

were asked to tender on the engineers' design, but were given permission to submit designs of their own if they so desired. Several alternative designs were submitted, and after some time—the composition of the engineers' commission having been changed by the retirement of Mr. Fitzmaurice, who felt his duties to have been accomplished by the submission of the plan, and the resignation of H. E. Vautelet, who was succeeded as chairman by C. N. Monsarratt, formerly Bridge Engineer, C.P.R.—one of the designs submitted by the St. Lawrence Bridge Co., Montreal, was accepted. This plan provided for a central span of 1,800 ft., carrying a railway track and two 4 ft. side-walks. The cost of this bridge was estimated at \$8,650,000. It is of the K web-system in the cantilever and anchor arms, the suspended span being a modified Pratt. All members in the anchor arm and those immediately over the main pier, as well as the floor system, are carbon steel, the cantilever arms and suspended span being of nickel steel. The top chords are composed of built up riveted members extending over one full truss panel or two floor panels. The design has an 1,800 ft. channel span, as in the old bridge. The suspended span is 640 ft. long, 110 ft. deep

at the centre, and 70 ft. deep at each end. The cantilever arms are 580 ft. long, 70 ft. deep at the end, and 310 ft. high over the main post. The anchor arms are 515 ft. long. The trusses are 88 ft. apart, and there is a clear headroom of 150 ft. above extreme high water. The train load allowed for on each track is equivalent to two E-60 locomotives followed by a train load of 5,000 lb. per lineal foot of track. The contracting company was a combination of the Dominion Bridge Co. and the Canadian Bridge Co.

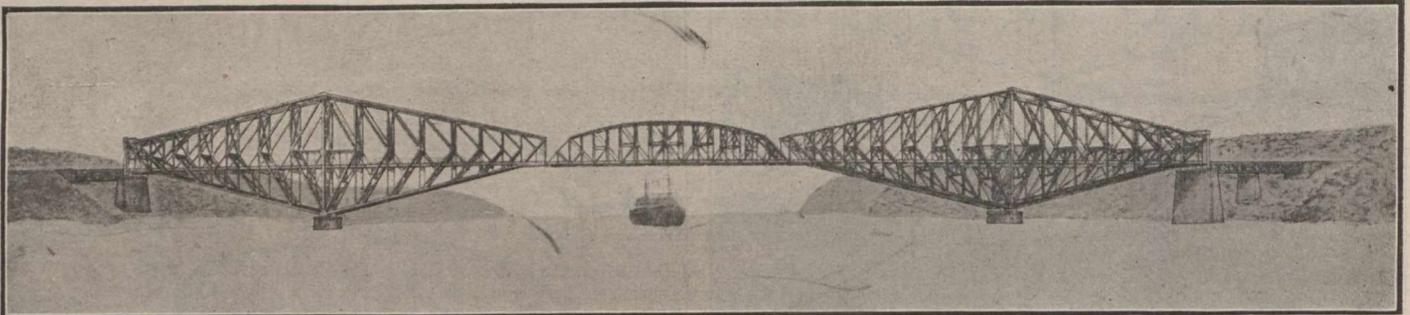
Work was started promptly by the contractors, both for the substructure and for the superstructure, and everything went on so successfully that the St. Lawrence Bridge Co. expected to complete its work at the end of 1916—earlier than was estimated. Sept. 11, 1916, was set for floating out the suspended member of the central span. The first part of this work had been successfully completed, and the 640 ft. long span had been raised several feet when, owing, as was afterwards ascertained, to the failure of a portion of one of the castings in the hoisting apparatus, the span slipped, crumpled up and fell to the bottom of the river. The fullest investigation was made into the matter, and it was found that there was no defect in the span, or in the plan, and that the other sections of the bridge had received no damage from the accident. The company immediately put in hand the fabrication of the steel for a new span and to prepare for its being got into position. This was done and the new span was ready for erection at the time of the September high tides this year. The method of erection, described in Canadian Railway and Marine World, Oct., 1916, pg. 417, was not changed except that extra precautions were taken in connection with the manufacture and getting in place of the hoisting apparatus, etc. A larger number of men were arranged for at the lifting jacks and at other points, and it was decided to raise the span only 2 ft. at each lift, instead of 4 ft., as was done in 1916. The scows bearing the span were towed out of Silery basin on Sept. 17 at 5.10 a.m. and reached the bridge at 7.03, and the lifting operations were begun at 9.45. The span weighed about 5,000 tons, and this weight had to be raised so that there would be a clearance of 150 ft. at high water, thus the height to be raised would be 150 ft., less the height of the scows and the supports thereon. The hoisting proceeded steadily and with but two interruptions, once on Sept. 18 by a slight fog, and again on the following day by high wind. The final lift was completed Sept. 20, at 2.19 p.m., after which the bolting of the span into place was taken in hand. The work of laying the floor of the span and placing the rails for traffic will be proceeded with at once, and it is expected that it will be completed in two months, and the bridge formally opened for traffic about the

to C.N.R. Tariff C.R.C. no. E-860, to become effective Sept. 1st, 1917, be suspended; that cancellation Supplement 1 to C. N. R. Tariff C.R.C. no. E-156, to become effective Sept. 1, 1917, be suspended, and that the rates on pulpwood as published in C.N.R. tariff C.R.C. no. E-156, effective Oct. 2nd, 1912, be continued in effect, pending a hearing by the board.

Canadian Northern Standard Freight Tariff.

26504. Sept. 7.—Re application of Canadian Northern Ry. Company, under sec. 327 of the Railway Act, for approval of its Standard Freight Tariff C.R.C. no. W-1025, cancelling C.R.C. no. W-862. Upon the report and recommendation of the Chief Tariff Officer, it is ordered that the said tariff be approved.

Japan Buys Old Rails. Seattle, Wash., press dispatch, Sept. 19.—Large quantities of old steel rails have been bought in the northwest by Japanese brokers and shipped to Japan. In the last few weeks 2,300 tons have been shipped and additional shipments are being assembled. The brokers are paying \$70 a ton for the rails, which originally cost \$24 a ton. In turn, they are selling them to the Japanese railways for \$100 a ton.



The Quebec Bridge as completed, from the Contractors' Sketch.

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middle of November.

The work of raising the span into position was supervised by Phelps Johnson, President, St. Lawrence Bridge Co.; G. H. Duggan, Chief Engineer; G. F. Porter, Construction Engineer; S. P. Mitchell, Consulting Engineer; W. B. Fortune, General Superintendent, and C. N. Monsarratt, Chairman of the Quebec Bridge Commission.

Traffic Orders by the Board of Railway Commissioners.

Interchange Track at Thorold, Ont.

26465. Aug. 24.—Re application of Niagara, St. Catharines and Toronto Ry., for approval of plan showing interchange track proposed to be constructed between the applicant's railway and the G.T.R. at Thorold, Ont., as required under the order 26186, June 5, 1917. Upon the report and recommendation of an engineer of the board, it is ordered that the plan filed by the applicant, dated July 4, 1917, be approved; the applicant to construct the tracks within three months from date of this order; and the question of the apportionment of the cost of the work to be reserved for further order.

C.N.R. Pulpwood Rates to Campbellford.

26476. Aug. 29.—Re application of Hydro-Electric Power Commission for suspension of proposed increased rates on pulpwood from stations on the Canadian Northern Ry. to Campbellford, Ont. Upon reading what has been submitted in support of the application, it is ordered that the advanced rates on pulpwood, as published on page 3 of Supplement 20

Electric Railway Department Items too Late for Classification.

A Usher, who died in Ottawa, Sept. 19, aged 59, was at one time in the old Canada Atlantic Ry. service and for the last eight years was airbrake inspector, Ottawa Electric Ry.

Joseph Gibbons, Toronto, and F. A. Hoover, Vancouver, B.C., were elected Vice Presidents of the Amalgamated Association of Street and Electric Railway Employees of America, at the annual convention at Providence, R.I., recently.

Sir Adam Beck stated recently that next year a service of hourly limited trains will be put in operation between London and Port Stanley, Ont., on the London & Port Stanley Ry. The present practice is to run every second car as a through car between the terminal points, the other car being for service to all intermediate points. The only intermediate stop made by the through cars is at St. Thomas.

Guelph Radial Ry.—In order to provide accommodation for traffic to the Military Convalescent Hospital at Guelph, an arrangement is reported to have been made with the Toronto Suburban Ry. for running rights over a portion of its line. This will necessitate the making of a connection between the G.R.R. and the T.S.R. and between the latter railway and the hospital grounds. It is proposed to provide a 20 minute service between the city and the hospital. The cost of operating the service is estimated at \$8,000 a year. (Feb., pg. 73.)