

Salvage Operations on the Empress of Ireland.

Inasmuch as it was definitely settled that it was practically impossible to raise the Empress of Ireland so unfortunately sunk in the lower St. Lawrence, the next thing was to save whatever was possible from the wreck—all the bodies of the drowned that could be reached, the mails and the gold, of which there was a large amount.

When working in the interior of a sunken vessel the divers very properly object to following intricate passages where air pipes may be fouled and life lines cannot have a direct pull, and especially where, as in this case, the working pressure approaches the limit of endurance. One diver lost his life on this work. It was determined, therefore, to cut a number of holes in the inclined side of the ship to give the men short and direct entrances to certain locations where they might expect to make the most important finds.

The general scheme was to cut a number of rectangular openings, say 4 ft. or more in dimensions, through the steel plates, giving the divers free passage through them, and four or more of these holes have been cut. For each side of the rectangle a row of holes is drilled as close together as possible, defining the opening all around, and then the piece inclosed is torn out. This job is not as easy as the telling of it, the most difficult part of all, perhaps, being the drilling of the first one or two holes, on account of the difficulty of applying the necessary pressure behind the drill to make it cut. After two corner holes have been drilled, hook bolts can be inserted and these are made to support a steel beam placed at such a distance from the sheet as to form a proper backer for the drill. The work is then comparatively easy for all

that row. The thin portions between the holes are not cut away by chisels or otherwise, but the sheet is torn away bodily by brute force. The surface being inclined at a considerable angle, hooks can be inserted in a number of holes at once along the bottom, and then a powerful pull from a hoisting engine on the wrecker will do the rest. In this case it is not necessary to pull the sheet entirely off; it can be swung up and let remain there like an open door.

At the depth where the drills were employed the water pressure was about 40 lb., so that this had to be provided for by additional air pressure to correspond. The air is supplied by two Rand compressors, RC, of a type now somewhat obsolete, but which have done excellent service in other places. The air for the divers is supplied by hand operated pumps, which the divers prefer. Six divers are employed with a large gang of men for the various service required. The work of salvage is being done by King & Wotherspoon, of New York. —F. Richards, in Engineering Record.

Shipping Report From Fort William.

F. & W. Jones, grain, vessel and marine insurance brokers, Fort William, Ont., wrote Oct. 15:—Coal arrivals are still keeping up, there being 16 cargoes, two anthracite and 14 bituminous, in the first half of October. Dispatch continues good, and much on the same lines as at our last writing. Western rail shipments have been more active but are not yet up to what is usual at this season of the year. A most noticeable feature is the small amount of tonnage lined up, and docks expect little improvement for the remainder of the season. The current opinion is that stocks are ample for the expected winter western shipments.

The grain situation has been disappointing from a shipping viewpoint. While lake shipments have naturally advanced, on account of the arrival of the new crop, there has been no semblance of rush business. Ninety three cargoes have gone east since the first of the month, 78 of which were in Canadian bottoms and 15 in U.S. bottoms, showing an aggregate of 6,675,116 bush. of all grains. The total stocks in elevators have steadily increased, and at time of writing stand at 22,462,904 bush. against 18,414,290 on Oct. 1. It will thus been seen that movement is by no means over active. There is still a large quantity of grain held in western line elevators yet to come forward. Much of this is said to be still in farmers' hands, who are apparently waiting more active markets. Should a higher export market develop, undoubtedly the larger amount of this grain would be rushed forward to the head of the lakes and thus further add up stocks. There are some four vessels lined up at elevators to load winter storage grain to be held at eastern points, and several others are expected to arrive shortly. As yet there are no vessels in sight for storage at the head of the lakes, although two vessels have laid up expecting to secure cargoes. While the general feeling, in view of the foregoing, is one of uncertainty, still it is thought likely that there will be a steady demand for winter storage boats. Although shippers at the moment do not appear to be active buyers, it is known that they already hold a good quantity of grain, and they will be naturally anxious to carry this over at the least possible cost, which means winter vessel storage. Stocks at date, receipts and shipments, are as follows:—

	Stocks.	Receipts.	Shipments
Wheat	17,206,128	11,979,531	11,121,304
Oats	3,174,757	2,857,630	1,496,629
Barley	553,379	480,238	335,209
Flax	1,528,640	430,929	757,549

List of Steam Vessels Registered in Canada During August and September, 1914.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines Etc.	Owner or Managing Owner
134367	Dick T.....	Sorel, Que.....	Sorel, Que..... 1914	64 0	15 2	6 3	44	20	16n.h.p. sc.	Sable Union Co., Quebec, Que.
131220	Electrona.....	Sydney, N.S.....	Portland, Me..... 1913	108 0	23 5	9 6	231	157 46	" "	Cape Breton Electric Co. Sydney, N. S.
134358	Felicia D.....	Montreal.....	Sorel, Que..... 1914	81 0	22 2	11 6	161	80 54	" "	Sincennes McNaughton Line, Montreal.
134379	Fred A. Lee.....	Sault Ste Marie Ont	Port Huron, Mich..... 1896	72 0	15 5	10 0	65	32 14	" "	L. Penhorwood, Sault Ste. Marie, Ont.
134253	Garry.....	Winnipeg.....	Selkirk, Man..... 1914	101 6	20 5	8 5	120	81 31	" "	North West Navigation Co., Winnipeg, Man.
134441	Hudson Bay Terminals, Lighter No. 3	Toronto.....	Toronto..... 1914	112 0	21 5	9 0	268	129 19	" "	Minister of Railways and Canals, Ottawa, Ont.
130440	Inland (1).....	Sarnia, Ont.....	Cleveland, Ohio..... 1894	248 0	42 0	21 5	1,889	1,098 146	" "	Reid Wrecking Co., Sarnia, Ont.
134250	J. H. G. Haggarty.....	Toronto.....	Collingwood, Ont..... 1914	536 0	58 3	27 3	7,462	5,704 217	" "	St. Lawrence & Chicago Steam Navigation Co., Toronto.
134138	Le Progres.....	Quebec, Que.....	Lauson, Que..... 1914	126 5	34 2	11 0	465	242 37	" "	City of Three Rivers, Que.
133677	Musquash.....	Halifax, N.S.....	Portsmouth, Eng..... 1894	51 0	11 8	5 2	22	15 12	" "	F. Longley, Halifax, N.S.
134312	Northland Call	Kenora, Ont.....	Athabasca, Alta..... 1911	95 3	18 0	2 4	103	55 3	" pa	Northern Transportation Co., Athabasca, Alta.
134311	Northland Echo.....	Kenora, Ont.....	Athabasca, Alta..... 1912	120 0	24 0	3 6	147	79 5	" "	" " "
134184	P. W. D. No. 1 (2).....	St. John, N. B.....	Sorel, Que..... 1905	244 0	42 8	18 0	1,605	888 66	" sc	Minister of Public Works, Ottawa.
136307	Sable I.....	Windsor, N.S.....	Paisley Scotland..... 1914	183 0	28 6	12 2	734	341 85	" "	A. Farquhar, Halifax, N.S.
134276	Sicamous.....	Victoria, B. C.....	Okanagan Landing, B. C..... 1914	200 5	40 0	8 0	1,787	994 50	" pa	C.P.R. Co., Montreal.
115849	Tarantula.....	Montreal.....	Poplar England..... 1902	152 7	15 3	7 8	124	84 59	" sc.	J. K. L. Ross, Montreal.
134016	Thomas Fisher	Port Arthur, Ont.....	Fort William, Ont..... 1914	65 0	14 7	7 1	52	23 14	" "	Great Lakes Dredging Co., Port Arthur, Ont.
133949	Winnipeg (3).....	Ottawa, Ont.....	Newcastle on Tyne..... 1912	415 0	55 2	31 1	6,330	3,863 597	" "	International Petroleum Co., Toronto.

(1) Formerly J. W. Nicholas. (2) Formerly W. S. Fielding. (3) Formerly Adorna.

List of Sailing Vessels and Barges Registered in Canada During August and September, 1914.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
126127	Bertie Calcins.....	Kingston, Ont.....	Schr.....	Two Rivers, Wis..... 1874	134 4	27 2	9 3	227	H. Vandusen, Deseronto, Ont.
130977	C. S. B. D. and C. Co.'s No. 8.....	Collingwood, Ont.....	Scow.....	Collingwood, Ont..... 1914	130 0	30 0	10 7	389	C. S. Boone Dredging & Construction Co., Toronto.
33653	Ellen, Mary.....	Halifax, N. S.....	Schr.....	Pasbebiac, N. S..... 1878	71 3	20 4	8 3	66	R. Jones & Whitman, Halifax, N.S.
134380	McLean, No. 3.....	Sault Ste. Marie, Ont.....	Scow.....	Sault Ste. Marie, Ont..... 1913	78 0	30 0	7 0	164	A. B. McLean, Sault Ste. Marie, Ont.
134393	Mark A. Tobin.....	Lunenburg, N. S.....	Schr.....	Lunenburg, N. S..... 1914	108 4	25 8	10 4	96	C. Iverson, M.O., Lunenburg, N.S.
134442	O. H. C., No. 51.....	Toronto.....	Scow.....	Toronto..... 1914	108 0	28 0	8 7	241	Polson Iron Works, Toronto
134443	O. H. C., No. 52.....	".....	".....	"..... 1914	108 0	28 0	8 7	241	" " "
134444	O. H. C., No. 53.....	".....	".....	"..... 1914	108 0	28 0	8 7	241	" " "
134445	O. H. C., No. 54.....	".....	".....	"..... 1914	144 0	31 0	11 1	434	" " "
134446	O. H. C., No. 55.....	".....	".....	"..... 1914	144 0	31 0	11 1	434	" " "
134447	O. H. C., No. 56.....	".....	".....	"..... 1914	144 0	31 0	11 1	434	" " "
131185	R., No. 1.....	Peterborough, Ont.....	".....	Peterborough, Ont..... 1914	144 0	31 0	11 1	434	" " "
131186	R., No. 2.....	".....	".....	"..... 1914	80 0	28 0	5 4	104	C. H. Rogers, Peterborough, Ont.
134359	S. McN. L. Derrick scow.....	Montreal.....	".....	Sorel, Que..... 1914	96 5	27 6	4 0	84	Sincennes McNaughton Line, Montreal
134449	T. & C.....	Toronto.....	Barge.....	Buffalo, N. Y..... 1902	113 0	32 0	11 0	215	Lake Simcoe Ice Supply Co., Toronto
130223	White and Friant.....	Owen Sound, Ont.....	Schr.....	Bay City, Mich..... 1881	158 0	28 0	11 6	278	Peninsula Tug and Towing Co., Wiarton, Ont.