

# Break of Gauge at Prescott Junction

by Colin Churcher

The Bytown and Prescott Railway was built to the standard gauge (4' 8 1/2") whereas the Grand Trunk Railway, with which it connected at Prescott Junction, Ontario, was built to the provincial 5' 6" gauge. Interchange of cars was not possible between the two lines and this did not pose great difficulties at first, particularly bearing in mind that much of the traffic on the Bytown and Prescott was conveyed by car ferry across the St. Lawrence River where it was put on the standard gauge American network at Ogdensburg, New York.

However, the Grand Trunk broad gauge system became extensive and the Bytown and Prescott (which became the Ottawa and Prescott and later the St. Lawrence and Ottawa) found itself at a disadvantage, particularly when the second railway into Ottawa, the Canada Central, was built to the wide gauge and had the advantage of easy interchange with the Grand Trunk at Brockville.

The Grand Trunk was also feeling the effects of the break of gauge with standard gauge railways and a solution was developed.

The *Ottawa Citizen* documents some through movements between the St. Lawrence and Ottawa and the Grand Trunk as follows:

For Chicago. Nine cars belonging to the Canada Rolling Stock Company are at the St. Lawrence and Ottawa Railway station today to be loaded with sashes and doors to be sent through to Chicago without transshipment. (12 March 1871)

Mr. Luttrell of the St. L. & O. Railway left town yesterday after making arrangements with the wholesale merchants of this city for heavy shipments of goods for the west. The freight will be sent without transshipment on change-gauge cars. (29 April 1871)

Seventeen cars laden with lumber were dispatched yesterday for Boston, to be delivered without transshipment via the St. L. & O. Railway. (18 May 1871)

Cars belonging to the National Car Company are at the St. Lawrence and Ottawa Railway depot, being loaded with beds, mattresses and bedsteads from Whiteside & Co.'s establishment, to be sent through to Chicago without transshipment. (7 November 1871)

This section of the Grand Trunk was converted to standard gauge on 3-4 October 1873, after which time cars could be interchanged freely. How did the cars move from one gauge to the other? This question is answered in: *The American Railroad Freight Car: From the Wood Car Era to the Coming of Steel* by John H. White Jr. (John Hopkins Univ. Press, Baltimore, 1993.) page 450.

## ADJUSTABLE-GAUGE TRUCKS

*"Before exploring other aspects of arch-bar trucks, we should study with greater care the 1868-1869 Grand Trunk truck mentioned earlier (Fig. 7.20). Because of its 5-foot 6-inch gauge, the Grand Trunk could not exchange cars with its connecting lines and was thus cut out from the economies of the interchange service just then developing. Just as the Union Line had experimented with broad-tread wheels to solve a similar problem, so too did the National Despatch Line, another fast freight line, develop a way to overcome the gauge difference, National Despatch adopted telescoping axles so that wheels could be reset for a 9 1/2-inch difference in track gauge.*

*"The scheme selected was patented by C.D. Tisdale of East Boston, Massachusetts, with the first patent having been issued in March 1863. Special wheels with extra-large hubs were fitted with key wedges. The axles were notched so that the wheels could be set at standard or 5-foot 6-inch gauge. The keys were locked in place by a long safety pin and giant rubber bands. The position of the wheel was shifted by a gradually diverging or converging track. In the shift from broad to standard, the keys would be loosened and removed at one end of the tapering track, workmen in a 4-foot-deep pit removed the keys from below the train. A long shed was built over the pits to protect the workmen. With the keys out, the train was slowly pushed down the track, and the wheels-would be forced inward as the train moved along the converging rails. Once at the end, the workers would reinsert and lock the wedges and the train could go on its way. The change could be done in five to ten minutes. When shifting to broad gauge, a third rail set inside the tapering track pushed the wheel out to the wider gauge. Shifting stations were located at Point St. Charles, Montreal, and Sarnia, Ontario. The plan was first tried in November 1863, yet no serious consideration was given to it until early 1868. The tests proved so promising that by late in the following year two hundred adjustable-gauge cars were running between Chicago and Boston via the Michigan Central, the Grand Trunk, the Vermont Central, and several connecting lines in New England. The problems of the northern east-west route seemed to have been resolved, and three*

*hundred more cars were ordered by National Despatch.*

*"Just months later, however, the Grand Trunk announced plans to rebuild its entire line to standard gauge. Major conversions were completed in 1872 and 1873, with all parts of the system having been remade to the Stephenson gauge by September 1874. This disruptive and costly conversion might have been avoided had the changeable-gauge trucks worked as well as advertised. Problems obviously had developed. The keyway grooves were said to weaken the axles. Misgivings over the safety of the telescoping axles were voiced as early as 1846, long before the Grand Trunk test. Considerable skepticism was expressed as to the reliability of the workmen charged with loosening and tightening so many wheels day in and day out. Even on the short freight trains of that time, could the men be trusted to pursue their jobs with care? Crouching in a dank pit for ten hours with a rumbling train overhead could be tiresome and lead to boredom and negligence. It seemed like a scenario for disaster. Even if the axle crews proved true to their duty, the normal wear of the shifting wheels would beget loose fits, and even a slight wobble could cause a derailment."*

In spite of the potential difficulties, the Grand Trunk felt this system to be an advantage as this extract from the *Ottawa Citizen* of 12 July 1872 notes:

The Grand Trunk Railway authorities have recently issued a notice to the effect that the restrictions and difficulties existing hitherto at Port Huron, as regarded forwarding goods to the Western States, have at length been removed, and that the change of gauge cars of the Company enable it to ship goods, household effects, &c. to Chicago and other Western ports of entry without detention.

There is no reference in this account to a gauge change facility at Prescott Junction although this must have existed there, if only for a brief period. Another interesting and unexpected item of our railway history. (With thanks to David Knowles for the reference) ■



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by Charles Cooper

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