	1	3	1	4	21
Brimstone Point, N. J.							1				1
Broad Cove Rock, Casco Bay, Me.									1		1
Broadkill River, (mouth of,) Del.								1			1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Browney Island, Me					1						1
Browney Island Ledge, Me									1		1
Brown's Bank or Brown's Island, Mass										1	1
Brown's Cove, Fox Island Thoroughfare, Me										1	1
Brown's Cove, North Haven Island, Me				1				2	1		1
Brown Ledges, Penobscot Bay, Me			1								3
Bull Rock, Boston Bay, Mass							1				1
Bull Rock, Carver Harbor, Me								1			1
Bull's Island Shoal, S. C								2			1
Burnt Island, Seal Harbor, Me										1	3
Button Moulds, The, (off Cape Small Point,) Me										1	1
Cahoon's Hollow, Cape Cod, Mass										1	1
Calcasieu Bar, La								1			1
Calf Island, Boston Harbor, Mass						2					2
Cape Ann, Mass						1	1				2
Cape Arundel, Me				1							1
Cape Canaveral, (15 miles south of.) Fla								1			1
Cape Canaveral, (25 miles north of.) Fla									1		1
Cape Charles, Va			1					1	1		3
Cape Cod, Mass		1				1					2
Cape Elizabeth, Me			1	1	2	1			1		6
Cape Fear, N. C			1						1		2
Cape Fear River, (mouth of,) N. C				2	1	1	1		2		7
Cape Florida Light-house						1					1
Cape Hatteras, N. C	2	2		1	3			1	2	1	12
Cape Henlopen, Del			5	1	5	5		1	3	3	23
Cape Henlopen, (5 miles south of.) Del						1					1
Cape Henlopen, (7 miles south of.) Del							1				1
Cape Henry, Va				3	1	6	2	2	2	5	21
Cape Island, Me									1		1
Cape Lookout, N. C	1	1	1	2	1		1	2	1	1	11
Cape Lookout Shoals, N. C											1
Cape May, N. J		3	1	2	1	1		2	2	3	15
Cape Poge, Mass			2			1	1		2		7
Cape Porpoise, Me	1			1					1	1	4
Cape Romain, S. C					1					1	2
Cape Romano, Fla								1			1
Cape San Blas, Fla					1		1				2
Cape Small Point, Me			1						1		2
Captain's Island, Long Island Sound							1				1
Caroline Shoal, N. C			1								1
Carysfort Reef, Florida Reefs				1					1		2
Castle Hill, (rocks off.) R. I						1				1	2
Cedar Hammock, N. C							3				3
Cedar Island, Va			1		1						2
Cedar Keys, Fla		1					1				2
Cedar Point, Chesapeake Bay, Md								2			2
Cedar Tree Neck, Vineyard Sound, Mass				1						1	2
Chandeleur Island, La				1					1		2
Chandeleur Island Light, (4 miles southeast of.) La					1						1
Chandeleur Island Light, (14 miles southwest of.) La						1					1
Chappaquiddick Point, Martha's Vineyard, Mass								1			1
Charles Island, Conn				1							1
Charleston Bar, S. C			1	1	2			1	1	3	9
Chatham, Mass				1			1		2		4
Chatham Bar, Cape Cod, Mass	1	6	2		5		2	2		3	21
Chebeag Islands, Casco Bay, Me					1	1					2
Cherrystone Inlet, Va						1					1
Cherrystone Inlet, (5 miles above.) Va					1						1
Chincokeague Island, Va			1								1
Chincokeague Shoals, Va					1	1		1	1	5	9
City Island, Long Island, N. Y						1	1	2		1	5
Clapboard Island, Casco Bay, Me					1						1
Clapboard Island Ledge, Casco Bay, Me					1						1
Clark's Island, Me				1				1			2
Clark's Island, Portsmouth, N. H					1		1				2
Clark's Island, Tex										1	1
Clay Head, Block Island Sound								1			1
Cobb's Island, Va						1	1				3
Cobb's Island, (Carter's Shoal.) Va					1					2	3
Cobb's Island, (Williams's Shoal.) Va								1	2		3
Cobscok Bay, Me						1					1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Coffee Island, Ga.									1		1
Cohasset Rocks, Mass.								1			1
Cold Spring Inlet, N. J.	1	1	2	2	1	6	2	5	2	3	25
Collins' Beach, Delaware Bay, Del.								1			1
Common Flats, Cape Cod, Mass.			1					4			5
Conanicut Island, R. I.		2		1							4
Coney Island, N. Y.		1				1	1				4
Copps' Island, Conn.				1						1	1
Coral Reef, Florida Reefs		1									1
Corson's Inlet, N. J.		1									1
Cottage City, Mass.		1								1	1
Conch Reef, Florida Reefs						2					2
Cove Beach, Va.									1		1
Cove Harbor, Stamford, Conn.									1		1
Cove Point, Chesapeake Bay, Md.					1	1					2
Cow Bay, Long Island										1	1
Cow Shoal, Conn.							1				1
Cox's Head, Me.					1						1
Crab Meadow, Long Island Sound		1									1
Crabtree Point, North Haven, Me.						1					1
Cranberry Island, Me.					2	1	2			3	8
Cranberry Island Light, Petty Pan Reef, Me.					1						1
Crane's Neck Point, Long Island, N. Y.							1				1
Craney Island, Hampton Roads, Va.									1		1
Crocker's Reef, Fla.			1								1
Cross Island, Machias Bay, Me.			2					1		3	6
Crow Shoal, Delaware Bay, Del.								2			2
Cuckolds, (The,) Me.			2								2
Cumberland Island, Ga.			1								1
Currituck Beach, N. C.		2	2	1			1				6
Curtis Island, Conn.					1						1
Cushing Island, Casco Bay, Me.						1					1
Cutler, Me.			1				1		2	4	8
Cuttyhunk Island, Mass.	2			2	3	4	2	1	1	1	16
Damiscove Island, Me.				2		1					2
Davis Neck, Mass.				2							2
Davis Point, Little Machias Bay, Me.										1	1
Davis Shoal, Florida Reefs.				2							2
Deal Beach, N. J.					2	1	2	1			6
Dearmon Ledge, (near Gloucester,) Mass.						1					1
Decros Point, Tex.					1						1
Decros Point, (3½ miles east of,) Tex.									1		1
Deer Island, Boston Harbor, Mass.										1	1
Delaware Breakwater, Del.	1		1	2	2	1	2	3	1		13
Dennisport, Mass.							1		8		9
Despair Island, Narragansett Bay											1
Devil's Back, Boston Harbor, Mass.						1		1	1	1	4
Diamond Shoals, Cape Hatteras, N. C.					1		3	2	1	3	10
Dick's Flat, Mass.				1							1
Dighton, Mass.									1		1
Dimer's Creek, Chesapeake Bay, Va.										1	1
Dixie Island, Mobile Bay, Ala.									1		1
Dog Island, Fla.									1		1
Dogfish Ledges, (entrance to Cross Island Narrows,) Me.							1				1
Dow Ledges, Deer Island Thoroughfare, Me.									1		1
Dread Ledge, Mass.			1								1
Drinkwater Point, Me.							1				1
Duck Island, Mass.				1			1				2
Duck Key, Florida Reefs.						1					1
Duck Ledges, Me.				1							1
Dumpling Rock, Buzzard's Bay, Mass.					1						1
Dutch Island, R. I.			1		2	1	1	3		1	9
Duxbury Beach, Mass.										1	1
East Chop, Vineyard Haven, Mass.				2		1		1	1	1	6
Eastern Egg Rock, (near Moos-a-bec Light,) Me.								1			1
Eastern Point, (near,) Mass.										1	1
East Hampton, Long Island, N. Y.									2		2
East Orleans, Mass.								1		1	2
Eaton's Neck, Long Island, N. Y.				1				3	1	1	6
Edgartown Harbor, Mass.							2	4	1	2	9
Egg Harbor Bar, N. J.									1		1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Egg Island, Altamaha Sound, Ga								1			1
Egg Rock, (near Browney Island,) Me								1			1
Eldridge's Shoal, Vineyard Sound, Mass					1						1
Elihu's Island, Pawtucket Bay, R. I					1						1
Emery's Point, Me			1								1
Execution Rocks, Long Island Sound								1			1
Falkner's Island, Long Island Sound					1			1			2
Fall River, Mass					3						4
Falmouth, Mass							1	1			2
False Cape, Va				2			1	1	1	1	6
Federal Point, N. C								1			1
Fenwick's Island, Md						1	4	1	1		7
Fernandina Bar, Fla				1						1	2
Fidler's Ledge, Fox Island, Me									1		1
Fingers, (The,) N. C									1		1
Fire Island, Long Island, N. Y		2	1	2	4			3	1	2	15
Fire Island Light, (8 miles east of,) Long Island, N. Y					1		1				2
Fire Island, Penobscot Bay, Me					1						1
Fisher's Island, Long Island Sound			3	1	1	1	1	1		3	11
Fisher's Island Sound, (rocks in,) Conn											1
Fisherman's Inlet, Cape Charles, Va						1					1
Fisherman's Island, Me			1		1			1		1	4
Fishing Creek Shoal, Delaware Bay, N. J									1		1
Fishing Island, N. H				1							1
Fishing Point, Assateague Island, Va								1			1
Five-Mile Beach, N. J						1		1			2
Flat Rock, New Haven, Conn									1		1
Flatty Creek Bar, Albemarle Sound								1			1
Fletcher's Neck, Me				1							1
Florida Reefs			1		1	1	1				3
Flye Island Light-house, Me					1						1
Folly Island, Cape Porpoise, Me					1						1
Fort Green, R. I					1						1
Fort Island, Me			1								1
Fort Macon, N. C				1							1
Fort Pickens Point, Fla								1			1
Fort Point Rock, Gloucester Harbor, Mass						1					1
Foster's Island, Me									1		1
Fowey Rocks, Florida Reefs							1				1
Fox Island, Me										1	1
French Reef, Florida Reefs								1			1
Frost's Point, N. H		1		1							3
Frying Pan Shoals, N. C							2			1	3
Gallup's Island, Boston Harbor, Mass				1				1			2
Galveston, Tex	2		2		1	2	2		1		10
Galveston Bar, Tex					3				1		5
Galveston Island, Tex										2	2
Gateway Ledge, Muscle Ridge Channel, Me					1		1				2
Gateway Rock, (off Watch Hill,) R. I					1						1
Gardiner's Island, Long Island Sound				1	1	1	1		5	2	10
Gardiner's Island, (west side,) Long Island Sound									1		1
Gay Head, Martha's Vineyard, Mass	1					1			1		3
George's Island, Boston Harbor, Mass				1						1	2
George's Island, Maine		1								1	2
Georgetown Breakers, S. C										2	2
Georgetown Harbor, S. C	3	1			2		2				8
Gerrish's Island, Portsmouth Harbor, N. H					1						1
Gilgo Inlet Bar, Long Island, N. Y						4	1	2	2	1	10
Gloucester, Mass						1					1
Glover's Rock, Me						3		1			4
Goat Island, Cape Porpoise, Me											1
Goat Island, R. I			1								1
Goose Island, Long Island Sound					1				1		2
Gooseberry Island, R. I									1		1
Goose Rocks, Kennebunk Port, Me								1			1
Goshen Reef, Long Island Sound, Conn				1	2	1		1			5
Gould Island, R. I									1		1
Governor's Run, Chesapeake Bay									1		1
Grand Grozier Shoal, La									1		1
Graves, (The,) Boston Harbor, Mass				3							3
Great Cranberry Island, Me									1		1
Great Egg Harbor, N. J	1		1		1		1	1	1		6

TABLE 65.—Principal places on the Coasts of the United States where Vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Great Fawn Bar, Boston Bay, Mass.			1			1		1	1		4
Great Island Shoal, Portsmouth, N. H.						1					1
Great Rock, (near Seacomett,) R. I.					1						1
Greenbury's Point, Chesapeake Bay, Md.								1			1
Green Island, Boston Harbor, Mass.				1							1
Green Island Ledge, Casco Bay, Me.					1	1					2
Green Island Reef, Me.									1		1
Green Island, N. J.									1		1
Green Run Inlet, Md.				1		1	1	1			4
Green Run Inlet, (3½ miles north of,) Md.										1	1
Greenport, N. Y.							1				1
Greenwich Point, Conn.									2		2
Grindstone Ledge, Muscle Ridge Channel, Me							1				1
Guilford, Conn.				1							1
Gull Islands, (The,) near Long Island Sound									1		1
Gull Rock, Long Island Sound			1							1	1
Gull Rock, Newport Harbor, R. I.				2							2
Gull Rock, Pamlico Sound, N. C.						1					1
Gunnison's Cut, (¼ mile north of,) Fla.										1	1
Gunning Rocks, Me.										1	1
Gun Rock, Lubec Narrows, Me.					1		1				2
Gurnet Point, Mass.						1					1
Hadlock's Point, Me.									1		1
Half-Tide Rock, New Haven, Conn.									1		1
Halibut Point, Mass.								2			2
Hampton Bar, Va.					1	2			1	1	5
Hampton Beach, N. H.							1				1
Handkerchief Shoal, Mass.				2					1	3	6
Harbor Island Bar, N. C.								1			1
Harding's Ledge, Boston Bay, Mass.					1				2		3
Harding's Beach, Cape Cod Bay, Mass.					1	2					1
Hart Island, Long Island Sound	1		2	1	2	2					8
Haskell's Island, Me.						1					1
Hatchett's Point, (1 mile west of,) Conn.						1					1
Hatchett's Reef, Long Island Sound, Conn.								1			1
Hatteras Inlet, N. C.					2	4	3		3		12
Hatteras Inlet, (7 miles southwest of,) N. C.										1	1
Hawes' Shoal, Vineyard Sound, Mass.						1		1		1	3
Hawkins' Point, Chesapeake Bay, Md.				1						1	1
Hay Island Ledge, Seal Harbor, Me.								1	1		2
Head Harbor Island, Me.			1				1				2
Hedge Fence Shoal, Vineyard Sound, Mass.				2	1	2	1	1	1		8
Hell Gate, N. Y.		3	4	6	6	5	3	1	1		29
Hell Gate, (Flood Rock,) N. Y.										1	1
Hell Gate, (Hallet's Point,) N. Y.									1		1
Hell Gate, (Negro Head,) N. Y.								1			1
Hell Gate, (Scaly Rock,) N. Y.									1		1
Hell Gate, (Steep Rock,) N. Y.					1	1					2
Hen and Chickens Shoal, Del.	1						1			1	3
Henry's Point, Castine Harbor, Me.								1			1
Hereford Inlet, N. J.			3	1	3	1	1			1	10
Hereford Light, (6 miles northeast of,) N. J.								1			1
Heron Island Point, Me.							1		1		2
Heron Neck, (ledge near,) Me.									1		1
Herring Bay, Chesapeake Bay, Md.				2			1				3
Herring Gut, Me.						2	1				3
Highlands, N. J.				1					1		2
Highland Light, Cape Cod, Mass.			1			1					2
High Pine Ledge, Cape Cod Bay, Mass.									2		2
Hillsborough Inlet, Fla.						1					1
Hill's Point, Chesapeake Bay, Md.										1	1
Hill's Point, Va.			1						1		2
Hodgdon's Ledge, Me.						1					1
Hodgdon's Point, Me.								1			1
Hog Island, Va.	1	3	3		3	2			4		16
Hog Island, Narragansett Bay, R. I.										1	1
Hog Island Ledge, Seal Harbor, Me.								1	1	1	3
Holland point, Chesapeake Bay, Md.						1					1
Holland's Island, Chesapeake Bay, Md.								1			1
Holmes' Cove, (east point,) Me.										1	1
Hooker's Island, Chesapeake Bay								1			1
Hooper's Island Ledge, Herring Gut Harbor, Me.							1				1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—											Total
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.		
Horn Island, Mississippi Sound					1		1					2
Horn Point, Chesapeake Bay, Va							1					1
Horse-Shoe Reef, Fisher's Island Sound, Conn											1	1
Horse-Shoe Shoal, Chesapeake Bay												1
Horse-Shoe Shoal, Nantucket Sound, Mass								1				1
Horton's Point, N. Y				1								2
House Island, Mass		1										1
Hunnell's Point, Me											1	2
Hunting Island, S. C.			1			1				1		2
Huntington Neck, Long Island Sound				1								1
Hyannis, Mass					2	1			3			8
Hypocrite Ledge, Me						1		1	1	1		4
Indianola, Tex		1			1							2
Indianola, (2 miles west of,) Tex					1							1
Indianola, (2 miles southwest of,) Tex					2							2
Indian Point, Penobscot Bay, Me						1						1
Indian River Inlet, Del									2		1	3
Indian River Inlet, (30 miles north of,) Fla								1				1
Inlet Point, Long Island, N. Y					1			1				2
Ipswich Bar, Mass			2	4	1		1	1	1	1		11
Isaac Shoals, Va										1	2	3
Island Beach, N. J				1					2	1		4
Island Ledge, Mass					1							1
Isle au Haut, Penobscot Bay, Me									1			1
Isles of Shoals					2	1			2			5
Jacob's Point, Long Island, N. Y					1							1
Jamaica Island, (off Kittery,) Me					1							1
James Ledge, Wickford, R. I					1							1
Jamestown Island, Va									1			1
Jekyll Island, Ga						1						1
Jekyll Spit, Ga							1					1
Jerry's Point, Portsmouth Harbor, N. H.			1									1
Jewell's Island Reef, Me						1						1
Joe Flogger Shoal, Delaware Bay				1	1	1			2	1		6
Johnson's Point Reef, Ga								1				1
Jones' Beach, Long Island, N. Y				3			1			1		5
Jones' Hill, N. C					1							1
Jonesport, Me	4	3						1				8
Joshua Rock, (mouth of Connecticut River)									2			2
Jupiter Inlet, Fla	1	1										2
Kedges Straits, Chesapeake Bay, Md											1	1
Kers, (The,) Muscongus Bay, Me							1					1
Kelsey's Ledge, Damariscotta River, Me									1			1
Kennebunk Port, Me								1				1
Kent Island, Chesapeake Bay, Md						1	1	1	2			5
Key West, Fla					1							1
Key West, (18 miles northeast of,) Fla								1				1
Key West, (18 miles northwest of,) Fla								1				1
Key West Harbor, Fla							1		1			2
Key West Island, Fla							1					1
Kill Pond Bar, Mass			1									1
King's Beach, Lynn, Mass					2							2
Kinnekeet, N. C		2			1							3
Kittery, (ledge near,) Me												1
Kittery Point, Me					2			1				2
Kitty Hawk, N. C							1					1
Lambert's Cove, Vineyard Sound, Mass					1		1					1
Lambert's Point, Va										1		1
Lane's Island, Penobscot Bay, Me								1				1
Lanesville, Mass										1		1
Latimer's Reef, Long Island Sound				1				1				2
Laralette City, N. J									1			1
Lazy Gut Island, Deer Island Thoroughfare, Me											1	1
Leaming's Beach, N. J					1							1
Leete's Reef, Conn						1	1					2
Leighton's Point, Pembroke, Me							1					1
Lewes, Del			2		1	3	1	3	2	2		14
L'Homme Dieu Shoal, Vineyard Sound, Mass			1		2		2		2			7
Libbey Island, Machias Bay, Me	1				2							3
Little Bay, Va										1		1
Little Beach, N. J			1					1				2
Little Cove Point Chesapeake Bay, Md							1					1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Little Cranberry Island, Me.				1					1	3	5
Little Cumberland Islands, Ga.			1								1
Little Egg Harbor, N. J.	3		1		4			4	1	1	14
Little Gull Island, Long Island Sound.				1					1	1	3
Little Inlet, Long Island Sound.					1						1
Little Island, Vineyard Haven, Mass.			1								1
Little Island, Va.									1		1
Little Moriches Beach, Long Island, N. Y.				1							1
Little Mud Thoroughfare, N. J.								1			1
Little River Island, Me.					1						1
Little Round Shoal, Mass.		1									1
Little Spoon Island, Me.						1					1
Lloyd's Neck, Long Island, N. Y.				1		1			1	1	4
Lobster Rock, Saco Bay, Me.								1			1
Lobster Rocks, Beverly Harbor, Mass.						1					1
Lockwood's Folly Inlet, N. C.				1	1				1		3
Loggerhead Reef, (south point of,) Florida Reefs.							1				1
Londoner, (The,) near Thatcher's Island, Mass.							1				1
Long Beach, (6 miles east of Cape Ann Harbor,) Mass.								1			1
Long Beach, Long Island, N. Y.										2	2
Long Beach, N. J.								7			7
Long Branch, N. J.	1		1	3	1			3			9
Long Island, Boston Harbor, Mass.					1					1	2
Long Island, Harbor Head, Me.							1				1
Long Ledge, Bass Harbor, Me.										1	1
Long Ledge, Seal Harbor, Me.							1				1
Long Ledge, Scituate, Mass.									1		1
Long Point, Cape Cod, Mass.								2			2
Long Shoal, Nantucket Sound, Mass.						2	1				3
Lord's Gifts Flats, Me.									1		1
Lovell's Island, Boston Harbor, Mass.				1							1
Love Ladies' Island, N. J.								1			1
Lowell's Point, Me.			2								2
Lowell's Rock, Penobscot Bay, Me.									1		1
Lower Hell Gate, Me.			1								1
Lowe's Point, Chesapeake Bay, Md.								1			1
Ludlam's Beach, N. J.						1	1	1			3
Lynn Haven Bay, Va.			1			1	1	1			4
Machias, Me.					1						1
Machiasport, Me.					2						2
Machipongo Inlet, Va.						1				1	2
Main Inlet Bar, (2½ miles northeast of,) N. C.						1					1
Mamaroneck, N. Y.								1			1
Mandeville, Lake Pontchartrain, La.										1	1
Manhattan Beach, N. Y.									1		1
Manomet Point, Mass.									1		1
Manor Hills, (The,) Long Island, N. Y.						2					2
Mansfield Ledge, Deer Island Thoroughfare, Me.					1						1
Marblehead, Mass.								1			1
Marblehead Neck, Mass.					1						1
Mare Island, Me.										1	1
Mark Island Ledge, Penobscot Bay, Me.			1		1						2
Marsh Bank Bar, (off Harwich,) Mass.					1						1
Marshfield Beach, Boston Bay, Mass.									1	1	2
Marshall's Island, Me.								1			1
Martha's Vineyard, (south beach,) Mass.										1	1
Marquesas Key, Florida Reefs.			1	1	1	2					5
Masonboro' Inlet, N. C.										1	1
Matagorda Bay, Tex.		1	2		7						10
Matagorda Island, Tex.					4		2	1	2	1	10
Matanzas Inlet, (mouth of,) Fla.									1		1
Matinicus Island, Me.									1		1
Matinicoek Point, Long Island, N. Y.						1					1
Mayport Beach, Fla.								2			2
Menunktesuck Point, Conn.			1								1
Merrimac River, (North Breakers, mouth of,) Mass.					1	3	1	1	1		7
Merry Meeting Bay, (Rocks in,) Me.										1	1
Merwin's Point, Conn.						1					1
Metinic Island, Me.							1	1			2
Metompkin Inlet, Va.						1	1	1			3
Micomit Rip, Mass.			1								1
Middle Ground, Boston Harbor, Mass.										2	2

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Middle Ground, Chesapeake Bay.....							1	1	1	1	4
Middle Ground, N. C.....									1		1
Middle Ground, Vineyard Sound, Mass.....										1	1
Middle Reef, (near Woolsey's Point,) Long Island, N. Y.....						1					1
Milk Island, Mass.....			1	1							2
Mishaum Point, Mass.....		1									1
Misphillion Light, Del.....			1					1			2
Mistake Island, Me.....				1		1					2
Mobile Bay, Ala.....							1		1	1	3
Mobile Point, Ala.....									1		1
Molasses Reef, Fla.....						1				1	1
Monhegan Island, Me.....					1						1
Monmouth Beach, N. J.....						1				1	2
Monomoy Point, Cape Cod, Mass.....					1	2		1	2	1	7
Monroe Island, Penobscot Bay, Me.....						1			4		5
Montauk Point, Long Island, N. Y.....							1	1			2
Moose Island, Booth Bay Harbor, Me.....				1							1
Moriches, Long Island, N. Y.....								1			1
Morris' Cove, New Haven Harbor, Conn.....				1		1					2
Morris' Island, S. C.....							1				1
Mount Desert Rock, Me.....								1			1
Muskeget Island, Nantucket Sound, Mass.....			1					3		2	6
Musquito Inlet, Fla.....	2				1	1	1				6
Musquito Inlet, (3 miles north of,) Fla.....								2			2
Musquito Inlet, (7 miles north of,) Fla.....								1			1
Musquito Inlet, (4 miles south of,) Fla.....								1			1
Musquito Inlet, (12 miles south of,) Fla.....										1	1
Musquito Island, Me.....				1							1
Mustang Island, Tex.....			1								1
Myrtle Island, Va.....						1					1
Nag's Head, N. C.....	1						1	1	1		4
Nancy Ledge, Lubec, Me.....								1			1
Nantucket Bay, Mass.....		2		4			1	3		1	12
Nantucket, Great Point, Mass.....	3			1				1	3	1	10
Nantucket, Sankaty Light, Mass.....							1				1
Nantucket Shoal, Mass.....						1		3		1	5
Napatree Point, R. I.....					1			2	1		4
Napeague, Long Island, N. Y.....						1					1
Napperette Point, Martha's Vineyard, Mass.....		1									1
Narragansett Pier, R. I.....		1	1				1			1	4
Nashawena Island, Vineyard Sound, Mass.....	2					1		1			4
Nash's Island, Me.....			1								1
Nassau Inlet, Fla.....			1								1
Nauset Beach, Cape Cod, Mass.....	1		9	1	1	3	3				18
Naushton Island, Vineyard Sound, Mass.....					1		1				2
Negro Island, Saco Bay, Me.....					1						1
New Bedford Harbor, Mass.....				1	1	1		1	1		4
Newburyport, Mass.....			1	1	1			1			4
Newcomb's Hollow, Mass.....					2						2
New Haven, Conn.....				1	1	1				1	4
New Inlet, Long Island, N. Y.....	1			1	1	2		3	1		9
New Inlet, N. C.....				2	1	1			1		4
New Inlet, N. J.....				1							1
New London, Conn.....		2				3		1		2	8
New London, (ledge off,) Conn.....									1	1	1
New Mill Creek, Va.....										1	1
Newport, R. I.....				1		2			1	1	5
Newport News, Va.....						1				1	2
New River, (mouth of,) N. C.....									1	1	2
New Rochelle Harbor, N. Y.....									1	2	2
Nix's Mate, Boston Harbor, Mass.....						1					1
No Man's Land, Mass.....										2	2
Nonamesset Island, Vineyard Sound, Mass.....				1							1
Norman's Woe, Cape Ann, Mass.....			1								1
North Inlet, S. C.....				1							1
North Point, Chesapeake Bay, Va.....								2			2
Northport, Me.....						1					1
Northport Harbor, N. Y.....									1		1
North River Bar, N. C.....									1	2	3
North Truro, Mass.....								2			2
Northwest Long Island, N. Y.....									2		2

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Norton's Cove, (ledge in,) Me								1			1
Norton's Island, Seal Harbor, Me						1					1
Norton's Point, Carver Harbor, Me							1				1
Norton's Shoals, Mass			2								2
Norwalk Islands, Long Island Sound				1						1	2
Noyes Point, R. I.					1	1					2
Oak's Ledge, Mass			1								1
Ocean Beach, N. J.							1	1			2
Ocean City, Md					1			1			2
Ocean Grove, N. J.			1			1	1				3
Ocean View, Va						1		1	2		4
Ocklockonee Bar, Fla										1	1
Ocracoke Inlet, N. C.		1			1	3	1	1	1		8
Odiorne's Point, N. H.						1					1
O'Donnell's Point, Lubec Narrows, Me								1			1
Old Cilley Ledge, Penobscot Bay, Me				1	1				1		3
Old Currituck Inlet, N. C.									1		1
Old Ferry Point, N. Y.									1		1
Old Field Point Light, Long Island, N. Y.							1				1
Old Man Ledge, Penobscot Bay, Me				1				1			3
Old Point Comfort, (near,) Va										1	1
Old Prince, (The,) Cape Porpoise Harbor, Me								1			1
Old Woman Ledge, Me									1		1
Oregon Inlet, N. C.	7	3		1	1	1				2	15
Orleans Beach, Cape Cod, Mass						2	2			1	5
Ossabaw Island, Ga									1		1
Outer Diamond Shoal, Cape Hatteras, N. C.									1	1	2
Owl's Head, Me			1	1							2
Oyster Bay, N. Y.									2		2
Oyster Pond Reef, N. Y.				1							1
Oyster Rock, Wilmington Harbor, N. C.						1					1
Padre Island, Tex							2			4	6
Palacios Point, Matagorda Bay, Tex							1				1
Pamet Hollow, Cape Cod, Mass							1				1
Paramore's Beach, Va										1	1
Parker's Cove, Heshboro', Me						1					1
Parker's Island, N. Y.							1				1
Pascagoula Bar, Miss				1						1	2
Pasque Island, Vineyard Sound, Mass			2	3		1					6
Pass à l'Outre, mouth of Mississippi River			1	1							2
Pass Cavallo, Tex	1	1			3				1	2	8
Pass Christian, Miss				1							1
Patuxco River, (mouth of,) Chesapeake Bay, Md								3	1		4
Patuxent River, (mouth of,) Md						1		1	1		3
Pavilion Beach, Mass					2						3
Peak'd Hill Bar, Cape Cod, Mass		1		2	1	1		1	1	3	10
Peak's Island, Casco Bay, Me			1					1		1	3
Peck's Beach, N. J.			1					1	1		3
Peirce's Island, Portsmouth Harbor, N. H.										1	1
Pelican Island, Tex									1	1	2
Pelican Reef, Florida Reefs	1			1	1				1		4
Pembroke, Me				1							1
Penfield's Reef, Conn								1			1
Penikese Island, Buzzard's Bay								1			1
Pensacola, Fla			2					2			4
Pensacola Bar, Fla					1		1				2
Pepperell's Cove, Portsmouth Harbor, N. H.						1					1
Perrido Bay Bar, Fla					1						1
Perkins' Ledge, (mouth of Kennebec River,) Me				1							1
Perry's Creek, Penobscot Bay, Me								2			2
Petit Manan Island, Me			1	1		2			2		7
Piankatank River Bar, Va								2			2
Pickard's Point, Penobscot Bay, Me				1							1
Pickle's Reef, Florida Reefs						1	2	1			4
Pine Island, (off New London,) Conn								1			1
Plum Island, Long Island Sound		1		1			1	1		1	4
Plum Island Point, Mass									1	1	2
Plum Point, Chesapeake Bay, Md								1	1		2
Point Allerton, Boston Harbor, Mass			1	1							2
Point au Fer, Fla				1							1
Point Gammon, Mass			1								1
Point Isabel, Tex				3						3	6

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Point Judith, R. I.	2										10
Point No Point, Chesapeake Bay, Md.											1
Point No Point, Conn.											1
Point of Rocks, Lynn, Mass.											1
Point Pleasant, N. J.											1
Point Seguin, Me.											1
Pollock Rip, Mass.											2
Pond Cove, Cape Elizabeth, Me.											1
Pond Cove Island, Englishman's Bay, Me.											1
Popasquash Point, Narragansett Bay											1
Pool's Island, (3 miles southeast of,) Chesapeake Bay											1
Portland Head, Cape Elizabeth, Me.											2
Port Jefferson, Long Island, N. Y.											1
Port Morris, (rock near,) N. J.											1
Portsmouth, N. H.											7
Portsmouth, Va.											1
Powder Horn Bayou, Tex.											3
Promised Land, Long Island, N. Y.											5
Prospect Harbor.											5
Provincetown, Mass.											23
Pulaski Shoals, Florida Reefs											1
Pumpkin Hill Shoal, Charleston, S. C.											4
Pumpkin Island, Portsmouth Harbor, N. H.											1
Punta Rassa, Fla.											1
Quoddy Bay, (west side,) Me.											1
Quoddy Head, Me.											5
Quonochontaug Beach, R. I.											2
Race Point, Cape Cod, Mass.	1	1	3	2	4			2	1		14
Race Point, (near Cutler,) Me.											1
Race Rock, Long Island Sound.											1
Rackliff Island, Seal Harbor, Me.											1
Ragged Island, Penobscot Bay, Me.											1
Ragged Point, Assateague Island, Va.											1
Ram Island Reef, Long Island Sound											1
Ram's Head Ledge, Boston Harbor, Mass.											1
Ravenswood Rock, East River, N. Y.											1
Red Fish Bar, Tex.											3
Red Spring Point, Long Island, N. Y.											1
Reed's Point, Albemarle Sound, N. C.											1
Rehoboth Beach, Del.											1
Revenue Point Shoal, Ala.											1
Rich Inlet, N. C.											2
Richmond's Island, Casco Bay, Me.											3
Rip-Raps, Hampton Roads.											1
Robbins' Reef Bay, New York Harbor.											2
Robert's Harbor, Penobscot Bay, Me.											1
Robinson's Beach, (southwest harbor,) Me.											1
Robinson's Hole, Vineyard Sound, Mass.											1
Rockaway, Long Island, N. Y.											8
Rockaway Beach, (main inlet,) Long Island, N. Y.											1
Rockaway Shoals, Long Island Sound											3
Rock Island Beach, Long Island Sound											1
Rockland, Me.											3
Rock Point, Chesapeake Bay, Md.											2
Rockport, Mass.											2
Rocky Neck, Gloucester, Mass.											1
Rocky Point, Long Island Sound.											2
Rocky Point, Mass.											2
Romer Shoal, N. Y.											11
Rose Island, R. I.											1
Round Shoal, Quoddy Bay, Me.											2
Royal Shoal, (northwest point,) N. C.											1
Rudder Rock, Deer Island Thoroughfare, Me.											1
Rye Beach, N. H.											4
Rye Ledge, N. H.											2
Sabine Pass, Tex.											4
Sachem's Head, Conn.											1
Saddle Island, Penobscot Bay, Me.											1
Sag Harbor, Long Island, N. Y.											1
Sag Harbor, (12 miles east of,) N. Y.											1
Saint Augustine, Fla.											1
Saint Augustine, (12 miles north of,) Fla.											1
Saint Augustine Bar, Fla.											2

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Saint George's Island, Chesapeake Bay									1		1
Saint George's Island, Fla		1									1
Saint John's Bar, Fla			3	1		1	2	2	2	1	12
Saint Lucie, (10 miles north of,) Fla.								1			1
Saint Simon's Bar, Ga.	2		1						1		4
Saint Vincent's Island, Fla							1				1
Sakonnet Point, R. I					2			1	3		6
Salem, Mass									1	1	1
Salt Island Ledge, Mass				1							1
Saluria, Tex					2						2
Sand Shoal Inlet, Va							1				1
Sandwich, Mass									1		1
Sandy Hook, N. J	1		4		4	1	3	2	2	2	19
Sandy Keys, Florida Reefs							1				1
Sandy Point, Chesapeake Bay						4					4
Sandy Point, Conn									1		1
San Luis Pass, Tex				4				1		1	6
San Luis Pass, (2 miles northeast of,) Tex							1				1
San Luis Pass, (4 miles west of,) Tex								1			1
San Luis Pass, (5 miles west of,) Tex							1				1
Santa Rosa Island, Fla			1	1		2		2	1	2	9
Sapelo Shoals, Ga	2		1								3
Saquis Point, Mass									1		1
Saybrook Bar, Conn	2		1	1	1	2	3		3		13
Saybrook Point, Conn								1			1
Schoodic Island, Frenchman's Bay, Me							1		1		2
School-Ship Rock, Mass.								1			1
Scituate, Mass	1	3		3		2	3	1	2	1	16
Seabright, N. J									2		2
Sea Grove, N. J						1					1
Seal Cove, Mount Desert, Me					1						1
Seal Harbor, Muscle Ridge Channel, Me						1	2	1			4
Seal Island, Machias, Me							1				1
Seavey's Island, Portsmouth Harbor, N. H.					1					1	2
Seyern River, (mouth of,) Md.							1				1
Sewell's Point, Chesapeake Bay, Va					1						1
Shabbit Island, Me				1							1
Shallotte Inlet, N. C						1		1			2
Shark River, N. J	2		1				1				4
Sheep Island Bar, West Penobscot Bay, Me										1	1
Sheepscot River, (mouth of,) Me							1				1
Shinnecock, Long Island, N. Y			1		2	1				2	6
Ship Bottom, Long Beach, N. J								1			1
Ship Shoals, Va.						1					1
Shippan Point Reef, Long Island Sound	1		1	1							3
Shiverly Ledge, (off Spruce Head,) Me							1				1
Shore Island, R. I.							1				1
Short Beach, N. J., (½ mile south L. S. S., No. 23)								3			3
Shovelful Shoal, Nantucket Sound, Mass				1	3		1	2			7
Simonton's Cove, Cape Elizabeth, Me					1						1
Sinepuxent Neck, Md.		1	1			1	2	1			6
Skiff Shoals, Nantucket Sound, Mass										1	1
Skinner's Head, Marblehead Harbor, Mass						1	1				2
Sloop Ledge, Sheepscot Bay, Me								1			1
Smith's Island, Va		1			3		1	1	1		7
Smith's Island, (shoal of) Va							1				1
Smith's Point, Chesapeake Bay, Va			1						3		5
Smith's Point, Long Island, N. Y							1	1		1	3
Smith's Rock, Long Island Sound			2								2
Smith's Rock, Scituate Neck, Mass						1					1
Smithtown Harbor, Long Island, N. Y						2	1				3
Smithville, N. C.			1								1
Somers Point, N. J								2			2
South Breaker, off Baker's Island							2				2
South Chatham, Mass							1				1
Southern Island, (near Saint George,) Me							1				1
South Hampton, Long Island, N. Y	1		1	1							3
South Harwich, Mass									1		1
South Island, Fishing Bank, S. C								1			1
South Marshfield, Beattie's Island, Me				1					1		1
South Norwalk, Conn										1	1
Southport Bar, Conn			1			1					2

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Southport Island, Me.....			3								3
South Saint George, Me.....						2					2
Southwest Ledge, New London, Conn.....								1			1
Southwest Pass, mouth of Mississippi River.....						1					1
Sow and Pigs, Vineyard Sound, Mass.....			1			1			2	1	5
Spectacle Island, Cumberland Inlet, Ga.....						1					1
Spindle Rock, south side Rose Island, R. I.....										1	1
Spruce Head Island, Penobscot Bay, Me.....								1			1
Spruce Island, off Machias, (south side of,) Me.....						1					1
Spruce Point, Booth Bay Harbor, Me.....									1		1
Spruce Point Ledge, Me.....			1	1							2
Squam Beach, Mass.....										2	2
Squam Beach, N. J.....	6	2	1	2	2	2	1		2	3	21
Squash Meadow Shoals, Vineyard Sound, Mass.....				2	1						3
Squinnocket Beach, Mass.....										1	1
Stage Island, Saco Bay, Me.....								1			1
Stamford, Conn.....				1					1	2	4
Stamford, (sunken ledge off,) Conn.....								1			1
Stanley's Point, Me.....									1		1
Staten Island, N. Y.....	1			1	1	1				1	5
Stingray Point, Chesapeake Bay, Va.....					2						2
Stirrup Key, Florida Reefs.....							1				1
Stone Beacon Ledge, Portsmouth Harbor, N. H.....						1					1
Stone Horse Shoal, Nantucket Sound, Mass.....					1	1	1		1		4
Stone Horse Shoal, (near Tybee Island,) Ga.....					2						2
Stonington Harbor, (Academy Ground,) Conn.....					1						1
Stono Inlet, S. C.....					2			1			3
Stony Point, Cape Poge, Mass.....						1					1
Straitsmouth Island, Mass.....								1			1
Stratford Shoals, Conn.....			1			1					2
Straw's Point, (ledge near,) N. H.....								1			1
Sugar Loaf, (mouth of Kennebec River,) Me.....									1		1
Sugar Reef, R. I.....										2	2
Swampscott, Mass.....					2						2
Swan Point, Chesapeake Bay.....							1				1
Sweet's Island, Sheepscoot River, (mouth of,) Me.....							1				1
Tally's Point, Chesapeake Bay, Md.....							1				1
Tampa, Fla.....	1	1									3
Tanner's Point, Long Island, N. Y.....							1				1
Tarpanlin Cove, Vineyard Sound, Mass.....			1	3				1	1		6
Taylor's Island, Chesapeake Bay, Md.....								1	1		2
Tennant's Harbor, Me.....							1				1
Ten-Pound Island, Mass.....			1		2				1		4
Terry Ledge, (off White Head Light,) Me.....						1					1
Thatcher's Island, Mass.....					3	2				1	6
Thimble, (The,) Long Island Sound.....				2				1			4
Thompson's Ledge, Cranberry Island, Me.....									1		1
Three Sisters, Chesapeake Bay.....				1							1
Three Tree Island, Me.....				1							1
Throg's Point, (rock near,) Long Island Sound.....								1			1
Tiger Island, Ga.....								1			1
Tilghman's Island, Chesapeake Bay, Md.....								1			1
Timbalier Island, La.....							1		1		2
Tiverton, R. I.....							1	1			2
Toddy Rock, Boston Harbor, Mass.....					1				1		2
Tom Moore's Rocks, Mass.....								1			1
Tom Never's Head, Nantucket Sound, Mass.....								1			1
Tom's River, N. J.....								1			1
Too's Point, Chesapeake Bay, Va.....			1	1							2
Tortugas, Fla.....					1	1					2
Tortugas, (southwest reef,) Fla.....						1		1			2
Townsend's Inlet, N. J.....			1	4	2			2	2		11
Truro, Mass.....		1		1		1					3
Tucker's Beach, N. J.....		1	1			1	1			1	5
Tuckernuck Shoals, Nantucket Sound, Mass.....				2		2	1	2	1	1	9
Turner's Shoal, Assateague, Va.....			1					1			2
Turtle Gut Inlet, N. J.....						1	1			1	4
Tybee Island, Ga.....		1		2			1			1	4
Vancock Shoals, Tex.....				1							1
Vineyard Haven, Mass.....		2	1	6	3		4	12	6	3	37
Wading River, Long Island, N. Y.....									1		1
Warren's Cove, Mass.....								1			1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

ATLANTIC AND GULF COASTS.—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Watchapreague Inlet, Va.....		1	3	2	2	2	3		1		14
Watchapreague Inlet, (Dawson's Shoals,) Va.....										2	2
Watch Hill, R. I.....	1		1						2	2	6
Webber's Ledge, Muscongus Sound, Me.....					1						1
Wellfleet, Cape Cod, Mass.....		3	1						1		5
Wells' Beach, Me.....	1		1		1					1	4
West Chop, Vineyard Sound, Mass.....			1	2	9			1	1	3	17
West Dennis, Cape Cod, Mass.....			1						1		2
Western Dry Rocks, Florida Reefs.....						1					1
West Hampton Bar, Long Island.....							1				1
Westport Point, Mass.....							1				1
West Sister, (The,) Portsmouth Harbor, N. H.....										1	1
West Triangle, Me.....									1		1
Whale Back Shoal, Cape Cod, Mass.....								1			1
Whale Rock, R. I.....	1							1	1		3
Whale Rock Light, Me.....				1							1
Wheeler's Bay, (Red Ledge in,) Me.....					1						1
White Head, (1 mile south of light,) Me.....								1			1
White Head Island, Penobscot Bay, Me.....										2	2
Whitestone Point, N. Y.....									1		1
Whortleberry Island, Long Island Sound.....									1		1
Wicopesset Reef, Conn.....								1			1
Wilkes' Ledge, Buzzard's Bay.....				1							1
Willoughby Shoal, Chesapeake Bay.....			1								1
Willoughby Spit, Chesapeake Bay.....								1			1
Wilmington Bar, N. C.....			1								1
Windmill Point, Stonington, Conn.....					1						1
Winter Quarter Shoals, Va.....				1	1				2		6
Winthrop Beach, Boston Bay, Mass.....			2	1	1						2
Winthrop Head, Boston Bay, Mass.....			1	1							2
Wolftrap Shoal, Mobjack Bay, Va.....					1		1				2
Wood End, Cape Cod, Mass.....					5	1	1	1	4		12
Wood's Hole, Mass.....					1						2
Wood Island, Saco Bay, Me.....		1					1			2	4
Wood Island Ledges, Kennebec River, Me.....								1			1
Woodville Landing, Conn.....									1		1
Wreck Shoal, Mass.....									1		1
York Beach, Me.....			1		1			1			3
York Ledge, Me.....				1		1					2
York Point, Blue Hill Bay, Me.....								1			1
York Spit, Va.....										1	1
Young's Point, Fox Island Thoroughfare, Me.....					1						1

PACIFIC COAST.

Albion River, Cal.....								1			1
Alcatraz Island, San Francisco Bay, Cal.....					1		1				3
Angel Island, San Francisco Bay, Cal.....									1		1
Aquina Bar, Oreg.....					1						1
Arch Rock, San Francisco Bay, Cal.....							1				1
Arestable Island, Alaska.....		1									1
Astoria, Oreg.....				1							1
Belkopsky, (one of the Ounga Islands,) Alaska.....								1			1
Berkley, San Francisco Bay, Cal.....									1		1
Black Point, San Francisco Bay, Cal.....									1		1
Bodega Head, Cal.....									2		2
Bolinas, Cal.....								1			1
Bowen's Landing, Mendocino County, Cal.....						2	1	1			4
Brother's Island, San Francisco Bay, Cal.....									1		1
Cape Flattery, Wash. Ter.....	1	1			1	1					4
Cape Foulweather, (10 miles north of,) Oreg.....					2						2
Caprian Islands, Alaska.....					1						1
Caspar, Mendocino County, Cal.....					1				1		2
Clark's Island Reef, Washington Sound.....				1							1
Clatsop's Spit, (mouth of Columbia River).....				1	1						2
Columbia River.....	1			2		1	1				5
Columbia River Bar.....							3	1	1	1	6
Cook's Inlet, Alaska.....	2										2

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

PACIFIC COAST—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Coos Bay, Oreg.....			2							1	3
Coos Bay Bar, Oreg.....							1	1	2		4
Coos Bay Bar, (9 miles north of,) Oreg.....			1	1							1
Coquilla River, (5 miles south of,) Oreg.....						1					1
Cottoneva, Cal.....						1					1
Crescent Bay, Wash. Ter.....							1		1	1	3
Crescent City, Cal.....						1	1	1	2	3	8
Cuffey's Cove, Cal.....	1		1			1				1	4
Deadman's Island, San Pedro Bay, Cal.....									1		1
Destruction Island, Wash Ter.....					1						1
Drake's Bay, Cal.....							2				2
Duncan's Mill, Sonoma County, Cal.....				1							1
Duxbury Point Reef, Cal.....			1	1			1	1			4
Ediz Hook, Wash. Ter.....									1		1
Eel River Bar, Cal.....							2				2
Farallon Islands, Cal.....	1			2							3
Fidalgo Island, Alaska.....									1		1
Fish Rocks, Mendocino County, Cal.....				1			1	1	1	1	5
Fisk's Mill, Sonoma County, Cal.....					1						1
Fort Point, San Francisco Bay, Cal.....	1			1		1					3
Fort Ross, Cal.....				1					1		2
Fort Stevens, Oreg.....				1							1
Four Fathom Bank, Cal.....		1									1
Fresh Water Bay, Wash. Ter.....				1					1		2
Gerstler's Cove, Cal.....							1				1
Golden Gate, 5 miles south of L. S. S., No. 7, Cal.....										1	1
Goleta, Cal.....							1				1
Gualala, Cal.....										1	1
Humboldt Bar, Cal.....							2				2
Hunter's Point, San Francisco Bay, Cal.....							1				1
Kadiak Harbor, (21 miles southeast of,) Alaska.....				1							1
Kake Island, Alaska.....			1	1							2
Karquines Strait, Cal.....						1			2		3
Lime Point, San Francisco Bay, Cal.....							1				1
Little River, Cal.....					1		1	1	1		4
Marrowstone Point, Wash. Ter.....					1						1
Mendocino, Cal.....	2						1				3
Middle Ground, Suisun Bay, Cal.....								1			1
Mile Rocks, entrance to San Francisco Bay, Cal.....						1	2		1	1	5
Mission Rocks, San Francisco Bay, Cal.....								1			1
Monterey Harbor, Cal.....								1			1
Mora Bay, Cal.....						2					2
Neah Bay, Wash. Ter.....										1	1
Neah Bay, (rock off,) Wash. Ter.....										1	1
New Dungeness, Wash. Ter.....			1					2			3
Newport, Los Angeles County, Cal.....			1								1
Newport, North Mendocino County, Cal.....									1		1
North Beach, San Francisco Bay, Cal.....									1		1
North Head, San Francisco Bay, Cal.....				1							1
Novarro River, (mouth of,) Cal.....										1	1
Novarro River, (reef,) Cal.....	1							1			2
Noyo River, (mouth of,) Cal.....							1			1	2
Onalaska Island, Alaska.....									1		1
Ounga Island, Alaska.....						1					1
Pillar Point, Cal.....						1					1
Point Adams, Oreg.....								1			1
Point Arena, Cal.....	1		1	1	1			1	1	1	7
Point Arena Harbor, Cal.....				1					1		1
Point Bonita, Cal.....	1						1			1	3
Point Bonita, (5½ miles northwest of,) Cal.....								1			1
Point Gorda, Cal.....			1								1
Point Greenville, Wash. Ter.....			1								1
Point Montara Reef, (near,) Cal.....									1		1
Point of Rocks, Mission Bay, Cal.....							1			1	2
Point of Rocks, Wrangel, Alaska.....					1						1
Point Reyes, Cal.....				1	1	1	1				4
Point Sal, Cal.....					1	1	1			1	3
Point San Luis, (1 mile west of,) Cal.....										1	1
Point San Pedro, Cal.....	1								1		2
Point Sur, Cal.....				1							1
Point Wilson, Wash. Ter.....					1					1	2
Port Orford, Oreg.....					1						1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

PACIFIC COAST—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Port Orford, (15 miles south of,) Oreg							1				1
Port Townsend, Wash. Ter									1		1
Red Rock, San Francisco Bay, Cal									1		1
Rocky Point, Cal.....						1					1
Rogue River Bar, Oreg.....				1	1				2		4
Rough and Ready, (5 miles south of Point Arena,) Cal							1				1
Saint Lawrence Island, Behring Sea, Alaska.....										1	1
Saint Paul's Island, (ledge off,) Alaska.....										1	1
Salmon Creek, Cal		1					1				2
San Buenaventura, Cal.....					3	1					4
San Diego Bay, Cal							1				1
San Juan Island, Straits of Fuca, Wash. Ter.....			1			1					2
San Miguel Island, Cal.....									2	1	3
San Pablo Bay, Cal.....							1				1
San Pedro Bay, Cal		1								1	2
Sand Island, Oreg.....			1		1			1			3
Santa Cruz Point, Cal.....						1			1		2
Shoalwater Bay, Wash. Ter.....					1				1		2
Smith's Point, Oreg										1	1
Smith's River, (mouth of,) Cal							1	1			2
Soquel, (½ mile north of,) Cal.....					1	1					2
South Beach, San Francisco Bay, Cal										1	1
South Farallon Island, Cal.....										1	1
Stewart's Point, Cal.....					1						1
Tillamook Bar, Oreg.....										1	1
Tomales Point, Cal.....			1								1
Trinidad, Cal							1				1
Umpqua Bar, Oreg.....		2	1		1			1			5
Westport, Humboldt Bay, Cal								1	1		2
Wilmington Bay, Cal.....					1						1
Yaquina Bay, Cal.....			1			1	1				4

LAKE COASTS.

[NOTE.—This list includes also places on the Canadian shore where American vessels have stranded.]

Ahnapee, Lake Michigan, Wis	1			1							2
Ahnapee, (2¾ miles south of,) Lake Michigan, Wis.....								1			1
Alabaster Reef, Lake Huron, Mich	1	1			1						3
Alaska, Lake Michigan, Wis			1						1		2
Alcona, Lake Huron, Mich				1			2				3
Alpena, Lake Huron, Mich.....			2								2
Amherstburg, Detroit River, Canada.....					2			1			3
Amherst Island, Lake Ontario, Canada.....									1		1
Antrim, Lake Michigan.....				1	1						2
Apostle Islands, Lake Superior, Wis				1							1
Ashland Bay, Lake Superior, Wis										1	1
Ashtabula, Lake Erie, Ohio		1		1	2	2		1			7
Ashtabula, (8 miles southwest of,) Lake Erie, Ohio.....										1	1
Au Sable River, Lake Huron, Mich.....								1		2	3
Avon Point, Lake Erie, Ohio					1						1
Bailey's Harbor, Lake Michigan, Wis.....					2					6	8
Barcelona, Lake Erie, N. Y.....							1				1
Bark River, (mouth of,) Green Bay, Mich.....							1	1			2
Bar Point, Lake Erie, Canada.....	3	4	4	1	1		1		1		15
Beaver Bay, (2 miles northeast of,) Lake Superior.....										1	1
Beaver Bay, (8 miles northeast of,) Lake Superior.....									1		1
Beaver Island, Lake Michigan, Mich.....	3		2		1			1	2	2	11
Belle Island, Detroit River, Mich.....			4	1	1				2		8
Biddle's Point, Lake Michigan, Mich.....								1			1
Big Sandy Creek, Lake Ontario, N. Y.....									5	5	10
Big Sandy Creek, (4½ miles off,) Lake Ontario, N. Y.....										1	1
Big Sodus, Lake Ontario	1							2			5
Black Lake Harbor, Lake Michigan, Mich.....									1		1
Black River, Lake Erie, Ohio.....	1		1								2
Black River, Lake Huron, Mich.....				2							2
Black River, Lake Michigan, Wis.....									1		1
Black River Island Reef, Lake Huron, Mich.....									2	2	4
Bois Blanc Island, Detroit River, Canada.....					1				1		2

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

LAKE COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—											Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.		
Bois Blanc Island, Straits of Mackinac, Mich.....		2	2	1	2				1			8
Braddock's Point, Lake Ontario, N. Y.....						1						1
Buffalo, (4 miles west of,) Lake Erie, N. Y.....							1					1
Buffalo Harbor, Lake Erie, N. Y.....	3	1	1	2	1	1	2		5	4		20
Burnt Cabin Point Reef, Lake Huron, Mich.....							1					1
Backhorn Dock, Lake Erie, Canada.....						1						1
Calumet Reef, Lake Michigan, Ill.....				1								1
Cana Island, Lake Michigan, Wis.....				1						1		2
Carlton Island, Lake Ontario, Canada.....		1										1
Carlton, Lake Michigan, Wis.....			1					1				2
Cat-Head Point, Lake Michigan, Mich.....				1								1
Cedar Point, Lake Huron.....									1			1
Cedar Point, Sandusky Bay, Lake Erie, Ohio.....	1		2	1	1				2	1		8
Cedar River, Lake Michigan, Mich.....					1							1
Chambers' Island, Lake Michigan, Wis.....	1		1									2
Charlevoix, Lake Michigan, Mich.....						1						1
Charlotte, Lake Ontario, N. Y.....	1			1	1			2				5
Charlotte, (4 miles west of,) Lake Ontario, N. Y.....							1					1
Charlotte, (6½ miles west of,) Lake Ontario, N. Y.....										1		1
Chaquamegon Point, Lake Superior, Wis.....										1		1
Cheboygan, (Straits of Mackinac,) Mich.....			1		4		1	1	1	1		9
Cheboygan, (18 miles east of,) Straits of Mackinac, Mich.....										1		1
Chester's Reef, Lake Erie.....				1								1
Chicago Harbor, Lake Michigan, Ill.....	3	1	1	1	6				2	1		17
Chicago, (5 miles south of,) Lake Michigan, Ill.....							1					1
Chick-e-no-lee Reef, Lake Erie, Canada.....		1	1						1			3
Chocoday River, (1 mile east of,) Lake Superior.....						1						1
Christian Island, Lake Huron, Canada.....										1		1
Clay Banks, Lake Erie.....	2	1	1							1		5
Clay Banks, Lake Michigan, Wis.....									2			2
Cleveland Harbor, Lake Erie, Ohio.....	1		3	1	2		1		2	3		13
Cockburn Island, Lake Huron, Canada.....	1											3
Colchester Reef, Lake Erie, Canada.....	1	1		1				2				4
Colchester Reef, (1¼ miles west of,) Lake Erie, Canada.....										1		1
Collingwood, Lake Huron, Canada.....								1	1			2
Conneaut, (4 miles east of,) Lake Erie, Ohio.....								1				1
Cove Island, Lake Huron, Canada.....			1							1		2
Death's Door, Lake Michigan, Wis.....			1	1	1	1						4
Detour, Detour Channel, Mich.....	3			1			1		2			7
Detour, Lake Huron, Mich.....										1		1
Detroit Island, Lake Michigan.....		1										1
Dorney's Reef Point, Lake Michigan.....				1								1
Duck Island, Lake Ontario, Canada.....		1										1
Duluth, Lake Superior, Minn.....	1	1										2
Dunkirk Harbor, Lake Erie, N. Y.....	1			2	1							4
Eagle Harbor, Green Bay, Lake Michigan, Wis.....								1				1
Eagle Harbor, Lake Superior, Mich.....		1	1									2
East Hamburg, Lake Erie, N. Y.....						1						1
East Sister Island, Lake Erie, Canada.....	1	1										2
East Sister Reef, Lake Erie, Canada.....								1				1
Eleven-Foot Shoals, Green Bay, Lake Michigan.....	1			1						1		3
Elk Creek, Lake Erie, Pa.....								1				1
Elk Rapids, Lake Michigan, Mich.....								1				1
Ellison Bay, Lake Michigan, Wis.....						1						1
Erie Peninsula, Lake Erie, Pa.....										1		1
Erie, (4 miles east of,) Lake Erie, Pa.....										3		3
Erie, (4 miles below piers,) Lake Erie, Pa.....										1		1
Erie Harbor, Lake Erie, Pa.....	3	2		2	1		1		2	1		12
Erie, (reef 9 miles east of,) Lake Erie, Pa.....										1		1
Escanaba, Lake Michigan, Mich.....	1				1							2
Evanston, Lake Michigan, Ill.....		2	2	4					1			5
Fairport, Lake Erie, Ohio.....	1	1	2	2	1		1	1	1	5		5
False Presque Isle, Lake Huron, Mich.....					2		2		1			5
Featherbed Shoals, Lake Ontario.....				1						1		2
Fighting Island, Detroit River.....				1					1	1		4
Fish Point, near Point au Pelée, Lake Erie, Canada.....								1				1
Fisherman's Island Reef, Lake Michigan, Mich.....					1							1
Ford Shoals, Lake Ontario, N. Y.....								1				1
Forest Bay, Lake Huron, Mich.....				1				1				2
Forty-mile Point, Lake Huron, Mich.....	1			1		1	1					4

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

LAKE COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Forty-mile Point, Lake Ontario, N. Y							1				1
Foscoro, Lake Michigan, Wis									1		1
Fox Island Shoal, Lake Michigan, Mich										1	1
Frankfort, Lake Michigan, Mich		2	3	1	2			1			11
Gallo Island Reef, Lake Ontario, N. Y										1	1
Gallup Island, Lake Ontario, N. Y							1				1
Garden Island, Lake Michigan									1		1
Geneva, (off,) Lake Erie, Ohio				1							1
Glen Arbor, Lake Michigan, Mich									1		1
Glencoe, Lake Michigan, Ill									1		1
Goderich, Lake Huron, Canada	1	1									2
Good Harbor Bay, Lake Michigan, Mich					2						2
Goose Island Shoal, Straits of Mackinac, Mich									1		1
Graham's Shoals, Straits of Mackinac, Mich			1				2			1	4
Grand Haven, Lake Michigan, Mich	1		6	3	6	2	2	9	9	1	39
Grand Haven, (4 miles north of,) Lake Michigan							1				1
Grand Isle, Lake Superior, Mich		1	1	1	1	1					5
Grand Manitoulin, Lake Huron, Canada								1			1
Grand Marais, Lake Superior, Minn					1				1		2
Grand Point au Sable, Lake Michigan, Mich										1	1
Gray's Reef, Lake Michigan, Mich								1			1
Greenbush, Lake Huron, Mich										1	1
Grindstone City, Lake Huron, Mich					1	1					3
Grosse Island, Detroit River, Mich			1		1	1			1		3
Gull Island, Lake Michigan, Mich							1	1		1	3
Gull Island, Lake Ontario, N. Y	2			1							3
Gull Island Reef, Lake Erie									2		2
Gull Island Rock, Lake Superior								1			1
Hamlin, Lake Michigan, Mich									2		2
Hammond's Bay, Lake Huron, Mich	1	1	1								3
Harrisville, Lake Huron, Mich							1				1
Hat Island, Green Bay, Lake Michigan, Wis				1							1
Hedge Hog Harbor, Lake Michigan, Wis										1	1
Herson's Island, Lake Saint Clair, Mich				1			1		1		3
Holland, Lake Michigan, Mich		1			1	1	1		1		5
Horn Pier, Lake Michigan, Wis									1		1
Horse-Shoe Reef, Lake Erie, N. Y								1	1	2	4
Horse-Shoe Reef, Green Bay, Lake Michigan								1			1
Huron Island, Lake Superior, Mich					1						1
Hyde Park, (off,) Lake Michigan, Ill								1			1
Indian Town Reef, Green Bay, Lake Michigan									1		1
Inverhuron Harbor, Lake Huron, Canada				2							2
Irondequoit, Lake Ontario, N. Y									1		1
Isle Royale, Lake Superior, Mich		1				1					2
Jacksonport, Lake Michigan, Wis							1			2	3
Kalamazoo River, (mouth of,) Lake Michigan								1	1		2
Kelley's Island, Lake Erie, Ohio		1	2	1	1						5
Kenosha, Lake Michigan, Wis	2	1	1			1		1			6
Kewaunee, Lake Michigan, Wis	1		2								4
Keweenaw Bay, Lake Superior, Mich					1						1
Kincardine, Lake Huron, Canada						1					1
Lake Forest, (2 miles south of,) Lake Michigan, Ill									1		1
Leamington, Lake Ontario, Canada					1						1
Leland, Lake Michigan, Mich	3	1					1		1		6
Lexington, Lake Huron, Mich						1		1			3
Limekiln Crossing, Detroit River									1	1	3
Limekiln Reef, Detroit, River									5	1	6
Limekiln Reef, (mouth of Niagara River,) Lake Ontario		2	4	3	2	1	2				15
Limstone Island, Georgian Bay, Canada							1			2	2
Lincoln Park, Lake Michigan, Ill									2		2
Little Manitou Island, Lake Michigan, Mich				1							1
Little Sturgeon Bay, Lake Michigan, Wis					1						1
Little Summer Island Reef, Lake Michigan, Mich									1	1	2
Long Point, Lake Erie, Canada	6	2		5	2		4		1		20
Long Point, Lake Ontario, Canada									1	1	2
Long Tail Point, Lake Michigan, Wis								1			1
Ludington, Lake Michigan, Mich		2		1				2	1	1	7
Mackinac City, Straits of Mackinac, Mich					1		1				2
Mackinac Island, (east end of,) Straits of Mackinac, Mich										1	1
McGulpin's Point, Straits of Mackinac, Mich									1		1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

LAKE COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Maitland, Lake Erie, Canada.....									1		1
Malden, Detroit River, Canada.....			1	1							2
Manistee, Lake Michigan, Mich.....	1	2			2	1			5	3	15
Manitowoc, Lake Michigan, Wis.....				1	3					1	5
Manitowoc, (4 miles south of,) Lake Michigan, Wis.										1	1
Marblehead, Lake Erie, Ohio.....	1				1		1		4		7
Marblehead Light, (rock ½ mile west of,) Lake Erie, Ohio.....										1	1
Marquette, Lake Superior, Mich.....		2	2								4
Maumee, Lake Erie, Ohio.....											1
Michigan City, Lake Michigan, Ind.....		2	1	2	1		2		3	1	12
Middle Bass Island, Lake Erie, Ohio.....											1
Middle Island, Lake Huron, Mich.....	1	1	1								2
Middle Sister Island, Lake Erie, Canada.....		2									2
Middle Village, Lake Michigan, Mich.....							1				1
Milwaukee, Lake Michigan, Wis.....	1	2	1	2			1		3	1	11
Mission Point, Lake Michigan, Mich.....				1	1						1
Morgan Point, Lake Erie, Canada.....	1	1		1		1					4
Mud Bay, Lake Michigan, Wis.....										2	2
Muskegon, Lake Michigan, Mich.....		2	3	1	1	1	1		1	2	12
Muskegon Harbor, Lake Michigan, Mich.....										1	1
Nebish Rapids, Sault Sainte Marie River.....	1	1	4	4	1					2	13
New Buffalo, Lake Michigan, Mich.....					1						1
Niagara Reef, Lake Erie, Ohio.....						1					1
Niagara River, Lake Erie.....	1		1					1			3
Nine-Mile Point, Lake Huron, Mich.....									2		2
North Bay, Lake Michigan, Wis.....	1				1					2	5
North Harbor Island Reef, Lake Erie, Canada.....	2			2							4
North Manitou Island, Lake Michigan, Mich.....	1		4	1	2	2			2		12
North Point, Lake Huron, Mich.....							4				5
North Point, Lake Michigan, Wis.....		2	1						1	2	6
Oak Creek, Lake Michigan, Wis.....									1		1
Oconto Reef, Lake Michigan, Wis.....					1						1
Old Fort Mackinac, Straits of Mackinac, Mich.....					3	1					4
Oscoda, Lake Huron, Mich.....								1			1
Oswego, Lake Ontario, N. Y.....	2	3	1			2		2	1	3	15
Oswego, (3½ miles west of,) Lake Ontario, N. Y.....									1		1
Oswego, (5 miles east of,) Lake Ontario, N. Y.....									1		1
Oswego, (7 miles east of,) Lake Ontario, N. Y.....										1	1
Otto Creek, (mouth of,) Lake Michigan, Mich.....										1	1
Papoose Island, Lake Huron, Canada.....		1									1
Peche Island, Lake Saint Clair, Canada.....				1							1
Peninsula Point, Lake Michigan, Mich.....					1					1	2
Peninsula Point, (reef 5 miles from,) Mich.....									1		1
Pentwater, Lake Michigan, Mich.....	2		2					1			5
Peshtigo Harbor, (on bar,) Lake Michigan, Wis.....										1	1
Peshtigo Reef, Lake Michigan, Wis.....		1	1	1							3
Pigeon Bay, Lake Erie, Canada.....	1		2				2				5
Pigeon Island, Lake Ontario, Canada.....	1			1							2
Pilot Island, Lake Michigan, Wis.....	1	1	1		1				1		7
Pine River, Lake Michigan, Mich.....			1					1			2
Plum Island, Lake Michigan, Wis.....				1	1		1		1	1	5
Point Abino, Lake Erie, Canada.....	2			3	3			1	1		7
Point au Pelée, Lake Erie, Canada.....	11	5	4	3	3		2	1			29
Point au Pelée Island, Lake Erie, Canada.....							2		2		4
Point au Sable, Lake Huron, Mich.....		3									3
Point au Sable, Straits of Mackinac, Mich.....	1				1				1	1	4
Point aux Barques, Lake Huron, Mich.....	2		1	1	1		1			1	7
Point aux Barques, (2 miles east of,) Lake Huron, Mich.....										1	1
Point aux Barques, (4½ miles above,) Lake Huron, Mich.....								1			1
Point au Bec Scies, Lake Michigan, Mich.....		1									1
Point aux Pins, Lake Erie, Canada.....		1									1
Point Clark, Lake Huron, Canada.....					1						1
Point La Barbe, Straits of Mackinac, Mich.....					1						1
Point Moullier, Lake Erie, Mich.....				1							1
Point Peninsula, Lake Ontario, N. Y.....							1				2
Point Saint Ignace, Straits of Mackinac, Mich.....									1		1
Portage, Lake Michigan, Mich.....							1				1
Portage Island Reef, Green Bay, Lake Michigan.....								1			1
Portage River, Lake Superior, Mich.....				1							1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

LAKE COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Port Austin, Lake Huron, Mich	3		1	2	2		2			1	11
Port Bruce, Lake Erie, Canada		2									2
Port Burwell, Lake Erie, Canada	1	2	1		1						5
Port Colborne, Lake Erie, Canada	2	1		1				1	1		7
Port Dalhousie, Lake Ontario, Canada					1						1
Port Hope, Lake Huron, Mich	1							1	1		3
Port Maitland, Lake Erie, Canada		2		4							6
Port Ontario, Lake Ontario, N. Y									1	1	2
Port Ryerse, Lake Erie, Canada							1				1
Port Sanilac, Lake Huron, Mich			1				1				2
Port Sarnia, Saint Clair River, Canada	2			1				1			4
Port Stanley, Lake Erie, Canada	1	1									2
Port Washington, Lake Michigan, Wis				1							1
Poverty Island, Lake Michigan, Mich		1									1
Presque Isle, Lake Erie, Pa		2					1	1			3
Presque Isle, Lake Huron, Mich	3		1	1			2		1	5	13
Presque Island, Lake Superior, Wis											1
Put-in-Bay Island, Lake Erie, Ohio	1			1					1	1	4
Pultneyville, (2 miles east of,) Lake Ontario, N. Y								1			1
Quinte Bay, Lake Ontario, Canada					1						1
Racine, Lake Michigan, Wis						3			4		7
Racine Point, Lake Michigan, Wis								2			2
Racine Reef, Lake Michigan, Wis	3	2	2	2	1		1			1	12
Rawley's Bay, Lake Michigan, Wis										1	1
Rock Falls, Lake Huron, Mich				2							2
Rock Island, Lake Michigan, Wis			1								1
Rondeau, Lake Erie, Canada		6									6
Sackett's Harbor, (rocks near) Lake Ontario, N. Y										1	1
Saginaw River, (mouth of,) Lake Huron, Mich				1				1	1		3
Saint Clair Flats, Lake Saint Clair				2			1		1		4
Saint Helena Island, Straits of Mackinac, Mich		2	1		1		1		1		5
Saint Joseph, Lake Michigan, Mich	3	2	1		3	2	2	1	6	1	21
Saint Martin's Island, Lake Michigan, Mich			1					1			2
Saint Martin's Shoal, Lake Michigan, Mich									1		1
Salmon Point, Lake Ontario, Canada										1	1
Sand Beach, Lake Huron, Mich				1			2	1	8	1	13
Sand Point, (¼ mile south of,) Lake Michigan, Mich										1	1
Saugatuck, Lake Michigan, Mich		1									1
Sault Sainte Marie, (1 mile above)							2				2
Sheboygan, Lake Michigan, Wis	3	2	1	2	1				1	1	11
Sister Bay, Lake Michigan, Wis						1				1	2
Sister Island, Lake Michigan, Wis					1						1
Sister Reef Island, Lake Michigan			1								1
Skilligalee, Lake Michigan, Mich						1				1	2
Sleeping Bear Point, Lake Michigan, Mich				1	1						2
South Bay Point, Lake Ontario, Canada									1		1
South Fox Island, Lake Michigan, Mich			1						1	2	4
South Haven, Lake Michigan, Mich		1		1	4				2	2	10
South Haven, (3 miles south of,) Lake Michigan, Mich								1			1
South Manitou Island, Lake Michigan, Mich	1	1		1	5	2			1	5	16
South Point, Lake Michigan, Wis									1		1
Spider Island, Lake Michigan, Wis		2					1				3
Stowe Island Reef, Lake Erie				2	1		1	1			5
Stony Island, Detroit River		1		1				1			3
Stony Point, Lake Ontario, N. Y						2					2
Stony Point, (5½ miles south of,) Lake Ontario, N. Y										1	1
Sturgeon Point, Lake Erie, N. Y	1	1		1							3
Sturgeon Point, Lake Huron, Mich	1			1					1		3
Sugar Island, Lake Huron, Mich	2	2					1				3
Tawas Harbor, Lake Huron, Mich	1	2	1							1	5
Tawas Point, Lake Huron, Mich				1					1		2
Thunder Bay, Lake Huron, Mich		1				2	2	1			6
Thunder Bay Island, Lake Huron, Mich								1	1		2
Tibbit's Point, Lake Ontario, N. Y							1				1
Toronto, Lake Ontario, Canada					1	1					2
Turtle Island, Lake Erie, Ohio	1									1	2
Twin Rivers, Lake Michigan, Wis	2							3			6
Twin Rivers, (1 mile south of,) Lake Michigan, Wis										1	1
Twin Rivers Point, Lake Michigan, Wis					1					1	2
Twin Rivers Point, (2 miles north of,) Lake Michigan, Wis									1		1

TABLE 65.—Principal places on the Coasts of the United States where vessels have Stranded, &c.—Continued.

LAKE COASTS—CONTINUED.

Name of place.	Fiscal year ending June 30—										Total.
	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Two Creeks, Lake Michigan, Wis					1						1
Walker's Point, Lake Huron, Canada								1			1
Washington Island, Lake Michigan, Wis	1		1								2
Waugoshance Island, Lake Michigan					3			2			5
Waukegan, Lake Michigan, Ill.		1		1	2						4
Whale Back Shoal, Green Bay, Lake Michigan		1									1
Whiskey Bay, Lake Superior									1		1
White Fish Bay, Lake Michigan, Wis										1	1
White Fish Bay, Lake Superior, Wis										1	1
White Fish Bay, Lake Superior, Mich										1	1
White Fish Point, Lake Michigan, Wis										1	1
White Lake Harbor, Lake Michigan		1	3	1	1		2	2	2	1	13
White Rock, Saginaw Bay, Lake Huron, Mich				1							1
White Shoals, Straits of Mackinac, Mich	2										2
Wilson Harbor, Lake Ontario, N. Y.				1							1
Wind Point, Lake Michigan, Wis					1	1					2
Wolf Island, Lake Ontario, Canada			1								1

TABLE 66.—List of places where American vessels have Stranded in FOREIGN WATERS during the last seven years.

Name of place.	Fiscal year ending June 30—							Total.
	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Abraham's Bay, Mougana Island		1						1
Adacora, Venezuela				1				1
Adjuah, west coast of Africa						1		1
Algoa Bay, (½ mile from Port Elizabeth,) Africa							1	1
Altalta, (sand beach, 20 miles north,) Mexico		1						1
Altalta, (off,) Mexico				1				1
Altalta Harbor, Mexico				1				1
Alvarado, (25 miles east of,) Mexico		1					1	1
Alvarado Bar, Mexico							1	1
Amherst Island, Gulf of Saint Lawrence	1	2						3
Anegada Island, British West Indies				1	1			2
Anguilla Island, (Salt Key Bank,) Straits of Florida	1							1
Argyle, (Old Man,) Nova Scotia		1						1
Arica, Peru					1			1
Arecibo, Porto Rico					1			1
Arogant Shoal, (latitude 5° 17' south, longitude 113° 29' east)		1						1
Aspinwall, Central America					2	2		4
Atlas Straits, East Indies							1	1
Australia, (southwest coast)							1	1
Awauni Heads, New Zealand							1	1
Azores, (Fayal Island)							1	1
Bahamas			2					2
Bahamas, (Abaco Island)					1			1
Bahamas, (Abaco light, 15 miles north of)				1				1
Bahama Bank			1					1
Bahamas, (Bimini Island)						2		2
Bahamas, (Bone Fish Bay)		1						1
Bahamas, (Caicos Island)		1	1	1		2	1	6
Bahamas, (Castle Island)						1		1
Bahamas, (Cay Bars)			1					1
Bahamas, (Crooked Island)	1	1			1			3
Bahamas, (Gingerbread Ground)						1	1	2
Bahamas, (Grand Bahama Island)	1							1
Bahamas, (Grand Cay Reef)				1				1
Bahamas, (Grand Saou Cay)			1					1
Bahamas, (Grand Turk and Salt Cay, reef between)					1			1
Bahamas, (Green Turtle Key)		1						1
Bahamas, (Harbor Island)					1			1
Bahamas, (Hogsties Reef)				1		2		3
Bahamas, (Inagua Reef)							1	1

TABLE 66.—List of places where American vessels have Stranded in FOREIGN WATERS, &c.—Continued.

Name of place.	Fiscal year ending June 30—							Total.
	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Bahamas, (Little Bahama Island).....					1			1
Bahamas, (Mariguana Reef).....	1	1				2		4
Bahamas, (Matanilla Reef).....			1					1
Bahamas, (Middle Reef).....	1							1
Bahamas, (Miradpurvos Island).....					1			1
Bahamas, (Moselle Shoals).....	1							1
Bahamas, (Nassau, New Providence).....					1			1
Bahamas, (No Name Cay).....				1				1
Bahamas, (North Bimini).....			1					1
Bahamas, (Northwest Reef).....	1							1
Bahamas, (Orange Key).....						1		1
Bahamas, (Powell's Key).....		1						1
Bahamas, (Rum Cay).....		2						2
Bahamas, (Sandy Cay).....					1	1		2
Bahamas, (Sheep Keys Shoals).....			1					1
Bahamas, (Silver Key Bank).....						1		1
Bahamas, (South Bimini).....	1	1						2
Bahamas, (Whale Key).....					1			1
Bahamas, (Wood Key).....		1						1
Balahare Island, Hebrides.....				1				1
Balbriggan, Ireland.....							1	1
Banca Straits, East Indies.....						1		1
Baracoa Harbor, Cuba.....			2					2
Barbadoes.....		1						1
Barbareta Island, Honduras.....			1					1
Barbuda Island, British West Indies.....		1						1
Barington, Nova Scotia.....						1		1
Batavia Harbor, (Neptune's Shoal,) Java.....			1					1
Bay of Fundy, (Saint Mary's Ledges, entrance to).....					1			1
Belfast, (Carrickfergus Bank,) Ireland.....		1						1
Belize, (main reef, 30 miles off).....		1						1
Benoit's Cove, Newfoundland.....				1				1
Bermuda.....		2	2					4
Bermuda, (Adventure Reef).....					1			1
Bermuda Reef, (15 miles from).....					1			1
Bermuda, (Saint George Island).....					1			1
Bermuda, (White Island).....							1	1
Black Point, Honduras.....	1							1
Bog Shippegan Gully, New Brunswick.....					1			1
Boiling Reef, Gulf of Georgia.....	1							1
Bolton Island, Molucca Group, East Indies.....	1							1
Bonacca Harbor, Honduras.....	1							1
Bordeaux River, (entrance of,) France.....							1	1
Brava Island, Cape Verde Island.....		1						1
Brazil, (latitude 3° 2' south, longitude 25° 22' west).....				1				1
Brazil Rock, Nova Scotia.....						1		1
Brier Island, Bay of Fundy.....		2						2
Buckos Reef, Tobago, British West Indies.....	1							1
Bull Ledge (off Cape Canso,) Nova Scotia.....						1		1
Byron Island, Gulf of Saint Lawrence.....					1			1
Cambodia River, (mouth of,) China.....							1	1
Campobello Island, New Brunswick.....		1						1
Cape Agulhas, (15 miles north of,) Africa.....			1					1
Cape Ballard, Newfoundland.....				1				1
Cape Breton Island.....		2		1				3
Cape Corrientes, Cuba.....						1		1
Cape Frio, Brazil.....				1				1
Cape Henry, Anticosti Island, Gulf of Saint Lawrence.....					1			1
Cape Hogan, Arichat Island, Nova Scotia.....		1						1
Cape Horn, South America.....				1				1
Cape Isabella, San Domingo, West Indies.....			1					1
Cape Negro, Brazil, South America.....		1						1
Cape Negro Harbor, Nova Scotia.....					1			1
Cape Negro Island, Nova Scotia.....	1		1					2
Cape Patani, Siam.....							1	1
Cape Roxo, (10 miles northwest of,) West Indies.....							1	1
Cape Sable, Nova Scotia.....	1							1
Cape Saint Mary, Newfoundland.....				1				1
Cape Saint Mary, (5 miles south of,) Newfoundland.....				1				1
Cape Sharp, West Bay, Nova Scotia.....							1	1
Cape Town, Africa.....					1			1
Cape Verde Islands.....		2						2
Cardenas, Cuba.....				3				3
Cariaco, Venezuela.....				1				1

TABLE 66.—List of places where American vessels have Stranded in FOREIGN WATERS, &c.—Continued.

Name of place.	Fiscal year ending June 30—							Total.
	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Caribbean, Cuba		1						1
Carimata Straits, East Indies	1							1
Carlisle Bay, Barbadoes		1						1
Carnarvon Bar, North Wales				1				1
Carzonas, Mexico							1	1
Cascumpeque, Prince Edward Island					1			1
Cay Largo Island, Cuba			1					1
Cette, France				1				1
Charles Island, (Galapagos Group,) Pacific Ocean						1		1
Charlottetown, Prince Edward Island				1				1
Che-Foo Light, (stick up rock,) China							1	1
Cheticamp, Cape Breton Island			1					1
Chickotan Island, (Kurile Islands,) Asia			1					1
Chincorro Reef, (off east coast of Yucatan)		1						1
Cienfuegos Harbor, (west head of,) Cuba		1	1					2
Coachman's Reef, Nova Scotia					1			1
Coatzacoalcos River Bar, Mexico		1						1
Cockburn Harbor Shoal, E. C.		1						1
Cocorocame Reef, Honduras					1			1
Colonia Harbor Rock, Uruguay, South America	1							1
Colorado Reef, Cuba	1		2					3
Colorado Reef, Lord Howe's Island, Australia			1					1
Comacho Bay, Peru			1					1
Constantinople, Turkey		1						1
Coral Island, Japan Bay				1				1
Coru Island, Central America	1				1			2
Coxyde, Belgium				1				1
Cruzdel Padre, Cuba						1		1
Cuba, (reef north side of,) W. I.						1		1
Cumberland Gulf, British America						1		1
Dartmouth, England			1					1
Deer Island, New Brunswick	1	1		1	1			4
Demas Key, (Salt Key Banks,) West Indies		1						1
Dona Maria Inlet, Cuba	1							1
Duck Island, New Brunswick		1			1			2
Dugeon Shoal, Yorkshire, England		1						1
Duke of York Island, South America							1	1
Dunkirk Roads, (entrance to,) France					1			1
Dungeness, Kent County, England					1			1
East London, Africa				1				1
Emulous Ledges, Nova Scotia				1				1
English Bank, Bristol Channel	1							1
Ensenada, mouth of Bristol Channel, Argentine Republic			1					1
Falmouth Harbor Reef, Jamaica					1			1
Fiji Islands, northeast group			1					1
Flores Islands		1						1
Flushing, Holland				1				1
Flushing Roads, below Antwerp, Belgium					1			1
Formentera, Balearic Islands		1						1
Frenchman's Harbor, Isle of Ruatan		1						1
Gabriola Reef, Gulf of Georgia, British Columbia							1	1
Galway, Ireland					1			1
Garrucha Roadstead, Spain				1				1
Gibraltar		1						1
Gibraltar Bay, coast of Spain							1	1
Gonaive Island, West Indies			1					1
Goodwin Sands, England			1					1
Gough's Island, South Pacific Ocean					1			1
Grand Cayman, West Indies				1			1	2
Grand Manan Island, New Brunswick			1		1			2
Grand Sands, near Trieste, Austria			1					1
Grand Turk Island, British West Indies		1						1
Greytown, Nicaragua				1				1
Grindstone Island, New Brunswick	1							1
Guanabana, Cuba				1				1
Gull Island, Long Harbor, Newfoundland			1					1
Gull Island, Nova Scotia	1							1
Gun Fleet Sound, Essex, England					1			1
Hainan Island, China							1	1
Hake, (south banks,) Nieuwe-Diepe, Holland				1				1
Halifax, Nova Scotia			1				1	2
Hammond's Knoll, (off Yarmouth Head)		1						1
Harbor Island, Bay of Islands, Newfoundland			1					1
Havana, (reef south side of,) Cuba					1			1

TABLE 66.—List of places where American vessels have Stranded in FOREIGN WATERS, &c.—Continued.

Name of place.	Fiscal year ending June 30—							Total.
	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Havana and Matanzas, (between,) Cuba		1						1
Hayo, Main Rock, Bay of Yeddo, Japan		1						1
Hebrides Island, (Mac Ivor rock,) Scotland							1	1
Helgoland, North Sea						1		1
Hesquot Sound, Vancouver's Island	1							1
Hong-Kong, China	2							2
Hoogly River, Diamond Harbor, British India	1							1
Hook Point, Wexford, Ireland					1			1
Hope Point, England						1		1
Idsumosaki Island, Japan					1			1
Imbetiba, Brazil					1			1
Indian Island, Labrador		1						1
Isle Bois, Straits of Belle Isle					1			1
Isle de Aves, Venezuela, South America						2		2
Jacquemel Bay, Hayti		1			1			2
Jardinillos Reef, West Indies		1	1					2
Jarvis Island, South Pacific				1				1
Jeremie Harbor, Hayti, West Indies				1	2			3
Jig Rock, near Shelburne, Nova Scotia				1				1
Kabe, Japan							1	1
Kabenda, Africa							1	1
Kaloot Bank, Holland		1						1
Kamschatka, Sea of Okhotsk				1				1
Kapaa, Sandwich Islands						1		1
Kingston Harbor, Jamaica						1		1
Kingstown, Ireland							1	1
Kutsino Island, off the coast of Japan					1			1
Lamoig, Jutland				1				1
Langlade Island, Newfoundland						1		1
Last Island, Gulf of Mexico		1						1
Leones Islands, Montego Bay, Jamaica		1						1
Lepreaux, Bay of Fundy, New Brunswick					1			1
Liberty Point, Campobello Island, New Brunswick		1						1
Liscomb Harbor, Nova Scotia					1			1
Little Curacoa, Caribbean Sea					1			1
Liverpool, England				1				1
Lockport Harbor, (ledge off,) Nova Scotia					1			1
Lockville, Geography Bay, West Australia		1						1
Los Palmos, Canary Islands						1		1
Lucca, (reef at,) Jamaica						1		1
Macassar Straits, East Indies		1						1
MacNutt's Island, Nova Scotia		1						1
Madeira Island		1						1
Magdalen Islands, Gulf of Saint Lawrence		1				1		2
Magdalena River, (mouth of,) United States Colombia							1	1
Malpec Bar, Gulf of Saint Lawrence		1						1
Main à Dieu Reef, Cape Breton Island				1				1
Manchioneal Reef, Jamaica, West Indies						1		1
Manilla Bay, Philippine Islands						1		1
Manzanillo de Cuba, (reef north of sloop channel,) West Indies							1	1
Maquabo, Porto Rico				1				1
Marfa Drychon Beach, Cardigan Bay, Wales		1						1
Matane, (Saint Lawrence River,) Canada				1				1
Matanzas Harbor, Cuba		1	1		1			3
Mayo Island, Cape Verde Group		1						1
Mazatlan, Mexico					1		1	2
Middle Wolf, New Brunswick				1				1
Milford Haven, South Wales				1				1
Miragoane, Hayti, West Indies					1	1		2
Mistaken Point, Newfoundland								1
Monte Rugginore, (east of,) Sardinia								1
Montevideo, Uruguay, South America		1						1
Morant Cays, Jamaica, West Indies						1		1
Mosquito Coast, Nicaragua					1			1
Moule, Gaudaloupe, West Indies							1	1
Murder Island Ledge, (near Yarmouth,) Nova Scotia				1				1
Musquash, Bay of Fundy, New Brunswick				1				1
Nag's Head, Louisburg, Cape Breton		1	1					2
Nanaimo, British America						1		1
Navidad Bay, Mexico							1	1
Neiva, (between Saint Domingo and Navassa)							1	1
Nevis, Windward Islands					1			1
New Guinea, (coral reef off southwest coast of)						1		1
New Harbor Point, Nova Scotia					1			1

TABLE 66.—List of places where American vessels have Stranded in FOREIGN WATERS, &c.—Continued.

Name of place.	Fiscal year ending June 30—						Total.
	1875.	1876.	1877.	1878.	1879.	1880.		1881.
Newport Roads, Wales.....		1					1
Nicaragua, (coast of).....						1	1
Noel's Point Reef, (entrance to Saint George's Harbor,) N. F.....		1					1
Noon Day Rock, Pacific Ocean.....						1	1
Nuevitas Harbor, Cuba.....		1		1			2
Opobo, west coast of Africa.....						1	1
Outer Brandy Rock, Newfoundland.....						1	1
Pabillon de Pica, South America.....			1				1
Packet Rock, Saint Thomas Harbor, West Indies.....						1	1
Palance Shoals, (near Manilla,) Philippine Islands.....		1					1
Para River, (mouth of,) South America.....	1						1
Pasages, Bay of Biscay, Spain.....							1
Penzance, Mountis Bay, England.....							1
Pictou, Nova Scotia.....					1		1
Piraguara Bay, Brazil.....					1		1
Platte River, (mouth of,) South America.....						1	1
Plover Bay, Siberia.....						1	1
Point Barbara, San Domingo Island.....						1	1
Point Castilla, Honduras, Central America.....				1			1
Point Della Madona, South America.....					1		1
Point Negro and Point Race, (between,) South America.....			1				1
Ponape Islands, Caroline Group, Pacific Ocean.....						1	1
Ponce, Porto Rico and Saint Thomas, (between).....				1			1
Popa Island, Maly Archipelago, Pacific Ocean.....			1				1
Porter's Passage, (east side of,) Halifax, Nova Scotia.....			1				1
Port Elizabeth, South Africa.....					1		1
Portland Point, Vancouver's Island, British America.....						1	1
Port Maria, Jamaica.....	1						1
Port Natal, South Africa.....				2	1		3
Porto Rico, West Indies.....			1				1
Porto Rico, (reef near,) West Indies.....						1	1
Progreso, Mexico.....		1					1
Prospect, Nova Scotia.....		1				1	2
Puerto Cortez, (6 miles from,) Honduras Bay, Central America.....						1	1
Puntas Arenas, (18 miles south of,) Costa Rico.....					1		1
Quoin Point, Cape of Good Hope, Africa.....		1					1
Quronata, Honduras, Central America.....				1			1
Rbio Straits, near Singapore, Malay Peninsula, East Indies.....						1	1
Rio de Contas, (mouth of,) Brazil.....					1		1
Rio Grande River, Mexico.....						1	1
Rio Grande do Sul Bar, Brazil.....						1	1
Rocas Reef, (125 miles northwest of Cape St. Roque,) Brazil.....	1						1
Rocky Reef, Point Carlisle Bay, Jamaica.....				1			1
Round Reef, Saint John Harbor, New Brunswick.....						1	1
Russell's Point, Cape Breton Island.....						1	1
Rustico Harbor, Prince Edward Island.....						1	1
Sable Island, Nova Scotia.....		2					2
Saint Antonio, Brazil.....						1	1
Saint Christopher Is and, British West Indies.....					1		1
Saint George, New Brunswick.....	1						1
Saint George Bay, Newfoundland.....		1					1
Saint George's Bay, Syria.....						1	1
Saint John, New Brunswick.....						1	1
Saint John's, Porto Rico, West Indies.....			1				1
Saint Mary's Bay, Nova Scotia.....	1						1
Saint Pierre, Newfoundland.....			1				1
Saint Thomas, West Indies.....			3			1	4
Sand Island, (island near,) Straits of Formosa.....					1		1
San Antonio Light, (15 miles east of,) Cuba.....				2			2
San Felipe Keys, Cuba.....			1			1	2
San Geronimo Island, Lower California.....			1				1
San José de Guatemala.....	1						1
San Juan, Vancouver's Island, British America.....						1	1
San Quentin Harbor, Lower California.....				1			1
San Salvador, West Indies.....				1			1
Sanger Island, Hoogly River, British India.....			1				1
Santa Anna, Mexico.....					3		3
Santa Catalina Island, Pacific Ocean.....					1		1
Santiago de Cuba.....					1		1
Saona Island, Hayti, West Indies.....			1		1		2
Saracen Shoal, coast of Borneo.....						1	1
Scarborough Shoals, China Sea.....	1						1
Scilly Island, South Pacific.....					1		1
Seal Shoal, Newfoundland.....			1				1

TABLE 66.—List of places where American vessels have Stranded in FOREIGN WATERS, &c.—Continued.

Name of place.	Fiscal year ending June 30—							Total.
	1875.	1876.	1877.	1878.	1879.	1880.	1881.	
Serranilla Bank, Caribbean Sea.....			1					1
Seven Stones, (off Land's End,) England.....				1				1
Shag Harbor, Nova Scotia.....					1			1
Shark's Point, (mouth of Congo River,) Africa.....			1					1
Sheelee River, (mouth of,) Nova Scotia.....						1		1
Shoal Bay, Newfoundland.....				1				1
Sicily Island, (near A'vola).....	1							1
Smith's Island, Port Hood Harbor, Cape Breton Island.....				2				2
Soledad Lagoon, Lower California.....				1				1
Stackpole, England.....	1	1						2
Stone Key, Cuba.....							1	1
Straits of Georgia, British North America.....					2			2
Straits of Magellan, South America.....		1						1
Sumatra, Gasper Straits.....			1					1
Surinam, Dutch Guiana, South America.....							1	1
Suwarrow Reef, South Pacific.....			1					1
Swallow Reef, China Sea.....				1				1
Swansea, Wales.....						1		1
Tabasco Bar, Mexico.....							1	1
Talbot's Passage, Cape Horn.....		1						1
Tallock Reef, Carimata Straits, East Indies.....							1	1
Taylor's Bank, Mersey River, England.....		1						1
Tecumshin, Wexford, Ireland.....					1			1
Tequish Island, Prince Edward Island.....						1		1
Terra del Fuego, South America.....						1		1
Terschelling Light, Netherlands.....			1					1
Tonala Bar, Mexico.....	1	1		1				3
Tongue Island, English Channel.....		1						1
Torkeo, Sweden.....		1						1
Trackio, Nova Scotia.....					1			1
Trial Island, British Columbia.....		1						1
Trinidad, West Indies.....				1				1
Tristan d'Acunha Island, South Atlantic.....						1		1
Truxillo, Honduras, Central America.....				1				1
Tusket Island, Nova Scotia.....	1				1			2
Tuspan, Mexico.....						1		1
Tuspan Reef, Mexico.....							1	1
Tuspan River Bar, Mexico.....	1	1		1			1	4
Two Rivers, Nova Scotia.....					1			1
Tyaartoos Island, Barclay Sound, British Columbia.....			1					1
Unknown Reef, latitude 59° south, longitude 107° east.....						1		1
Valdes Peninsula, Patagonia.....		1						1
Vancouver's Island, British Columbia.....							1	1
Vancouver's Island, (12 miles east of Cape Beale), British Columbia.....							1	1
Verdon Roads, (near Bordeaux,) France.....		1						1
Victoria Harbor, British Columbia.....			1					1
Waihi Island, Sandwich Islands.....						1		1
Walney Island, England.....				1				1
Wentworth Creek, Nova Scotia.....						1	1	2
White Head, Nova Scotia.....					1			1
Wicklow Bay, Ireland.....			1					1
Wood Creek, New Brunswick.....						1		1
Wood's Island, Bay of Islands, British America.....	1							1
Woody Island, Cape Breton, British America.....	1							1
Yabucoa, Porto Rico.....			1					1
Yarmouth, Nova Scotia.....		1						2
Zanzibar, Africa.....			1					1

REPORTS

OF THE

BOARD ON WRECK ORDNANCE.

22 L S

REPORT OF BOARD-ON WRECK ORDNANCE

UPON THE

HUNT LIFE-SAVING PROJECTILE.

1881.

LETTER OF TRANSMITTAL.

OFFICE OF INSPECTOR OF
UNITED STATES LIFE-SAVING SERVICE,

No. 3 Bowling Green, New York, June 15, 1881.

SIR: I have the honor to transmit herewith report of the Board on
Wreck Ordnance, upon the "Hunt" life-saving projectile.

Very respectfully, your obedient servant,

J. H. MERRYMAN,

Captain U. S. R. M., Inspector, President of the Board.

SUMNER I. KIMBALL, Esq.,

General Superintendent United States Life-Saving Service.

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- R. Reinforce.
- B B. Body.
- W W. Wings.
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- I. Position of centre of gravity of projectile (empty) without line.
- C. Centre of figure of projectile.
- L. Line.

Fig. 2. Longitudinal section of Hunt projectile, showing side elevation and partial section of coil of line.

- H. Head.
- L. Line.
- P. Wooden plug.
- W W. Wings.

Fig. 3. Rear elevation of Hunt projectile, showing relative position of wings.

- B B. Body.
- P. Wooden plug.
- L. Line.
- W W. Wings.

Plate II.

Fig. 1. Side elevation of Hunt's shore-can.

Fig. 2. Plan of top of shore-can with paper disk removed, showing coil of line in position for firing.

Fig. 3. Plan of bottom of shore-can, showing safety-ring.

Fig. 4. Longitudinal section of shore-can, showing side elevation and partial section of coil of line.

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- A B. Line of fire.
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- C. Position of shore-can at moment of firing.
- D. Position of shore-can after firing.
- L L. Position of line after firing.
- P. Position of projectile after firing.
- W, W. Direction of wind.

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- A. Position of 2.5-inch Lyle gun.
- C. Position of 3-inch Lyle gun, "A."
- F. Position of faking box for Lyle projectile.
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NOTE.—In Plates IV and V the planes of fire are projected upon the same vertical plane, or, in other words, the two planes are assumed to coincide in order that the deviations and drifts may be measured from the same right line (*i. e.*, the common horizontal trace of the two planes) for purposes of direct graphical comparison.

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- A. Position of Lyle projectile after firing.

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- C. Firing point.
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- a a a*. Position of Lyle line on the ground after firing.
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- W, W. Direction of wind.

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- A. Position of Hunt projectile after firing.
 - B. Position of Lyle projectile after firing.
 - C. Firing point.
 - C D. Horizontal projection of lines of fire.
 - a a a*. Position of Lyle line on the ground after firing.
 - b b b*. Position of Hunt line on the ground after firing.
 - W, W. Direction of wind.

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- Fig. 1. Diagram showing the relative positions on the ground of the Lyle and Hunt shot-lines in the "third set" of simultaneous firings, (October 25, 1880.)
- A. Position of Lyle projectile after firing.
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 - C. Firing point.
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 - E. Position of Hunt shore-can after firing, 51 feet in front of firing-point.
 - a a a*. Position of Lyle line on the ground after firing.
 - b b b*. Position of Hunt line on the ground after firing.
 - W, W. Direction of wind.

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- A. Position of Lyle projectile after firing.
 - B. Position of Hunt projectile after firing.
 - C. Firing point.
 - C D. Horizontal projection of lines of fire.
 - a a a*. Position of Lyle line on the ground after firing.
 - b b b*. Position of Hunt line on the ground after firing.
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Diagram showing normal trajectory for an angle of projection of 25 degrees and an initial velocity of 250 feet per second; also showing the action of the resistance of the air upon the Hunt projectile.

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 - B. Point of fall.
 - A B. Range.
 - C. Highest point of trajectory.
 - A D. Line of projection.

- Fig. 2. Vertical projection of normal trajectory.
- A. Firing point.
 - B. Point of fall.
 - A B. Range.
 - A D. Line of projection.
 - H. Hunt projectile.
 - G. Centre of gravity.
 - F. Centre of figure.
 - T. Tangent to trajectory.
 - R. Resultant of the resistance of the air, whose line of direction passes through the centre of figure.

NOTE.—The surface of the projectile exposed to the resistance of the air is included between the dotted lines parallel to the tangent, and R is the resultant of this resistance, which diminishes the velocity and range of the projectile, and, as shown in the figure, tends to rotate the rear end of the projectile about its centre of gravity, upwards in the first case, and downwards in the second. This action of the resistance of the air produces the vertical oscillations observed in the projectile's flight.

Plate VII.

Diagrams of the Hunt and Lyle life-saving projectiles, showing the action of lateral winds to produce a motion of rotation about the centres of gravity.

Fig. 1. 2.5-inch Lyle projectile.

G. Centre of gravity.

C. Centre of figure.

R. Resultant force of lateral wind.

C F. Direction in which the force of the wind tends to rotate the projectile about the centre of gravity.

Fig. 2. Diagram showing the relative directions in which the lateral forces of the wind and the weight of the projectile act.

C. Centre.

L. Direction of wind.

W. Weight.

Fig. 3. 3-inch Hunt projectile.

G. Centre of gravity when full of line.

I. Centre of gravity when empty.

C. Centre of figure.

R. Resultant force of lateral wind.

C D. Direction in which the force of the wind tends to rotate the projectile about the centre of gravity G, when the projectile is full of line.

C A. Direction in which the force of the wind tends to rotate the projectile about the centre of gravity I, when the projectile is empty.

Fig. 4. Diagram showing the relative directions in which the lateral forces of the wind and the weight of the projectile act.

C. Centre.

L. Direction of wind.

W. Weight.

Plate VIII.

This plate shows the Hunt projectile and shore-can in position for firing from the 3-inch Lyle life-saving gun "A," and the method of firing.

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HUNT'S LIFE-SAVING PROJECTILE.

The apparatus consists of a projectile and a tin can, known as the "shore-can." It is intended for life-saving purposes, to be used in connection with a gun or mortar of suitable dimensions.

I.—DESCRIPTION.

1. *The projectile, calibre, 3 inches.*

(Plate I.)

The body of the shot or projectile is composed of a tin tube closed at the front end by a disk of iron. The head or point* is made of lead, cast upon the end of the tin tube. The lead extends up the sides of the tube, forming a thin coating for a distance of 3.2 inches from the plane of the head. The diameter of the flat head is 2.9 inches, but when fired it expands to the full size of the bore. The tube is reinforced for 6 inches of its length above the lead, with a galvanized sheet-iron tube. The object of this reinforce is to strengthen the tube and prevent upsetting when fired. Near the rear end of the tube four trapeziform pieces of tin, termed "wings," are soldered to the tube at right angles to each other, and equidistant circumferentially for the purpose of guiding the projectile in its flight after the manner of the barbs of an arrow.

About 250 yards of small line is coiled on a spindle in a lathe after passing through a saturating solution of paraffine. This coil is wrapped with a thickness of laboratory paper, and when withdrawn from the lathe-spindle is placed in the tin tube. The exterior end of the line is made fast to a wire loop, which projects from the rear end of the tube. The wire is soldered to the tube. The rear end of the tube is then closed with a wooden plug one inch (1") in thickness, and of the same diameter as the inside of the cylinder. An axial hole 1 inch in diameter serves for the line to pass through in escaping from the shot. A paper disk is pasted over this end of the projectile, which must be removed before firing, in order to secure and withdraw the end of the line.

2. *The "shore-can."*

(Plate II.)

This can contains the shore-line, and is made of tin. It is a short cylindrical tube of greater diameter than the body of the shot. The lower end is closed by a bottom of the same material as the cylindrical body. To the bottom a ring is attached, in which is tied a line, or through which a stake is driven, to prevent the can from being carried off in firing. Holes are punched through the bottom, over each side

*The term "point" is used throughout this description and report in its technical sense.

of the ring-seat, through which the end of the line belonging to the outer coil is passed and tied to secure the line to the can. This shore-can contains about 250 yards of small line, coiled in a lathe and saturated with paraffine in the same manner as the line in the shot. After coiling, the line is placed in the can and the tin cover put on. The cover has a central hole 1.6 inches in diameter, through which the line is paid out. A strip of laboratory paper is pasted around the can so as to overlap the junction of the cover and body of the can, and prevent the removal of the former. A paper disk, which must be broken before firing, is pasted over the hole in the top.

3.—Principal dimensions.

a.—Projectile.

Total length	22'' .6
Head: Length, including coating of lead	3'' .2
Diameter before firing	2'' .9
Diameter after firing, about	3'' .0
Form of point or head	Flat.
Reinforce: Galvanized sheet-iron—	
Exterior diameter	2'' .84
Length in rear of lead-coating	6'' .0
Tin case: Exterior diameter	2'' .8
Length in rear of reinforce	13'' .4
Distance of centre of gravity from flat point or head of shot when the coil of line is inside	6'' .0
Distance of centre of gravity from flat point or head of shot when empty, (i. e., line all out)	3'' .2
Distance of center of figure from flat point or head of shot	12'' .4
Distance between centres of gravity and figure when line is in shot	6'' .4
Distance between centres of gravity and figure when shot is empty	9'' .2
Area of flat point or head of shot	Sq. feet. Sq. inches. 0.049 = 7.0685
Area of longitudinal section of shot, including two opposite wings	0.5132 = 73.9

b.—Shore-can.

Total length	5'' .0
Exterior diameter of can	5'' .46
Exterior diameter of cover	5'' .5
Exit hole in cover, (diameter)	1'' .6

4. Weights.

Weight of shot with line	10.5 lbs. to 12.75 lbs.
Weight of empty shot	8.75 lbs.
Weight of line in shot	3.5 lbs. to 4.0 lbs.
Weight of shore-can and line	3.75 lbs.

5. Line.

Length	500 yards.
Diameter	0.116 inches.
Kind of line	Twisted.
Material	Linen.
Total weight of line	7.857 lbs.

II.—COST.

Twenty-five (25) 3-inch Hunt life-saving projectiles were purchased from the inventor for experimental purposes. Five of these projectiles were ordered without the "wings." The inventor's first estimate was

\$15 each, including a shore-line and can for each projectile; but later he agreed to furnish them at \$12 each, which was the price paid for them.

III.—METHOD OF USING.

(Plate VIII.)

Suppose the gun, projectiles, or shore-cans to be on the firing-ground, and the gun in position for firing, the operations are as follows:

Insert the powder-charge, tear the paper-cap from the rear end of the projectile, and draw out a couple of feet of the line; place the projectile in the bore with the flat leaden head first; then tear the paper-cap from the hole in the top of the shore-can, and pull out about two feet of line; tie the ends of the line together, and place the shore-can near the gun on the windward side. The proper elevation is then given to the piece, the priming-wire inserted in the vent, a friction-primer put in, and the gun fired.

IV.—EXPERIMENTS.

1. *First series.*

This series of experiments was made at Sandy Hook, N. J., by Lieut. D. A. Lyle, Ordnance Department, U. S. A., and Keeper John J. Patterson, jr., of Life-Saving Station No. 1, District No. 4, and before the organization of the Board on Wreck Ordnance.

It seemed impossible to get a day when there was a head wind blowing, and, after waiting two days for the direction of the wind to change, it was determined to proceed with the firing. The results of the experiments made December 20, 21, 1878, are embraced in the tabular statement given below:

EXPERIMENTS WITH LIFE-SAVING APPARATUS AT SANDY HOOK, NEW JERSEY.

a.—Record of firings with Hunt's life-saving projectiles—calibre, 3 inches.

DATE.	GUN.		POWDER.		PROJECTILE.				SHOT-LINE—LINEN.			WIND.										
	Kind.	Calibre.	Kind.	Weight.	Kind.	Wings or not.	Weight.	Time of flight.	Number.	Diameter.	Action.	Range.	Deviation of projec- tile—right or left.	Drift of line at 300 yards, stake—right or left.	Direction.	Velocity.						
1878.																						
Dec. 20	1	Lyle "A" . . .	3	25	Ins. Deg	Life-Saving Service	3	Ozs.	Hunt . . .	No . . .	11.0	6.5	Sec.	4½	Good*	357.66	Yards.	0	Feet.	90 L.	Feet per sec.	14.166
20	2	do . . .	3	25		do . . .	3		do . . .	Yes . . .	11.5	8.25		3½	Fair . . .	443.5		30 L.	151 L.	11.39		
20	3	do . . .	3	25		do . . .	3		do . . .	Yes . . .	12.25	6.5		3½	Good . . .	503.0		71 L.	163 L.	20.41		
20	4	do . . .	3	25		do . . .	3		do . . .	Yes . . .	12.25	8.0		3½	Good . . .	592.33		150 L.	168 L.	11.72		
20	5	do . . .	3	22		do . . .	3		do . . .	Yes . . .	12.25	7. (?)		3½	Good . . .	475.0		252 L.	215 L.	14.16		
20	6	do . . .	3	22		do . . .	3		do . . .	Yes . . .	12.5	7.5		3½	Fair . . .	473.0		210 L.	240 L.	13.33		
21	7	do . . .	3	25		do . . .	3		do . . .	Yes . . .	12.5	7.5		3½	Good . . .	433.0		3 R.	†		Calm.	
21	8	do . . .	3	25		do . . .	3		do . . .	No . . .	12.5	7.5		3½	Good . . .	435.0		99 R.	†		Almost calm.	

* By "good" in this column is meant that the line ran out of shot without breaking or tangling in large knots. Small knots were not taken into account.

† Drift of line about the same as deviation of shot. Not measured.

Experiments with Life-Saving Apparatus at Sandy Hook, New Jersey—Continued.

REMARKS.

Average weight of shot and line about	12.25 pounds.
Weight of shot, empty	8.75 "
Weight of line in shot about	3.5 "
Weight of "shore-line" and its tin can	3.75 "

TESTS OF HUNT'S SHOT-LINE.

Size, * No. 3½ (1); diameter, 0".116.

Number of sample.	Breaking weight	Amount of stretch in 6 feet of line.	Remarks.
1	Lbs. 132	4 inches ...	} Line made of linen twisted, and saturated with paraffine when coiled.
2	125	4 " " ...	
3	129	4 " " ...	

* This line is a little larger than "No. 3½," and smaller than "No. 4," Silver Lake.

b.—SYNOPTICAL TRANSCRIPT OF NOTES FROM THE FIRING RECORD.

Hunt's life-saving projectiles, and 3-inch Lyle bronze gun "A."

Date.	No. of round.	
1878.		
Dec. 20	1	Shot without "wings;" turned over and over about shorter axis throughout trajectory. A little of the line left in the shot. Good line shot.
20	2	Shot with "wings." Rotated about shorter axis for 250 yards, and then continued "point" first to end of trajectory. Shot carried off shore-can.
20	3	Shot with "wings." Rotated as before. Line all out of shot.
20	4	Shot carried out all line in itself and shore-can. Carried can 200 yards down the range.
20	5	Time of flight uncertain, as falling snow made shot indistinct. Gun pointed a little to the left by mistake, which accounts for a portion of the drift of the line noted in the record. Falling snow rendered range-flags obscure. Shore-can carried down the beach. All line out.
20	6	Shot with "wings." All line carried out. Can carried down the beach by the line.
21	7	Instead of shore-line a faking-box (B) and Silver Lake line No. 4½ were used. The line in the shot was attached directly to the braided-line in the faking-box. About 200 yards of line was drawn from the faking-box.
21	8	No remarks. The combined lengths of line in the shot and shore-can proved to be too short for the ranges obtained on December 20, as four out of six of the shore-cans were carried down the range distances, varying from 50 yards to 200 yards, which would have been a very serious matter had the shots been fired out to sea to effect communication with a stranded vessel.

2. *Second series.*

The experiments comprising this series were made by and under the direction of the board. The lack of a proper firing-ground and adverse winds, when the ordnance proving-ground at Sandy Hook was available, caused the experiments to be postponed from time to time. There were so few projectiles at the disposal of the board that it was not

deemed advisable to expend any more until a head or cross-wind should be obtained. These causes, together with the diverse and pressing duties of the several members of the board, in connection with their other labors, rendered it extremely difficult to obtain the presence of a majority of them upon any particular date. Several attempts were made to continue the firing, but they were each time frustrated by sudden changes of wind, which would continue to blow with a provoking pertinacity from the wrong quarter. At length, on October 21st, 1880, the board succeeded in getting a head wind, and though it was only a brisk breeze, varying from 12 to 15 miles, and in one instance to 17 miles per hour, it was decided to make the most of it. Accordingly, ten shots were fired in rapid succession before the wind changed direction. The last shot of the series of October 21st was fired over a range measured at right angles to the direction of the wind, which was blowing from the left with a velocity of 15.34 miles per hour. (See Plate III, fig. 1.) The results are herewith presented in tabular form. The last round in the table (No. 11) was fired on October 25th, 1880, with the wind from the right and *rear*, blowing at the rate of 17.476 miles or nearly $17\frac{1}{2}$ miles per hour.

EXPERIMENTS WITH LIFE-SAVING APPARATUS AT SANDY HOOK, NEW JERSEY.
a. — Record of firings with Hunt's life-saving projectiles—calibre, 3 inches.

DATE.	No. of round.	GUN.		POWDER.		PROJECTILE.				SHOT-LINE—LINEN.			Range.	Deviation of projectile—right or left.	Drift of line at 300 yds. stake—right or left.	WIND.		Remarks.										
		Kind.	Calibre.	Kind.	Weight.	Kind.	Wings or not.	Weight.	Time of flight.	Number.	Diameter.	Action.				Direction.	Velocity.											
1880.																												
Oct. 21	1	Lyle "A"	3	25	Life-Saving Service	3	Ozs.	Hunt	Yes	12.5	Lbs.	12.5	Sec.	Not taken.	0.116	Good*	382.0	Yards.	382.0	13.5 L.	Feet.	10.0 L.	25.0	Ft. per sec.	←	W		
	2	do	3	25	do	3	do	do	Yes	12.25	do	12.25	do	do	0.116	Good	398.0	do	398.0	7.0 R.	do	25.5 R.	23.5	do	←	W		
	3	do	3	25	do	3	do	do	Yes	12.25	do	12.25	do	do	0.116	Good	409.0	do	409.0	1.5 L.	do	8.0 R.	18.3	do	←	W		
	4	do	3	25	do	3	do	do	Yes	11.25	do	11.25	do	do	0.116	Cut-off.	360.0	do	360.0	45.0 R.	do	55.0 R.	20.1	do	←	W		
	5	do	3	25	do	3	do	do	Yes	12.5	do	12.5	do	do	0.116	Good	403.0	do	403.0	6.0 R.	do	12.0 R.	20.5	do	←	W		
	6	do	3	25	do	3	do	do	Yes	12.5	do	12.5	7.5	do	0.116	Good	387.33	do	387.33	34.0 L.	do	34.0 L.	22.5	do	←	W		
	7	do	3	22	do	3	do	do	Yes	12.0	do	12.0	6.25	do	0.116	Good	389.0	do	389.0	5.5 R.	do	2.0 R.	22.0	do	←	W		
	8	do	3	22	do	3	do	do	No	11.25	do	11.25	5.75	do	0.116	Good	333.66	do	333.66	44.0 L.	do	27.0 L.	23.7	do	←	W		
	9	do	3	22	do	3	do	do	No	10.75	do	10.75	6	do	0.116	Good	304.66	do	304.66	25.0 L.	do	25.0 L.	22.5	do	←	W		
	10	do	3	25	do	3	do	do	Yes	10.5	do	10.5	7	do	0.116	Good	440.0	do	440.0	103.0 R.	do	251.0 R.	22.5	do	←	W		
	25	do	3	25	do	3	do	do	No	10.5	do	10.5	7.75	do	0.116	Good	474.66	do	474.66	2.0 L.	do	51.0 L.	27.5	do	←	W		

* The term "good" in this column means that no large knots or snags formed in the line. Small knots, caused by the catching of a few coils upon each other, but which were drawn through the hole in the wooden plug, or that in the shore-can, were marked as "good."

b.—SYNOPTICAL TRANSCRIPT OF NOTES FROM THE FIRING RECORD.

Hunt's life-saving projectiles—calibre, 3 inches.

Date.	No. of round.	
1880. Oct. 21	1	Shot rotated about shorter axis irregularly throughout trajectory. The wire-loop which attached the shot to the line came off when the line was all out of the case, and the end of the line fell to the ground. After freeing itself from the line the shot passed out of sight in the sand and bushes, and was lost. The range was measured by the distance between the firing point and the free end of the line.
	21	2 Action of shot and line good.
	21	3 Projectile wobbled throughout the trajectory.
	21	4 Projectile rotated three or four times about one of its shorter axes. All the line drawn out of shot; wire-loop on shot cut the line, whose loose end was found 360 yards from the firing point. The wooden plug in the rear end of the shot was pulled out, and remained on the line. Shot lost.
	21	5 Shot rotated about shorter axis several times. Angle of fall, great.
	21	6 Shot rotated horizontally four times about its shorter axis. Line parted from shot; wire-loop pulled out; shot lost.
	21	7 Shot rotated five times. Line parted from shot; wire-loop pulled out; shot lost.
	21	8 No "wings" on projectile. The latter rotated about shorter axis throughout trajectory. Motion very irregular.
	21	9 No "wings" on projectile. Motion of shot in trajectory, helicoidal and very irregular.
	21	10 Direction of wind perpendicular to the plane of fire. Shot rotated three times about shorter axis. All the line carried out of both shot and shore-can. Shot and line drifted badly "with the wind." Shore-can carried 27 yards to the front from the firing point. The line was found in loose coils near the empty shot. The drift of the line at the 200 yards' stake was 265 feet to the right, or greater than the drift opposite the 300 yards' stake. (See Plate III, fig. 1.)
	25	11 No "wings" on projectile. All line out. Shore-can carried 147 feet to the front from the firing point.

c.—Remarks.

October 21, 1880.—Weight of shore-can and hand-line, 3.75 pounds; length of line in can, 720 feet; length of line in shot, 792 feet; total length of line in shot and can, 1,512 feet. It was probably intended that the shot and can should contain 750 feet each.

The shore-can, (made of tin,) containing the hand-line, was placed 4 feet to the right, and on a line with the muzzle of the gun, except in round No. 10, when it was placed 4 feet on the left of the gun, on the windward side. Every coil drawn out of the shot put a twist in the line. The line is passed through hot paraffine when coiled by the maker, which in cooling hardens slightly and binds the coils together, and prevents tangling in running out.

In the majority of cases on this date the drift of the line was greater at the 200 yards' stake than at the 300 yards' stake.

In former experiments with this projectile, made in warmer weather, it was found that the paraffine, with which the line is saturated, made it slippery, difficult to grasp, and that, in attempts to haul upon it, great difficulty was experienced to prevent its slipping through the hands.

The weather being cold, a length of the line was placed in the cold salt-water, and left for several minutes; when removed, it was found that the cold sea-water had hardened the paraffine, and had made the line harsh to the touch and much less slippery. Hauling upon the line could be more readily performed without very much slipping.

d.—Velocities of the wind.

Station: Sandy Hook, N. J.; date, October 21, 1880. Experiments began at about 1.20 P. M., and ended at 2.30 P. M.

The following table gives the velocities of the wind as indicated by the self-registering anemometer on the United States Signal-Service building during the experiments:

Height of anemometer above the ground, 40 feet 7 inches.

Time, P. M.	Velocity of the wind.	
	Miles per hr.	
1. 20		24
1. 30		20
1. 40		20
1. 50		20
2. 00		20
2. 10		20
2. 20		20
2. 30		16

The surface velocities of the wind at the firing-point, as indicated by a delicate Casella anemometer, are given below for each shot fired between 1.20 P. M. and 2.30 P. M., on October 21, 1880:

Height of instrument above ground, 6 feet.

Number of round.	Velocity of wind in—	
	Feet per second.	Miles per hour, approximately.
1	25. 0	17. 0
2	23. 5	16. 0
3	18. 3	12. 5
4	20. 1	14. 0
5	20. 5	14. 0
6	22. 5	15. 4
7	22. 0	15. 0
8	23. 7	16. 0
9	22. 5	15. 4
10	22. 5	15. 4

It will be noticed that the velocities given by the self-registering anemometer are greater than those given by the Casella instrument. This is partly due to the difference in altitude, but more to the fact that the heavier instrument develops sufficient momentum during the intervals when the wind is brisk, to keep up the rotation during the intervals marked by temporary lulls in the force of the wind. The small mass of the Casella rotating wheel favors its ready response to the slightest variations in the strength of the wind. Its indications are more accurate than those of the coarser and heavier instruments, and have been accepted as standard measurements.

3. *Third series.*

(Plates IV and V.)

This series of experiments was made in order to institute a direct comparison between the line-carrying properties of the Lyle and Hunt systems of projectiles. The 3-inch Lyle gun, "A," was used to fire the Hunt projectile, and the service 2.5-inch Lyle gun for the Lyle projectile. The elevations given the guns in each set of shots were identical. The pieces were fired simultaneously by electricity in order to have the conditions of the atmosphere, the direction and force of the wind the same in both cases. One gun was trained to fire over the original measured range, and the other over a measured range parallel to the original one, and 35 feet distant from that range. The horizontal projections of the parallel planes of fire, the relative positions of the guns, and the arrangement of the electric wires, are shown in Fig. 2, Plate III.

The charge of powder, three (3) ounces, used with the Hunt projectile, was the charge prescribed by Mr. Hunt in a letter written by him, dated November 7, 1878.* This charge was fifteen one-thousandths, ($\frac{15}{1000}$) the weight of his projectile weighing 12.5 pounds. The six (6) ounces used the first day with the Lyle projectile is twenty one-thousandths ($\frac{20}{1000}$) of the weight of that projectile. Thus, assuming the lines to be of the same size and weight, (which they were not, the Silver Lake No. 4 line being greater in diameter and weight for the same length than the Hunt line,) the charge for the Lyle projectile was proportionately heavier than that for the Hunt.

On the second day the board directed seven (7) ounces to be used with the Lyle projectile, to see whether it would break the line or not, as the amount of powder-charge was considered to be immaterial,† so long as no part of the apparatus was affected injuriously, or its future usefulness impaired. The results of the simultaneous firings are presented in the table given below:

* Mr. Hunt, in his letter of November 1, 1878, recommends "2½ ounces for short range and 3 ounces for long range," and states in his letter of November 7, 1878, "3 ounces powder will be all that is needed to throw out the line."

† From its small cost and from the small limits within which charges for life-saving purposes may vary.

EXPERIMENTS WITH LIFE-SAVING APPARATUS AT SANDY HOOK, NEW JERSEY.

a.—Record of simultaneous firings with the Lyle and Hunt systems.

DATE.	GUN.		POWDER		PROJECTILE.				SHOT-LINK.				WIND.		Remarks.						
	Kind.	Calibre, inches.	Number of round.	Elevation, degrees.	Kind.	Weight, ounces.	Kind.	Weight, pounds.	Time of flight, seconds.	Range, yards.	Deviation—right or left, feet.	Drift at 300 yards—right or left, feet.	Primer.	Material.		How made.	Number.	Length, yards.	Diameter, inches.	Weight, pounds.	Action.
1880. Oct. 23	Lyle	2.5	1.25	6	Lyle ser-vice.	18.43	Lost.	443	57 L.	195 L.	Linen, W. P.	Braided.	4	700	0.148	14.0	Good	↖	15.0	} First set, fired together.	
			2.25																		3 L.
23	Lyle	2.5	3.25	6	Lyle ser-vice.	18.75	Lost.	435	35 L.	179 L.	Linen, W. P.	Braided.	4	700	0.148	14.0	Good	↖	15.0	} Third set, fired within 10 sec's; primer missed fire in one gun.	
			4.25																		77 L.
25	Lyle	2.5	5.22	7	Lyle ser-vice.	18.75	7.0	479	0	43 L.	Linen, W. P.	Braided.	4	700	0.148	14.0	Good	↖	25.7	} First set, fired together.	
			6.22																		10 R.
25	Lyle	2.5	7.22	7	Lyle ser-vice.	18.75	6.75	464	55 L.	55 L.	Linen, W. P.	Braided.	4	700	0.148	14.8	Good	↖	20.4	} Third set, fired together.	
			8.22																		38 L.

* The Hunt lines have been classed as "No. 3½," but they are larger than the Silver Lake "No. 3½," and are neither so large nor so heavy as the "No. 4" line used with the Lyle projectile.
 † Weight of line in both shot and shore-can.

b.—SYNOPTICAL TRANSCRIPT OF NOTES FROM THE FIRING RECORD.

Simultaneous firings of Lyle and Hunt systems of life-saving projectiles.

Date.	No. of set.	No. of round.	
1880. Oct. 23	1st set.	1	<i>Lyle projectile.</i> Time of flight lost by observer. Began firing at 9.27 A. M.
23		2	<i>Hunt projectile.</i> Shot suddenly changed direction and crossed No. 1's line below the 300-yard point. The projectile ran "up in the eye of the wind," due to a sudden gust of wind.
			These two shots were fired at the same instant by means of electricity, in order to make a direct comparison; both projectiles being influenced by the same force of wind.
23	2d set.	3	<i>Lyle projectile.</i> Time of flight, lost; action of line, good. Drift of line less at 200-yards stake than at 300 yards.
23		4	<i>Hunt projectile.</i> Drift of line 25 yards greater at 200-yards stake than at 300 yards. All the line carried out. Wire-loop in shot not pulled out.
			The two shots forming this set were fired at the same instant by electricity at 9.46 A. M.
25	3d set.	5	<i>Lyle projectile.</i> Used iron faking-box "B." Unbleached-linen line No. 4.
25		6	<i>Hunt projectile.</i> Shore-can carried out 51 feet towards the front.
			These shots were fired within ten seconds of each other; the primer failed to explode one charge.
25	4th set.	7	<i>Lyle projectile.</i> Used iron faking-box "B." Loose coils found near shot.
25		8	<i>Hunt projectile.</i> Action of line, good. Loose coils found near shot.
			These two shots were fired simultaneously.

c. *Remarks.*

The supply of Hunt projectiles having been exhausted, the trials were brought to a close.

V.—FORCES ACTING UPON LIFE-SAVING PROJECTILES.

A life-saving projectile fired from a gun or mortar is acted upon by *five* distinct forces, viz :

1. The projectile force.
2. The force of gravity.
3. The resistance of the air.
4. The friction against the surface of the bore.
5. The resistance of the line.

The force of gravity is the only force named that is constant in its effects, the others "varying not only for different pieces, but for different shots from the same piece."

1. *The projectile force.**

"The projectile force is that produced by the combustion of the powder in the piece, causing sudden development of gas, the expanding force of which, acting on the projectile, impels it forward and out of the piece." To secure *exact* uniformity in the charges is a physical impossibility. In practice or in service there will always be differences in the weights and shape of the cartridges, and in ramming home in the gun

* *Vide* Tidball's Artillery Manual, p. 56; Benton's Ordnance and Gunnery.

greater force or pressure will be applied at one time than another, thus causing greater or less compression of the powder-charge, and consequent lack of uniformity in combustion. Anything that influences the combustion produces more or less effect upon the velocity and range of the projectile. It is impracticable in this place to enter into a full discussion of all the perturbing causes which affect the projectile force, and the board will be content with merely indicating those recognized by the acknowledged authorities in ballistics. These causes may be classified as those pertaining to the piece, the projectile, the powder, and the atmosphere, and are—

(TO THE PIECE.)

1. Size of vent.
2. Position of vent.
3. Windage.
4. Length of bore.
5. Form of chamber.
6. Temperature of piece arising from { 1. Previous discharges.
2. Temperature of air.
3. Direct rays of the sun.
7. Condition of bore in regard to { 1. Foulness.
2. Humidity.

(TO THE PROJECTILE.)

8. Weight of projectile.
9. Diameter of projectile.
10. Density of projectile.
11. Its movement in the bore.
12. Variations in its weight.

(TO THE POWDER.)

13. The weight of the charge.
14. The form of the cartridge.
15. The windage of the cartridge.
16. The variations in the weight of the powder-charge.
17. The form of the grains of powder.
18. Their size.
19. Their density.
20. Their dryness.
21. Their condition resulting from { 1. Age.
2. Manipulation of ingredients.
3. Handling.

(TO THE ATMOSPHERE.)

22. The barometric state of the atmosphere.
23. The thermometric state of the atmosphere.
24. The hygrometric state of the atmosphere.

The combustion of the powder results in the evolution of a large quantity of heated gas under great tension, whose effort to expand drives the projectile from the bore of the gun.

It is one of the fundamental laws of fluids, that any pressure applied to a confined fluid mass in equilibrio "is equally transmitted throughout the whole fluid in every direction." It is also a well-established principle, "that the component of the pressure [of a fluid] on any surface, estimated in any direction, is equal to the pressure on so much of that surface as is equal to its projection on a plane at right angles to the given direction."*

"When a charge of gunpowder is ignited in the bore of a gun, the gas exerts equal pressure in every direction, and, therefore, neglecting windage, the pressure on the bottom of the bore is equal to that on the base of the shot, and the pressures on the top and bottom, as well as those on the sides of the bore, balance each other."

If it were not for this balancing of the pressures in radial directions, the gun when fired would move bodily up or down or to one side or the other, depending upon the direction in which the greatest pressure was exerted. The pressure upon the base of the shot, point or head, in the cases to be considered in this report, acting in the direction of the axis of the piece to eject the shot from the bore, is exactly the same as that which would be exerted upon a flat disk, whose area is equal to that of a section of the projectile by a plane perpendicular to its longer axis; consequently, all other things being equal, the pressure will always be the same for the same diameter of projectile, no matter what may be the form of the base, head or point, whichever may be exposed to the direct action of the powder gases.

The quantity of motion which measures the intensity of the projectile force is represented by the product of the mass into its initial velocity.

The projectile force is exerted in the direction of the axis of the piece, and through the centre of figure of the projectile. As soon as the projectile is free from the bore this force ceases to act, but the projectile continues in motion, due to the velocity already impressed upon it in the bore.

2. *The force of gravity.*

The force of gravity is free to act as soon as the projectile leaves the muzzle of the gun.

This is a constant force, acting vertically downwards, and within the limits of the ranges of life-saving projectiles the lines of direction of this force, at the different points of the trajectory, are sensibly parallel.

Gravity is the name given to that force which urges all bodies towards the centre of the earth. It acts upon every particle of matter. Therefore every body may be regarded as acted upon by a system of forces whose number is equal to the number of its particles or elementary masses. And since these elementary forces of gravity all act in the same direction, the intensity of their resultant will be equal to the sum of the intensities of the elementary components. This resultant is called the weight of the body, and always acts vertically downwards through the centre of gravity of the body.

3. *The resistance of the air.*

"The projectile, in passing through the air, meets with a resistance whose intensity depends upon the velocity, the shape of the projectile, and the density of the air." This resistance diminishes the intensity

* *Vide Battlett's Analytical Mechanics, p. 296.*

of the projectile force, and causes the spaces passed over by the projectile, in equal intervals of time, to be unequal.

As the unequal horizontal spaces gradually become less and less, the latter portion of the trajectory becomes much more curved than the first part.

"Atmospheric resistance increases as the square of the velocity, and with the cross section of the projectile exposed to the action of the resistance."*

"It is manifest that the resistance due to the atmosphere varies with the density of the latter, and this depends upon and varies with the temperature, the humidity, and the barometric pressure. The retarding effect of rain is evident."* Falling snow also retards a projectile in its flight. These influences operate to affect the range.

Robins considered that when the velocity exceeded 1,100 or 1,200 feet a second, the resistance would instantly be nearly trebled.

Hutton stated that the resistance appeared to increase gradually up to about 1,500 feet per second, (with the 2-inch ball,) when its ratio to the velocity was as the 2.153 power of the latter; but for higher velocities the ratio diminished, for at 1,600 feet per second it was the 2.152 power, and so on to 2,000 feet per second, when it was only as the 2.136 power.

Later experiments, especially those of Professor Bashforth, have established the fact that the resistance of the air to moving projectiles, having velocities of from 1,100 to 1,400 feet per second, "varies approximately as *the cube of the velocity*, a ratio sufficiently accurate for practical purposes." But for projectiles that move with low velocities, such as life-saving projectiles, the law that the resistance varies as the square of the velocity appears to be one that produces the closest approximation to practical results, and that has gained the adherence of the best authorities on such subjects.

"The resistance which a projectile meets with in moving through the atmosphere depends chiefly upon its *velocity*, the *magnitude of the surface* it presents to the resistance, and its *peculiar form*."† The loss of velocity also varies inversely as the weight.

"If a shell and solid shot of equal diameters, but the *densities* of which are of course different, be fired consecutively from a gun, at the same elevation and with equal charges, their initial velocities will be inversely as the square roots of their respective weights; the velocity of the shell being therefore the greatest, the shell will, in consequence of its *inferior weight*, be more retarded by the resistance of the atmosphere than the shot."‡

Point-blank ranges, or ranges at small elevations, differ but little. At angles of elevation which give long ranges, the times will be relatively long, and the retardation of the denser projectile "will be much less than that of the lighter, and consequently it will range to a greater distance."

It is obvious that (the weight remaining the same) as an elongated projectile is lengthened its diameter must be diminished, and that a longer range will be obtained with the same *initial* velocity. From their form, elongated projectiles present very much less surface to the

* *Vide* Tidball's Artillery Manual, p. 57.

† *Vide* Owen's Modern Artillery, p. 181.

‡ *Vide* Owen's Modern Artillery.

resistance of the air, and consequently they maintain their velocities longer than do spherical projectiles.

“The flat-headed projectiles lose their velocity very quickly.”

4. *The friction against the surface of the bore.*

Elongated projectiles can neither roll nor bound, but must *slide* along the bore, hence the resistance they encounter, due to friction, is far greater than that developed by spherical projectiles. This friction is of two kinds, (1,) that of *quiescence*, which opposes the starting of the projectile, and (2) that of *motion*, which in short guns continues to act uniformly against the shot while moving through the bore of the piece. The friction first mentioned prevents the shot moving, and upon the amount of this friction will depend the time allowed for the combustion of the charge.

The more completely the powder is consumed before the projectile starts the greater will be the tension of the gas, and the greater will be the strain upon the gun, and the effect upon the velocity. The friction during motion through the bore acts as a retarding force, and increases in some degree the strain upon the chase of the gun. The friction against the surface of the bore, in cases where the ends of the projectiles in contact with the powder are armed with soft metal or with sabots that expand, is probably much greater than in the case of a rigid material. As this force acts only while the projectile is passing through the bore, and in opposition to the “projectile force,” whose intensity is measured by the product of the mass of the shot into the velocity with which it leaves the muzzle, it is clear that the effect of friction upon the projectile has been eliminated, and need not be further considered in discussing the motion of the projectile in its trajectory.

5. *The resistance of the line.*

The effect of the resistance of the line upon the flight of life-saving projectiles is of an exceedingly variable nature. The complexity of the conditions which affect the intensity of this resistance is so imperfectly understood that great difficulty is experienced in estimating it. In general it may be said that the line influences the velocity and deviation of the projectile, and consequently the range and accuracy. The principal causes that produce this resistance are (1) the length, (2) diameter, and (3) weight of the line; (4,) the greater or less smoothness of its exterior surface; (5,) the method of faking or coiling the line; (6,) the friction of the air; (7,) the direction and (8) force of the wind; (9,) whether it is rainy, snowy, or dry; and (10) the angle of projection of the line-carrying projectile.

The effect of the resistance of the line is much more marked in the case of light than heavy projectiles.

VI.—TRAJECTORIES.

(Plate VI.)

The trajectory of a projectile is the curved line described by the centre of gravity of the projectile in passing through the air from the muzzle of the piece to the point of fall. The *normal* trajectory is the path described by the centre of gravity of the projectile in the absence of the atmosphere, in which the only forces acting are those of gravity

and projection. This is often called the trajectory *in vacuo*, and is a plane curve. This curve, in vertical fire, is a parabola, whose axis is vertical. The *actual* trajectory or the trajectory in air is generally a curve of double curvature, whose equation is very complicated and difficult of computation. This differs from the normal trajectory in consequence of the lateral and vertical deviations caused by the wind, the position of the shot in the gun, the form of the projectile, the position of the centre of figure with reference to the centre of gravity, and other circumstances. In addition to the above causes the trajectories of life-saving projectiles are influenced by the resistance of the lines attached to them. The life-saving projectiles forming the subject of this report reverse during their flight, due to their being loaded, head or point down, in the bore, and after leaving the muzzle they may reverse but once under the strain of the line, or may rotate several times about one of their shorter axes. After reversing they may continue their flight with more or less steadiness under the influence of the air and appendant line, or they may describe a sinuous curve, or one more or less helicoidal, depending upon their weights, the weight and resistance of the line, the force and direction of the wind, and the relative positions of the centres of figure and gravity. From lack of funds, and of an experimental firing-ground equipped with the proper materials and instruments, no trials could be made to determine the initial or muzzle velocities of these projectiles. Even had the attempt been made it is not certain that the results would have been satisfactory, as so far as is known to the board no velocities have ever been taken of projectiles carrying a line. It would doubtless be a matter of some difficulty to fire projectiles with attached lines through wire screens, and obtain uniform results. Calculated initial velocities were found from known ranges and angles of projection, which indicated that the velocities were in the neighborhood of 250 feet per second. From the small powder charges, as compared with the weight of the projectiles, and the considerable angles of projection, it could easily be predicted that the initial velocities and ranges could not be very great, and that the trajectories would approximate to the parabolic form.

Colonel Owen, in his "Modern Artillery," says: * "With low velocities of 200 or 300 feet per second, the parabolic theory gives tolerably accurate results, and the following formulæ may, therefore, be found useful in certain cases of practical gunnery, such as vertical fire with small charges:

- " Let V = initial velocity.
- R = range.
- T = time of flight.
- a = angle of projection.
- x and y = horizontal and vertical co-ordinates.
- g = 32.2 feet, acceleration due to the force of gravity.

"The equation for the trajectory is—

$$y = x \tan a - \frac{g x^2}{2V^2 \cos^2 a} \quad \dots \quad (1)$$

$$R = \frac{V^2 \sin 2a}{g} \quad \dots \quad (2)$$

$$T = \frac{1}{V} \sqrt{\frac{g}{R \tan a}} \text{ (nearly)} \quad \dots \quad (3)''$$

* Owen's Modern Artillery, p. 179.

By calculation from actual ranges and angles of projection, initial velocities were found which varied from 240 to 260 feet per second. In order to obtain a normal trajectory most nearly concordant with practice, an initial velocity of 250 feet was assumed, and an angle of projection of 25° . Substituting these values for V and a , respectively, in equation, (1,) and making x vary from 100 to 1,500 feet, we have the following table of values for co-ordinates :

Table giving values of x and y .

Arguments.	x .	y .	Remarks.
Assume: $V = 250$ feet.	<i>Feet.</i> 0. 0	<i>Feet.</i> 0. 0	Highest point of trajectory— $Y = 173.33$ feet. $X = 743.419$ feet.
$a = 25^\circ$	100. 0	43. 494	
$g = 32.2$ feet.	200. 0	80. 717	
	300. 0	111. 665	
	400. 0	136. 342	
	500. 0	154. 747	
	600. 0	166. 880	
	700. 0	172. 739	
	800. 0	172. 326	
	900. 0	165. 642	
	1, 000. 0	152. 684	
	1, 100. 0	133. 452	
	1, 200. 0	107. 951	
	1, 300. 0	76. 176	
	1, 400. 0	38. 130	
	1, 486. 836	0. 000	
	1, 500. 0	(—) 6. 187	

From this table it will be seen that the range in the normal trajectory is 495.612 yards, which accords very well with practice. The ranges obtained in the trials of October 23, 25, 1880, all fall below this, as they should, when the resistance of the atmosphere is taken into account.

VII.—INACCURACY OF FIRE.

Very great irregularities occur in the trajectories described by projectiles fired from smooth-bored ordnance. It is a well-known fact, recognized by all practical artillerists, "that if a number of solid shot (or any other projectiles) be fired from the same gun, with equal charges and elevations, and with gunpowder of the same quality, the gun-carriage resting on a platform, and the piece being laid with the greatest care before each round, very few of the shot will range to the same distance; and, moreover, the greater part will be found to deflect considerably (unless the range be very short) to the right or left of the line in which the gun is pointed."*

Since it is a mechanical impossibility to construct guns and projectiles of exact uniformity, the manufacturer is allowed to make certain specified variations from the true dimensions. This cause also affects the accuracy of the firing more or less. Other sources of error in firing are: Roughness of the bore and projectile, foulness of the bore, and whether the "foulness is hard and rough or soft and unctuous, depending on the humidity of the atmosphere, or whether the sponge was moist or dry," and the want of uniformity in the density, weight, figure, and centre of gravity of projectiles.

"To obtain accuracy of flight and increase the range with an oblong projectile, it is necessary that it should move through the air in the di-

* Owen's Modern Artillery, p. 198.

rection of its length. One of the simplest plans to effect this is, to place the centre of gravity or inertia in advance of the centre of figure or resistance.”*

Any one who studies the range-tables of smooth-bore ordnance, will notice that they show “clearly the inaccuracy of fire of smooth-bore guns, and the consequent difficulty of making accurate range-tables.”†

Comparison of projectiles.

	Lyle.	Hunt.
Weight	18.75 lbs	12.5 lbs. with line. 8.75 lbs. empty.
Diameter	2.5 inches	3.0 inches.
Square of diameter	6.25 sq. inches	9.0 sq. inches.
Area of cross-section of head	4.9087 sq. inches	†7.0685 sq. in.
	= 0.034 sq. feet	= 0.049 sq. feet.
Area of longitudinal section	40.037 sq. inches	73.90 sq. inches.
	= 0.278 sq. ft. (nearly)	= 0.51 sq. feet.
Volume	70.49288 cubic inches	141.65591 cu. in.
Density	7.35472	§2.43992.
Muzzle energy, initial velocity 200 feet per second	11645.951 foot lbs.	7764.0 foot lbs.
Muzzle energy, initial velocity 250 feet per second	18196.778 foot lbs	12131.204 foot lbs.
Muzzle energy, initial velocity 300 feet per second	26203.393 foot lbs.	17469.076 foot lbs.
Energies of the projectiles in the falling branch of their trajectories, supposing that both retain a velocity equal to their assumed initial velocities of 250 feet per second, the Lyle with a constant weight of 18.75 lbs. and the Hunt projectile with line all out, weighing only 8.75 lbs.	18196.778 foot lbs.	8491.843 foot lbs.

† Soft lead expands to full size of bore (3") in firing.

§ Average density, supposing the projectiles to be homogeneous.

In contrasting these projectiles it will be seen that the—

	Lyle.	Hunt.
Weight	Of the Lyle projectile is to that of the Hunt projectile, as—	1.5 is to 1.0
Diameter		1.0 is to 1.2
Square of the diameter		1.0 is to 1.44
Area of cross-section of the head		1.0 is to 1.44
Area of longitudinal section		1.0 is to 1.84+
Volume		1.0 is to 2.009+
Muzzle energy with same initial velocity ..		1.5 is to 1.0

These proportional results show that the weight of the Lyle projectile is one-half greater than the Hunt; that the diameter of the Hunt is two-tenths greater than the Lyle; that the area of its cross-section, which is proportional to the square of the diameter, is nearly one-half (0.44) greater; that the area of its longitudinal section is nearly twice (1.84) as great; that its volume is twice as great; and that the muzzle energy, with same initial velocity, is but two-thirds that of the Lyle projectile. Now, the Lyle projectile being the heavier, and at the same time exposing less surface to both the direct and lateral resistance of the air, will, other things being equal, preserve its velocity longer, and range to a greater distance, than a larger and less dense projectile. As shown above, the Lyle projectile has by far the greater energy, and this energy measures its capacity to overcome resistance. In order to show the differences of resistance upon the cross-sections of the two projectiles, let it be supposed, for instance, that the two projectiles are poised in the air with their heads or points directed towards

* Benton's Ordnance and Gunnery, p. 74.

† Owen's Modern Artillery, p. 435.

the quarter from which the wind is blowing, and that they remain motionless. Since the projectiles are at rest, the only pressure upon the heads will be due to the force of the wind alone.

Table giving pressures of the wind upon the heads of the shot supposed at rest.

Velocity of wind.	HUNT PROJECTILE.	LYLE PROJECTILE.
	Diameter, 3". Area cross-section, 7.0685 sq. in. = 0.49 sq. ft.	Diameter, 2".5. Area cross-section, 4.9087 sq. in. = 0.34 sq. in.
	<i>Pressure, pounds.</i>	<i>Pressure, pounds.</i>
10 miles per hour	0.024108	0.016728
20 miles per hour	0.096432	0.066912
40 miles per hour	0.385770	0.267680
60 miles per hour	0.86030	0.602309
80 miles per hour	1.543010	1.070660

In this table the velocities of the wind are given up to 80 miles per hour, since that velocity is reached in service on the sea-coast. A wreck occurred during the past season where the Lyle apparatus was used with the wind blowing 84 miles per hour. No account has been taken in this table of the form of the head. The pressures are those upon a flat surface. The Lyle projectile has an ogival head, and Col. Benton* states that "the resistance of the air is about one-third less on the ogival than on the spherical form of projectile;" and it is well known that a flat head experiences more resistance than the spherical or hemispherical form. Now suppose the projectile to have a velocity of 250 feet a second, and to be fired directly against a wind blowing 40 miles an hour, a common occurrence during the season of wrecks. The effect upon the projectile will be the same as if it were fired in a calm, with a velocity of 250 feet + 60 feet = 310 feet per second. If the shot were at rest, and the wind blowing 40 miles per hour, the resistance will be the same as though the shot moved with a velocity of 60 feet per second through still air. When the shot is moving with a velocity of 250 feet per second, against a wind of 40 miles per hour, which is equivalent to a velocity of 310 feet per second in still air, the resistance is about the same as if the shot were at rest, and the wind blowing at the rate of over 211 miles per hour. From this it may easily be seen that the Hunt projectile, exposing an area of cross-section 0.44 greater than the Lyle projectile, must experience much more resistance from the air than the latter. The relative effects of head winds, and those from the rear, will be shown in subsequent paragraphs.

VIII.—EFFECTS OF WIND UPON THE RANGE.

Below will be found a tabular statement exhibiting side by side the effects of front and rear winds upon the range of the Hunt projectiles. In the first series of experiments will be found the maximum range attained by this projectile during the whole series of trials. This range is 503 yards, with a rear wind blowing 20.41 feet per second, or between 13 and 14 miles per hour. In a dead calm, under the same conditions, with a shot one-fourth pound heavier, a range of 433 yards was obtained. In the second series the maximum range attained against the

* Ordnance and Gunnery, p. 404.

head wind was 409 yards, with the wind blowing at the rate of 18.3 feet per second, or about 12.5 miles per hour. In this series the greatest force of the head wind was during the first round when it was 25 feet per second, or 17 miles per hour, which resulted in a range of 382 yards. In all these cases, with a head wind, varying from 12.5 to 17 miles per hour, it will be seen that the ranges are grouped as closely as could be expected around the 400 yards' range, with a tendency to fall below that limit. It is not an uncommon occurrence during the season of wrecks for winds to be blowing with a force double the highest (17 miles an hour) noted above, or 34 miles per hour; in fact, it is often much higher. And when it is remembered that doubling the velocity of the wind increases the resistance *four times*, it is not difficult to foresee the adverse effect upon the range, which would be reduced very considerably below the figures given in the table. It is peculiarly unfortunate that the board was unable to avail itself of a head wind blowing 35 or 40 miles per hour. Several attempts were made to do so, and considerable expense was incurred by numerous delays waiting for such a wind, but they resulted in disappointment.

Table giving ranges of Hunt projectiles, with deviation and force of wind.

Number of round.	FIRST SERIES. December 20, 21, 1878.						SECOND SERIES. October 21-25, 1880.					
	Elevation.		Range.	Wind.		Elevation.		Range.	Wind.			
	Deg.	Pounds.		Direction.	Velocity.	Deg.	Pounds.		Direction.	Velocity.		
1	25	11.0	357.66	W	14.166	25	12.5	382.0	W	25.0		
2	25	11.5	443.5		11.39	25	12.25	398.0		23.5		
3	25	12.25	503.0		20.41	25	12.25	409.0		18.3		
4	25	12.25	502.33		11.72	25	11.25	360.0		20.1		
5	22	12.25	475.0		14.16	25	12.25	403.0		20.5		
6	22	12.5	478.0		13.33	25	12.5	387.33		22.5		
7	25	12.5	433.0	○	Calm...	22	12.0	389.0		22.0		
8	25	12.5	435.0		Almost calm.	22	11.25	336.66		23.7		
9	.....	.....	.....		.....	22	10.75	304.66		22.5
10	.....	.....	.....		.....	25	10.5	440.0		22.5
11	.....	.....	.....		.....	25	10.5	474.66		27.5

NOTE.—In the above series of experiments the maximum charge of three ounces of powder was used in every instance.

IX.—TIMES OF FLIGHT.

During the simultaneous trials of October 23–25, 1880, an attempt was made to time the flight of the projectiles.

On the first day the observer who was timing the flight of the Lyle projectile, failed to stop his watch when the shot fell, and thus the record was lost:

Table of times of flight, calculated and observed, from the comparative trials of October 23–25, 1880.

ELEVATION.	LYLE PROJECTILE.			HUNT PROJECTILE.		
	Actual range.	Time of flight.		Actual range.	Time of flight.	
		Calculated.	Observed.		Calculated.	Observed.
	<i>Yards.</i>	<i>Seconds.</i>	<i>Seconds.</i>	<i>Yards.</i>	<i>Seconds.</i>	<i>Seconds.</i>
25 degrees	443	6.223	Lost	450	6.275	7.25
25 degrees	435	6.167	Lost	425	6.095+	7.25
22 degrees	479	6.024	7.0	416.66	5.618	5.75
22 degrees	464	5.928+	6.75	444.33	5.801+	6.25

The initial velocities being unknown, the times in the above table have been calculated from the observed ranges. The observed times were taken with stop-watches beating quarter seconds. It will be noticed that the observed times are greater in every instance than the calculated ones. Colonel Benton* says "the observed times are invariably greater than the calculated times, as might be expected from the resistance of the air, which retards the motion of projectiles."

X.—VARIATIONS IN WEIGHT.

The Lyle projectile varies in weight from 18.7 to 18.75 pounds—a range of only eight-tenths of an ounce.

The Hunt projectile varies from 10.5 to 12.75 pounds, or a variation of 2.25 pounds between the maximum and minimum weights, which is far in excess of the usual allowance for shot of that weight and calibre.

Of the twenty-three Hunt projectiles fired in these trials—

2	weighed	10.5	pounds.
1	"	10.75	"
1	"	11	"
2	"	11.25	"
1	"	11.5	"
1	"	12	"
7	"	12.25	"
7	"	12.5	"
1	"	12.75	"

Total number of shot, 23.

Total weight of 23 shot, 274.75 pounds.

Mean weight of shot, 11.94+ pounds—say 12 pounds.

In calculating the energies of the projectiles, 12.5 pounds have been assumed as the average weight, whereas 12.25 pounds could have been

* Ordnance and Gunnery, p. 400.

used with equal propriety and justice. This would have increased the differences between the energies, and had 12 pounds been used, which is the real average, the disparity would have been still greater, and the comparison of the power or capacity to overcome resistance would have been more unfavorable to the Hunt projectile than the one given.

XI.—ENERGIES.

The energy of a projectile measures its capacity to overcome resistance. In order to institute a direct comparison of energies, 250 feet may be assumed as the initial velocity of each projectile. That this hypothesis is approximately correct, at least enough so for all practical purposes, is shown by the initial velocities calculated from the actual ranges obtained in the trials, and embodied in the following:

Table of initial velocities calculated from comparative trials of October 23-25, 1880.

ELEVATION.	LYLE PROJECTILE.		HUNT PROJECTILE.	
	Actual range.	Calculated initial velocity.	Actual range.	Calculated initial velocity.
	<i>Yards.</i>	<i>Feet.</i>	<i>Yards.</i>	<i>Feet.</i>
25 degrees.....	443	258.023+	450	260.055
25 degrees.....	435	255.683	425	252.727
22 degrees.....	479	258.090	416.66	240.711
22 degrees.....	464	254.016	444.33	248.574

From this table it will be seen that the initial velocities of the Lyle projectile vary from about 254 to 258 feet per second, while the Hunt varies from 240 to 260 feet per second. The extreme variation in the former case amounts to only 4 feet, in the latter to nearly 20 feet, showing greater uniformity of results for the first-named projectile. The mean initial velocities are as follows: Lyle, 256.453 feet per second; Hunt, 250.516 feet per second. Therefore, the assumption of a common initial velocity of 250 feet per second is seen to be very nearly correct, but operating more to the disadvantage of the service projectile than to the Hunt, since the former loses 11.925 foot pounds in muzzle energy, while the Hunt only loses 0.048 foot pound.

Assuming, then, the initial velocity of both projectiles to be 250 feet per second, it is found that the muzzle energy of the Lyle projectile is 18196.778 foot pounds, and that of the Hunt 12131.204 foot pounds—a difference of 6065.574 foot pounds, or 50 per cent. in favor of the Lyle projectile. Now, the Hunt projectile is continually paying out line during its flight until the supply is exhausted, and consequently is continually losing weight, which reduces still more its energy, which at the start was already 50 per cent. less than the Lyle projectile. The average weight of the Hunt shot has been taken at 12.5 pounds, with the coil of line in position, and 8.75 pounds when empty. For purposes of comparison, suppose that the two projectiles preserved their initial velocity of 250 feet *throughout* their trajectories. In this case the only variable in the equations for computing the energy would be the weight of the Hunt projectile. This, as stated above, diminishes from 12.5 pounds to 8.75 pounds, while the weight of the Lyle projectile remains constant throughout its trajectory. Hence the energy of the Lyle

projectile at the farther end of its trajectory would be 18196.778 foot pounds, and the Hunt would have an energy of 8491.843 foot pounds, or 9704.935 foot pounds less. This shows that at the end of their respective trajectories the Lyle projectile has over double (2.14 + times) the capacity to overcome resistance that the Hunt has.

These figures also show that the Hunt projectile starts out with an energy of 12131.204 foot pounds, and ends with an energy in the falling branch of 8491.843 foot pounds—a loss of three-tenths, (0.3,) or nearly one-third of its capacity to overcome resistance.

When the resistance of the atmosphere to the motion of the projectiles is taken into account, the velocities of both these projectiles will be found to be less than the initial velocity; but the Hunt projectile, from its greater volume, its small weight, which is continually lessening, and its form, will be more affected by the resistance of the air than the service projectile. It might be urged that the resistance of the line has a greater effect upon the latter projectile, since it drags the line behind it instead of paying it out, as does the Hunt. Even admitting that the resistance is greater, it is easily to be seen how it compensates for itself by steadying the motion of the smooth-bore projectile in the latter part of the trajectory, thereby exposing less surface to the resistance of the air. It must also be remembered in this connection that the Lyle projectile has, as shown above, more than double the capacity to overcome these resistances.

XII.—EFFECTS OF A LATERAL WIND UPON THE PROJECTILES.

(Plate VII.)

In order to calculate the lateral deviation of the projectiles due to the effect of the wind, it is necessary to know the surface exposed to its force.

“If the centre of gravity of an elongated shot be placed in or very near the middle of the long axis, the force of the wind will be pretty equally distributed over the whole length of the projectile. Should, however, the centre of gravity be placed far in advance of or behind the centre of figure, the force of the wind will press unequally upon the shot, and uncertain deflections will most probably occur, as was the case with the egg-shaped bullets proposed by Robins.”*

In a foot-note referring to this paragraph, Colonel Owen, in speaking of projectiles, whose centres of gravity were far towards the front, states that “their deviations to windward no doubt arose, like those of rockets, in consequence of the centre of gravity of the projectile being so far forward, and, as such deviations must always be exceedingly variable, they cannot be corrected by the laying of the gun.”

The above remarks of this distinguished authority have a pertinent application to the case now under consideration. The distance between the centres of gravity and figure of the Lyle projectile is only 0''.85, the centre of figure being in rear, while the centre of figure of the Hunt projectile is 6''.4 in rear of the centre of gravity when the shot is full of line, and is 9''.2 in rear of that centre in the falling branch of the trajectory when the shot is empty, or nearly so. Thus, it will be seen that the distance between the centres of gravity and figure in the Hunt

* Owen's Modern Artillery, p. 200.

projectile is, when filled with line, more than 7.5 times greater, and, when empty, more than 10.8 times greater, than the corresponding distance in the Lyle projectile; consequently, the leverage of the wind, which acts through the centre of figure, is from 7.5 to 10.8 times greater in the case of the Hunt projectile, depending upon its position in its trajectory.

For the purpose of calculating the effect of a lateral wind upon these projectiles, the following data are available :

LYLE PROJECTILE.

Total area of longitudinal section, including shank... } 40.37 square inches
 Distance of centre of gravity from plane of base..... } = 0.278 square feet, (nearly.)
 Distance of centre of gravity from plane of base..... 7.45 inches.
 Distance of centre of figure from plane of base..... 6.6 inches.
 Distance between centres of gravity and figure..... 0.85 inches;
 Or, the centre of figure is less than one inch (0'.85) in rear of the centre of gravity.

HUNT PROJECTILE.

Total area of longitudinal section..... } 73.9 square inches
 Distance of centre of gravity from flat end of shot when } = 0.513 + square feet, (nearly.)
 line is in position..... 6.0 inches.
 Distance of centre of gravity from flat end of shot when
 line is all out, shot empty..... 3.2 inches.
 Distance of centre of figure from flat end of shot..... 12.4 inches.
 Distance between centres of gravity and figure when
 shot is full..... 6.4 inches.
 Distance between centres of gravity and figure when
 shot is empty..... 9.2 inches.

Table giving the lateral pressures * of the wind upon the longitudinal sections of the projectiles

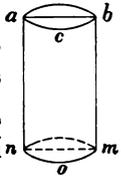
VELOCITY OF WIND.	LATERAL PRESSURES.	
	LYLE PROJECTILE. Area longitudinal section, 40.037 sq. inches = 0.278 sq. feet.	HUNT PROJECTILE. Area longitudinal section, 73.9 sq. inches = 0.513 sq. feet.
	<i>Pounds.</i>	<i>Pounds.</i>
10 miles per hour.....	0.136776	0.252494
20 miles per hour.....	0.547104	1.009584
40 miles per hour.....	2.188694	4.038849
60 miles per hour.....	4.924770	9.087795
80 miles per hour.....	8.754220	16.154370

* Trautwine, in his "Engineers' Pocket-Book," says: "The relation between the velocity of the wind and its pressure against an obstacle placed either at right angles to its course, or inclined to it, has not been well determined, and still less so its pressure against curved surfaces."

"The pressure against a semi-cylindrical surface, *a c b n o m*, is about half that against the flat surface, *a b m n*."

"The pressure against a large surface is probably proportionally greater than against a small one."

But he gives no data or experiments upon which the conclusion is based; therefore the board has taken the areas of the longitudinal sections of the projectiles in calculating the lateral pressures. Whichever method is used, the ratio of the pressures will not be affected.



The pressures in this table measure the intensity of the wind's deflecting action upon the projectiles when its direction is perpendicular to the plane of fire. The same relation would subsist between the normal components, which would produce deflection in the case of a wind oblique to the plane of fire. The most casual inspection of the

pressures in the table will disclose the fact, that those acting upon the longitudinal section of the Hunt projectile are nearly double the intensities of the corresponding pressures upon the Lyle projectile, which should have been anticipated, since the areas exposed bear about the same relative proportions to one another, and the pressure of any fluid upon any surface is directly proportional to the area pressed.

XIII.—COMPARISON OF LATERAL DEVIATING FORCES.

(Plate VII.)

Suppose the wind to be acting at right angles to the plane of fire, and its velocity to be 40 miles per hour. The resultant of the lateral pressure will pass through the centre of figure, and will tend to rotate the projectile about an axis passing through the centre of gravity perpendicular to the line of direction of the wind, and lying in the plane of fire. The product of the intensity of the wind's lateral pressure, into the distance between the centres of gravity and figure, will be the *moment* of that pressure. The *moment* of a force is the product of the intensity of the force into its lever-arm. The lever-arm is the perpendicular distance between the line of direction of the force and the axis of rotation. The moment of a force—the force of the wind in this case—measures the capacity of that force to produce a motion of rotation about an axis.

MOMENTS.

Force of wind 40 miles per hour.

Lyle projectile—Moment, 2.19 pounds \times 0".85 = 1.8615 inch pounds.

Hunt projectile—1. Full; moment, 4.04 pounds \times 6".4 = 25.856 inch pounds.

2. Empty; moment, 4.04 pounds \times 9".2 = 37.168 inch pounds.

Force of wind 60 miles per hour.

Lyle projectile—Moment, 4.92 pounds \times 0".85 = 4.182 inch pounds.

Hunt projectile—1. Full; moment, 9.08 pounds \times 6".4 = 58.112 inch pounds.

2. Empty; moment, 9.08 pounds \times 9".2 = 83.536 inch pounds.

Therefore the deflecting or rotating forces bear the following proportions to each other: The Lyle projectile is to the Hunt, when full, as 1 is to 13.89; and the Lyle is to the Hunt, when empty, as 1 is to 19.97.

Hence it will be seen that the tendency of the Hunt projectile to run "up in the eye of the wind" like a rocket is, when full of line, nearly fourteen times, and when empty nearly twenty times greater than the Lyle projectile. But in the case of the Lyle projectile the dragging effect of the line, which is attached in rear of the centre of figure, almost, if not entirely, counteracts this tendency to lateral rotation. In the case of the Hunt, the dragging effect of the line is not so great, (it is claimed that it is nothing, which is incorrect;) and since the moments are so much greater, and the resistance of the line less, it necessarily follows that the tendency to run "up in the eye of the wind" is greater, especially near the end of the trajectory, when the shot is lightest, as was seen in the first, third, and fourth sets of shots of October 23–25, 1880. (Plates IV and V.)

Thus it is that the Hunt projectile, after it reverses, and is paying the line out of the shot, will at first float off laterally *with the wind*, as the resistance of the line and air, in the direction of the plane of fire,

tends to prevent lateral rotation; and when it becomes lighter, and loses its velocity, it will rotate, more or less, after the manner of a rocket, and turn its head in the direction from which the wind is blowing. This effect, which takes place in the latter part of the trajectory, is, however, counteracted in part by reason of all the line being drawn from the shot, and the strain on the line, due to drawing the remainder of the line from the shore-can, which tends to change the line of flight again to the direction of the plane of fire. The centre of gravity being so far towards the front, the resistance due to uncoiling the line in the shot, acting consecutively around the inner circumference of the coil, as cylindrical layer after layer is paid out, gives to the projectile an irregular helicoidal motion about the tangent to the trajectory. In this motion the axis of the projectile, had the latter no motion of translation, would describe a conical surface about the tangent to the trajectory, the apex of the cone being at the centre of gravity. But the combined motions of translation and rotation cause it to describe a varying helicoidal surface about that tangent. This motion was admirably illustrated in the shots where the projectiles *without* "wings" were used. The wings on the shot, by the surface which they exposed to the resistance of the air, aided in diminishing the amplitude of the helicoidal oscillations.

In the Lyle projectile the centres of figure and gravity so nearly coincide that little or none of this effect can be detected. The strain of the line is such that after the one or more reversals, to which all these projectiles are subject, the projectile moves with its axis very nearly parallel to the initial plane of fire. The vibrations of the line caused by the method of faking sometimes communicates to the Lyle projectile a sinuous motion in its trajectory. The effect of a lateral wind upon the Lyle projectile is to deflect it bodily from the plane of fire, but from its greater weight and energy, and smaller surface of exposure to the action of the wind, it is less subject to the deflecting action of the wind than the Hunt projectile. Mr. Hunt has made a 3''²⁵ or 3''⁵ projectile which is reported to weigh 12.5 pounds. He is said to have changed the form of the head to hemispherical, which is less objectionable than the flat head.

It must be remembered that in increasing the diameter he increases the surface exposed to the wind without increasing greatly the weight or density, since the object is to get more line in the shot.

XIV.—ATTACHMENT OF LINE.

The method of attaching the line to the Hunt projectile is crude and unsatisfactory.

A small wire loop is soldered to the inside of the tin case, and projects slightly to the rear. The end of the line is tied to this loop. As may be seen by reference to the October experiments, this loop cut the line once, and was itself pulled out, or separated from the projectile in three cases.

XV.—CARRYING OFF SHORE-CAN.

Twenty-three (23) Hunt projectiles were fired, of which seven (7) carried the shore-can down the range, distances varying from a few to many yards. Four out of the six fired on December 20, 1878, carried the cans from 50 to 200 yards down the range. The choice lay between allowing the cans to be dragged down the range, or permitting the

wire loops to be pulled out, or the line cut by them. It was deemed best to let the cans be carried off, as in that case the ranges of the projectiles could be obtained with more accuracy than could be done had the connection between them and the line been severed. This could have been obviated by reducing the powder charge, but it was decided to continue the maximum charge in order to get the very best results of which the projectile was capable.

XVI.—PACKING.

In packing the Hunt projectiles, the "wings" being of tin, are liable to be bent more or less, and in straightening them by hand it is somewhat difficult to have them coincide with the planes containing the axis of the projectile.

XVII.—PRACTICE SHOTS.

In order to give life-saving crews experience and confidence in their ability to handle any gun apparatus, it is necessary that considerable practice should be given them; these practice drills are required by the Service regulations. With the Hunt projectile practice shots would be very expensive, as no projectile could be used more than once without being refilled with line, which is an impracticable operation at the life-saving stations. In cases of wreck, the sacrifice of the line and shot is a matter of no importance whatever in comparison with the saving of human life. But for ordinary practice drills the difference between \$12 per shot with the Hunt, and seven (7) cents per shot with the Service projectile, it becomes a matter of some importance. It is true that many of the expended Hunt projectiles might be collected and refilled at some central station furnished with a lathe. But, besides the cost of transportation to and from such station, it would be found necessary in many cases to resize the leaden head, which becomes enlarged by the expansion due to the powder-charge, and is often more or less defaced by the impact upon the sand of the beach.

XVIII.—COMPARISON OF LINES.

	<i>Lyle.</i>	<i>Hunt.</i>
Kind of line.....	Silver Lake, braided...	Twisted.
Material.....	Dark linen.....	Linen.
Number of.....	No. 4.....	Between Nos. 3½ and 4.
Total length.....	700 yards.....	500 yards.
Diameter.....	0.148 inch.....	0.116 inch
Total weight.....	14 pounds.....	7.857 pounds.*

But since these lines differ in length, diameter, and weight, it will be necessary to take the same length of line in each case before instituting a direct comparison. As the range in each case, during the simultaneous firings, was over 400 yards, that will be a convenient number to assume for comparison, as at least that number of yards was exposed to the action of the wind in each instance. Hence—

	<i>Lyle.</i>	<i>Hunt.</i>
Length of line taken.....	400 yards.....	400 yards.
Diameter.....	0.148 inch.....	0.116 inch.
Area of longitudinal section.....	14.8 square feet.....	11.6 square feet.
Weight of 400 yards of line.....	8.0+ poundst.....	6.28+ pounds.†

* Includes weight of line in shore-can.

† More accurately, 7.998857 pounds.

‡ More accurately, 6.284570 pounds.

Therefore the—

Length, (400 yards of each).....	} Of the Lyle line is to that of the Hunt as—	1.0 is to 1.0.
Diameter		1.27+ is to 1.
Area longitudinal section.....		1.27+ is to 1.
Weight, (400 yards of each).....		1.27+ is to 1.

From these proportions it will be seen that the diameter, weight, and area of longitudinal section of the Lyle line is more than one-fourth ($\frac{1}{4}$) greater than the corresponding quantities of the Hunt line, and consequently the resistance, everything else being equal, should be greater in the first case than in the second, or the Hunt line should show better results when exposed to the deflecting action of a lateral wind. Before detailing the effect of a lateral wind upon these lines, it may be well to state that the resistance of the lines in the direction of the line of fire, supposing both lines to be dragged by the projectiles, or both to be paid out of the shot, will be less in the case of the Hunt line than in that of the Lyle, since the latter is not only heavier, but exposes a greater surface to the retarding effect of the wind. But to recur to the effect of a lateral wind upon equal lengths of the two lines, the following table will give the amount of the lateral pressures which tend to deflect the lines from the plane of fire. The direction of the wind is taken at right angles to the plane of fire:

Table giving lateral pressures of the wind upon the lines.

VELOCITY OF WIND.	Lateral pressure on lines.	
	LYLE.	HUNT.
	Length, 400 yards. Diameter, 0.148 inch. Area longitudinal section = 14.8 square feet. Weight of 400 yds. = 7.998857 pounds, say 8 pounds.	Length, 400 yards. Diameter, 0.116 inch. Area longitudinal section = 11.65 square feet. Weight of 400 yds. = 6.28457 pounds.
	<i>Pounds.</i>	<i>Pounds.</i>
10 miles per hour.....	7. 2816	5. 7072
20 miles per hour.....	29. 1264	22. 8287
40 miles per hour.....	116. 5200	91. 3266
60 miles per hour.....	262. 1820	205. 4940
80 miles per hour.....	466. 0520	365. 2840

These results show, as before stated, that the lateral pressures which act upon the Lyle line, and tend to deflect the line from the plane of fire, are over one-fourth greater (as 1.2758 is to 1) than those which act upon the Hunt line. Therefore, the deflecting effect of the wind upon the Lyle line should be more marked than its effect upon the Hunt line; provided, the velocity of the wind be the same, and all other things equal. But the weight of the Hunt line is less than that of the Lyle line in the ratio of 1 to 1.2738; hence, the Hunt line, though experiencing less lateral pressure than the other, will be deflected slightly more than the Lyle line.

The firing results of October 23–25, 1880, show, except in one instance,* that the Lyle line was deflected less at the 300-yards' stake

* In this instance, the less deflection of the Hunt line was due to the great distance between the centres of gravity and figure of the Hunt projectile. The wind, acting through the centre of figure, had sufficient leverage to rotate the nearly empty projectile about its centre of gravity, and point it "up in the eye of the wind," so that it crossed the Lyle line. This change of direction was plainly noticeable from the firing point.

than the other, as it should have been. The deflection, or drift of the lines was not so great in either case as one would be led to suppose from the figure, since, instead of being perfectly free to float off bodily in a lateral direction under the influence of the wind, the motion of both lines was constrained by being attached to the projectile at one end, and at the other end to the fakes in the box, and to the coils in the shore-can, respectively.

The force of the wind in the above discussion has been assumed to be 40 miles per hour, and blowing from a direction at right angles to the plane of fire. In both cases the lines are assumed to be homogeneous, and to be extended so nearly in a rectilinear direction that the centres of gravity might be taken at their middle points without appreciable error. In estimating the effects of winds whose directions are oblique to the plane of fire, it would always be necessary to resolve the force into two components, one parallel and the other perpendicular to the plane of fire. The perpendicular component is the one that produces the deflection. The intensity of this component varies directly with the sine of the angle which the line of direction makes with the plane of fire.

XIX.—USE OF LARGER LINES.

As has been seen in the foregoing pages, the size of the Hunt line falls between Nos. 3½ and 4, Silver Lake lines.

It is also evident that the tin case of the Hunt projectile, even if its diameter be increased to 3" .5 will not contain a greater length of line of a larger diameter than it now does of the smaller line. The latter line, as has been shown, is already short enough when the maximum charge of 3 ounces of powder is used. The Lyle projectile has energy enough to carry lines Nos. 4½, 5, 6, 7, 8, and 9, made by Silver Lake Company, and weighing 13, 24, 33, 33 to 38, 50.5, and 55.5 pounds respectively, in addition to carrying the No. 4 service line which itself is larger than the Hunt line. The lines in use in the Service at present are Nos. 4, 7, and 9; the two latter being beyond both the containing and carrying capacity of the light Hunt projectile. It is evident from the size of the case of the Hunt projectile that it could not contain a sufficient length of even No. 7 line to be of much practical value; and the project of putting a No. 9 line, such as has been issued to the Service, in this shell is simply impracticable.

Although a No. 4 line is placed at every life-saving station for use in extreme cases, no instance has yet occurred in which it has been used in actual service at any wreck. The practical experience of the surfmen has led them, in every case, to reject the small for the larger lines. The reason for their abandonment of the No. 4 line for the larger lines is easily understood, for, in addition to the uncertain drift of the No. 4 line due to the effect of the wind, they well know that an intermediate larger line (No. 7 or No. 9) must be drawn out to the wreck before they would dare to trust the whip-line and block to the heavy strain caused by hauling across a strong current and against the breakers. The use of a No. 7 or No. 9 line gives a reasonable assurance that the whip-line and block will make the transit from the shore to the wreck in safety, and without that loss of valuable time which the employment of an intermediate larger line would necessarily entail. It is only in very extreme cases—of rare occurrence—that the

crew would be compelled to resort to the use of the No. 4 line. When a vessel or wreck cannot be reached by means of a No. 7 or No. 9 line, of course no alternative presents itself but that of using the smaller line with its consequent disadvantages and loss of time. A small line, even the No. 4, is difficult to handle by the shipwrecked; their benumbed fingers cannot grasp it. It is hard to haul with upon ordinary occasions, and almost impossible when the attempt is made to haul the whip and block by it across a strong current, which is invariably met with along shore during strong gales and heavy seas. It would, therefore, seem to be imperative to use a projectile whose energy is sufficient to carry at once a line (No. 7 or No. 9) to the wreck that is able to stand the strain of hauling off the whip-line.

Mr. Hunt has stated that he would prefer a gun and projectile of 4." or 4."5 calibre instead of the smaller calibre submitted. It should be borne in mind that this would increase the surface and volume of the projectile without increasing its weight in the same proportion. There is now within the knowledge of the board an instance where an 8-inch projectile, constructed on the same principle as the Hunt projectile, but intended to carry a heavier (No. 7) line, has been tried and proved a failure.

XX.—FORM OF HEAD.

The form of the head in projectiles is governed by two general considerations, flight and penetration. In life-saving projectiles, we are only concerned with the effect of the form of head upon the flight of the projectile. Many experiments have been made to determine the best form of head, which have resulted in the general adoption of the form termed "ogival," as developing less resistance from the air than any other. An English authority states, that with a projectile having a velocity of 1,100 feet per second, "the loss of velocity, due to the resistance of the air, of a flat-headed shot, is to that of an ogival-headed shot as 80 to 63." The results of the experiments of Hutton and Borda on the resistances experienced by different forms of solids moving through the air with low velocities, show, as stated by Col. Benton, that rounded and pointed solids suffer less resistance from the air than those which present flat surfaces of the same transverse area; but at the same time, the sharpest points do not always meet with the least resistance, and that the ogival form experiences less resistance than any other tried. Hutton made use of solids in the form of a hemisphere, (convex surface in front,) a sphere, a cone, with alternately point and base in front; a flat disk, and a hemisphere, with the plane surface in front.

Borda used prisms, with triangular bases, exposing alternately a face and an edge to the front; also, a semi-ellipsoid and an ogee. Professor Bashforth, in his experiments to determine the resistance of the air to elongated projectiles, of a given diameter and weight, selected for the form of their heads "the hemispherical, the prolate hemispheroidal having axes in the ratio of 1 to 2, and two ogivals struck with radii of one, and of two diameters of the shot." He states, "that the resistance to the hemispherical head was decidedly greater than that opposed to the remaining three forms. The resistance of the air to the hemispheroidal and the ogival heads varied so little that it was plain that any of the forms most serviceable in other respects might be safely

adopted. The slight variations in the resistance to the three latter forms lead to the conclusion that the amount of resistance offered by the air to the motion of elongated shot, is little affected by the more or less pointed apex, but depends chiefly upon the form of the head near its junction with the cylindrical body of the shot. In this neighborhood, the forms of the hemispheroidal head and the ogival head struck with the radius of two diameters, are the same, and the resistances are little different.”*

XXI.—OPINION.

After a thorough investigation of all the requirements to be met by any line carrying projectile in actual service, it is the opinion of the board that the Hunt life-saving projectile has not practically sustained the claims of the inventor, and that it is not adapted to the use of the United States life-saving stations.

J. H. MERRYMAN,
Captain U. S. R. M., President of Board.
 D. A. LYLE,
First Lieut. Ord. Dept. U. S. Army.
 THOMAS D. WALKER,
Second Lieut. U. S. R. M., Recorder.
 D. P. DOBBINS,
Supt. Life-Saving Stations, Ninth District.
 JOHN C. PATTERSON,
Keeper Life-Saving Station No. 1, Fourth District.

The board then proceeded to the transaction of other business.

J. H. MERRYMAN,
Captain U. S. R. M., President.
 THOMAS D. WALKER,
Lieut. U. S. R. M., Recorder.

*Bashforth's Motion of Projectiles, p. 30.

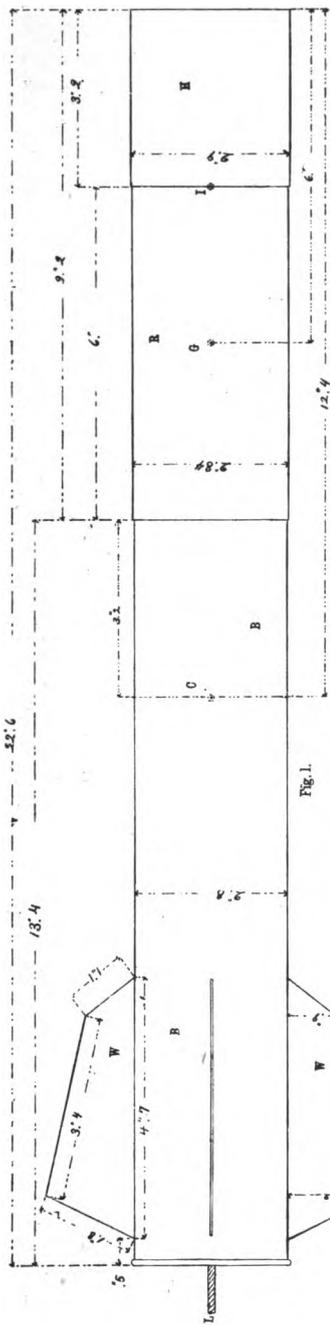


Fig. 1.

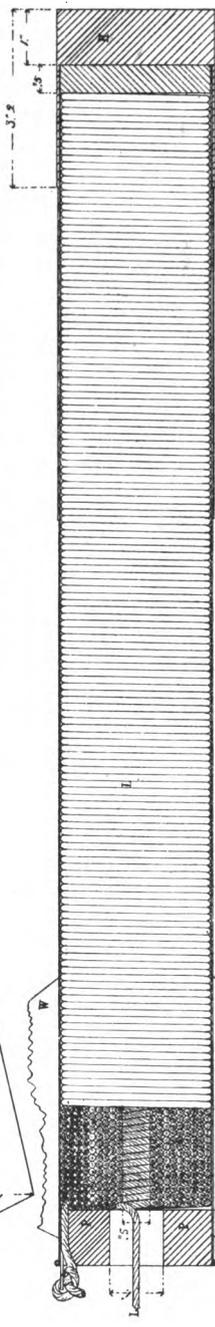


Fig. 2.

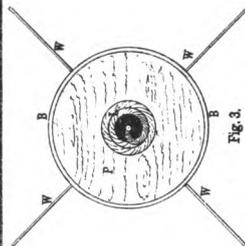


Fig. 3.

LIFE-SAVING APPARATUS.

HUNT'S

3-INCH LIFE-SAVING PROJECTILE.

LIFE-SAVING PURPOSES.

1881.

LIFE-SAVING APPARATUS.
 HUNT'S SHORE CAN,
pat. Dec. 17th 1880
 3-inch Hunt Life-Saving Projectile,
 LIFE-SAVING FORCEPS.

1881.

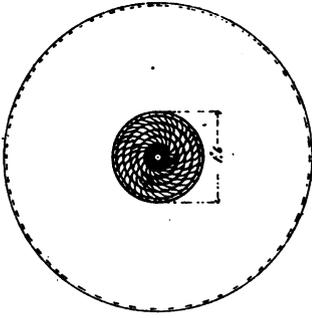


Fig. 1

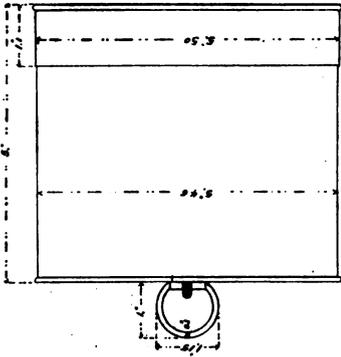


Fig. 1

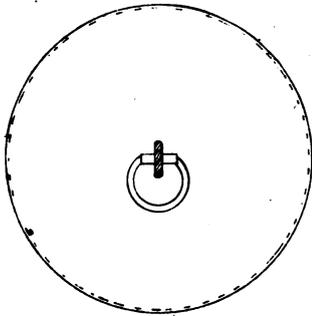


Fig. 3

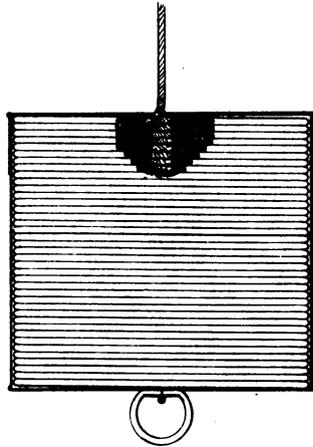
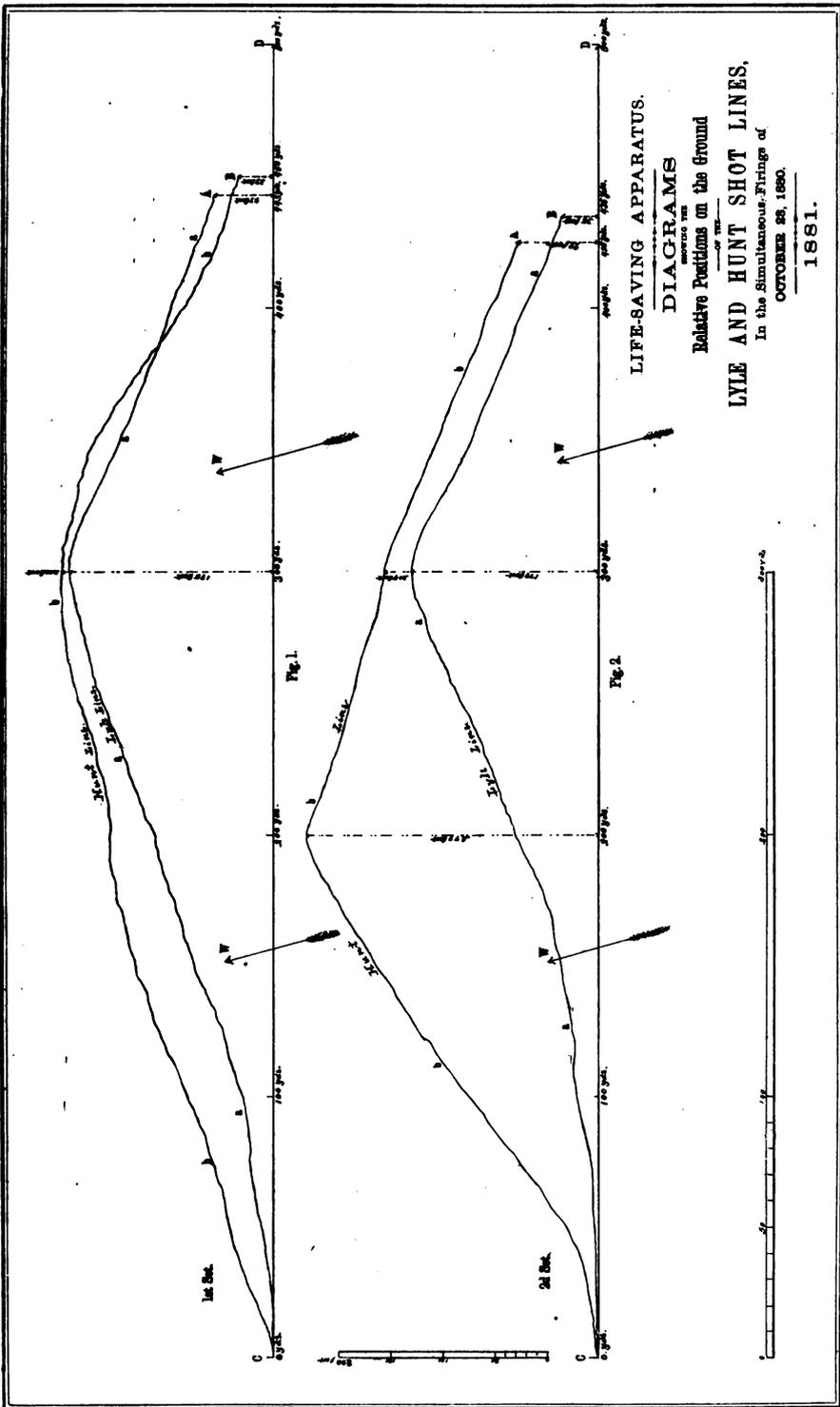


Fig. 4





LIFE-SAVING APPARATUS.
 DIAGRAMS
 SHOWING THE
 RELATIVE POSITIONS ON THE GROUND
 OF THE

LYLE AND HUNT SHOT LINES,
 In the Simultaneous Firings of
 OCTOBER 22, 1880.
 1881.

Fig. 1.

Fig. 2.

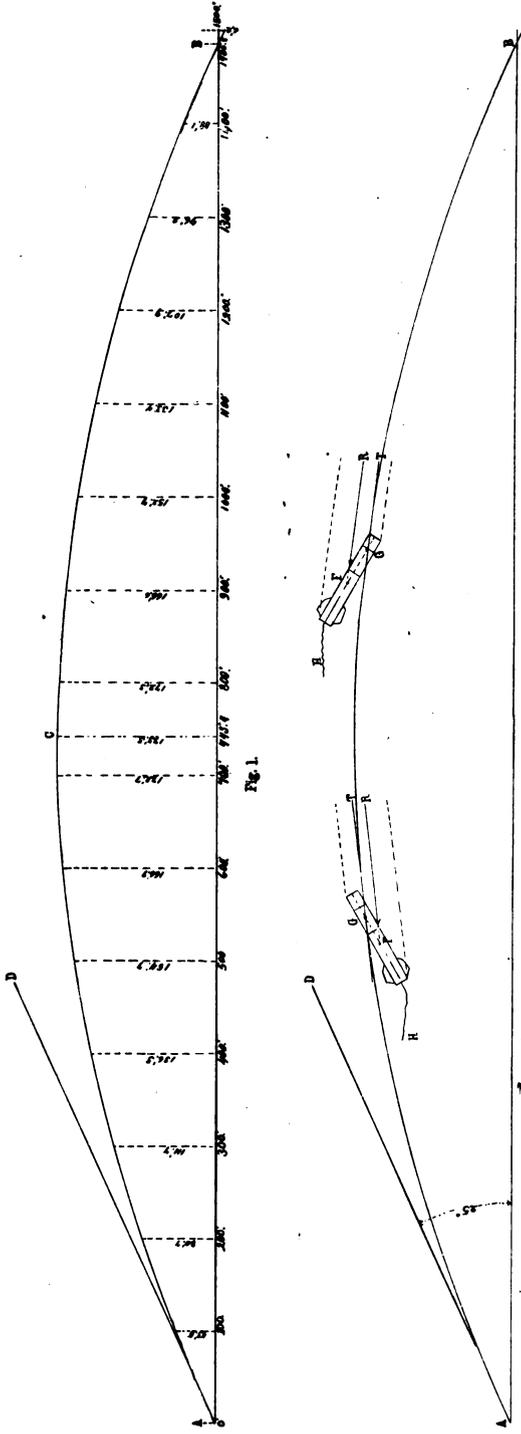


Fig. 1.

Fig. 2.

LIFE-SAVING APPARATUS.
 SHOWING THE NORMAL TRAJECTORY
 DIAGRAMS

Angle of Projection of 25 degrees, and an
 Initial Velocity of 260 feet per second.

ALSO—
 Showing the action of the Resistance of the Air
 upon the Hunt projectile.

1881.

LIFE-SAVING APPARATUS.
 OF THE
DIAGRAMS
 OF
 LYLE AND HUNT L. S. PROJECTILES.
SHOWING THE
 Action of lateral winds to produce a motion of
 rotation about the centers of gravity.

1881.

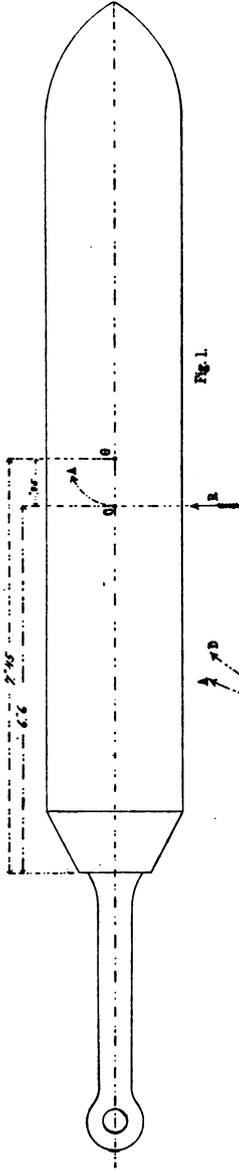


Fig. 1.

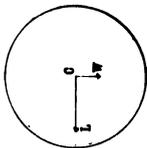


Fig. 2.

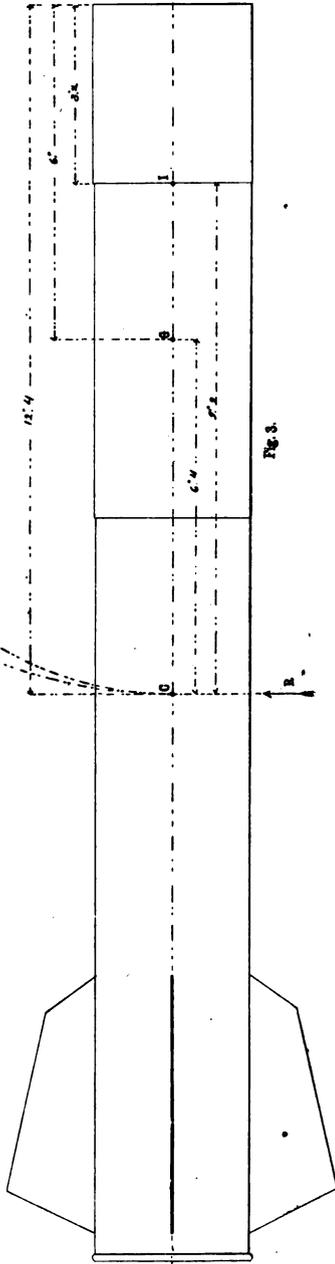


Fig. 3.

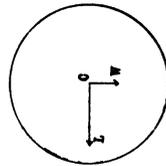
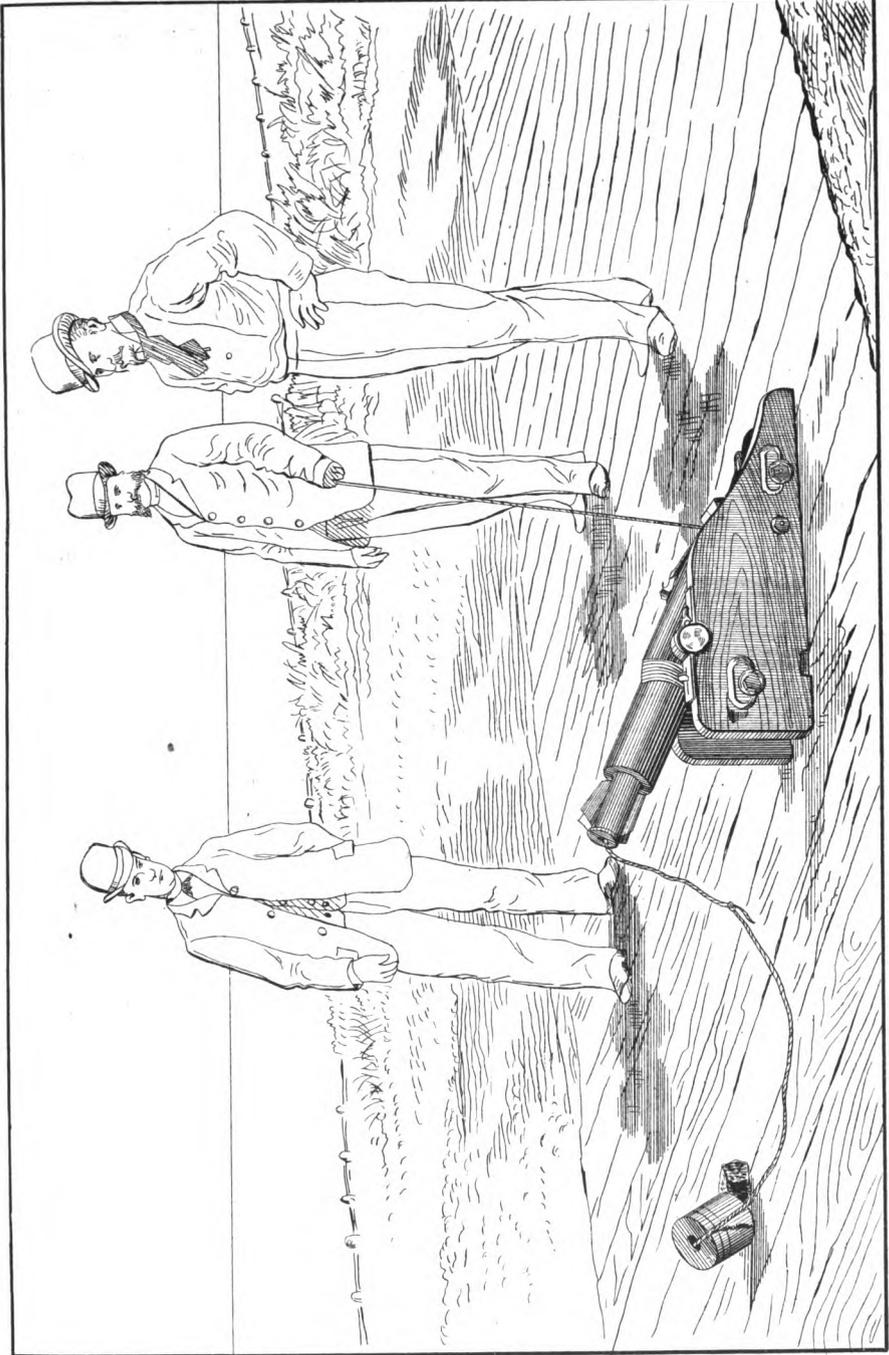


Fig. 4.



GENERAL REPORT
OF THE
BOARD ON WRECK ORDNANCE.

JUNE MEETING, 1881.

LETTER OF TRANSMITTAL.

OFFICE OF INSPECTOR OF U. S. LIFE-SAVING SERVICE,
No. 3 Bowling Green, New York, June 17, 1881.

SUMNER I. KIMBALL, Esq.,

General Superintendent United States Life-Saving Service.

SIR: I have the honor to transmit herewith report of the Board on Wreck Ordnance, for the June meeting, 1881, together with accompanying papers.

Very respectfully, your obedient servant,

J. H. MERRYMAN,
*Captain U. S. R. M., Inspector L. S. S.,
President of the Board.*

REPORT.

BOARD ON WRECK ORDNANCE,
No. 3 Bowling Green, New York, June 17, 1881.

I.—PREAMBLE.

The Board on Wreck Ordnance, consisting of Captain J. H. Merryman, United States Revenue Marine, Inspector United States Life-Saving Service, president; Lieutenant D. A. Lyle, Ordnance Department, United States Army; Lieutenant Thomas D. Walker, United States Revenue Marine, Assistant Inspector United States Life-Saving Service, recorder; Superintendent D. P. Dobbins, United States Life-Saving Service, Ninth District; and Keeper John C. Patterson, jr., Life-Saving Station No. 1, Fourth District, constituted by the Secretary of the Treasury in Department letter of May 27th, 1879, met at No. 3 Bowling Green, New York, on June 15th, 1881, for the transaction of such business as should be properly brought before it.

II.—DOCKET.

1. Hunt life-saving projectile.
2. Spencer line-throwing gun.
3. Dunham's tarred-cotton cordage.
4. Powder and cartridge-bags.
5. Sponge, sponge-cover, &c.
6. Fastenings for faking-boxes.
7. Galvanized sheet-iron faking-boxes.
8. Firing-record books.
9. Coston's new beach-light, (signal and holder.)
10. German rocket systems.
11. English boxer rocket system.

III.—REGULAR TESTS.

1. *Hunt life-saving projectile*.—For the trials of this invention, see the special report on the same made by the Board on Wreck Ordnance, June 15th, 1881.

2. *Spencer line-throwing gun*.—This gun, with its projectiles, was tested at Sandy Hook, N. J. Fired with service charges of powder and No. 7 line. For details, see report of committee herewith appended.

IV.—AMMUNITION.

1. *Hunt life-saving projectile*.—Life-Saving Service powder, electric and short-service friction primers were used in testing this projectile.

2. *Spencer line-throwing gun*.—Life-Saving Service powder and electric primers were used. Powder for first round was furnished by inventor's representative.

V.—PRESENCE OF EXHIBITORS.

Inventors and exhibitors were allowed to be present under the restrictions given in the general regulations adopted by the board.

VI.—RESULTS.

1. *Hunt's life-saving projectile*.—The results of the trials with this projectile are contained in the special report above referred to.

2. *Spencer line-throwing gun*.—This piece failed to sustain the claims of the inventor. Its cost, material, and lack of simplicity do not commend it to the favorable consideration of the board. It should be the object of the Service to reduce as much as possible the number of essential parts in any apparatus used. The adoption of this system would be a step in the wrong direction, as it would increase the complexity of the apparatus.

3. *Dunham's tarred-cotton cordage*.—The inventor failed to submit proper samples of the cordage for the action of the board.

4. *Report on powder and cartridge-bags.*

5. *Report on sponge, sponge-cover, &c.*

6. *Report on fastenings for faking-boxes.*

These three reports relate to articles already adopted for use in the Service that have not heretofore been described. They contain all the data necessary to complete the record of the present life-saving apparatus.

7. *Galvanized sheet-iron faking-boxes*.—These boxes have had a limited trial at Sandy Hook, New Jersey, but have not been sufficiently tested to enable the board to report upon them at this meeting.

8. *Firing-record books*.—The use of these books would be of great benefit in furnishing data for future use; but their general introduction at the stations would entail more labor upon the poorly-paid keepers than they now have. It is possible that many of them would be unable to keep the records with the accuracy required to make their observations of any practical or scientific value. The inspectors and superintendents could use them, or similar books or blanks, in their rounds of inspection with advantage to the Service.

VII.—OPINIONS.

The *Spencer line-throwing gun* failed to fulfil any one of the essential requirements for a line-carrying device for the Life-Saving Service.

VIII.—RECOMMENDATIONS.

The board would respectfully recommend that a sufficient number of the proposed books for record of firings be issued by the General Superintendent for the use of superintendents and assistant inspectors of the various districts, and also for the use of the board. The board also begs to bring to the attention of the General Superintendent the necessity for providing a firing-ground on the Government property at Sandy Hook, with the necessary arrangements for convenience in testing the various devices for wreck ordnance that may be submitted for the action of the board.

IX.—UNFINISHED BUSINESS.

The following matters before the board remain for future consideration :

1. Galvanized sheet-iron faking-boxes.
2. Coston's new beach-light, (signal and holder.)
3. German rocket systems.
4. English boxer rocket system.

ADDENDA.

- I. Daily record of proceedings of board.
- II. Report of committee on the *Spencer line-throwing gun*, with four plates.
- III. Report of Lieut. D. A. LYLE, Ordnance Department, U. S. A., on *powder and cartridge-bags*.
- IV. Report of Lieut. D. A. LYLE, Ordnance Department, U. S. A., on *sponge, sponge-cover, &c.*, with one plate.
- V. Report of Lieut. D. A. LYLE, Ordnance Department, U. S. A., on *fastenings for faking-boxes*, with one plate.
- VI. Report of Lieut. D. A. LYLE, Ordnance Department, U. S. A., on *galvanized sheet-iron faking-boxes*, with two plates.
- VII. Report of Lieut. D. A. LYLE, Ordnance Department, U. S. A., on *string-record books*.

J. H. MERRYMAN,
Captain U. S. R. M., President.

D. A. LYLE,

First Lieut. Ordnance Department, U. S. A.

THOMAS D. WALKER,

Lieut. U. S. R. M., Recorder.

D. P. DOBBINS,

Superintendent Ninth Life-Saving District.

JOHN C. PATTERSON, JR.,

Keeper Life-Saving Station No. 1, Fourth District.

There being no further business before it, the board adjourned, subject to the call of the president.

J. H. MERRYMAN,
Captain U. S. R. M., President.

THOMAS D. WALKER,
Lieut. U. S. R. M., Recorder.

ADDENDA.

I.

DAILY RECORD OF PROCEEDINGS OF BOARD.

NO. 3 BOWLING GREEN, NEW YORK, *June 15, 1881.*

In compliance with the call of the president, the Board on Wreck Ordnance assembled at the office of the Inspector United States Life-Saving Service, No 3 Bowling Green, New York, on the 15th day of June, 1881, at noon. Present: Captain J. H. Merryman, U. S. R. M., president; Lieutenant D. A. Lyle, Ordnance Department, U. S. A.; Lieutenant T. D. Walker, U. S. R. M., recorder; Superintendent D. P. Dobbins, U. S. L. S. S.; and Keeper J. C. Patterson, jr., U. S. L. S. S. The record of proceedings at the last two meetings of the board was read and approved.

The correspondence received by the president, since the last meeting of the board, in relation to the offer of the Massachusetts Humane Society to donate two Hunt guns, with projectiles, for test, at stations on the coast of Massachusetts, was then read; also the letter of the president, addressed to the General Superintendent, under date of February 12th, 1881, in relation to the said offer; the latter receiving the full indorsement of the board.

REPORTS OF COMMITTEES.

A fair copy of the report of the board on the Hunt life-saving projectile, giving the results of extended experiments and investigations conducted at the ordnance proving-ground, Sandy Hook, N. J., was then read and discussed, and its opinion in regard to this device appended; after which the report was signed.

The committee on the Spencer line-throwing gun for life-saving purposes submitted its report; which was accepted.

At 4.40 P. M. the board adjourned until 10 A. M., June 16th.

THOMAS D. WALKER,
Recorder.

NO. 3 BOWLING GREEN, *June 16, 1881.*

The board reassembled at 10 A. M., all the members being present.

The committee on tarred-cotton cordage reported verbally that the inventor, Thomas H. Dunham, had, up to this time, failed to present the necessary samples for trial.

The board then proceeded to read and discuss the reports on powder and cartridge-bags, sponge, sponge-covers, &c., fastenings for faking-boxes, firing-record books, and the papers in relation to Coston's new beach light, (signal and holder,) and, after acting upon the same, began the preparation of its general report.

A committee, composed of Lieutenant Lyle, Superintendent Dobbins, and Keeper J. C. Patterson, was appointed by the president for examination and report upon Coston's new beach light.

The board adjourned at 4.45 P. M. until 10 A. M., June 17th.

THOMAS D. WALKER,
Recorder.

—
No. 3 BOWLING GREEN, N. Y., *June 17, 1881.*

The board reassembled at 10 A. M., pursuant to adjournment, and proceeded to discuss the various subjects before it; after which the general report was prepared, read, and signed.

The board then, at 2 P. M., adjourned, subject to the call of the president.

THOMAS D. WALKER,
Recorder.

II.

REPORT ON THE SPENCER LINE-THROWING GUN BY THE COMMITTEE OF THE BOARD ON WRECK ORDNANCE.

No. 3 BOWLING GREEN, NEW YORK CITY, *June 15, 1881.*

Capt. JAMES H. MERRYMAN, *U. S. Revenue Marine,*
President of the Board on Wreck Ordnance.

SIR: Your committee has the honor to make the following report upon the "line-throwing gun" submitted to the Board on Wreck Ordnance by Mr. L. W. Spencer, of New York.

For a description of the gun and appurtenances, the committee would respectfully refer to the descriptive and technical report of Lieut. D. A. Lyle, Ordnance Department, U. S. A., which is appended hereto and made a part of this report.

The committee met at Sandy Hook, N. J., October 23, 1880, and proceeded to the examination and trial of the Spencer gun.

Lieut. D. A. Lyle, Ordnance Department, U. S. A., was directed by the committee to prepare a descriptive report of the apparatus.

Mr. Thomas D. Harrison, of No. 27 Water street, New York, appeared before the committee, and by it was directed to proceed with the firing trial. By the courtesy of Col. S. Crispin, Constructor of Ordnance, U. S. A., and Capt. W. S. Starring, Ordnance Department, U. S. A., in charge of the ordnance proving-ground at Sandy Hook, N. J., the range at that place was made available for the trials.

Mr. Harrison and his assistant had charge of the manipulation of the apparatus on the first day of the trials. They were absent on the second day, and the committee continued the tests.

The following tabular statement and the synoptical transcript of notes from the firing record present a full summary of the results obtained:

a.—Record of Firings with the Spencer Breech-loading Line-throwing Gun—Calibre, 2.8 inches.

STATION, SANDY HOOK, NEW JERSEY.

DATE.	Number of round.	Elevation.	POWDER.		PROJECTILE.		Deviation of shot—right or left.	Kind of primer.	Recoil.	SHOT-LINE—BRAIDED.		WIND.	
			Kind.	Weight.	Kind.	Weight.				Kind.	Number.	Direction.*	Velocity.
1890.		Deg.		Ozs.	Lbs.	Yds.	Feet.		Feet.				Feet per sec.
Oct. 23	1	20	Unknown	8(1)	Spencer	30.5	57	Electric	Slight	Linu	7	Good	Not taken.
	2	22	L. S. Service	8	do	20.5		do	20	do	7	Broken	Do.
	3	17	do	6	do	18.5	35 Left	do	Between 15 to 20	do	7	Good	Do.
	4	17	do	8	do	20.5		do	Not taken	do	7	Wire pulled out	23.6
	5	17	do	8	do	24.0	16.5 Right	do	24	do	7	Good	13.0



* The small arrows show the direction of the wind with reference to the plane of fire.

b.—SYNOPTICAL TRANSCRIPT OF NOTES FROM FIRING RECORD.

Spencer breech-loading line-throwing gun—calibre, 2.8 inches.

Date.	No. of round.	
1880. Oct. 23	1	<p>This round and the two succeeding ones were fired by the assistant of Mr. Thomas D. Harrison, of No. 27 Water street, New York. Mr. Harrison was the agent of Mr. Spencer. The manipulation of the apparatus was entirely under the direction of said assistant.</p> <p>The cartridge-bag was made long and of small diameter, in order to go inside the spiral spring of wire. The powder used was stated to be "Life-Saving Service" powder. The quantity was unknown to the committee, but was said to be eight (8) ounces. The cartridge was put up by the exhibitors before arriving upon the firing-ground at Sandy Hook. It was stated that the powder was mixed with saw-dust, "to make it burn slower." The total weight of the cartridge (powder and saw-dust combined) was 10.5 ounces.</p> <p>The spiral spring was screwed into the slotted base-screw. The projectile was then clamped in a bench-vise, and the base-screw turned in with a wrench. The cartridge-bag, with its contents of powder and saw-dust, was inserted with difficulty within the spiral spring. The sleeve was attached to the shot-line, and the apparatus placed at the firing-point. The projectile, as prepared, was inserted in the muzzle, (spiral spring first,) with a wooden sabot just in rear of the shot, and rammed home. The rear tang protruded from the breech-block, and the sleeve carrying the line was attached. The cartridge could not be pricked with the priming-wire, as the coils of the spiral spring were so close to each other that the wire could not be inserted between them. An electric primer was placed in the vent and exploded by electricity, but failed to ignite the powder in the cartridge. It was found that in ramming home the cartridge the spring had been so tightly compressed that the flame from the primer could not penetrate to the cartridge. The sleeve was removed and a few blows upon the rear tang started the projectile slightly forward. By pulling to the rear upon the tang, the coils of the spring were separated sufficiently to allow the passage of the flame from the primer. The second primer ignited the charge. The report from the gun was muffled and insignificant, as was anticipated. Very little of the powder was ignited, due to the presence of the saw-dust; the remainder was blown from the gun unburned. The range of the projectile was less than should be obtained with a single ounce of powder. The wire spiral was found to be but partially straightened out, indicating the insignificance of the impelling force.</p>
	2	<p>No saw-dust in cartridge. Hazard's standard "Life-Saving Service" powder, furnished by the board, used to load the cartridge. Line broke off flush with the rear end of the sleeve. The spiral spring was straightened out to its full length. Range of projectile and wire, about 800 yards. The break was claimed by the exhibitors to be due to "too much elevation." The ground at the firing-point was horizontal. Had it had a downward slope to the front (as often occurs in beach service) the difficulty would have been aggravated. The more nearly the axis of the gun and the line drawn from the front edge of the faking-box to the centre of the rear end of the breech-block coincide with each other, the less the danger of breaking the line at or near the sleeve. At the next round the elevation was reduced to 17°.</p>
	3	<p>Charge of "Life-Saving Service" powder reduced to six (6) ounces. Wire spring straightened out. Action of line, good.</p>
25	4	<p>The exhibitors were not present upon this day. The firing was done, under the direction of the board, by the crew of Life-Saving Station No. 1, District No. 4. Charge, eight (8) ounces of service powder. The spiral wire pulled out of the base-screw of the shot and fell to the ground with the line, directly in front of the gun. Time of flight of the projectile, 7¾ seconds. Range not measured. Sheet-iron faking-box "A" used to contain line.</p>
	5	<p>Charge of powder, eight (8) ounces. An electric primer failed to ignite the charge, on account of the closeness of the coils in the spiral spring. The shot was pushed slightly to the front, and the coils of the spring opened a little by pulling on the rear tang. The second electric primer ignited the charge. Sheet-iron faking-box "A" used for line. Faking-box placed 8 yards in rear of the gun and 5 feet to the right of the plane of fire, to avoid being struck by the recoiling carriage. The spiral was straightened out. Time of flight of projectile, 4¾ seconds. The gun and carriage recoiled 8 yards, stopping on a line with the front edge of the faking-box. The action of the line was peculiar. After the gun had come to rest the line continued to run out of the faking-box straight to the front to a point opposite that where the gun stood when fired, and then, with an abrupt curve, doubled upon itself and ran to the rear in a parallel line until it reached the gun, where, with another sharp turn, it followed its course through the bore towards the front. The inertia of the line and the rapidly decreasing velocity of the projectile conspired to preserve this motion, and when the line ceased running out of the faking-box its position was that shown in Fig. 7, Plate II.</p>

DIFFICULTY OF LOADING.

The method of loading is not only complicated but is attended with many serious difficulties. Though the gun is a breech-loader, it is evidently more practicable to load it from the muzzle. Whether it be loaded from the breech or the muzzle, it is better to employ a cartridge-bag to contain the charge of powder. Assuming that this be done in every case, the first thing to do is to insert the cartridge in the spiral spring. This experience has proved to be no easy matter, on account of the peculiar arrangement of the projecting tangs, which obstruct the diametral opening at each end. The easiest way to get the cartridge inside the spring was found to be that of tying a twine around the "choke" and passing this cord through the spring longitudinally; then with a forward strain upon this cord, assisted by pressure and a twisting motion from the rear, the cartridge could be gradually worked into its place in the spiral.

The projectile being ready, two methods of loading present themselves. *First*, insert the spiral in the muzzle, then place the half sabots in position clamping the projecting base-screw, and press the projectile down into the bore, completing the operation with the rammer. This method insures the keeping of the sabot in place, but is liable to compress the coils of the spiral spring so closely together that the flame from the friction primer will fail to ignite the charge. The sleeve with the line attached can then be screwed on the rear tang and the piece is ready for firing as soon as the elevation is given. In this case the breech-block need not be removed as the hemispherical chamber usually guides the rear tang through the aperture in the breech-block. If this method should be adopted, and it is the preferable one, the anomaly of a muzzle-loading breech-loader is presented. *Second*, remove the breech-block, insert the projectile from the rear, placing the half sabots in position as before, and push the whole towards the front. In this instance the half sabots, as soon as flush with the base of the counter bore, are left unsupported by the withdrawal of the hand of the operator, and their position is immediately deranged. Should the bore be foul the projectile will wedge and the rammer will be of no assistance in driving it forward, on account of the interposed spring and cartridge.

To attempt to load from the muzzle, using loose powder, would be exceedingly dangerous. Premature explosions would be liable to occur at any moment during the process of ramming home the projectile, as the steel spiral would have to force its way through the loose powder. In addition to the danger incurred in loading in this manner, it would be subject to the further disadvantage of losing a portion of the charge by escape through the aperture in the breech-block.

But one more method of loading remains to be discussed; that of loading through the breech, using loose powder. This can only be done by depressing the muzzle and elevating the rear part of the carriage, a method as clumsy and inconvenient as it is impracticable.

PREPARATIONS FOR LOADING.

The preliminary operations of loading could be curtailed somewhat by preparing the apparatus in advance as far as possible. For instance, the spiral spring and base-screw could be screwed into the shot as soon as they arrive at a station. For this purpose a bench-vise or

clamp and a wrench would be required. The compound sleeve could also be attached to the end of the line in advance. The cartridges could be prepared and held in readiness; but if at the first fire the line should break, then a new sleeve would have to be made fast to the line. This would necessitate the following operations:

1. Cutting off the end of the line.
2. Unscrewing the head from the body of the sleeve, unless they were carried dismounted; in which case the parts would have to be interchangeable, which, in turn, would require reasonably accurate gauging of the screw-threads during manufacture.
3. Putting the end of the line through the body of the sleeve.
4. Piercing that end with the awl.
5. Putting in the conical screw with the thumb and finger.
6. Imbedding it firmly by means of the screw-driver.
7. Drawing the line back until it wedges in the body of the sleeve.
8. Screwing in the head, using the two small steel wrenches.

To perform these manipulations a knife, an awl, a screw-driver, and two small wrenches would be requisite—all small articles, and easily lost in the darkness and excitement that usually attend a case of wreck.

After the line is prepared for the second shot, the tedious process of loading the gun has still to be performed. If the crew have carried a second projectile, it probably has no cartridge inserted in the spring, as they well know that the powder will rapidly deteriorate if the cartridge is placed there in advance. Then, here is another troublesome task—to drag, twist, and push the cartridge into the spiral before the gun can be fired.

It must be recollected that all these things may have to be done in rain, sleet, or snow, and during violent gales of wind. Wrecks may occur at night that admit of no delay; then darkness is added to the other difficulties. And should the thermometer range below the freezing point, as it often does during the season of wrecks, the half-frozen fingers of the surfmen are in no condition to handle small wrenches, awls, conical screws, and sleeves, or to twist a cartridge into an obdurate spiral spring.

PORTABILITY.

The great length of the gun and carriage, nearly six feet, renders it inconvenient to carry. It would occupy more space in the hand-cart than could be assigned to it without diminishing the amount of impedimenta which are now required. The weight of the gun and carriage is 233 pounds. The heaviest shot weighs 24 pounds, the lightest 15.5 pounds. This would make the apparatus complete weigh from 248.5 to 257 pounds, omitting the implements.

RUST.

The material being steel is very liable to corrosion in the damp air of the sea-coast. It would be impossible to keep it perfectly free from rust, especially the screw-threads in the breech-block, which are almost inaccessible. When rusty much difficulty would be experienced in opening and closing the breech mechanism. On the first examination by the board it required several minutes for the inventor himself, though

aided by a heavy billet of wood, to turn the breech-block, which had rusted in its seat.

Being made of steel, a not altogether reliable metal, should a gun happen to burst, it is more than likely to do so explosively, and thus endanger the lives of the surfmen.

COST.

The board understood from the inventor that the cost of the apparatus would be between \$400 and \$500.

D. A. LYLE,
First Lieut. Ordnance Department, U. S. A.,
 THOMAS D. WALKER,
Lieut. U. S. R. M., Ass't Inspector L.-S. S.,
 JOHN C. PATTERSON,
Keeper Life-Saving Station No. 1, Dist. No. 4,
Committee.

REPORT ON THE SPENCER LINE-THROWING GUN FOR LIFE-SAVING PURPOSES.

BY LIEUTENANT D. A. LYLE, ORDNANCE DEPARTMENT.

(4 Plates.)

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THE SPENCER LINE-THROWING GUN FOR LIFE-SAVING PURPOSES.

I.—SPENCER GUN.

(Plate I.)

1.—*Description.*

The Spencer line-throwing gun is a smooth-bore, and consists of—1. The body; 2. The trunnion ring; and 3. The breech-plug or fermeture.

The body is made of low steel, forged solid and afterward bored out. The exterior of the body is divided into three principal parts, viz., the first reinforce, the second reinforce, and the chase.

The *first reinforce* is a frustum of a cone with the larger base turned toward the muzzle of the gun.

The *second reinforce* is a short frustum, generated by revolving about the axis a convexo-concave line whose middle point touches continually a circle having its centre on, and its plane perpendicular to, the axis. This reinforce conjoins the first reinforce and the chase.

The *chase* is a frustum of a cone terminated in front by the face of the piece without swell of the muzzle or a muzzle-band.

The *trunnion ring* is a cylindrical ring of wrought-iron, which embraces the first reinforce near its rear end. This ring bears the trunnions, which are forged solid with the ring and then turned down and properly aligned.

The *breech-plug* is made of low steel. It is divided into two symmetrical parts by a meridian plane, which is horizontal when the fermeture is in position for firing. One of the halves has four dowel pins, two on each side, that fit into corresponding holes in the other half. These dowels or pins serve to preserve the relative positions of the parts when put together. The front end of the breech-plug as a whole is recessed to form the small hemispherical chamber that terminates the bore.

The axial portion of the breech-plug is cut away, forming a funnel-shaped cavity connecting with the chamber at its forward and smaller end. The bounding lines of this cavity as seen in the longitudinal section are curves, convex toward the axis of the bore prolonged. The hole through the fermeture is made of this form to guide the line as it passes through the bore of the gun and prevent cutting it off. The head of the fermeture, or part which projects beyond the posterior terminal plane of the gun, is slightly rounded for the same reason. Two holes perpendicular to the axis are bored in this basal projection to receive the cylindrical projection on the spanner-wrench used to close the fermeture. The cylindrical exterior of the body of the breech-plug is divided into eight equal parts, four sectors being armed with sectional screw-threads and four being blanks. The sectional screws and blank spaces alternate. The rear end of the bore of the gun is counterbored and has sectional screw-threads and blanks to correspond with those in the breech-plug. The plug is inserted by turning it to the left until the threads on the block come opposite a blank space in the gun, then press the plug forward until it reaches the bottom of the counterbore, when an eighth of a turn to the right with a spanner-wrench engages the threads on the block with the corresponding ones on the inner surface of the counterbore and brings the block firmly to its seat, at the same time locking the system. To withdraw the plug, give it an eighth

of a revolution to the left and *pull out* the plug. The vent is perpendicular to the axis of the bore and is placed 1".6 in front of the trunnion ring.

It is obvious that the gun has a large muzzle preponderance.

By an error of the draughtsman the sectional screw-threads and blank spaces have been interchanged in Figs. 3 and 4, Plate I.

2.—Principal dimensions.

	Inches.
Total length of gun	36.2
Length of body	35.2
First reinforce, length	16.9
Diameter, rear end	5.4
Diameter, front end	5.5
Second reinforce, length	1.0
Diameter, rear end	5.5
Diameter, front end	4.8
Chase, length	17.3
Diameter at rear end	4.8
Diameter at muzzle	3.7
Trunnion ring, length	2.5
Interior diameter, a little greater than	5.4
Thickness	1.0
Trunnions, length	2.5
Diameter	2.0
Distance between faces of trunnions	12.4
Distance between rim-bases	7.4
Distance from rear end of body to trunnion ring	2.4
Bore, total length, exclusive of chamber	30.1
Diameter	2.8
Chamber, depth or radius	1.3
Total length of bore, including chamber	31.4
Diameter of vent	0.2
Length of counterbore in breech	5.1
Breech-plug, total length	6.1
Exterior diameter of base	4.5
Diameter of body over screw-threads	3.1
Diameter of body over blanks	2.9
Number of screw-threads	seventeen.
Funnel-shaped cavity, length	4.8
Smaller diameter	0.5
Largest diameter	3.6

II.—GUN-CARRIAGE.

(Plate II.)

1.—Description.

The carriage or bed for the Spencer gun is made of 2-inch plank planed to a thickness of 1".8. A plank of the same thickness is placed between the cheeks, forming a bottom. The rear ends of the cheeks and bottom board are curved upward to allow the carriage to slide readily to the rear when fired. This also obviates the danger of upsetting and of entangling the line.

The cheeks are bound with wrought-iron, and two handles are placed upon each side similarly to the carriage for the Lyle gun.

A wrought-iron yoke is suspended from the trunnions, and furnished with an arm of the same material, which extends to the front. This arm is bent at right angles near its forward end and forms the support for the muzzle when elevated for firing. A lever on the right-hand side of the carriage actuates a clamp which binds the yoke and pre-

serves the elevation. The cap-squares are detachable and are confined by means of keys. Three holes are bored through the bottom board to receive recoil pins intended to be driven into the sand or earth. These holes are placed triangularly. The recoil bolts are two feet long and were designed to take up the recoil, but were abandoned by the inventor before the official trials.

2.—*Principal dimensions.*

	Inches.
Length of carriage.....	36.0
Width of cheeks.....	8.4
Distance from axis of trunnions to rear end of carriage.....	23.85
Total length of gun and carriage.....	55.4
Total weight of gun, carriage, and bolts.....	233 pounds.

III.—PROJECTILES.

1.—*Description.*

(Plate III. Figs. 1-5.)

The projectiles are made of cast iron. They are cylindrical in form with short ogival points. The rear ends are rounded off. An axial hole is drilled in the base of the shot to receive the base-screw, used to connect the projectile with the spiral spring, to be hereafter described.

Three sizes of projectiles were made, differing only in length and weight. These sizes are designated as Nos. 1, 2, and 3.

2.—*Base-screw.*

(Plate III. Figs. 8 and 9.)

The base-pin or screw is slotted longitudinally for a little more than two-thirds of its length. This slot extends from the rear end forward to the anterior extremity of the exterior screw-thread. A cylindrical hole whose axis is coincident with that of the base-screw is pierced entirely through this screw. The rear portion of this hole is counter-bored to enlarge it, while the forward part has a female screw-thread (not shown in drawings) tapped upon its interior surface. The exterior of the base-screw is divided into three parts—1, the square; 2, the screw-thread; 3, the tenon.

The first is for the application of the wrench used to screw it into the shot. The screw-thread is tapering, being larger at the rear end. This taper in connection with the longitudinal slot causes the base-screw to act as a vise or clamp upon the wire tang of the spiral spring. This tang occupies the axial cavity of the screw when the latter is turned into the cylindrical hole in the base of the projectile.

Spiral spring.

(Plate III. Figs. 1 and 7.)

This spring is made of strong steel-wire. The middle portion of the steel rod is coiled in a close helix of the same diameter as the projectile. The end coils are bent inward until the front and rear tangs are in the prolongation of the axis of the spring. Threads are cut upon the extremities of the tangs. The forward tang screws into the base-screw, and the rear tang into the head of the compound sleeve

that serves to attach the shot-line to the projectile. A brass valve or gas-check is placed upon the rear tang or tail just in rear of the coiled spring. This closes the aperture in the bottom of the chamber and prevents the escape of gas when the piece is fired.

4.—*Compound sleeve.*

(Plate III. Figs. 10-13.)

This sleeve is composed of two parts, the body and the head. The latter is perforated longitudinally and has screw-threads cut upon both its exterior and interior surfaces. The exterior thread engages the female thread in the body and the interior one is screwed on the rear tang of the spiral spring. The body is perforated in a similar manner to the head, in order to admit the end of the shot-line. The forward portion of this cavity is counterbored to receive the end of the line after being enlarged by the insertion of the conical screw, which spreads the yarns of the line and secures it to the sleeve by wedging in the throat of the counterbore. After the conical screw is inserted in the end of the line and the latter drawn down until it wedges in the cavity, the head is screwed in and the sleeve is ready to be attached to the projectile. Two flat surfaces are cut upon opposite sides of both body and head to engage the wrenches used in assembling.

5.—*Conical screws.*

(Plate III. Fig. 14.)

The form of these screws is indicated by the name. They are made of brass wire. Threads are cut upon the points, and a slot in the heads to receive the blade of a small screw-driver.

6.—*Sabots.*

(Plate III. Figs. 6 and 7.)

The sabots are made of soft wood and accurately fit the bore of the gun. They are made in two pieces, as shown in the figure, so as to be readily placed in position when loading. They are pierced centrally by a hole large enough to embrace the projecting end of the base-screw. They are placed in rear of the projectile and in contact with its base. The sabots are intended to obviate the windage of the projectile.

7.—*Cartridge-bag.*

(Plate III. Fig. 7.)

This is made of serge or other woollen material, and must be long enough to allow the choke to be made some distance above the powder. If not so made it will not enter the spiral spring, as the bending in of the end coils and the projection of the tangs render it a very difficult matter to insert the cartridge even when loosely tied.

8.—*Principal dimensions and weights.*

	Inches.
Diameter of projectiles.....	2.75
Depth of base-screw hole.....	2.5
Length of projectiles, Number 1.....	16.3
Number 2.....	14.1
Number 3.....	10.3

V.—METHOD OF LOADING.

The method given by the inventor lacks practicability, but it is deemed best to let him describe it in his own words. Appended to this report will be found a copy of the printed specifications forming part of his letters-patent. The specifications are given in full, and accompanied by a copy of the drawings forming part thereof. It will be seen by consulting the foregoing description and plates, and comparing them with those of the inventor, that the apparatus presented differs considerably from that indicated in the patent, though not vitiating any of the claims for the patented combinations.

VI.—ELEVATION.

From the manner of construction it is impossible to obtain much range in the elevation of the piece. When the carriage is on a horizontal plane and the gun has an elevation of about 16° , the axis of the bore prolonged will just touch the rear edge of the bottom board. With 25° elevation the axis produced will pierce the bottom board about $8''$.5 in front of the rear end.

Placed upon a shelving beach, dipping 16° or more toward the water, great difficulty would be experienced in obtaining the necessary elevation. If the beach shelved just 16° and the axis of the gun had the same inclination, 16° to the bottom of the carriage, this axis would be horizontal when placed in position for firing. The greater the angle of elevation of the gun the greater will be the angular change of direction of the line in passing from the faking-box and out through the gun. The greater this change of direction is, the greater will be the danger of cutting off or breaking the shot-line.

VII.—ADVANTAGES CLAIMED BY THE INVENTOR.

The inventor asserts that the object of his invention is "to obtain greater accuracy and a longer range in throwing life-lines." The greatest recorded range obtained with the Spencer gun of which the writer has any authentic knowledge is 255 yards, carrying a No. 7 braided line. The firing records exhibit no perceptible difference in accuracy over other methods.

[Copy of printed record.]

SPENCER'S LINE-THROWING GUN.

Specification forming part of Letters-Patent No. 229,058, dated June 22, 1880. Application filed November 1, 1879.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, Lewis W. Spencer, of the city, county, and State of New York, have invented a new and improved gun and projectile for throwing life-saving lines, of which the following is a specification:

The object of my invention is to obtain greater accuracy and a longer range in throwing life-saving lines.

In the accompanying drawings, Fig. 1 is a longitudinal sectional elevation of my improved gun and projectile arranged for firing. Fig. 2 represents a side view of my improved breech-block for breech-loading guns. Fig. 3 represents the breech-block open for the reception of the connection between the life-line and the projectile. Fig. 4 is a cross-section of the gun, taken on line xx of Fig. 1. Fig. 5 represents the improved projectile and its elastic tail. Fig. 6 represents my improvements applied to a muzzle-loading gun.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A is a breech-loading gun, mounted by means of trunnions on a gun-carriage, B. In the breach a of the gun, back of the barrel b , is an internally screw-threaded chamber, c .

C is the breech-block, screw-threaded externally to adapt it to be screwed into chamber c . Breech-block C is divided longitudinally into two semi-cylindrical sections, $e e'$, which, when put together to form the block, are held together by dowel-pins f in section e' entering corresponding holes in section e . In each of sections $e e'$, at the longitudinal centre, is a half round groove, e'' . When the sections are placed together these grooves e'' form a breech port, e''' , (see Fig. 1,) which coincides with the centre of the bore of barrel b . Around the front end of this port e''' the breech-block is coned out to form a seat, h , and at the rear end the breech-block is funnelled out, as at i , so that the line can run freely into port e''' . The object of making the breech-block in two parts is to facilitate the loading of the gun after the life-line and projectile are spliced together, the division of the breech-block permitting the splicing to be laid through the port e''' , so that the coiled life-line can be connected directly with the projectile, and it is only necessary to put the two sections together and screw the breech-block into the gun, instead of having to splice the line to the projectile after loading.

D is the elongated projectile which I use with my gun. To the butt j is attached one end of an elastic metal tail, k . Near the free end l of the elastic tail an ovoid valve, m , is fixed to said tail, which serves to close the inner end of the port e''' in the breech. The tail k is made of a material that can be coiled into a tight spiral without breaking, and which will resist the action of the exploded gunpowder.

Underneath the gun is a plate, E, suspended by ears n from the trunnions n' of the gun. The forward end o of plate E is turned up at right angles so as to bear against the underside of the barrel b . Underneath the rear end of plate E is a curved arm, F, with a slot, p , through which is passed the end q of a set-screw passed through the side of the gun-carriage B. By means of plate E the muzzle of the gun is held at any required height to obtain the proper range.

The manner of using the gun and projectile is as follows: The projectiles are prepared and kept in readiness for use by splicing the end l of the elastic tail k to the free end of the life-line l' , which is coiled in a box in the usual manner. The breech-block C is withdrawn from the gun and opened for the insertion of the line. The projectile D is inserted into the barrel b through the breech a , and the elastic tail k is coiled into a close hollow spiral of the same diameter as the projectile, and this hollow spiral is passed into the barrel behind the shot in the manner shown in Fig. 1. A bag of powder, r , is then inserted within the spiral formed by the tail k , the end l beyond the valve m is laid in the channel e'' , and the two parts of the breech-block being put together,

said block is screwed into the breech, and the valve *m* is drawn into the concave seat *h* so as to close the port *e'''* and prevent the backward escape of gas.

When the gun is fired the shot passes straight out of the gun, the elastic tail *k* uncoils, and the life-line is drawn by the tail through the port *e'''* and barrel *b* behind the shot, which is thus enabled to keep straight on its course without turning or reversing its position after leaving the gun, as is the case in the use of the common method when the life-line is attached to the shot and passed into the gun from the muzzle. The result of my improvement is, that a longer range and greater accuracy are obtained.

In Fig. 6 is shown a muzzle-loader. Herein the port *e'''* for the end of the elastic tail is made directly through the breech, and at the rear end is funnelled out, the same as in the breech block C. In this construction it is, of course, impossible to splice the elastic tail and life-line before loading. Consequently the end *l* of the tail is attached to a needle, which is thrust through the barrel *b* and thence through port *e'''*, and the end *l* having been by this means drawn through the breech, the said end is spliced to the life-line *l'* and the valve *m* is drawn down to its seat, *h*.

In loading, the powder is first placed in the gun from the muzzle, the tail *k* is coiled, as before, and, having been inserted in the gun, the shot is also placed in the muzzle and rammed home, and the gun is fired as before.

It will be readily seen that by my improvement the projectile is delivered from the gun without other retardation than that caused by the weight of the life-line, whereas by the ordinary method, when the life-line is fired out of the gun ahead of the projectile, the weight of the line compels the projectile to reverse or turn end for end, and the consequence is a very great retardation of the projectile's speed.

The tail *k*, in addition to serving as an elastic connection between the shot and the life-line, serves also as a guide for holding the shot on its course, and thus materially increases the accuracy of the shooting.

By applying the tail *k* to elongated projectiles I am enabled to use such projectiles with smooth-bore guns for all purposes, and to obtain thereby as great accuracy as is now obtained with rifled ordnance and a much longer range.

Having thus described my invention, I claim as new and desire to secure by letters-patent—

1. In combination with the barrel *b*, the breech-block C, provided with a central port *e'''*, valve-seat *h*, and funneled entrance *i*, as and for the purpose substantially as described.

2. In combination with the projectile D, the elastic tail *k* and valve *m*, substantially as described.

3. In combination with the projectile D, the elastic tail *k*, valve *m*, and *l* for the attachment of the life-line, substantially as described.

LEWIS W. SPENCER.

Witnesses:

W. C. DONN.

C. SEDGWICK.

26 L S

LIST OF PLATES.

EXPLANATIONS.

(Plate I.)

- Fig. 1. Longitudinal section of the Spencer line-throwing gun :
- A. First reinforce.
 - E. Second reinforce.
 - G. Chase.
 - R. Trunnion ring.
 - D. Breech-block.
 - B. Bore.
 - C. Chamber.
 - F. Funnel-shaped cavity.
 - V. Vent.
- Fig. 2. Plan of Spencer line-throwing gun.
- A. Body of gun.
 - D. Breech-block.
 - R. Trunnion ring.
 - T. Trunnions.
 - V. Vent.
- Fig. 3. Front elevation of breech-block.
- Fig. 4. Cross-section of gun in rear of trunnions.
- Fig. 5. Front elevation of gun.

(Plate II.)

- Fig. 1. Side elevation of Spencer line-throwing gun and carriage.
- Fig. 2. Front elevation of same.
- Fig. 3. Spanner-wrench.
- Fig. 4. Piercing awl.
- Fig. 5. Plan and elevation of screw-driver.
- Fig. 6. Plan and elevation of small wrenches, only one shown, (wrenches are of the same size.)
- Fig. 7. Showing relative positions of gun before and after firing, showing position of line after firing.
(Range distorted :)
- A. Position of gun and carriage before firing.
 - B. Position of gun and carriage after firing.
 - C. Position of faking-box.
 - D. Position of projectile after firing.
 - E. Position of shot-line after firing.

(Plate III.)

- Fig. 1. Side elevation and partial section of Spencer life-saving projectile No. 1, showing arrangement of parts when assembled :
- B. Base-screws.
 - A. Front tang of spiral spring.
 - S. Coils.
 - V. Valve or gas-check.
 - C. Rear tang or tail of spiral spring.
- Fig. 2. Rear elevation of projectile No. 1.
- Fig. 3. Side elevation and partial section of Spencer life-saving projectile No. 2, without base-screw or spiral spring.
- Fig. 4. Rear elevation of projectile No. 2.
- Fig. 5. Side elevation and partial section of Spencer life-saving projectile No. 3.
- Fig. 6. Plan and elevation of wooden sabot.
- Fig. 7. Longitudinal section of Spencer line-throwing gun, showing arrangement of parts when loaded with projectile No. 1.
- A. Body of gun.
 - D. Breech-block.
 - V. Vent.
 - B. Projectile No. 1.
 - G. Sabot.
 - S. Spiral spring.

LIFE-SAVING APPARATUS.

SPENCER'S

LINE-THROWING GUNS, GUN CARRIAGE

AND IMPLEMENTS.

1880.

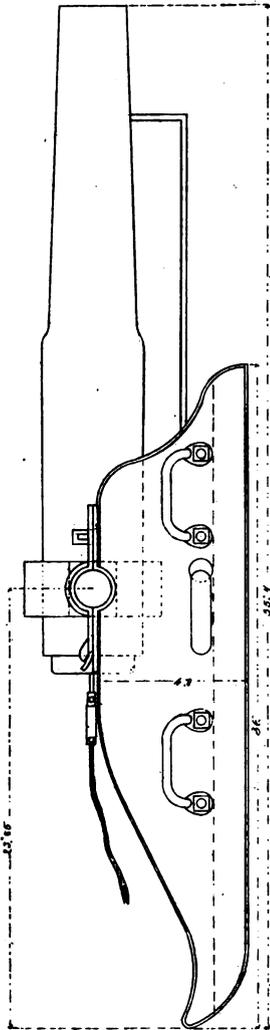


Fig. 1

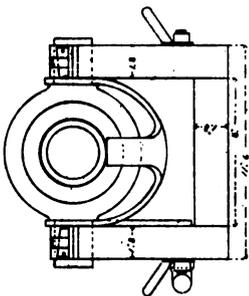


Fig. 2

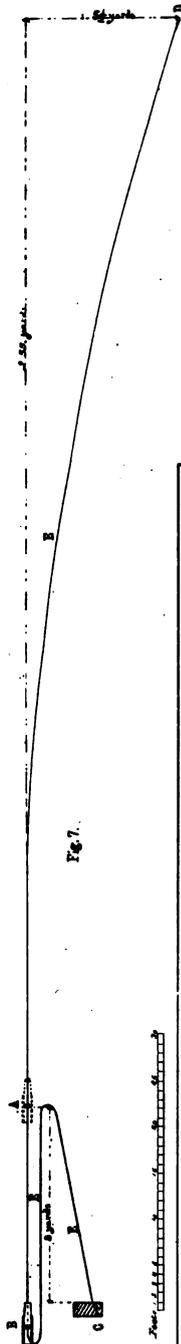


Fig. 7.

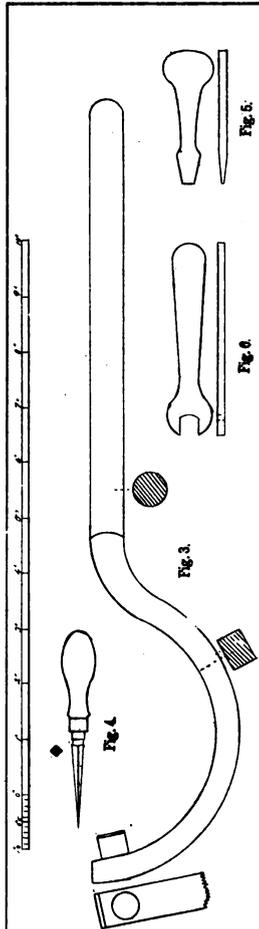


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

LIFE-SAVING APPARATUS.

SPENCER'S
LIFE-SAVING PROJECTILES,
—AND—
APPURTENANCES.

1880.

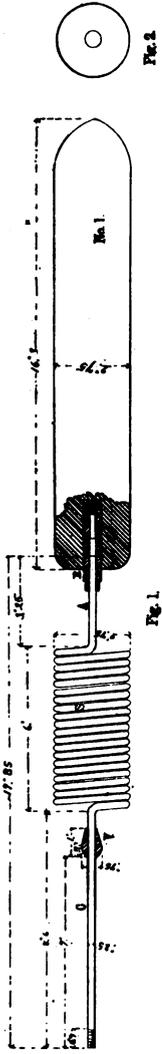


Fig. 1.



Fig. 10.

Fig. 11.



Fig. 12.



Fig. 13.

Fig. 14.

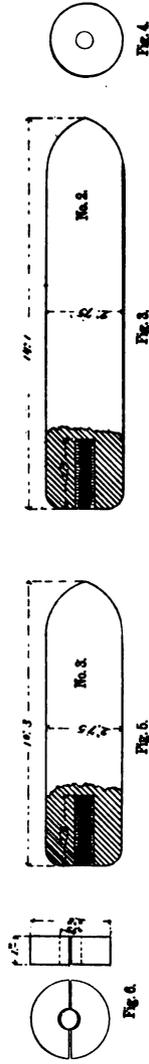


Fig. 2.

Fig. 4.

Fig. 3.

Fig. 5.

Fig. 6.

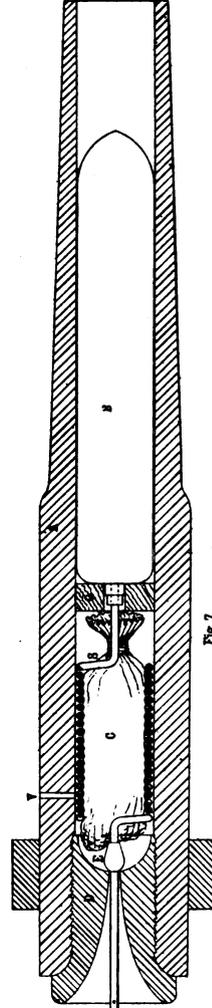


Fig. 7.

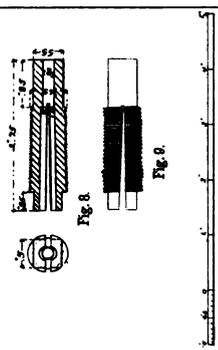


Fig. 8.

Fig. 9.



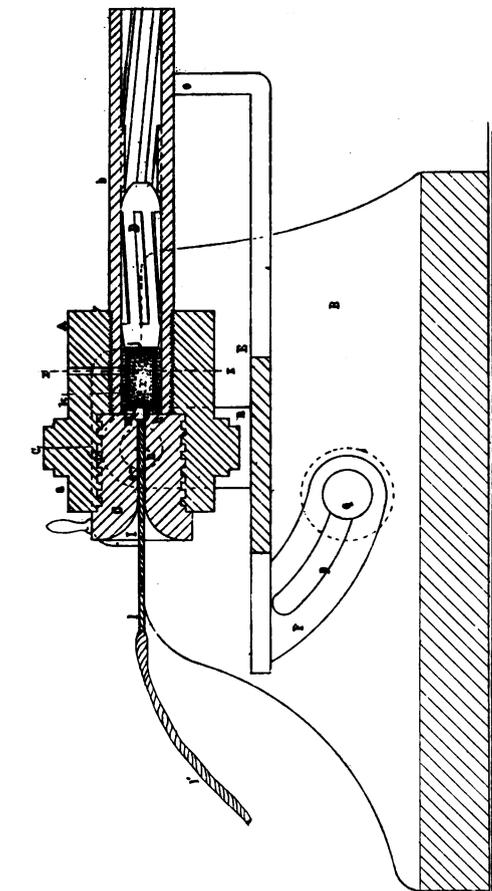


Fig. 1.

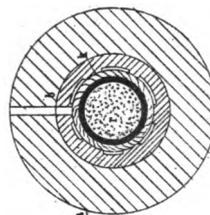


Fig. 4.



Fig. 5.

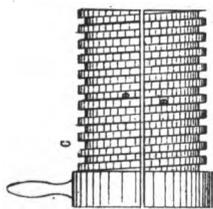


Fig. 2.

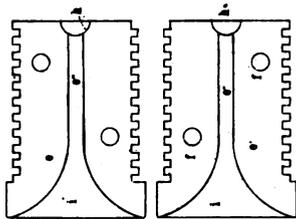


Fig. 3.

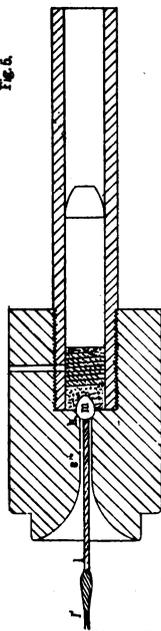


Fig. 6.

LIFE-SAVING APPARATUS.
 SPENCER'S
 LINE-THROWING GUNS & PROJECTILES.

As shown in his drawings for Letters Patent.

JUNE 22, 1860.

- C. Cartridge.
- E. Valve or gas-check.
- F. Compound sleeve.
- L. Shot-line.

- Fig. 8. Rear elevation and longitudinal section of base-screw.
- Fig. 9. Side elevation of base-screw.
- Fig. 10. Longitudinal section of compound sleeve.
- Fig. 11. Rear and side elevations of body of sleeve.
- Fig. 12. Front and side elevations of head of sleeve.
- Fig. 13. Longitudinal section of body of sleeve, showing shot-line and conical screw in position.
- Fig. 14. Side elevations of two forms of conical screws.

(Plate IV.)

Enlarged copies of drawings of Spencer line-throwing gun, &c., taken from the specifications accompanying letters-patent.

- Fig. 1. Longitudinal section of Spencer rifled gun and carriage.
- Fig. 2. Side elevation of breech-block.
- Fig. 3. Plan of two halves of breech-block.
- Fig. 4. Section of gun.
- Fig. 5. Side elevation of rifle projectile and spiral spring.
- Fig. 6. Longitudinal section of smooth-bore gun.

III.

REPORT ON POWDER AND CARTRIDGE-BAGS FOR THE UNITED STATES LIFE-SAVING SERVICE.

MADE BY LIEUT. D. A. LYLE, ORDNANCE DEPARTMENT, U. S. A.

I.—LIFE-SAVING SERVICE POWDER.

The powder now in use in the service was manufactured by the Hazard Powder Company, of Hazardville, Conn.

It has been found to be well adapted to the requirements of the coast service, and has been definitely employed to secure uniformity in the quality of powder.

The following report of Mr. Hare gives the record of the powder issued in 1879 to the life-saving stations.

The powder was packed in 5-pound tin canisters to protect it from the influence of moisture.

RECORD OF INITIAL VELOCITIES.

Station, National Armory, Springfield, Mass.; date, February 8, 1879.

Kind of arm..... Springfield rifle.
 Ammunition..... Prepared.
 Weight of powder..... 70 grains.
 Kind of powder..... Hazard's life-saving service powder.
 Weight of ball..... 405 grains.
 Object of experiment..... To test velocity and pressure of powder.

The powder was received on the 8th of November, and tested on the 9th of November, 1878.

Number of shot.	Le Boulengé.	Electro-ballistic.	Thread velocimeter.	Pressure, pounds.
1	1,296.5	1,300.3	1,296.9	23,450
2	1,280.9	1,281.4	1,281.3	23,450
3	1,304.4	1,300.3	1,302.3	24,470
4	1,300.0	1,300.3	1,307.6	.....
5	1,299.5	1,300.3	1,307.6	.....
Mean	1,296.3	1,296.5	1,291.0	23,790

Distance between targets for Le Boulengé..... 98 feet.

Distance between targets for electro-ballistic..... 97 feet.

Distance between targets for thread velocimeter..... 100 feet.

By whom taken:

R. T. HARE.

INSPECTION OF POWDER.

For convenience the powder tests have heretofore been made at the National Armory, Springfield, Mass.

The instruments used for obtaining velocities have been the Le Boulengé chronograph, the Benton electro-ballistic machine, and the Benton thread velocimeter.

For obtaining pressures the Rodman pressure guage, with musket housing, and the Benton dynamometer were used.

Though the pressures obtained differ somewhat from experiments made under the conditions of the service, still they afford a relative test, which is sufficient for all practical purposes.

The limits adopted are—

For initial velocities.... From 1,290 feet to 1,330 feet per second.

For pressures..... From 23,000 lbs. to 29,000 lbs. per square inch.

For specific gravities... From 1.77 to 1.79.

For range..... From 260 yards to 280 yards.

The experiments for "range" are made under the following conditions, viz:

Piece used..... 2" .5 Lyle gun.

Projectile..... Lyle service, (18.7 lbs.)

Charge of powder..... 3 ounces.

Kind of line..... Silver Lake braided linen, No. 7.

Elevation..... 25 degrees.

Direction of wind..... Right, left, or front.

Force of wind..... 6 to 10 miles per hour. •

It has been found that the limits here assigned will not impair the efficiency of the service, and will conduce to greater uniformity of results than has heretofore obtained.

II.—CARTRIDGE-BAGS.

The cartridge-bags described below are intended for use with the 2.5-inch Lyle gun employed in the United States Life-Saving Service. They are made of twilled serge or some other woollen material whose texture is fine enough to prevent the powder sifting through. Each bag is formed of two pieces of the same size and shape. The lower end of each half bag is semi-circular.

The cartridge-bags are cut out by means of sheet-metal patterns, and have the seam traced with chalk or pencil by the cutter. The seams are placed half an inch from the edge, and may be rapidly made by a sewing-machine.

For the 2.5 inch Lyle gun, two sizes of cartridge-bags are used—one, small for practice charges, and the other large, with capacity for the maximum service charge.

The shape and dimensions for the small bag are given in Fig. 2, Pl. XXVIII, Report on Life-Saving Ordnance, by Lieut. D. A. Lyle, Ordnance Department, U. S. A.

The large cartridge-bag for service charges is shown in accompanying plate, (Pl. 1, Fig. 6.)

Dimensions.

	Inches.
Length.....	8.7
Width.....	4.5
Distance of seam from edge.....	0.5

This cartridge-bag was designed, made, and issued, after the adoption of the calibre of the bronze guns (Lyle) now employed in the Service.

NATIONAL ARMORY,
Springfield, Mass., October 18, 1880.

IV.

REPORT ON SPONGE, SPONGE-COVER, AND CARTRIDGE-BAG FOR THE LIFE-SAVING APPARATUS.

BY LIEUT. D. A. LYLE, ORDNANCE DEPARTMENT.
(One plate.)

The articles described below complete the equipment of the Lyle life-saving gun. The figures in the accompanying plate are working drawings, giving all necessary dimensions.

SPONGE.

Plate I, Figures 1 and 2.

The sponge-staff and rammer have been described* in Lieutenant Lyle's report for 1878, and a drawing of the implement is shown in Plate III, Fig. 6, of that report, but no reference was made to the dimensions of the material. The sponge is composed of two pieces, either of sheep-skin, with the wool on, or of the usual sponge-cloth heretofore described. One piece is circular to form the head; the other rectangular, to form the body of the sponge. The head is sewed to the body, and then the sponge placed on the staff, the edges of the body drawn together, and the whole fastened to the staff by means of long copper tacks.

Dimensions.

	Inches.
Heads: circular.	
Diameter.....	1.9
Body: rectangular.	
Length.....	5.0
Width.....	6.0

These pieces are cut out by means of patterns of wood or sheet-metal.

* *Vide* Report on Life-Saving Ordnance, 1878, by Lieut. D. A. Lyle, Ordnance Department, U. S. A., page 76; also Report of Chief of Ordnance, U. S. A., 1878, page 250; and Report of Operations of U. S. Life-Saving Service, 1878, page 292.

SPONGE-COVER.

Plate I, Figures 3, 4, and 5.

This cover is made of white duck or canvas, and is designed to protect the sponge from sand and rain. Like the sponge, it is composed of two pieces, one circular, the other rectangular. The head is sewed to the end of the body, and the longitudinal edges sewed together, after which the cover is turned inside out, bringing the projecting edges on the inside. The mouth or open end of the canvas cylinder has a hem run around it, through which is passed a twine cord to draw it together and bind it to the staff. A knot is tied in each end of the twine to prevent its being drawn through the hem. A loop of bridle-leather is sewed to the circular end to facilitate the removal of the cover from the sponge.

<i>Dimensions.</i>		Inches.
Heads: circular.		
Diameter		3.2
Body: rectangular.		
Length		10.25
Width		9.25
Strap, (for loop.)		
Length		6.0
Width		0.75

SERVICE CARTRIDGE-BAG, (large.)

Plate I, Figure 6.

This is made of serge or other woollen material. The diagram shows one of the half-bags. The dotted line 0".5 from the edge indicates the position of the seam.

<i>Dimensions.</i>		Inches.
Total length		8.7
Total width		4.5
Width between seams		3.5
Distance from seam to edge		0.5
Radius of semicircular end		2.25

EXPLANATION OF PLATE.

- Fig. 1. Developed cylindrical body of sponge.
 Fig. 2. Circular end of sponge.
 Fig. 3. Developed cylindrical body of sponge cover.
 Fig. 4. Circular end of sponge cover.
 Fig. 5. Development of loop on end of cover.
 Fig. 6. Half cartridge-bag, (large, service.)

NATIONAL ARMORY, June 2, 1881.

V.

DESCRIPTION OF A NEW METHOD OF FASTENING FAKING-BOXES FOR THE LIFE-SAVING SERVICE.

BY LIEUT. D. A. LYLE, ORDNANCE DEPARTMENT.

(One plate.)

PLATE I.

The method of fastening in use in the United States Life-Saving Service prior to 1879 was simply two staples and a hook. In transportation the hooks were liable to drop out of the engaging-staple on

LIFE-SAVING APPARATUS.
DETAILS OF SPONGE COVER,
Service Cartridge Bag. (large.)

1879.

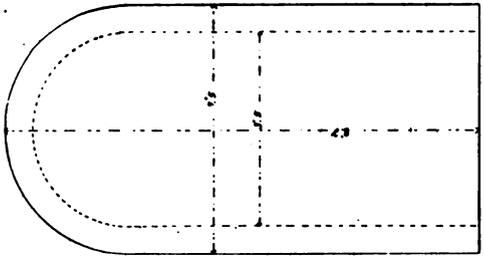


Fig. 1.

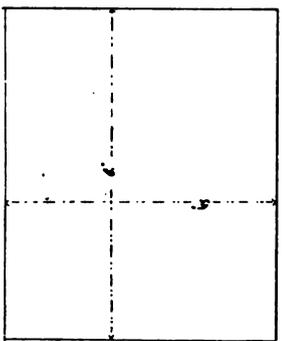


Fig. 2.

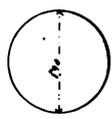


Fig. 3.

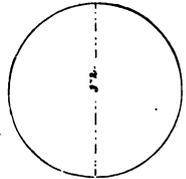


Fig. 4.

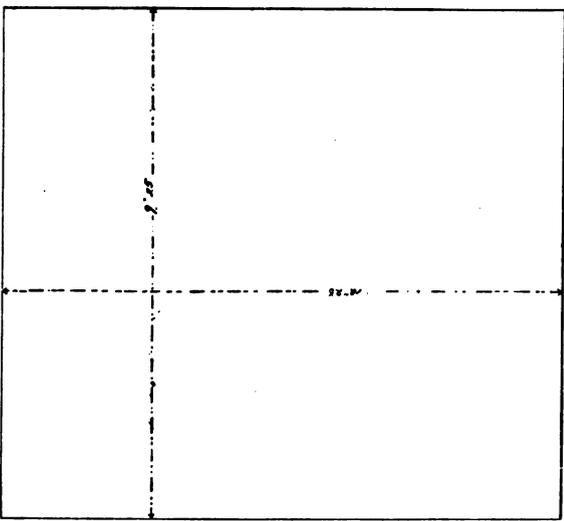


Fig. 5.



Fig. 6.



the box, and permit the frame carrying the faking-pins and shot-line to fall to the ground, and the line to become entangled.

While experimenting with life-saving apparatus during the years 1877-'78, Lieut. D. A. Lyle, Ordnance Department, U. S. A., contrived a metallic hasp and turn-button to replace the old hook and staple. In his report of 1878, he says :

“Hasps and turn-buttons were tried on the experimental boxes ; these, though safe, sometimes gave trouble in getting ready for firing when in great haste, and the button being on the box, it was thought to give an opportunity for the line when vibrating or whipping to catch and be cut off.”

In view of these serious disadvantages, Lieutenant Lyle devised the fastening described in this paper, and recommended that “hasps, staples, and lever snap-hooks” be tried.*

The new fastening was submitted to Capt. J. H. Merryman, U. S. R. M., Inspector, and S. I. Kimball, General Superintendent of the Life-Saving Service.

The new method was adopted, and all faking-boxes manufactured since November, 1878, have been supplied with the improved fastening.

DESCRIPTION.

The system consists of three staples, a hasp, ring, safety-chain, and lever snap-hook.

The lever snap-hooks are made of malleable iron ; the two large staples and hasp, of wrought iron ; the small staple, ring, and safety-chain, of brass. The whole are tinned, to protect them from the effects of rust.

The only thing attached to the box is one of the large staples ; consequently there is nothing on the faking-box that can interfere with or injure the line so far as the fastening is concerned.

The other parts are all attached to the “frame,” and are removed with it when preparing for firing.

The safety-chain is that used by plumbers for attaching the stoppers of the exit tubes of bath-tubs and stationary wash-basins to their fixtures. It is purchased by the “piece,”† and cut into the required lengths.

The lever snap-hooks are known to the trade as “Andrew’s patent lock-snaps, $\frac{3}{4}$ -inch, No. 10,” and are manufactured by O. B. North & Company, of New Haven, Conn. These snaps are put up in boxes containing “one-half gross” each.

The operation of the lever snap is very simple. The mere act of hooking the snap in the staple compresses the spring, raises the bent end of the lever, allows the staple to pass within the hook when the elastic force of the spring closes the snap, and locks it.

To remove the hook from the staple, seize the looped end with the thumb and index finger, and press them together. This action will depress the end of the lever on the opposite side of the fulcrum from the

* *Vide* Report on Life-Saving Ordnance, &c., by Lieut. D. A. Lyle, Ordnance Department, U. S. A., 1878, p. 28. Also Annual Report of Chief of Ordnance, U. S. A., 1878, p. 202 ; and Annual Report of Operations of the Life-Saving Service, by S. I. Kimball, General Superintendent, 1878, p. 244.

† A “piece” is twelve feet in length.

hook and unlock the snap, so that it can be withdrawn from the staple. These lock-snaps were intended for the use of harness-makers, and hence the lengthened slot at the end opposite the hook—which was made for the attachment of a strap or rein of a given width. This length of slot is unnecessary, as regards the convenience of fastening the safety-chain and snap-hook together, but serves a most useful purpose in the Life-Saving Service.

The excess of length of slot necessitates a corresponding amplitude of the rear end of the hook, and allows a much wider cavity for the play of the rear end of the bent lever. It also admits of this end of the lever being made spatula-shaped.

The size of the cavity and end of lever are such that the snap may be unlocked with ease by the surfman, no matter how large his thumb may be, or how thick the gloves or mittens that he is wearing.

This is a point of great importance, as the surfman can manipulate this portion of the apparatus in the coldest weather without removing his hand-covering.

Dimensions.

	English.	French.
	<i>Inches.</i>	<i>Centimeters.</i>
Hasp, total length	3.4	8.636
Length of rectangular part	2.8	7.112
Width	0.75	1.905
{ Lower end	0.50	1.27
{ Upper end	0.125	0.3175
Thickness	0.25	0.635
Hole for staple in frame	0.375	0.9525
{ Diameter	1.20	3.048
{ Distance of center from lower end	0.20	0.508
Slot for staple on box	2.75	6.985
{ Length	1.15	2.921
{ Width	0.30	0.762
{ Distance of upper end of slot from lower end of hasp	1.60	4.064
Length of lower end, bent	0.15	0.381
Amount of deflection	0.30	0.762
Staple for frame	0.30	0.762
{ Length	1.40	3.556
{ Thickness	0.15	0.381
{ Distance between legs	0.40	1.016
Staple for faking-box	0.70	1.778
{ Length	0.05	0.127
{ Thickness	0.15	0.381
{ Distance between legs	0.60	1.524
Staple for safety-chain	0.10	0.254
{ Length	3.00	7.62
{ Width of links	0.20	0.508
{ Thickness of links	0.05	0.127
{ Total length	2.55	6.477
Brass ring	0.45	1.143
{ Exterior diameter	0.60	1.524
{ Diameter of wire	3.00	7.62
{ Length	0.20	0.508
Safety-chains	0.05	0.127
{ Width of links	2.55	6.477
{ Thickness of links	0.45	1.143
{ Total length	0.45	1.143
Snap-hook	0.45	1.143
{ Width of body	0.45	1.143
{ Distance between point of hook and body	0.45	1.143

EXPLANATION OF PLATE.

PLATE I.

- Fig. 1. End elevation of faking-box, showing manner of fastening, and the "yellow metal" angle-pieces on the corners of the box.
 Fig. 2. Side elevation of hasp and large staples.
 Fig. 3. Front and side view of hasp, before curving.
 Fig. 4. Front and side view of hasp, after curving.
 Fig. 5. Front and side view of staple for "frame."
 Fig. 6. Front and side view of staple for end of faking-box.
 Fig. 7. Plan and elevation of safety-chain.
 Fig. 8. Plan and elevation of brass ring for connecting snap-hook and chain.
 Fig. 9. Front and side view of small staple for attaching safety-chain to "frame."
 Fig. 10. Plan of snap-hook, and partial section and side elevation, showing spring and bent lever.

VI.

DESCRIPTIVE REPORT ON TWO GALVANIZED SHEET-IRON FAKING-BOXES DESIGNED FOR THE LIFE-SAVING SERVICE.

BY LIEUT. D. A. LYLE, ORDNANCE DEPARTMENT.

(Two plates.)

It has been found that the term of service of a wooden faking-box is very short. The vibrations of the line, when the full charge of powder is used, are so violent that the ends of the box are often split, and sometimes the sides and top.

It was for the purpose of preventing this splitting that angle pieces of cast brass were placed on the four corners. Though this method of construction has remedied the defect to a certain extent, it has not fully obviated it. To secure the necessary lightness of the box, it was requisite that it be made of light wood, and that the material be very thin, consequently the box is quite fragile.

If a material can be obtained that will possess a greater degree of durability than one made of wood, and weigh no more than the latter, that material should be adopted, provided the cost of manufacture be reasonable.

The experimental faking-boxes described below were designed to meet the demands of the Life-Saving Service for a stronger faking-box, without increasing the size, weight, or cost.

EXPERIMENTAL FAKING-BOX A.

PLATE I.

DESCRIPTION.

This faking-box is made of "No. 24" galvanized sheet-iron. Its internal dimensions are the same as those of the regulation box. It is intended to be used in connection with the wooden frame and faking-pins now in service. The seams are at the corners, and are soldered.

The edge of the box is stiffened by an iron wire, two-tenths of an inch in diameter, over which the sides and ends of the box are rolled.

Wire handles supplant the rope handles of the old box and are fastened to the box by sheet-iron straps, each held by two rivets.

A small looped strap of iron at each end of the box replaces the staples of the wooden box.

Dimensions, weight, &c.

	Inches.	Centimeters.	
Interior dimensions	{ Length	34.9	88.644
	{ Width	18.8	47.751
	{ Depth	12.2	30.937
Thickness of sheet-iron	0.02	0.508	
Diameter of perimeter wire	0.20	5.08	
Two straps for handles	{ Length	2.00	5.08
	{ Width	1.25	3.175
Two handles, wire-loops	{ Length, interior	4.60	11.684
	{ Width, interior	2.80	7.112
	{ Diameter of wire	0.25	0.635
Two looped straps, (ends)	{ Total length	3.75	9.525
	{ Width	0.40	1.016
	{ Width of loop	0.40	1.016
	{ Diameter of wire	0.15	0.381
Distance from edge to upper side of loop	2.6	6.604	
Distance of handle from edge of box	7.0	17.780	
Weight of box, without frame or pins	17.5	7.932	

The dimensions of the frame, false bottom, pins, &c., are the same as those in the service box.

The outside of the sheet-iron faking-box is painted in the usual manner.

COMPARISON OF WEIGHTS.

The following table gives the weights of a number of wooden faking-boxes, size A, made at the National Armory in July, 1880. The timber for these boxes was well seasoned, and had laid in a warm, dry room for several months before the articles were made. It was perfectly dry, and it is evident that the boxes had their minimum weight.

TABLE I.

Number of box.	Weight.	Number of box.	Weight.	Number of box.	Weight.
	<i>Pounds.</i>		<i>Pounds.</i>		<i>Pounds.</i>
1.....	20.50	10.....	20.75	19.....	20.25
2.....	20.25	11.....	21.00	20.....	20.25
3.....	21.00	12.....	20.25	21.....	20.00
4.....	19.75	13.....	20.50	22.....	20.50
5.....	21.50	14.....	21.75	23.....	22.00
6.....	19.50	15.....	20.75	24.....	20.50
7.....	21.00	16.....	20.25	25.....	21.00
8.....	21.25	17.....	20.50		
9.....	21.25	18.....	21.25		

Total weight of 25 boxes, (wood)	Pounds. 517.5
Mean	20.7
Weight of iron box.....	17.5
Difference in favor of iron box.....	3.2

EXPERIMENTAL FAKING-BOX B.

PLATE II.

The box is similar in construction to the one previously described, but is smaller, and conforms in size to the small faking-box (B) now used.

The material is No. 27, galvanized sheet-iron. It also is painted in service colors.

Dimensions, weight, &c.

	Inches.	Centime- ters.	
Interior dimensions	{ Length.....	22.8	57.911
	{ Width.....	14.8	37.591
	{ Depth.....	12.2	30.937
Thickness of sheet-iron.....	0.016	0.406	
Diameter of perimeter wire.....	0.20	0.508	
Two straps for handles. {	Length.....	2.40	6.096
	Width.....	1.25	3.175
Two handles, wire loops. {	Length, interior.....	4.00	10.160
	Width, interior.....	2.25	5.715
	Diameter of wire.....	0.25	0.635
	Total length.....	3.75	9.535
Two looped straps	Width.....	0.40	1.016
	Width of loop.....	0.40	1.016
	Diameter of wire.....	0.15	0.381
Distance from edge to upper side of loop.....	2.60	6.604	
Distance of handle from edge of box.....	7.00	17.780	
Weight of box, without frame and pins	Pounds. 10.0	Kilograms. 4.536	

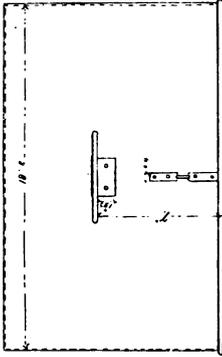


Fig. 3.

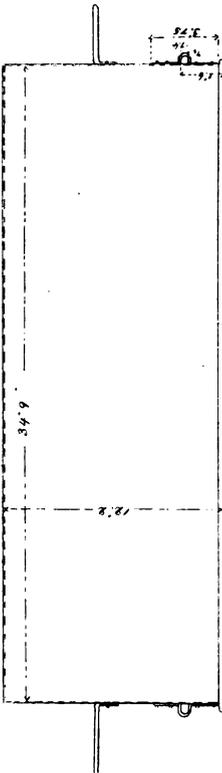


Fig. 2.

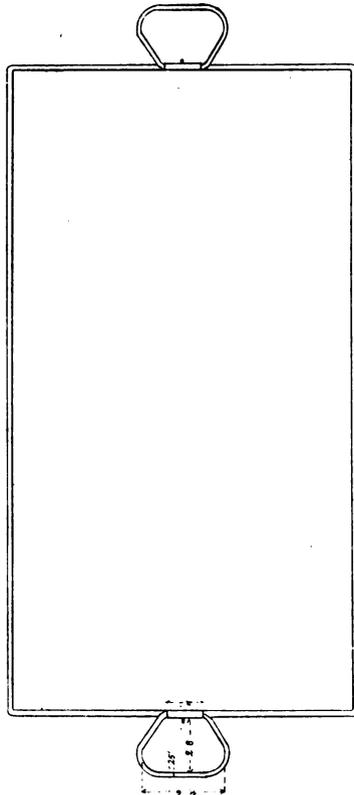


Fig. 1.

LIFE-SAVING APPARATUS
 EXPERIMENTAL FAKING BOX "A."

Galvanized Sheet Iron, No. 24.
 (Weight 73 Lbs.)
 REGULATION SIZE.

DESIGNED BY
 Lieut. D. A. LITTLE, Ord. Dept., U. S. Army.
 MAY 1, 1880.

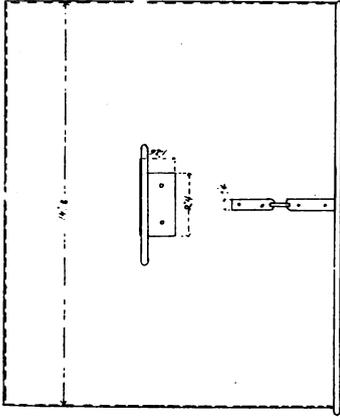


Fig. 3.

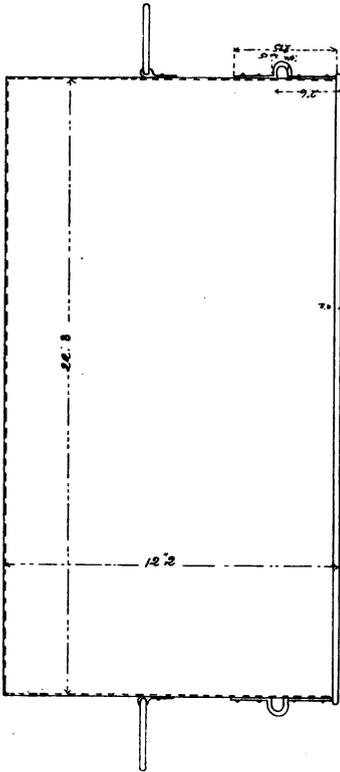


Fig. 2.

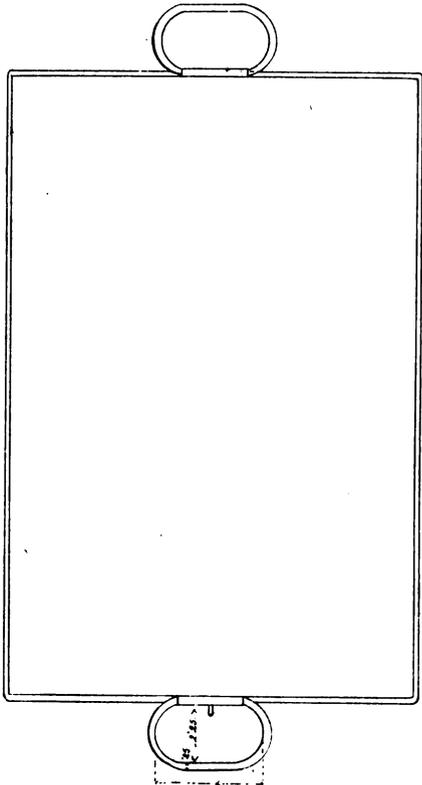


Fig. 1.

LIFE-SAVING APPARATUS
 PATENTED BY
EXPERIMENTAL FAKING BOX, "B"
 CALVEKED SHEET IRON, No. 87.
 (INVENTOR IN U.S.)

REGULATIONS 8828.

DESIGNED BY
James D. A. EYLER, Ord. Dept., U. S. Army.
 MAY 1, 1900.

COMPARISON OF WEIGHTS.

The twenty-five wooden boxes, size B, were made from the same lot of lumber and at the same time as those given in Table I.

TABLE II.

Number of box.	Weight.	Number of box.	Weight.	Number of box.	Weight.
	<i>Pounds.</i>		<i>Pounds.</i>		<i>Pounds.</i>
1.....	14.75	10.....	15.00	19.....	14.00
2.....	14.75	11.....	15.00	20.....	14.75
3.....	14.75	12.....	15.25	21.....	14.75
4.....	14.25	13.....	14.75	22.....	14.50
5.....	15.50	14.....	14.25	23.....	14.75
6.....	14.00	15.....	13.75	24.....	15.00
7.....	14.75	16.....	14.00	25.....	15.00
8.....	14.25	17.....	14.25		
9.....	14.75	18.....	15.25		
					<i>Pounds.</i>
Total weight of 25 boxes, (wood).....					366.0
<i>Mean</i>					14.64
Weight of iron box.....					10.00
Difference in favor of iron box.....					4.64

COST.

The cost of manufacture is a little less than the cost of the wooden faking-boxes of the same size.

VII.

FIRING-RECORD BOOKS.

NATIONAL ARMOY, SPRINGFIELD, MASS., June 1, 1881.

SIR: Having found in experimental firing with life-saving ordnance, that great difficulty was experienced in keeping a complete record of the shots fired, when only a blank book was used, I have deemed it advisable to invite your attention to this fact, and to suggest that a safe and accurate method of recording the data, so as to be available for future use or reference, may be attained by the employment of blank books with the requisite printed headings.

I have the honor to submit herewith samples of such records for your consideration.

It frequently happens that some important data are omitted or forgotten in the hasty method of taking notes in a blank memorandum book. These omissions vitiate, partially at least, the value of the trials, and can only be avoided by the adoption of some systematic method of recording the results of firing.

I would respectfully suggest that two books be furnished each station as per samples; one, the station record book, the other a pocket memorandum book, to be carried by the keeper when making practice shots.

At some future time it will be necessary to inspect the guns for de-

facts of the bore, trunnions, &c., due to service use, and the value of this inspection will be greatly enhanced by a knowledge of the service each piece has performed.

Should you deem any action advisable, I would respectfully request that this subject be submitted with your suggestions to the Board on Wreck Ordnance at its next meeting, for its opinion or action as you may see fit.

Very respectfully, your most obedient servant,

D. A. LYLE,
Lieut. of Ordnance, U. S. A.

To the Hon. S. I. KIMBALL,
General Superintendent U. S. Life-Saving Service.

1.—MEMORANDUM FIRING RECORD.

The following printed legend is to be stamped upon the left-hand cover of the memorandum firing-books:

U. S. LIFE-SAVING SERVICE.

MEMORANDUM

FIRING RECORD.

STATION No. ——. DISTRICT No. ——.

— — — — —, *Keeper.*

INSTRUCTIONS.*

This memorandum firing record is carried by the keeper who fills the appropriate blanks with the data derived from each practice shot. The record is made with a pencil, and should *always* be made at the time of firing in order to avoid the errors incident to trusting to the memory.

The first, or left-hand, page is filled out before firing the piece. After firing, first insert the direction of the wind and estimate its velocity when no means exist for measuring it. Then measure and record the range, deviation of shot, and drift of the line. If the deviation be to the left draw a pencil line through the word "right;" if to the right, strike out the word "left." Proceed similarly for the drift of the line, and if the drift be measured opposite the 300-yards' stake, strike out "200," and *vice versa*.

Any remarks may be entered on the lower half of the right-hand page. The vertical arrow indicates the direction in which the piece is pointed; the inclined arrow shows the direction and angle of the wind. This arrow flies with the wind and shows in the model that the wind is blowing from the left and rear.

A reference to the "model page" will show the manner of making the record. The script [*Italic*] letters and figures in the parentheses indicate how the blanks should be filled. These memoranda are recorded *in ink* in the station record book at the leisure of the keeper, and prevents the loss of the data obtained.

The following double page serves as a model to guide the keepers in

* These instructions should be placed in the front part of the book.

entering their records. It should follow the page containing the printed instructions. The corners should be rounded off, and the sheet folded so that the halves face each other in order that the complete record of each shot may be seen at once.

[MODEL PAGE.]

Station No. (1.) District No. (4.)
 State of (New Jersey.)
 Date, (November 27th.) 188-
 Gun—Kind, (Lyle gun.)
 Calibre, (2.5) inches.
 Number of round, (2.)
 Elevation, (30) degrees.
 Powder—Kind, (Hazard's Life-Saving Service.)
 Charge, weight, (6) ounces.
 Projectile—Kind, (Lyle Life-Saving.)
 Weight, (18.75) pounds.
 Kind of primer, (Friction, copper.)
 Shot line—Kind, (Silver Lake, braided.)
 Material, (Linen.)
 Length, (700) yards.
 Diameter, (0.10) inches.
 Weight, (7.62) pounds.

Action of line in firing, (good, kinked a little.)
 Range, (617) yards.
 Deviation of shot from plane of fire,
 Distance, (4) feet, (right,) left.
 Drift of line at 300-yds. stake, (241) feet, (right,) left.



Wind—Direction,

Velocity, (15.55) feet per second.
 (10.5) miles per hour.

REMARKS.

The following blank form follows the "model page," and shows the manner of printing and spacing. "No. 1" is the left-hand page, and "No. 2" the opposite right-hand page. The book should have the corners rounded.

(No. 1)
 Station No. —. District No. —.
 State of —.
 Date, —, 188 —.
 Gun—Kind —.
 Calibre, — inches.
 Number of round, —.
 Elevation, — degrees.
 Powder—Kind, —.
 Charge, weight, — ounces.
 Projectile—Kind, —.
 Weight, — pounds.
 Kind of primer, —.
 Shot line—Kind, —.
 Material, —.
 Length, — yards.
 Diameter, — inches.
 Weight, — pounds.

(No. 2.)
 Action of line in firing, —.
 Range, — yards.
 Deviation of shot from plane of fire,
 Distance, — feet, right, left.
 Drift of line at { 200 } yards stake, — ft., right, left.
 { 300 }



Wind—Direction,

Velocity, — feet per second.
 — miles per hour.

REMARKS.

2.—STATION FIRING RECORD.

The legend to be placed upon the outside of the station-book is as follows:

U. S. LIFE-SAVING SERVICE.

FIRING RECORD

OF

LYLE BRONZE L. S. GUN No. —.

STATION No. —. DISTRICT No. —.

All records in this book should be made in ink, and taken from the keeper's memorandum-book. The records should be neatly and accurately kept, and should be inspected by the superintendent and inspector of the Service. Every shot or round fired should be placed on record in this book whether for practice or at a wreck. Each double page, with printed headings, is followed by a corresponding double blank page for remarks or notes of explanation. The pages should be eight inches long by ten and a half inches wide, and the book substantially bound.

STATION FIRING RECORD.

Sample of headings and blanks. Have in front instructions prescribed by General Superintendent, and the "model page" filled out in "script" to show manner of keeping record.

On first blank page of book print as follows:

"Number of times Lyle gun No. — has been fired since its receipt at this station and before the receipt of this book —."

The alternate double pages are left blank for remarks, &c.

[MODEL PAGES.]

[Left-hand page.]

RECORD OF FIRINGS WITH THE

Name of place, Sandy Hook, Station No. 1, District No. 4,

DATE.	GUN.				Elevation.	POWDER.		PROJECTILE.		PRIMER.
	No. of round.	Kind.	No. of gun.	Calibre.		Kind.	Weight.	Kind.	Weight.	Kind.
188—				In.	Deg.		Ozs.		Lbs.	} Friction, copper..... }
Nov. 27	1	Lyle ..	16	2.5	25	Life-Saving Service.	6	Lyle service.	18.7	

[Right-hand page.]

LYLE LIFE-SAVING BRONZE GUN—CALIBRE, 2.5 INCHES.

State of New Jersey, Latitude 40° 27' 42" N., Longitude 73° 59' 34" W. from Greenwich.

Kind.	SHOT LINE.						Range.	Deviation of shot.		Drift of line at 200 } 300 } yards.		WIND.		
	Number.	Material.	Length.	Diam.	Weight.	Action.		Feet, right or left.	Feet, right or left.	Direction.	Velocity.	Miles per hour, estimated.	Character of.	
Silver Lake, braided.	7	Linen	Yds	In.	Lbs	} Good, kinked, or broke. }	Yds.	10 L.	40 L.		21.0	Gusty.		
			700	0.22	35									

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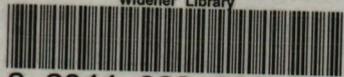
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