

time, & these were carried bodily into the canal. Fortunately, all the men escaped without injury, but one horse was smothered to death. On this section, too, the power house to operate & light the canal by electricity, is being built, & much remains to be done before this structure can be finished.

Sections 4, 5, 6 & 7.—These sections are all comprised in one contract, which was first let to G. Goodwin, & afterwards re-let to A. Onderdonk in April, 1897. Approximate value of contract, \$957,000. When Mr. Onderdonk took over the contract there were approximately 850,000 cubic yards of earthwork to complete. About 1,200,000 of the easiest part had been taken out by the previous contractors, & the work then abandoned. The masonry & concrete, of which there were about 40,000 cubic yards, were untouched, not a stone having been prepared or delivered four years after the signing of the contract. The lower part of the prism is chiefly in blue clay, difficult to handle, especially in wet or frosty weather, & in some cases the material has been hauled over 4 miles. The masonry of lock no. 4, which rests on a pile foundation, has been completed, & the work is excellent. The other masonry on these sections is about completed, but much remains to be done to the iron work, gates, etc., & there is still considerable earthwork to remove. It will be almost impossible to finish this work this season.

Section 3.—Contractors, J. & M. O'Leary, Ottawa. Date of contract, March 27, 1893. Approximate value of work, \$200,000. This work is completed, & was accepted from its contractors in the fall of 1897.

Sections 1 & 2.—This contract was first let to A. Stewart, of Ottawa, on Sept. 24, 1892, & was re-let to Ryan & Macdonell, on Dec. 1, 1897. Approximate value of work, \$683,000. Upon these sections are 3 locks, with waste weirs, basins, etc. This has been one of the heaviest pieces of work on the canal, & has been carried on very vigorously, night & day. It is hoped by the Government that these sections may be finished by about the beginning of Sep., but this is very doubtful, indeed, as much remains to be done. If, indeed, the canal is finished in time for the passage of vessels drawing 14 ft. of water at the opening of navigation next year, it will be quite as soon as is generally expected by many on the spot.

The full staff of engineers in charge of the canal is as follows: T. Monro, chief, assisted by A. J. Grant, S. J. Chapleau & R. A. Dufresne, from no. 13 to no. 7, inclusive; Mr. McNaughton, who resides at Cedars Rapids, has charge of nos. 8, 7, 6 & 5; & Mr. Coutlee, assisted by Messrs. Mathewson, Wise & Davey have charge of the remaining 4 sections & entrance at Cascades Point.—Montreal Witness.

An Ottawa despatch of Aug. 15 says:—The Minister & Deputy Minister of Railways, Mr. Collingwood Schreiber, were over the Soulages canal works yesterday. They found that another slide has occurred in the clay banks of the prism of the canal on Raynor's section. A large quantity of clay was precipitated into the bottom. As the water has been let in the canal the slide will be taken out as soon as a dredge can be had, & it is hoped that the water in may obviate further mishaps. Should no further slide occur the canal may be opened to navigation by the end of the first week in September.

Through the St. Lawrence Rapids.

The recent trip through the rapids of the steel str. Mae, the largest vessel ever transferred from the great lakes to the Atlantic coast, via the St. Lawrence, has proven a most interesting event of the present season of navigation. The Mae was built at Toledo, Ohio, for the Porto Rico trade & is 250 ft.

keel, 42 ft. beam & 24 ft. depth. She has triple expansion engines of 19, 30 & 52 ins. diameter of cylinders & 40 ins. stroke; 2 Scotch boilers, 12 by 12½ ft., allowed 175 lbs. steam pressure. As she was too large to pass through the St. Lawrence canals she had to attempt running the rapids. After discharging a cargo of grain in Kingston, she proceeded under her own steam to Ogdensburg, arriving there July 16. From there she was taken in tow of the str. Chieftain, & proceeded as far as Coteau Landing, arriving there July 17. Something having gone wrong with the Mae's steam steering apparatus, it was given a thorough overhaul & the defective part repaired, & on July 18 the steamer, drawing 7 ft. 9 ins. of water, started on her perilous journey down the Coteau Rapids in tow of the Chieftain. She swept past the Coteau railway bridge without mishap. Upon taking her first plunge in the Coteau rapids, however, her steam steering gear again gave out, leaving her to the mercy of the waves, but the plucky commander of the Chieftain, realizing the danger, at once swung his steamer around in the current. He brought the Mae head to current & her anchors were thrown just below the big shoal known as "La bature de franc coeur," where she fetched up all safe in the eddy formed by this shoal. The steering gear was once more put in repair, & on July 20 the anchors were raised & another start made. Arriving opposite the great swells known as La chute aux boulaux (the largest in the whole chain of rapids), the vessel took a sheer northwards, straight for the big shoal where the Standard Oil Co.'s barge stranded a year ago, but the Chieftain crowded on full steam & pulled her clear of it. The next place where trouble was expected is called La bature a Lachine, but the steamer, as if to atone for her previous shortcomings, made this winding descent as beautifully as any of the mail steamers could have done. Split rock, Grecian's shoals & Cascades were then successively passed in safety, & without further adventure the largest & deepest draught steamship ever attempted through the rapids glided safely into the still waters of Lake St. Louis.—Marine Review.

Heavy Lake Traffic.

The shipping business on the great lakes has expanded enormously this year. On both sides of the lakes vessel owners are being offered more business than their boats can handle & rates have advanced considerably already, & promise to go higher. U.S. vessel owners claim to be getting higher rates than in any year for 10 years back. Coal & ore shipments seem to engage most of the vessels from southern parts. The boom in the iron & steel trades has no doubt brought about this activity. Iron mining companies are endeavoring to get as much ore as possible to points of manufacture before the season closes, but the consumption has increased so largely that the furnaces are devouring shipments almost as fast as they are unloaded. One Chicago concern is said to be 250,000 tons short of its usual stock of ore at this time of the year, & other companies are no better off. It is predicted that when navigation closes it will be found that stocks of coal at north-western & western lake ports are not nearly adequate to the demands which will be made upon them next winter. Coal shippers have been very reluctant to pay the rates being asked by vessel owners this year, & in consequence, the boats are going in for other more profitable business. Vesselmen say that it is now impossible with the ships available to replenish the stocks of coal at the head of the lakes before navigation closes. How far this is true remains to be seen.

Canadian vessel owners are experiencing a no less active demand for their services than

their U.S. competitors, & are making substantial profits out of the business. No one will begrudge them this, as the business has been to a large extent unprofitable for a number of years. Sailors & all classes of employes are also benefited by the increased business, as wages have been advanced 10 to 15%. The carrying of Canadian lumber to U.S. ports is a new source of revenue this year, due to the new regulations of the Ontario Government regarding log exports. Hitherto the logs have been rafted to U. S. ports & sawn there. Now they are being sawn in Canada & Canadian vessels get the business of carrying the lumber across. The grain carrying trade is also yielding large revenues to Canadian vessels this season, & the delays caused by the backward spring & the Buffalo strike are now being fully compensated for.

Dominion Notices to Mariners.

The Department of Marine has issued the following notices:—

No. 47, July 24, Quebec.—St. Jean semaphore again in operation.

No. 48, July 26, Nova Scotia.—Liscomb whistling buoy.

No. 49, July 27, U.S.A.—Inland waters contiguous to International Boundary Line. 1. Galloo Island shoal gas buoy no. 1; 2. Presqu'île fog signal station; 3. Kelley's Island south shoal gas buoy no. 2; 4. Peach Orchard point gas buoy; 5. Detroit River—Limekiln Crossing channel—depth signals; 6. Lake St. Clair twenty-foot channel lights; 7. Lake St. Clair—Grosse point—new buoy; 8. River St. Mary—Lightbuoy established off Gros cap; 9. Light buoys in Vidal shoal channel.

No. 50, July 27, Newfoundland & Labrador.—Improved fog signals at Belle Isle.

No. 51, July 27, Ontario.—Improvements in Rainy River range.

Richelleu & Ontario Navigation Co.

The Co.'s hotels are reported to be all doing well, including the new one at Tadousac.

The directors have decided to invite plans for an hotel at Murray Bay, to be built next year.

On July 16 the Co. inaugurated its double service between Montreal & Quebec, adding a day service to the night one. The day service is performed by the strs. Columbian & Caspian.

On the str. Toronto's trip from Toronto to Prescott & return, Aug. 1 to 3, her coal consumption was tested. On the down trip it was 1.80 per horse-power per hour on a speed of 17 miles, & the up trip was 1.76 on a speed of 17.6 miles.

A union wharf at Montreal for the Co.'s boats is talked of, so that shippers may have the advantage of cheap freight transfers, light storage & sharp connections. The Toronto & Hamilton steamers now dock in the canal basins, & the other boats at another wharf. Through freight for points below Montreal could be much more easily transferred by all boats going to one wharf.

At a meeting July 20, the General Manager informed the directors of a marked increase in receipts, which, owing to the lateness of navigation opening, were about \$20,000 behind at the start. In comparison with last year, the boats had been running less time, yet the receipts were not only sufficient to recoup the \$20,000 loss at the beginning, but to place \$20,000 additional to the amount.

Levels of the Great Lakes.

L. E. Cooley, C. E., Chicago, estimates 10,000 cubic feet a second as the probable outflow of water at Chicago, for the sanitary