

Removing and Repairing a Wrecked Timber Truss Span on the C. N. R.

The clearing of a wrecked timber truss span and erection of a temporary structure, restoring traffic, was accomplished a short time ago in three days on the Canadian Northern Ry. at Saskatoon, Sask., where a derailed car demolished the north shore span of the bridge over the South Saskatchewan river. This bridge consists of six 150 ft. through Howe truss spans of timber on concrete piers, the rail elevation being about 45 ft. above the surface of the water. The bridge was of British Columbia fir in first class condition. It was built about six years ago.

As one of the southbound through passenger trains, carrying several sleeping cars on its rear end, was pulling through the south end of the yard at the approach to the bridge on March 4, the rear truck of the last sleeper left the rails at a switch about 500 ft. north of the bridge. The truck slewed and led off on the switch to the west or right hand side until the wheels that should have been on the left hand

The cable was then run down to the wreckage, dragging the tangled mass of rods and timber and the wrecked sleeper out of the way.

Reconstruction was started by first erecting a temporary trestle over which traffic could be opened. Bents were framed on the ice and raised by a wrecking crane working outward from the shore end, blocking being put under the bents. On account of the end of the second sleeper overhanging the adjacent span, it was necessary to build entirely from the shore, so that the crane could be used to lift the overhanging car. The last two bents next to the pier were framed at the side of the bridge, then lifted clear and swung into place. When all but one panel of the trestle was decked, the crane lifted the end of the hanging car and pushed it forward on the undamaged part of the bridge.

With traffic thus restored, work was continued on the erection of the permanent Howe truss span, utilizing the trestle for

A Temporary Cement Wash Protection for Bridge Timbers.

A temporary fire protection for old timbers on a steel bridge where the length of useful service had nearly been reached and the wood badly checked was recently provided on the Boston & Maine Rd. by a wash made up of Portland cement, plaster of Paris and sand. The bridge was a deck structure, located at such a distance from the station or houses where attention might be attracted by a fire burning on it, that some form of protection was considered advisable during the period of one or two years remaining in the life of the ties. There were wide and deep cracks in some of these ties, and as sufficient experience had not yet been had at that point with the use of fire-resisting paints to give assurance of their effective service, experiments were made in filling the cracks with various compositions, and also covering the entire top surface of the ties and guard rail.

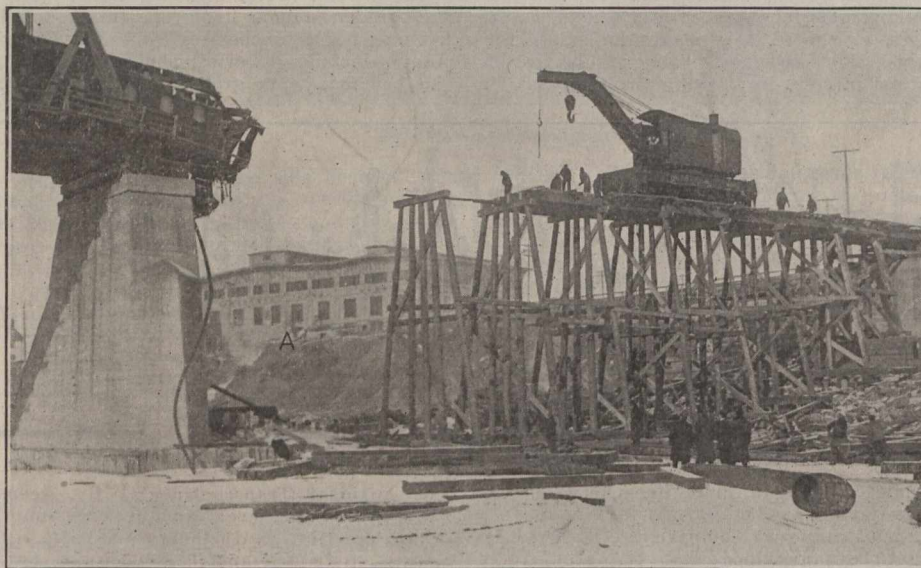
The first experiment was with cement and water alone, but this plaster cracked



Wreckage of the Timber Truss.

rail were over a foot outside the right hand rail and beyond the guard timber. There was a 30 ft. approach trestle, but the wheels were hanging over the ends of the ties when this was reached, so the guard rails could have no effect. The sleeper was dragged in this position on to the bridge, sideswiping the truss and breaking or knocking out the posts and diagonals. This span collapsed completely, falling with the last car to the river bed below, which was almost dry and frozen to the bottom. The sleeper which went down is shown at B in the smaller of the two accompanying illustrations. The damage to the bridge did not extend beyond the first pier and the car preceding the one which wrecked the truss remained on the structure, having its rear badly damaged, however. Fifteen passengers were in the rear sleeper, and 12 were injured, but none fatally. A fire started in the wreckage, but was quickly put out by the city forces.

The wreckage of the truss and the car was cleared away with the aid of a Lidgerwood ballast unloader, which dragged it sideways off the bridge site. A track which runs west along the river bank at right angles to the bridge was utilized for this purpose, the Lidgerwood car being set at the point marked A on the photograph of the reconstruction.



Method of Clearing and Re-erecting the Span.

falsework. Additional posts were placed vertically on the end of each sill to carry the weight of the new span.

The nature of this accident was such that it was believed to be unpreventable by the guard rails, and it is also believed that a steel structure would have suffered similarly.

Steam Railway Fatalities.—During July, 24 employes were killed and 34 were injured, in the course of their work in connection with the operation of Canadian steam railways. Of the fatalities, six were due to being run over, four each to collisions and to derailments, three to falls, two each to falling material, and to being crushed between cars, and one each to being drowned, to being struck by a train, and to being shot. Of the non-fatal accidents, nine were due to being struck by trains, cars and light engines, eight to being run over, seven to collisions, six to derailments, three to falling material, two to scalding, and one each to being burnt, and being caught between rail and crossing plank.

The report that Mackenzie, Mann & Co. had offered the Government \$90,000 for Snake island, situated about three miles from Roche's point in Lake Simcoe, was denied by Sir Donald Mann, Sept. 4.

and came out of the cavities in the ties, so as to afford very little protection. A mixture of lime, cement and sand was then used on another portion of the bridge and was found to give better protection. Finally a mixture of cement, plaster of Paris and very fine sand was tried, this being mixed so thin that it would run in and fill all of the cracks in the ties and guard rails. It was washed over the entire surface of the timber.

This form of protection proved effective in stopping fires on the bridge for a number of months, but was considered only as a temporary expedient. The expense of the application was about the same as that for the application of a coating of fire-resisting paint, but the durability was considerably less than that of a paint. Since this work was done the fire-resisting paints have been investigated further and found to be sufficiently serviceable as a protection. They are believed to be preferable, where the protection is desired to last for any considerable period.

The experiments and observations in connection with the cement wash coatings outlined in the foregoing have been carried out under the direction of B. F. Pickering, Supervisor of Bridges and Buildings, Boston and Maine Railroad, at Salem, Mass.