

The Rebuilding of the C.P.R. Bridge Over the St. Lawrence River at Lachine.

An illustrated article on the rebuilding of the C.P.R. bridge over the St. Lawrence, at Lachine, Que., prepared by a member of Canadian Railway and Marine World's staff, who visited the work, was published in the February issue. The following information has been supplied officially recently:—

It was early in 1910 that the management came to the conclusion that the time had arrived to rebuild the bridge, so as to provide for a second track to handle the enormous increase in traffic over this important approach to Montreal from New York and other U.S. points, and contracts were let.

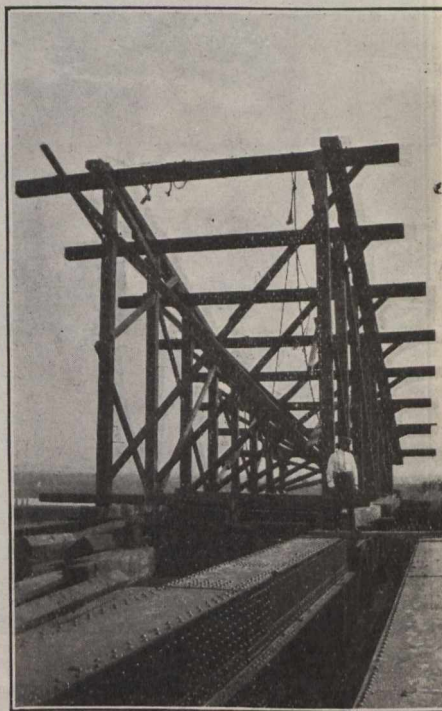
On July 12, 1910, the first operation was made on the enlargement of the old piers to carry the new girders before any of the new steel could be swung. This in itself was a huge job, and the contractors undertook to complete the first 11 piers during the first season. This was not accomplished, but the 11 piers were completed to a point above the water and all the work on them was completed by Nov. 8, 1911, leaving only pier 13 on the up-stream side to be finished when the cantilever is taken out, but this will not be started probably until next year, as until the last two stages are completed, which is part of the work now under way, this cannot be done, owing to the cantilever tracks of the bridge being in use.

The work on the superstructure was commenced March 15, 1911, when the placing of the two 80 ft. deck plates was undertaken, and ever since the work has been hurried forward with all speed. The bridge, when completed, will contain steel spans as follows: Six 80 ft. long, sixteen 120 ft., four 270 ft., two 122 ft., eight 240 ft., four 270, and four 480 ft., making the total length of the bridge in spans, 3,138 ft. The bridge was cut down, so to speak, from four 240's to eight 120's as far as pier seven. The piers on which the girders are resting consist of open casement to pier seven, counting from the island side, and from eight to 15 inclusive, the pneumatic casing was used. Eleven spans were erected from the main line, on the down stream track, out to pier seven, and then a cross over enabled the traffic to reach the new steel and the work of bridging was continued without the traffic being in the slightest degree interrupted, beyond that caution was used by trains in crossing the bridge, every train travelling at slow speed.

The changing or reducing of the spans to smaller ones, and the device used for putting them into place, resulted in the saving of thousands of dollars. The introduction of the smaller spans has no tendency to reduce the strength of the bridge, but on the other hand, it greatly increases it, as the weight is being carried by more spans on shorter lengths. During the carrying out of the work, only two cross-overs were necessary to complete it to the eleventh pier, from which point the huge channel spans, which are 480 ft. long, commence. The placing of the spans has reached such a point that no further cross-overs will be required, and the traffic will cross on the steel on the west side of the bridge until the east is totally completed, which it is expected will be by next autumn, provided everything goes on satisfactorily. The whole of the bridge as far as the eleventh pier, or the swinging of the huge channel spans are concerned, is finished, with the exception of a small length of new steel to replace the old, and the progress has been well maintained throughout with a gang of nearly 100 men.

Work has now commenced in connection with the placing of the two 408 ft. spans, which will fully complete the west side of the bridge. The spans are being erected at the Dominion Bridge Co.'s

yards, which are in close proximity to the bridge connected by a spur line. As soon as this is finished, the spans will be re-erected on the finished deck-plate portion of the bridge on the Caughnawaga side of the river, where space sufficient in length has been left for the purpose. This done, one end will be attached to a huge derrick which has been specially erected for the purpose of steadying and assisting in putting the end into place, while the other end will be floated on a huge scow in the river below, and in this way the spans will be floated into position. It is expected that the work which has to be done before the bridge is finally completed for second track service, will occupy at least another twelve months. The work of floating in the four huge spans will occupy almost as much time as the rest of the bridge work has done. These through channel spans are not of the cantilever type, but the strength of the bridge will be below, and when the work is nished, the bridge will constitute one of the finest pieces of engineering work on this



Derrick erected to assist the Floating in of the 408 ft. spans, C.P.R. Lachine Bridge.

continent. The two flanking spans on the south side are practically completed, so that everything is in readiness for going ahead with the work, and this will be done within the next week or two, as soon as the steel is discharged from the workshop.

It is expected that early in August the second tracking will be completed on both the down stream side and the up stream side to the point where the longest spans are to be put in to replace the present cantilever spans.

In the new bridge there will be 28,072,252 lbs. of steel. The 80 ft. lengths run 110,000 lbs., the 120's 226,000, the 240's 960,000 lbs., the 270's 1,324,138 lbs., and the 408's 2,600,000 lbs. Starting from the island side, the bridge widens out at the seventh pier, from 16 ft. from centre to centre of trusses, to 20 ft. at the eleventh pier, and continues from that point to the end.

The work being done in the vicinity of the Lachine bridge is of a very extensive character, and not only includes the en-

largement or second tracking of the structure across the St. Lawrence, but three other bridges approaching the main bridge, are to be second tracked, while the bridge across the Lachine canal will, in the near future, have to undergo the same enlargement. This is a heavy swing bridge, but the appropriation has not yet been made, and several matters are to be settled before the work can be started. Still, with the complete second tracking of the approach from the Montreal main line to the Lachine bridge, the second tracking of the canal bridge must inevitably follow. New spans have been inserted in the bridge that crosses the G.T.R. at Rockfield, and the filling up of the sidings for the double tracks approaching on either side is being continued. At the Highlands extensive works are also being carried out.

The C.P.R. is carrying out these works at a cost of about \$3,000,000, in pursuance of its policy to build a second track over the whole of its main transcontinental line, and it is anticipated that before many years, this will have been completed from St. John, N.B., to Vancouver, B.C. Owing to the great difficulty in securing the requisite number of men in various parts of the country, the company is somewhat handicapped in pushing forward the huge work of double tracking.

First Aid to the Injured on the Canadian Pacific Railway.

By S. A. Gidlow, General Secretary, St. John Ambulance Association, C.P.R.

On first thoughts, the reader may consider the subject either too dry, or something entirely out of his line, therefore, I will commence by stating that if he will have a little patience he will find it not so dry after all, and, no matter what his occupation, it does concern him very materially. One of the first questions usually asked is, "What is First Aid?" and I think the best way to answer this question is to state what its objects are:

To instil into the public mind a few simple, practicable lessons showing how best to render instant attention to persons suffering accident or sudden sickness, pending the arrival of skilled medical assistance.

To teach people what not to do, so that there may be no likelihood of the bystander causing aggravation to injury, or loss of life through improper first aid treatment.

In case of emergency, such as bleeding, accidental poisoning, choking or drowning, a life may not be sacrificed by want of a little intelligent first aid knowledge on the part of the bystander.

To attempt to explain in detail the various kind of accidents in which first aid has been rendered successfully, would be wearisome, therefore a comparative list has been compiled showing the advantage of first aid, and the consequences resulting from the want of such knowledge:

| WANT OF FIRST AID KNOWLEDGE. | VALUE OF FIRST AID KNOWLEDGE. |
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| 1. A little child was sitting at the dinner table with the family. With its mouth full of food, it got into a fit of temper over something its brother was having served to him, the food became lodged in the windpipe, and, notwithstanding the slapping of its back, it went black in the face, throwing its arms wildly about; the father rushed out of the house to fetch a doctor, who lived but a short distance away, but on his arrival life was extinct. | 1. A little child, whilst eating an apple, bit off a piece larger than he intended. By some means this piece slipped down his windpipe, and became lodged. The child became black in the face; the mother rushed to a neighbor who happened to know first aid. Upon her arrival, the child, being found unconscious, she immediately used first aid knowledge as instructed, with the result the doctor stated, the child was none the worse for its accident. |