

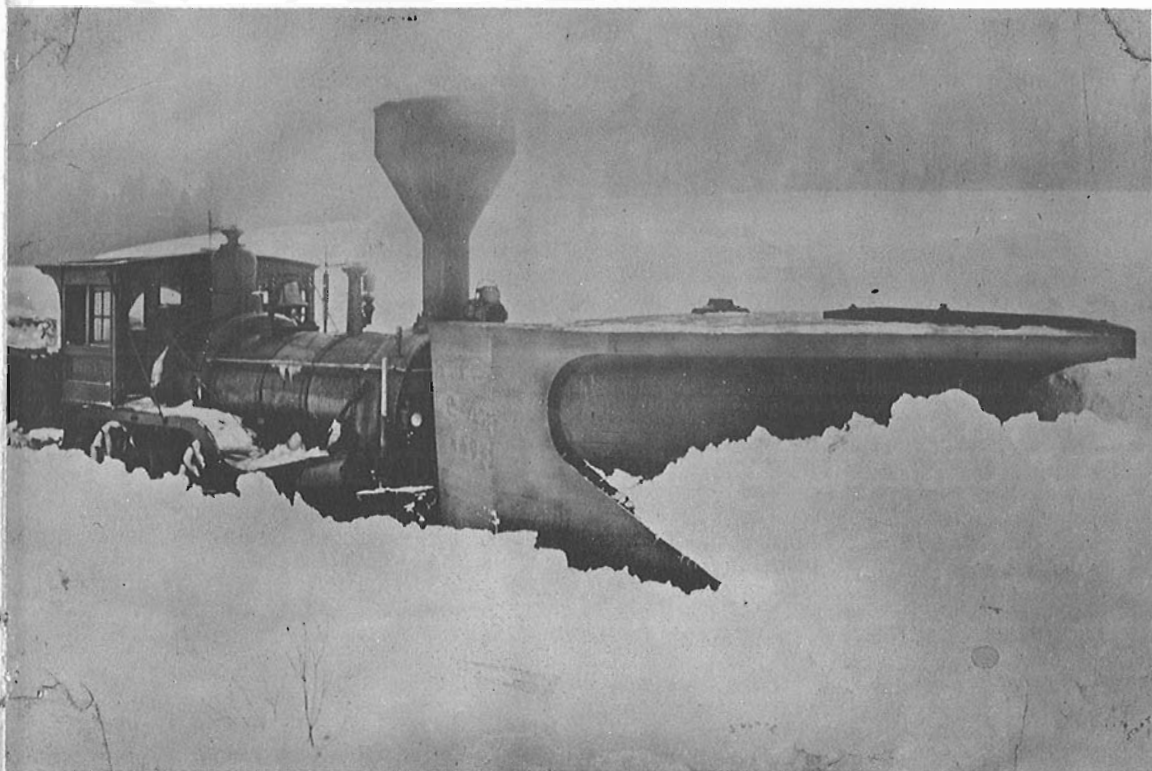
Canadian Rail



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WHILE RAILWAYS HAVE CONQUERED many natural obstacles in the course of their history, one of their most bitter and unpredictable adversaries in Canada and in other northern countries has been the snow. While the means to fight this seasonal adversary have undergone great technological changes during the past century, the snow still blankets the countryside every bit as effectively as it did back in March, 1869, when a photographer captured this broad-gauge "Birkenhead" 4-4-0 engine tackling a drift near Black River on the Quebec and Richmond section of the Grand Trunk Railway of Canada.

Collection of the late John Loye.

The Rise and Fall of the PROVINCIAL GAUGE

by O.S.A. Lavallee

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I. THE SITUATION BEFORE 1851

IT IS AN INTERESTING MENTAL EXERCISE to speculate upon how the railways of Canada might have developed if, in some way, the blight of the broad gauge could have been averted. Many of the troubles of the Great Western Railway and of the Grand Trunk might never have arisen, and it is possible, though admittedly not probable, that the Grand Trunk, as an independent railway, might still exist today. Other factors helped the GTR on its downward path, such as absentee management and balance sheet acrobatics, but these handicaps paled in comparison to the artificial restraint which the broad gauge put upon the expansion of this system and the other 5'6" lines for twenty years. Added to this was the financial burden of conversion to conformity, necessitating the purchase of new motive power, regauging of rolling stock and permanent way renewal which was more burdensome to smaller companies and significantly retarded their own conversion plans; the Canada Central Railway, for example, was not changed over until 1880, ten years after the legislation was revoked.

The perspective of history permits us to view this period at arm's length, so to speak, and it is quite clear, from the standpoint of the Twentieth Century historian, that the broad gauge was inflicted on British North American railways by selfish commercial interests, and the Provincial Government was "taken in" by glib talk. Nothing else could possibly excuse an action which was of such tremendous cost not only to the railways, but to the people of Canada.

That such a thing as the adoption of a wide gauge could come seems particularly hard to understand when one realizes that all of the first railways in Canada, the Champlain & Saint Lawrence opened in 1836, the Albion Colliery tramway opened with steam locomotion in 1839 and the Montreal & Lachine Rail Road* opened in 1847, were all built to the Stephenson (4'8½") gauge or track width. Moreover, all of the railways in those parts of the United States in closest cultural and commercial contact with Canada, were of the same gauge.

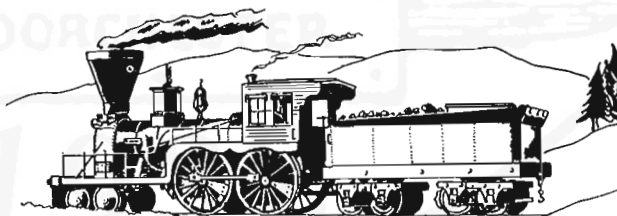
Gauge problems were fashionable, of course. In England, the Great Western adopted the gauge of 7'0¼", selected by Isambard Kingdom Brunel, surely one of the world's great railway engineers and the greatest protagonist in history of the advantages of the broad gauge, which included larger, more powerful and faster trains and the ability to haul greater loads. The GWR started out in the late Thirties, and

*- The Lachine railway's gauge was officially 4'9".

for nearly sixty years held tenaciously to its seven-foot width. In the United States, similar reasons were advanced for the building of the Erie Railroad to broad width, and in the Forties and Fifties, this line built from New York to Dunkirk and to Buffalo with a six-foot width of track. Rather more of an idiosyncrasy than an advantage was the five-foot width adopted by the railways of the southern United States, and later transplanted to Russia where it exists today.

The Province of Canada didn't have a railway problem of any kind in the year 1845, when a Royal Commission was appointed by the Legislature to enquire into means to aid railway construction, and to select a suitable gauge which would be adopted as standard throughout the Province. Possibly due to the fact that the Champlain & Saint Lawrence, the only steam line, and the Erie & Ontario, a horse-operated railway around Niagara Falls, were the only public railways in the Province, caused the matter to be deferred for several years. In the interim, interests in Portland, Maine, and in Montreal, promoted the construction of a railway linking the two cities, which would, in addition, afford Montreal an ice-free port for winter use. Therefore, two railways were incorporated almost simultaneously -- the Saint Lawrence & Atlantic Rail Road, to run from Longueuil, opposite Montreal, by way of St. Hyacinthe, Richmond, and Sherbrooke to the International Boundary near Coaticook, Que. On the American side, charters were sought in Maine, New Hampshire and Vermont, for the corresponding US company, the Atlantic & Saint Lawrence Rail Road, which would build from the Boundary to Portland, via Island Pond, Berlin and Lewiston. We do not know how the gauge of 5'6" came to be selected for this railway, but it is possible that it may have come about as the result of the purchase of its first two locomotives, "St. Hyacinthe" and "Beloeil", which are said to have come from the Arbroath & Forfar Railway in Scotland, which was built originally to this gauge. The first section of the railway to Portland was opened from Longueuil to St. Hyacinthe in the spring of 1847. In the following year, the American line started service on its first section, out of Portland to Danville Junction, using, as motive power, some of the first products of the Portland Company's Works, as shown by GTR No.106, "Coos", below.

This was the time of great activity in railway building in Canada and charters had been obtained for many lines, not the least of which was a "Grand Trunk" railway to extend from one end to the other of what is today Ontario and Quebec. Another was for the Great Western Railway, which was to link the Niagara and Detroit river frontiers in southwestern Ontario, and form part of a through Chicago-New York rail link. Then too, in the Maritimes, there was much agitation for railways at this time, and though the Provinces of Nova Scotia and New Brunswick were politically independent of the Province of Canada, there is no doubt that the development of the railway in these areas was much influenced by that which took place in the upper province.



Finally, in 1851, the Royal Commission brought itself to grips in the matter of the gauge, since so many projects hinged upon the

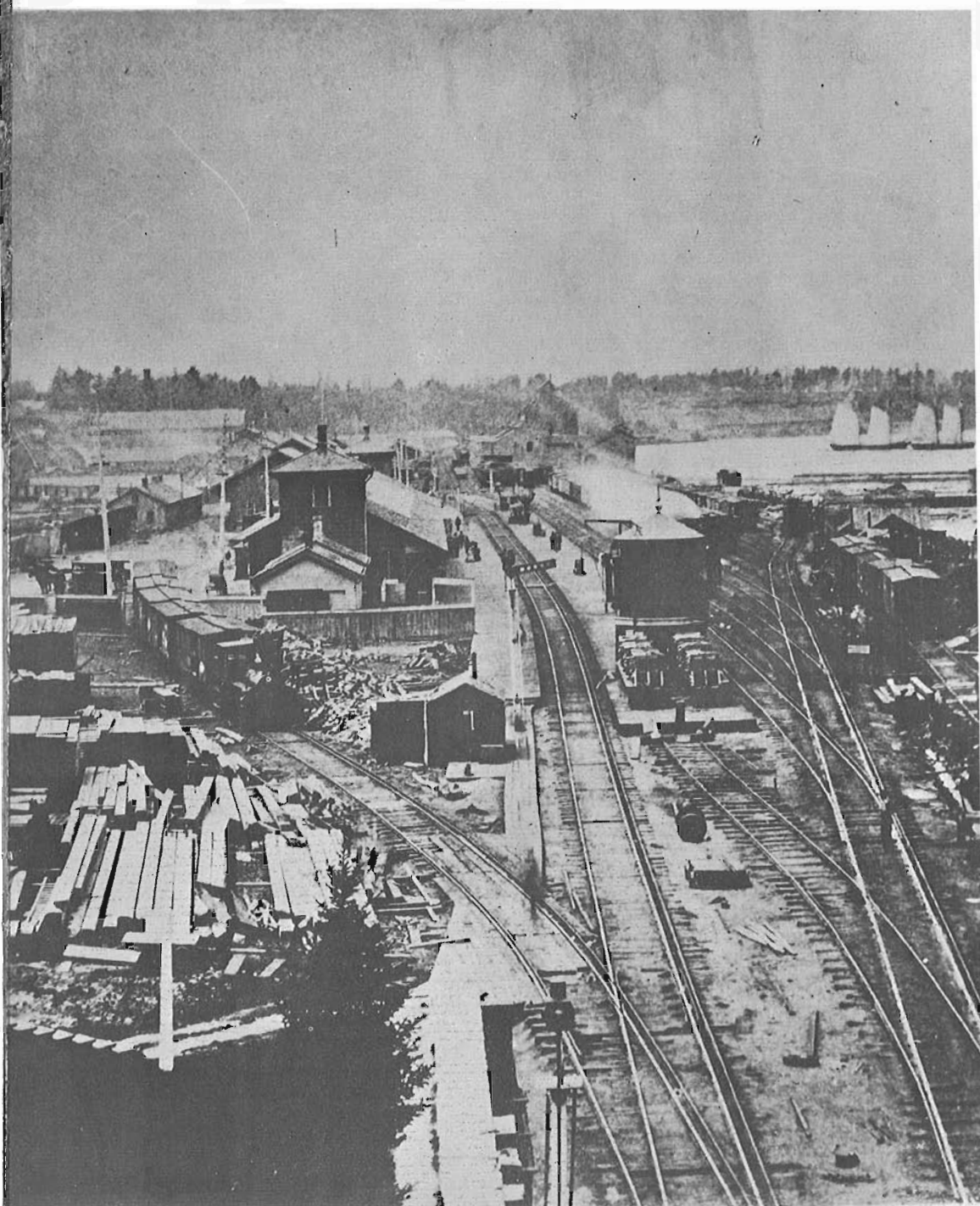
decisions which would be reached. It is clear now that the mercantile interests of Portland and those of the promoters of the Portland railway were determined to obtain the approval of the broad gauge, and to make it mandatory on the projected "Grand Trunk" and on other major railways to be built in Canada. Most important of all to these interests, it would secure for Portland a virtual monopoly on Canadian export rail traffic -- or so they thought, by forcing traffic to flow artificially from east to west in Canada. They sought to arouse the patriotic instincts of the Canadians by pointing out that a railway system whose gauge was substantially dissimilar to that used in the United States, would hamper any military invasion of Canada from the USA. Ridiculous as this may seem today, it was nonetheless a plausible argument to older Canadians to whom the War of 1812 was still a distinct and unpleasant memory. Other, obviously weaker reasons were, for example, that transshipment at border points would be advantageous to local interests; that lack of interchange would thwart the "theft" of cars by foreign railways and, unthinkable as it may be to the comfort-loving Twentieth Century North American -- that changing trains at gauge-break points would afford passengers "healthful exercise" !

The Chief Engineer of the Portland railway, A.C. Morton, was much impressed by the broad gauge, and he could and did speak with authority. It is not so well known that Morton had previously worked for the six-foot-gauge Erie Railroad and so could be expected to have been influenced to some degree. For the side of the Stephenson gauge, the Great Western, whose complete economy depended upon uniformity of gauge with United States roads, took the stand that this uniformity should continue for the reasons, valid even today, that the standard gauge had an established character, that it would be less costly to build and to maintain, and that interchange with other railways was necessary and desirable.

II. ADOPTION OF THE "PROVINCIAL GAUGE"

Nonetheless, heedless of the voices of moderation and of logic, the Broad Gauge forces carried the day. On July 31st, 1851, the Legislature of the Province of Canada enacted statutes making the adoption of the 5'6" gauge a precondition of the receipt of government financial assistance under the Guarantee Act of 1849. The latter legislation, having as its end the stimulation of railway building in the Province, had provided government help to railways to be built having a route length of 75 miles or more, but the government reserved to itself the right to pass on the technical qualifications of railways applying for this relief. By its action in 1851, the Government of Canada pressured the Great Western Railway into adopting a gauge obviously contrary to its interests, since the railway could not hope to complete its construction programme without the aid afforded by the Guarantee Act. In vain did it protest this cavalier action and much against its will, the GWR started construction of its rails to a width which would not correspond, at either end of its Suspension Bridge-Windsor main line, with connecting United States railways.

RIGHT: This photograph of Hamilton station taken between 1866 and 1873, shows the complicated trackwork made necessary by the installation of double gauge on the Great Western main line in the former year. With the repeal of the broad gauge law in 1870, the outer, broad-gauge third rail was gradually taken up.



Construction forces were released to build a network of railways, almost without exception to the new width. Almost prophetically, just a month-and-a-half after the decision for the Broad Gauge, which was thereafter referred to as the "Provincial Gauge", the Champlain & Saint Lawrence Rail Road connected up with the Vermont & Canada Railroad at Rouses Point, and in mid-September, 1851, a Railway Celebration was held in Boston to mark the first through train from Montreal to Boston, using, in Canada, the existing 4'8½" gauge lines which were not affected by the new legislation. With the traffic of the Montreal area now going to Boston, Portland became more determined than ever to finish the broad-gauge connection. In August, 1852, the railway from Longueuil was opened as far as Sherbrooke. In January, 1853, the American-side A. & St. L. was completed to Island Pond, and on July 18th, 1853, the first through train ran over the broad gauge from Montreal to Portland, Maine. Only days before, the Portland railway had become the nucleus of a new railway, the Grand Trunk Railway of Canada, whose imprint was to appear liberally across the pages of the history of Canadian transportation.

In Canada West, (what is now Ontario), the first steam operated line, the Ontario, Simcoe & Huron Union Railway, was opened in May, 1853, from Toronto to Aurora. On November 10th, 1853, the first section of the Great Western Railway was completed from Suspension Bridge at the Niagara frontier, to the city of Hamilton, all this on the new 5'6" gauge; but the standard gauge still had its protagonists, and in 1854, the Bytown & Prescott Railway, excepted from the provisions of the Broad Gauge act of 1851 by reason of its length of less than 75 miles, was completed from Prescott to Bytown (now Ottawa). The Grand Trunk had not yet been built through Prescott and the selection of the Stephenson gauge for the B. & P. was dictated by its car ferry connection between Prescott and Ogdensburgh, N.Y., whence the Northern Railroad of New York, and later, the Rome, Watertown & Ogdensburgh Railroad, afforded through rail connections to United States markets.

FIGURE 1. - PROVINCE OF CANADA: Annual Growth of Railway
Mileage by Gauge, 1836-1860

Year	New 5'6"	Total 5'6"	New 4'8½"	Total 4'8½"	Grand Total
1836			14	14	14
1847	30	30	8	22	52
1850			12	34	64
1851			22	56	86
1852	66	96	38	94	190
1853	212	308		94	402
1854	276	584	54	148	632
1855	236	820		148	968
1856	437	1,257		148	1,405
1857	58	1,315		148	1,463
1858	141	1,456		148	1,604
1859	221	1,677	28	176	1,853
1860	29	1,706		176	1,882

Source: Report of Samuel Keefer, Esq., Inspector of Railways, 1859-60.

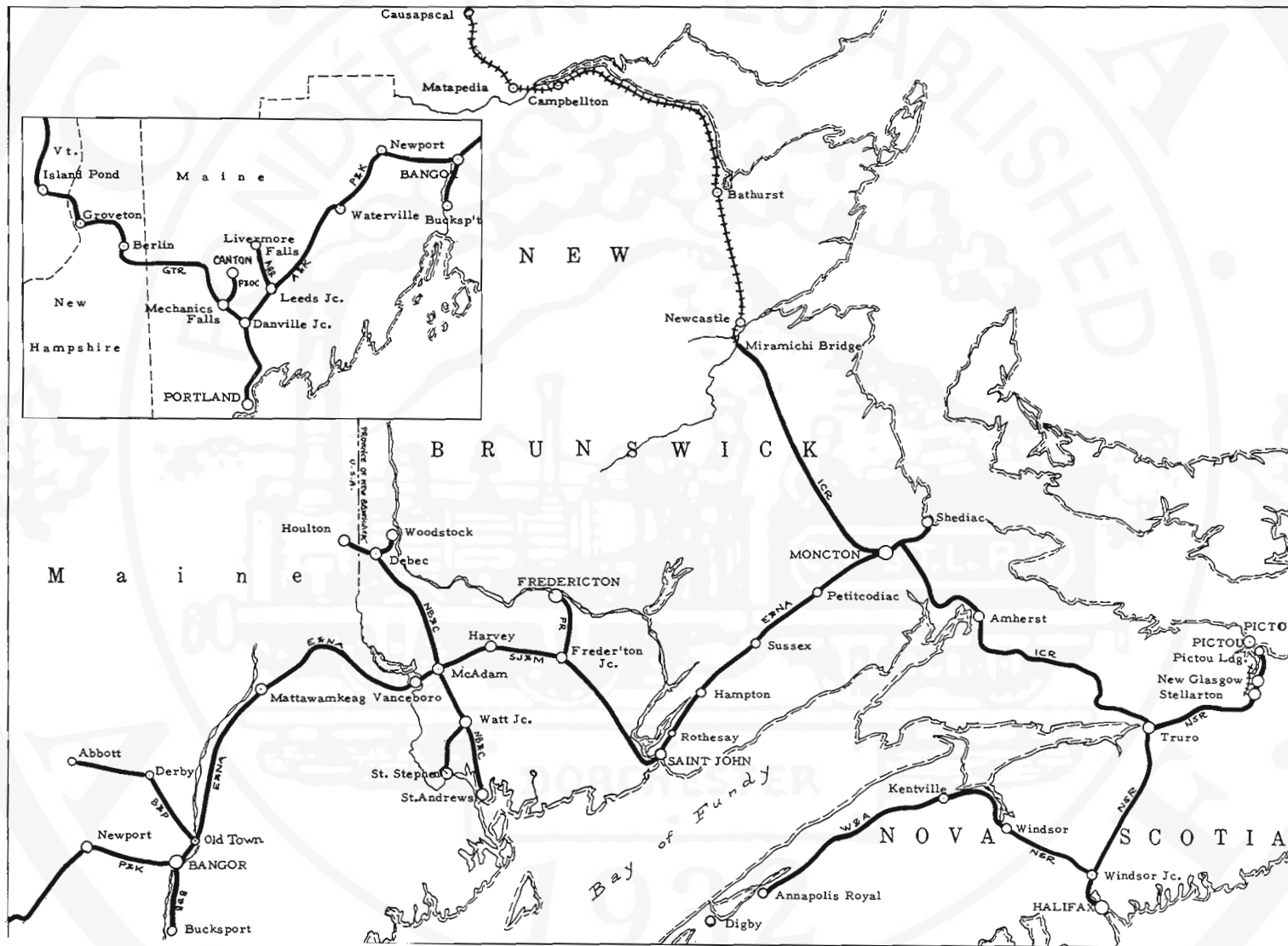
The Bytown & Prescott was one of very few new railways built to the standard gauge during the twenty-year period in which the broad-gauge legislation was applicable. Another was the Stanstead, Shefford & Chambly which connected St. Johns with Waterloo in what is now Quebec, in the early 1860s. The table reproduced as Figure 1 and showing the annual growth of railway mileage in the Province of Canada between 1836 and 1860, will demonstrate the profound effect the legislation of 1851 had on construction in both gauges. The broad gauge mileage kept increasing, and was arrested only momentarily by the depression of 1857.

Not only did the decade between 1850 and 1860 see the railway extend itself from Sarnia and Windsor on the west, to Riviere-du-Loup and Portland on the east, but in the neighbouring British provinces, Nova Scotia saw its first train run a few miles out of Halifax in July 1855, while two years later, on March 17, 1857, the European & North American Railway opened for three miles out of Saint John, in the direction of Moncton. Both of these lines, influenced no doubt by the current of opinion in the Province of Canada, built to the 5'6" width. Unlike Canada, however, where the public favoured free enterprise and private ownership of railways, the two Maritime provinces undertook these initial railway projects as government-owned and operated enterprises. Public ownership of railways was always a popular creed in the Maritimes. In the course of time, both Prince Edward Island and Newfoundland would undertake their own rail systems as government projects. Indeed, Prince Edward Island, in all of its railway history, never had privately-owned public railways at any time.

South of the boundary, the Portland interests were a strong influence in Maine. Portland had been reached from Boston by the Portland Saco & Portsmouth Railroad, on November 21st, 1842. Though this was a standard-gauge line, other lines in Maine corresponded to the broad gauge of the Atlantic & Saint Lawrence, now become the Grand Trunk. Among these was the Androscoggin & Kennebec Railroad, opened in December 1849 from Danville Junction to Waterville, and the Penobscot & Kennebec RR, which continued the A&K from Waterville to Bangor, opened in September 1855. From Bangor on to the New Brunswick border, and then to Saint John, the European & North American Railway was constructed as a broad-gauge line. Its completion, however, did not come about until 1871.

In 1860, 92% of the 2,160 miles of public railway in Canada, New Brunswick and Nova Scotia, was of the 5'6" gauge. The outbreak of internal hostilities in the United States in 1861, and the subsequent abrogation, by the U.S.A., of its Treaty of Reciprocity with Canada, set up forces in the British provinces which were important factors leading to Confederation on July 1st, 1867. The advent of such a union resurrected a project for a railway connecting Halifax with Quebec. The resulting Intercolonial Railway, reflecting the policy of Imperial military authorities, was routed around the coasts of New Brunswick and Quebec, as far away from the International Boundary as possible. It was built largely to the broad gauge simply because the railways with which it connected at either end, were also broad gauge. Before the Intercolonial was completed in 1876, however, the change of gauge on the eastern end of the GTR, occurring in 1874, set up a chain reaction which saw the Intercolonial changed while under construction, and the consequent change, in turn, of the older lines in New Brunswick and Nova Scotia.

*- The first public train service. The Albion Colliery tramway, of 4'8½" gauge and opened in 1839 with steam locomotion, was Nova Scotia's first steam railway.



III. HIGHLIGHTS OF THE BROAD GAUGE ERA

Strangely, in spite of the arguments in favour of the broad gauge advanced before the 1851 Commission, no practical advantage was ever taken of the wider width to build heavier or larger motive power or rolling stock, as the Erie had done in the United States and the Great Western had in England. Yet the era was not lacking in accomplishment even though none of the achievements were necessarily attributable to the adoption of the 5'6" track width.

The year 1859 saw the completion of the mile-long Victoria Tubular Bridge across the Saint Lawrence at Montreal, a feat in which the noted Robert Stephenson was consultant and which was considered by railway professionals to be one of the greatest engineering accomplishments in the world. The official opening, in August 1860, was marked by the presence of the nineteen-year-old Prince of Wales, whose Royal Visit in that year was the first of many such visits to this country which employed railway transportation extensively.

At the end of 1860, the opening of Canada's first railway tunnel occurred, this structure built by the Brockville & Ottawa Railway under the town of Brockville and, incidentally, still in use. Earlier, a project which stands apart for sheer audacity rather than practicality claimed the attention of the public when, in the year 1854, the Cobourg & Peterborough Railway completed a pile bridge with draw spans for three miles across Rice Lake. When it is realized that the railway itself was only twenty-eight miles long, one can comprehend that the maintenance of such a costly structure would loom large in its modest balance sheets. After several futile attempts were made to repair it following ice damage in successive winters, it was abandoned.

The Broad Gauge and its era witnessed two serious railway accidents, the first at Desjardins Canal near Hamilton in 1857, and the second at Beloeil, each of Montreal, in 1864. The latter catastrophe still holds the record, with 100 fatalities, as Canada's worst railway disaster. It so aroused public opinion as to bring about reform and unification in railway operating practice, and stimulated the development of safety devices such as the air brake.

IV. MOTIVE POWER AND ROLLING STOCK

Motive power and rolling stock was of the same size as contemporary United States standard-gauge equipment, as exemplified by the "behemoth" of the Canadian locomotive fraternity, GTR No. 209, which was built at Point St. Charles works in Montreal in May, 1859. Weighing 48 tons, 10 hundredweight in working order, and having an overall length of 50'6", it dwarfed its contemporaries and was the object of an admiring public as it appeared majestically at the head of the 1860 Royal Train, much as its successors, CNR 6400 and CPR 2850 claimed the attention of the multitude when Their Majesties King George VI and Queen Elizabeth toured Canada in 1939. Like most engines in Canada a century ago, No. 209 was of the 4-4-0 arrangement, though other types included a few 4-6-0s, 0-6-0s, and 2-4-0s and even some 4-2-2s. Motive power is summarized by gauge in Figure 2, and rolling stock in Figure 3. Of particular note in the latter is the sixteen-wheeled passenger car built for the Royal Visit of 1860. A similar vehicle was used in New Brunswick on the European & North American, and is illustrated in one of the photographs appearing with this story.

While locomotive design at this early period gravitated strongly

FIGURE 2. - PROVINCE OF CANADA: Construction Origin and Track Gauge of Locomotive Engines, Dec. 31, 1860.

	Built in: Canada	Great Britain	U.S.A.	Total
5'6" Gauge:	57	105	210	372
4'8½" Gauge:	--	4	19	23
TOTALS:	57	109	229	395

Source: Report of Samuel Keefer, op. cit.

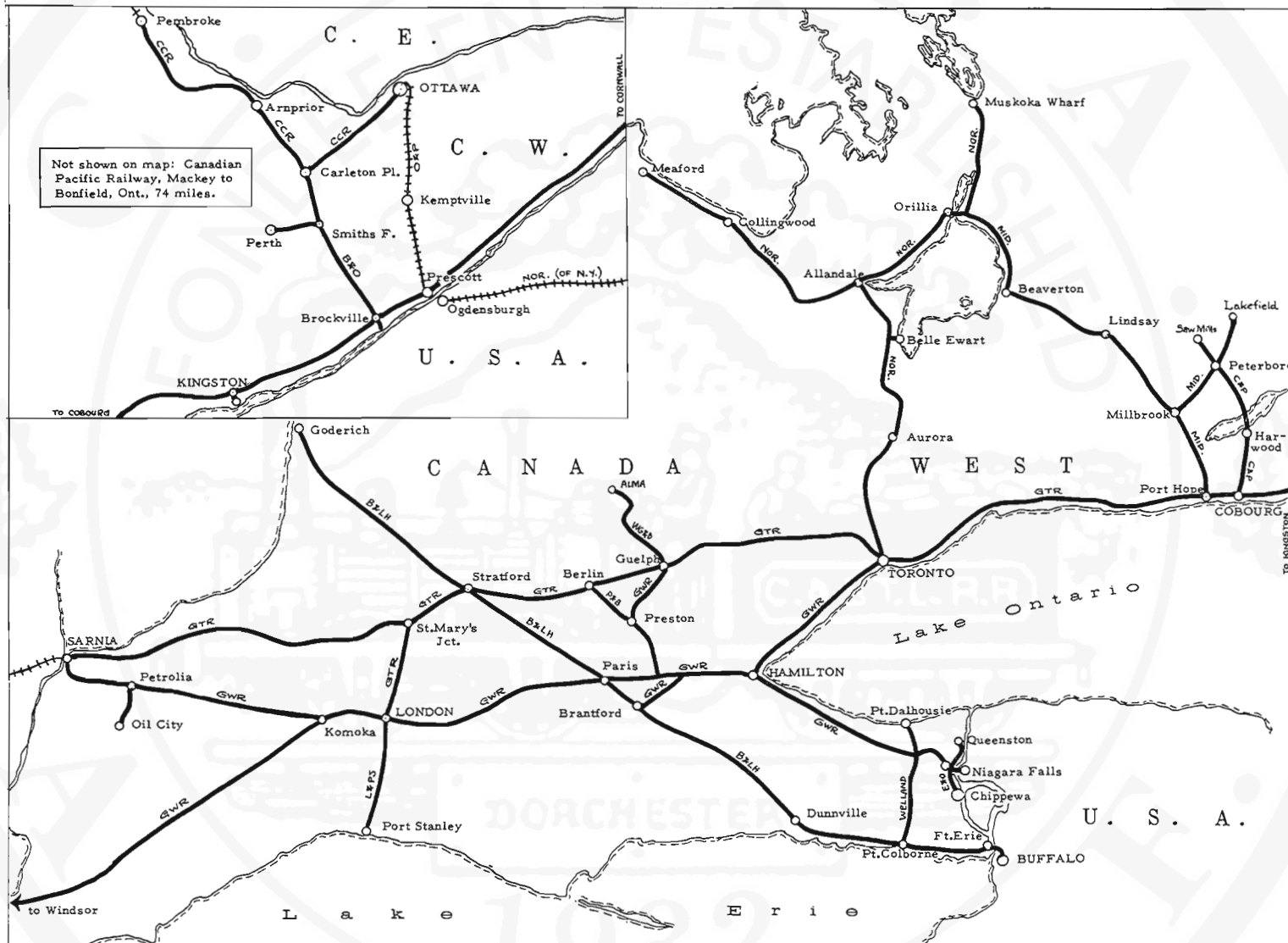
either toward British or American practice, the year 1854 saw the introduction of the first purely Canadian locomotive design, an interesting blend of Anglo-American features, built at Birkenhead, England by Peto, Brassey, Betts & Jackson. Some sixty engines of this design, originally 2-4-0 but later built as more flexible 4-4-0s, became a familiar feature on the GTR and, to a lesser extent, on the Great Western. These engines, known as "Birkenheads", after their place of origin, were a familiar sight in broad-gauge times. So sound were these machines that some of them were among the very few steam locomotives to be rebuilt to standard-gauge during the conversions of the 1870s, and these survivors found their way to short lines such as the Drummond County Railway, the Irondale, Bancroft & Ottawa Railway and the Montreal & Ottawa Railway. But it remained for a broad-gauge "Birkenhead" to be the last in regular service, chalking up more than a half century of service when retired by the Carillon & Grenville in 1910.

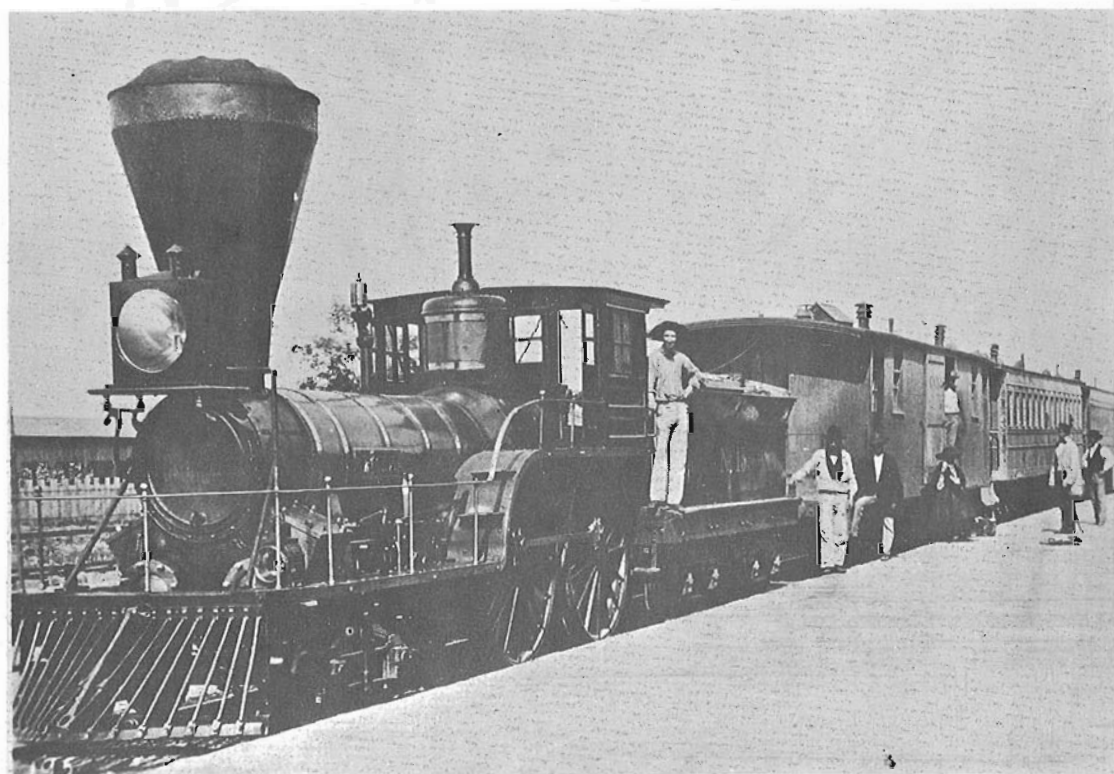
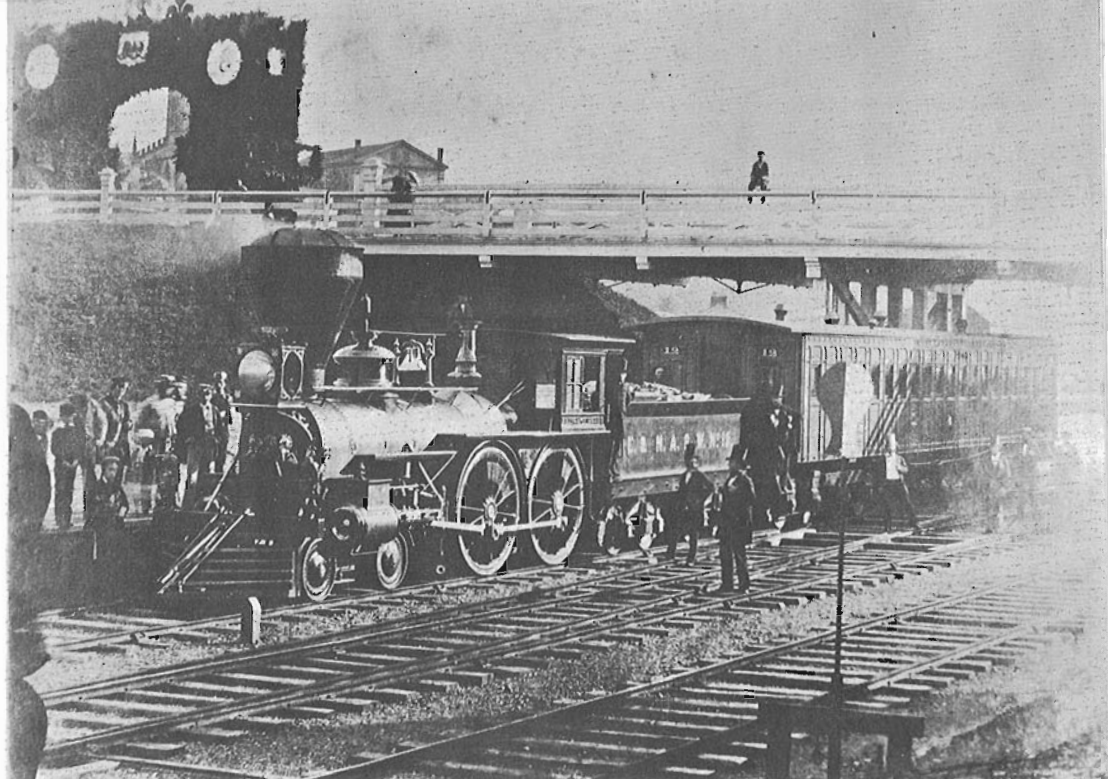
V. DECLINE

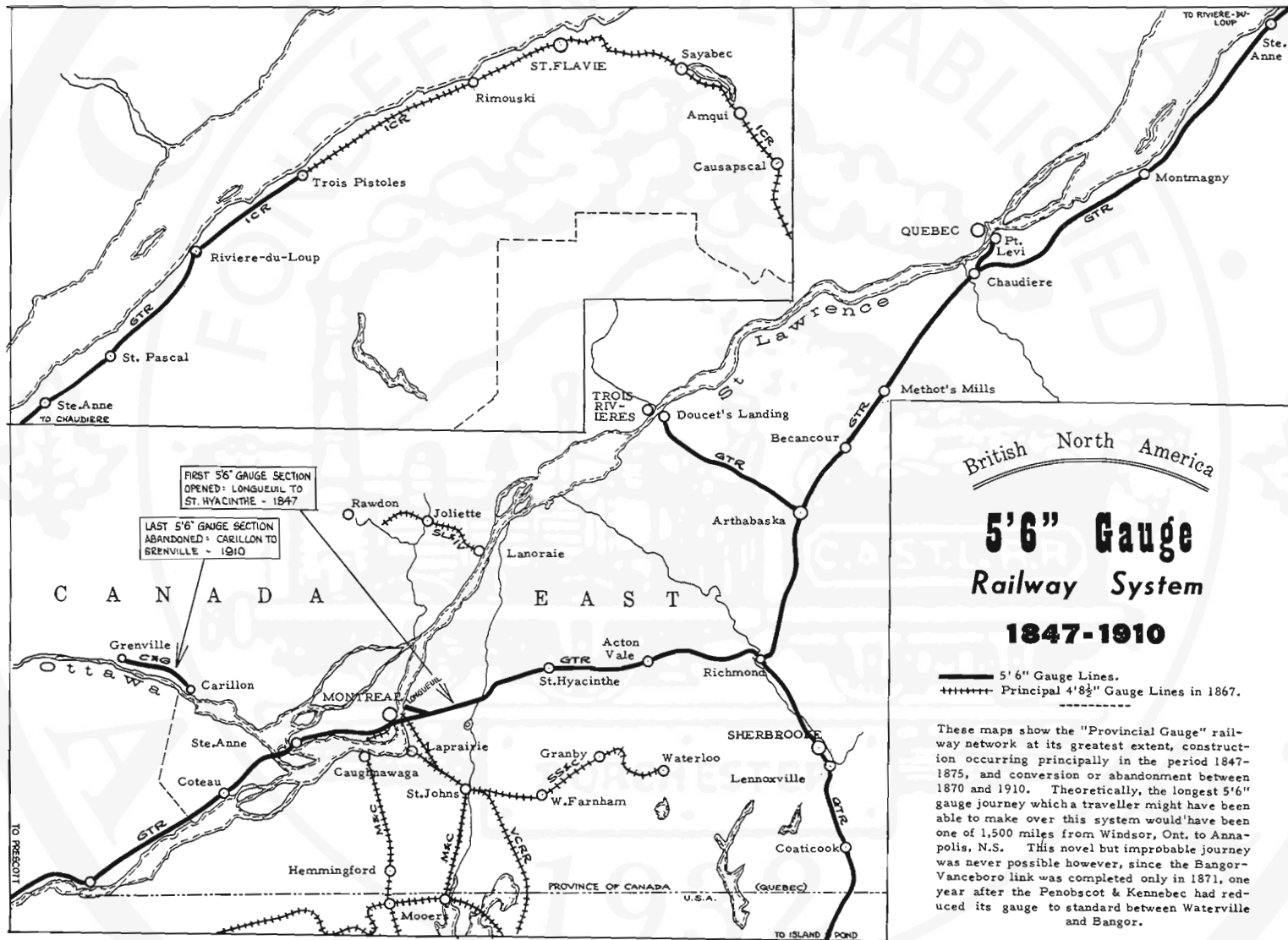
Throughout this period, the Montreal & Champlain Railway, which had succeeded and united the Champlain & Saint Lawrence, the Montreal & New York and the Montreal & Lachine roads, continued to function between Montreal and the International boundary on two 4'8½" routes. One was from St. Lambert to Rouses Point, via St. Johns, the other from Montreal to Lachine with a car-ferry connection across the Saint Lawrence to Caughnawaga, thence from that point to Plattsburgh, N.Y., by way of St. Isidore, Hemmingford and Moer's Junction. In 1864, the G.T.R. acquired control of this Stephenson-gauge network. No attempt was made to broaden the gauge, however, and a third rail was laid across the Victoria Bridge for standard-gauge trains, then another third rail along the standard-gauge line from St. Henri into Bonaventure (to page 35)

RIGHT (Top): Broad-gauge tracks are clearly apparent in this 1860 view of the Prince of Wales' Royal Train in Saint John, N.B., on the European & North American Railway. Note the sixteen-wheeled passenger car. The locomotive, No. 12, had been built new in that year by Messrs. Fleming & Humbert of Saint John, and was specially named "Prince of Wales" for the occasion.

(Bottom): This view of a typical broad-gauge train of the 1850s was taken on the Great Western at Suspension Bridge, Ont. Locomotive No. 15, "Essex", built by the Lowell Machine Shop in 1853, heads a typical train of flat-roofed, outside-framed passenger equipment.







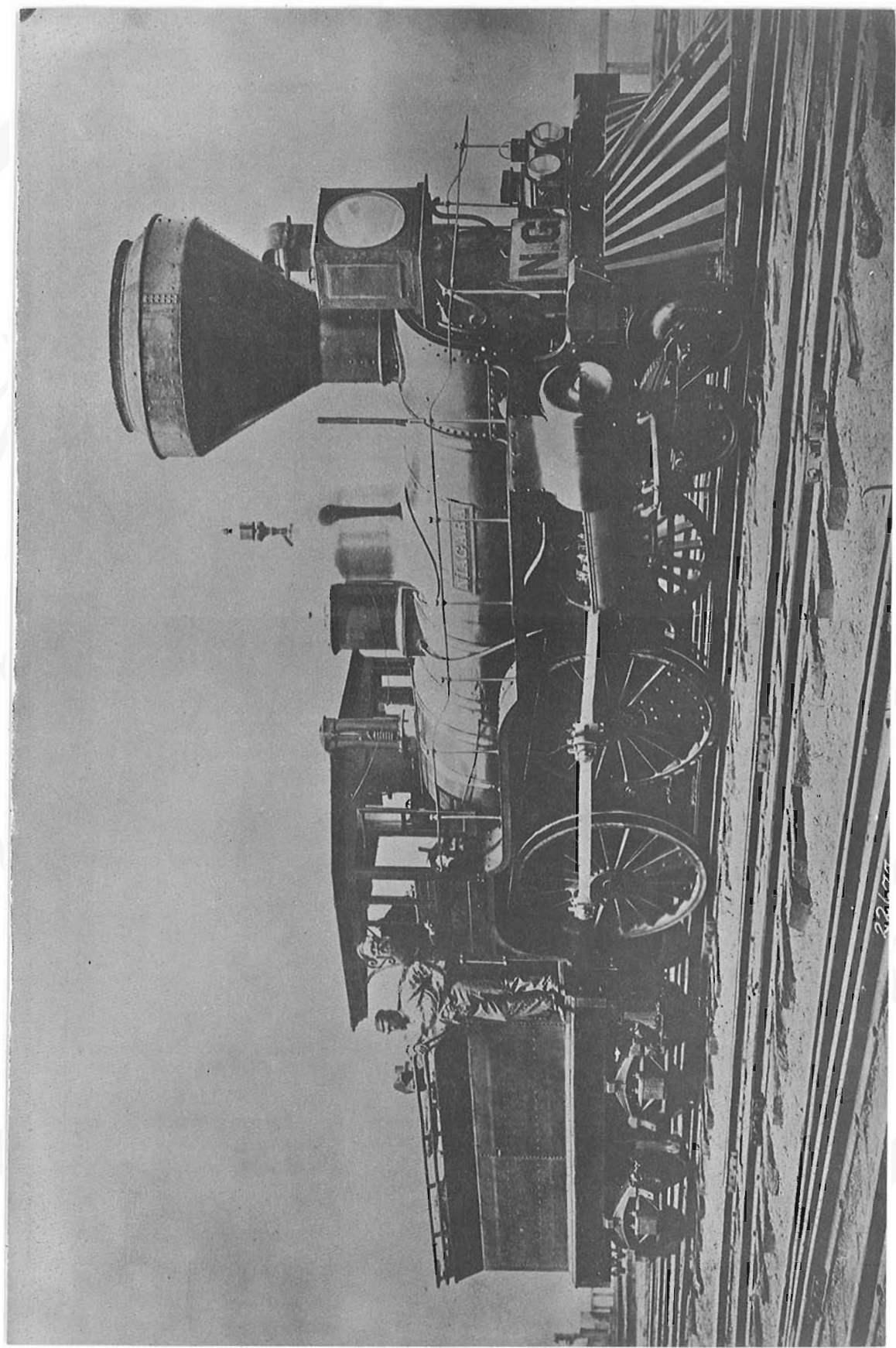


FIGURE 3. - PROVINCE OF CANADA: Summary of Rolling Stock by Type and Track Gauge, Dec. 31, 1860.

Type	4'8½" Gauge	5'6" Gauge	Total
First Class, 16 wheels:	--	1	1
" 12 " :	--	25	25
" 8 " :	17	206	223
" 4 " :	1	--	1
Second Cl. & Emigrant, 8 wheels:	7	110	117
" " 4 " :	3	--	3
Composite, 8 wheels:	--	2	2
Baggage, Mail & Express, 12 wheels:	--	12	12
" " 8 " :	9	95	104
" " 4 " :	2	--	2
Box, Freight & Cattle, 8 wheels:	140	3,040	3,180
" " 4 " :	1	100	101
Conductors' Cars, 8 wheels:	--	40	40
Platform Cars, 8 wheels:	105	1,763	1,868
Grain Cars:	--	50	50
Refrigerator Car:	--	1	1
Gravel Cars, 8 wheels:	--	90	90
" 4 " :	82	278	360
Timber Cars, 16 wheels:	--	6	6
" 4 " :	--	6	6
Spar Timber Trucks:	--	16	16
Snow Ploughs, Large:	1	34	35
Hand Cars:	19	102	121
TOTALS: (Cars)	387	5,977	6,364

Source: Report of Samuel Keefer, Esq., Inspector of Railways, 1859-60.

Station, so that broad gauge trains might use this terminal, which was more centrally located than the G.T.R. station at Point St. Charles.

After having endured tedious and expensive transshipment at interchange points for thirteen years, the Great Western took a notable step on January 1st, 1867, by inaugurating the use of a third rail for standard-gauge over the entire 229-mile main line from Windsor to Suspension Bridge. This proved to be the opening move in the dissolution of the cumbersome and expensive Provincial Gauge. The GWR made no change in its motive power or rolling stock immediately, and trains of mixed-gauge equipment were marked, on this section, by a placard with the letters "NG" carried on the front of the engine. This was to prevent such a train being switched, in error, into a siding which was not equipped for both gauges. At best, this measure was a temporary expedient, resulting in considerably-increased maintenance and operation expense.

After nearly twenty years of experience in operation of the Provincial Gauge, the Government of what had now become the Dominion of Canada took the inevitable step, in 1870, of repealing so much of the Act of 1851 which referred to a mandatory 5'6" gauge. The Great Western was well-prepared for such a move; on one day in December, 1870, the first positive step was taken by changing over the Hamilton-Toronto Branch from 5'6" to 4'8½" in the space of eight hours only. This

LEFT: GWR's "Niagara" with the "NG" plate referred to in the text.

line had never been converted to double-gauge. Shortly after, in late 1870 and early 1871, the third rail was removed between Windsor and Komoka, and from Hamilton to Suspension Bridge. Later in 1871, the rest of the Broad Gauge system was converted, but the three-rail section between Komoka and Hamilton was left intact until June 1873, so that usable broad gauge equipment could be kept in service as long as possible. However, in that month, the GWR became a completely standard-gauge railway system.

The Grand Trunk made a start in November, 1872, by changing over its line which, like the GWR, united the Detroit river and Niagara interchanges with American lines. The section affected was from Sarnia to St. Mary's Junction, and from Stratford, via Paris and Brantford to Fort Erie. A third rail was retained between St. Mary's Junction and Stratford, for the use of broad gauge trains on the London branch. The GTR changed the rest of its system in October and November, 1873, with the exception of lines east of Richmond to Riviere-du-Loup, and branches, which did not go over to standard until September 1874, along with the section of the unopened Intercolonial between Riviere-du-Loup and Ste. Flavie (Mont Joli). The balance of the Intercolonial and the Windsor & Annapolis Railway, were changed in June and November, 1875.

With the line to Portland, the original broad gauge railway, converted to standard gauge in November, 1873, the other 5'6" lines in Maine followed suit, all lines west of Bangor being changed by 1875. In 1877, the European & North American between Bangor and Saint John, N.B., via Vanceboro, was reduced to standard, and with it went the 22-mile Fredericton Railway. In 1878, the New Brunswick & Canada Railway was converted, and the stragglers to belated conformity continued with the reduction of the Northern in 1879, and that of the Canada Central which took place on Easter Sunday, 1880.

Even at this eleventh hour, the Broad Gauge was not quite dead; late in 1880, while the Canada Central was being extended westward from Pembroke, under Government subsidy, to the eastern terminus of the Pacific Railway at Callander, out of a desire to utilize broad-gauge equipment left over and still unconverted, account pressure of work, from the gauge conversion of Easter of 1880, the Canada Central constructed its new line, on a temporary basis, between Mackey, Ont., and Callander, to the 5'6" gauge. In 1881, when the CCR shops at Carleton Place could accommodate this remaining equipment for alteration, the section was changed over to standard gauge for normal operation.

At the close of the year 1881, thirty years after the enactment of the Provincial Gauge act, only 60 miles of 5'6" gauge railway remained in the Dominion of Canada. Forty-six of those miles belonged to the Cobourg, Peterboro & Marmora Railway, which operated between Cobourg and Harwood, on the southern shore of Rice Lake, with a mineral spur near Blairton, further inland. The C.P. & M. was never changed but was abandoned completely about 1889 as a broad gauge line. The remaining fourteen miles were those of the Carillon & Grenville Railway, which operated a portage service in connection with the Montreal-Ottawa steamer service on the Ottawa River. The Carillon & Grenville had no physical connection with other roads, nor any use for such a connection; its quaint antiquated train was hauled over the road by the last Birkenhead engine in Canada, and it continued a charming, pastoral and anachronistic existence until the end of the navigation season of 1910 when it closed for good, taking with it the vestigial remains of what had been, in retrospect, a costly and unfortunate experiment for the railways of Canada, yet one of intense interest to the historian -- the era of the Provincial Gauge.

LIST OF 5'6" GAUGE RAILWAYS IN CANADA, WITH DATES OF CONSTRUCTION
AND CONVERSION OR ABANDONMENT, WITH U.S. CONNECTIONS

Section	Year Built	Changed to 4'8½"
<u>GRAND TRUNK RAILWAY OF CANADA</u>		
Longueuil - St. Hyacinthe, Que.	1847	4/1874
St. Hyacinthe - Sherbrooke, Que.	1852	"
Sherbrooke - Boundary U.S.A. (on line to Portland)	1853	"
Richmond - Point Levi(s), Que.	1854	10/1874
Chaudiere Jc. - St. Thomas, Que.	1855	"
Montreal - Brockville, Ont.	1855	11/1873
Brockville - Toronto, Ont.	1856	"
Toronto - Stratford, Ont.	1856	10/1873
Stratford - St. Marys Jc., Ont.	1858	3R 11/1872 10/1873
St. Marys Jc. - London, Ont.	1858	10/1873
St. Marys Jc. - Sarnia, Ont.	1859	11/1872
Victoria Bridge & approaches, Montreal.	1859	3R 1864 4/1874
St. Thomas - St. Pascal, Que.	1859	10/1874
St. Pascal - Riviere-du-Loup, Que.	1860	"
Kingston Branch	1860	11/1873
Bonaventure Sta., Montreal to St. Henry (St. Ga. 1847)	3R 1864	4/1874
Arthabaska - Doucet's Landing, Que.	1864	10/1874

GREAT WESTERN RAILWAY

Hamilton - London, Ont.	1853	3R 1/1867	1873
Suspension Bridge - Hamilton, Ont.	1853	"	1870
London - Komoka, Ont.	1854	"	1873
Komoka - Windsor, Ont.	1854	"	1870
Harrisburg - Galt, Ont.	1854	3R 1870	1871
Hamilton - Toronto, Ont.	1855	"	12/1870
Galt - Guelph, Ont.	1857	3R 1870	1871
Komoka - Sarnia, Ont.	1858	3R 1870	"
Wyoming - Petrolia, Ont.	1866	"	"
Guelph - Alma, Ont.	1870	"	"

NORTHERN RAILWAY OF CANADA

Toronto - Allandale, Ont.	1853	1879
Allandale - Collingwood, Ont.	1855	"
Collingwood - Meaford, Ont.	1872	"
Allandale - Orillia, Ont.	"	"
Orillia - Washago, Ont.	1873	"
Washago - Gravenhurst (Muskoka Wharf)	1875	"

EUROPEAN & NORTH AMERICAN RAILWAY

Saint John - Moose Path, N.B.	1857	6/1875
Pointe-du-Chene (Shediac) - Moncton, N.B.	"	"
Moose Path - Rothesay, N.B.	1858	"
Rothesay - Sussex, N.B.	1859	"
Sussex - Moncton, N.B.	1860	"

NOVA SCOTIA RAILWAY

Halifax - Bedford, N.S.	1855	6/1875
Bedford - Grand Lake, N.S.	1857	"
Grand Lake - Truro, N.S.	1858	"
Windsor Jc. - Windsor, N.S.	"	"
Truro - Pictou Landing, N.S.	1867	"

NEW BRUNSWICK & CANADA RAILWAY

St. Andrews - Barber Dam, N.B.	1857	1878
Barber Dam - Canterbury, N.B.	1858	"
Canterbury - Richmond (Debec Jc.), N.B.	1862	"
Watt Jc. - St. Stephen, N.B.	1866	"
Richmond - Woodstock, N.B.	1868	"
Richmond, N.B. - Houlton, Me.	1871	"

INTERCOLONIAL RAILWAY OF CANADA

Painsec Jc. - Dorchester, N.B.	1868	6/1875
Dorchester - Sackville, N.B.	1869	"
Sackville, N.B. - Amherst, N.S.	1870	"
Amherst - Truro, N.S.	1872	"
Riviere-du-Loup, - Post Road, Que.	1872	10/1874
Post Road - Trois Pistoles, Que.	1873	"
Moncton (Miramichi River crossing) N.B.	1875	11/1875

MIDLAND RAILWAY OF CANADA

Port Hope - Lindsay, Ont.	1857	6/1874
Millbrook - Peterborough, Ont.	1858	"
Peterborough - Lakefield, Ont.	1870	"
Lindsay - Beaverton, Ont.	1871	"
Beaverton - Orillia, Ont.	1873	"

BROCKVILLE & OTTAWA/CANADA CENTRAL railways

Brockville - Almonte, Ont.	1859	4/1880
Smiths Falls - Perth, Ont.	"	"
Brockville Town Tunnel.	1860	"
Almonte - Sand Point, Ont.	1867	"
Sand Point - Pembroke, Ont.	1876	"
Carleton Place - Ottawa, Ont.	1870	"

BUFFALO & LAKE ERIE RY. Fort Erie-Stratford, Ont.	1856	11/1872
Stratford-Goderich, Ont.	1858	10/1873
LONDON & PORT STANLEY RY. London-Port Stanley, Ont.	1856	10/1872
COBOURG & PETERBOROUGH RY. Cobourg-Harwood, Ont.	1854	Abandoned 1889
Harwood-Peterborough, Ont.	"	" c1860

(including Rice Lake bridge)		
WINDSOR & ANNAPOLIS RY. Windsor-Annapolis, N.S.	1869	6/1875
SAINT JOHN & MAINE RY. Saint John, N.B.-Vanceboro, Me.	1869	9/1877
FREDERICTON RY. Fredericton Jct. - Fredericton, NB	1869	"
ERIE & ONTARIO RY. Chippewa - Queenston, Ont.	1854	c1875
CARILLON & GRENVILLE RY. Carillon-Grenville, Que.	1854	Abandoned 1910
WELLAND RY. Port Dalhousie - Pt. Colborne, Ont.	1859	3R 1872 c1875
PETERBOROUGH & CHEMONG LAKE RY. (as title)	1859	6/1874
CANADIAN PACIFIC RY. Mackey-Bonfield, Ont.	1881	1883

CONNECTING RAILWAYS OF 5'6" GAUGE IN NEW ENGLAND

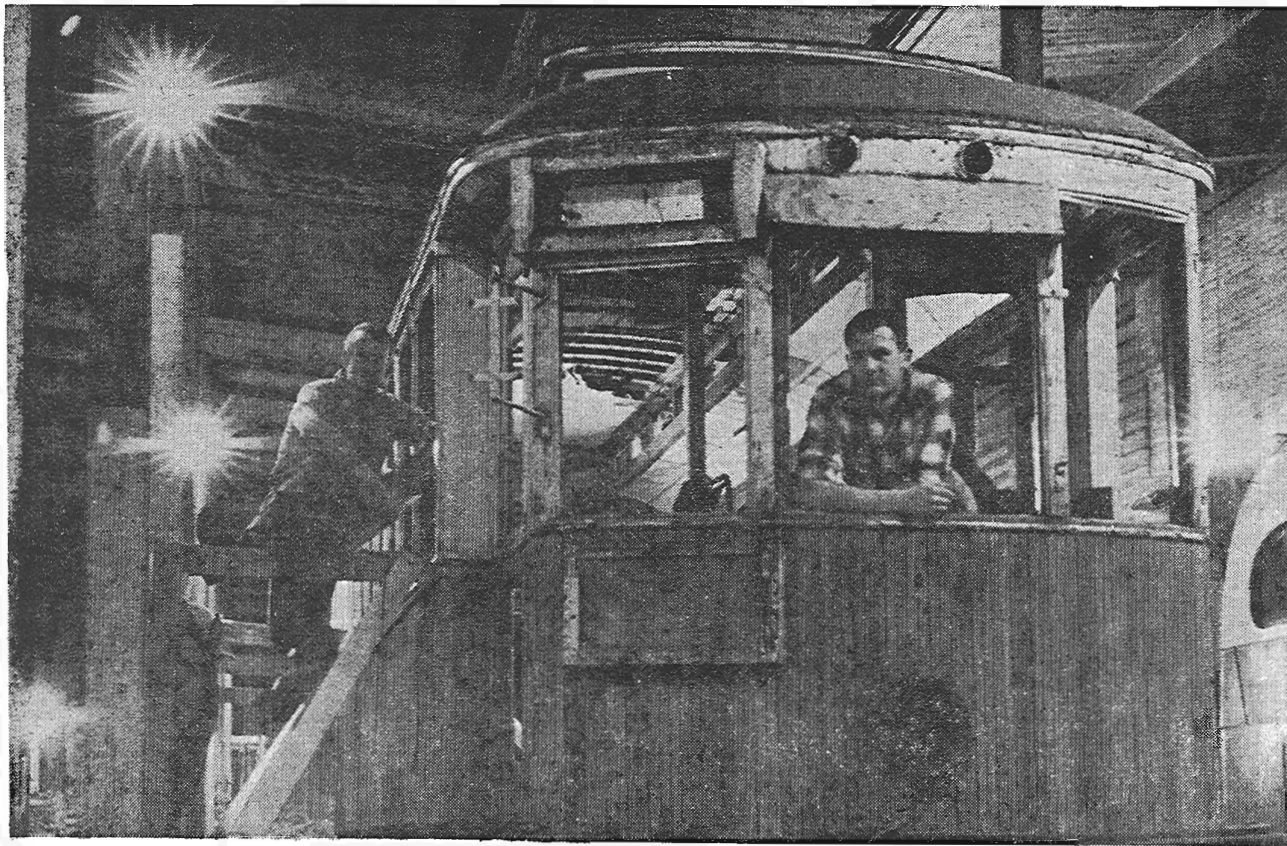
GRAND TRUNK RY. Portland-Boundary, Canada.	1853	4/1874
ANDROSCOGGIN & KENNEBEC RY. Danville Jc.-Waterville, Me.	1849	11/1871
PENOBSCOT & KENNEBEC RY. Waterville-Bangor, Me.	1862	11/1870
EUROPEAN & NO. AMERICAN (Maine) Bangor-Vanceboro.	1871	9/1878
ANDROSCOGGIN RY. Leeds Jc.-Livermore Falls, Me.	1855	1862
PORTLAND & OXFORD CENTRAL Mechanic Falls-E. Sumner	1854	c1878
E. Sumner-Canton, Me.	1870	"
BUCKSPORT & BANGOR RR. Bucksport-Bangor, Me.	1874	1877*
BANGOR & PISCATAQUIS RR. Old Town-Dover, Me.	1869	1877
Dover-Abbott, Me.	1874	1877

* changed to 3' gauge in 1879, back to 4'8½" in 1883.

NOTE: "3R" indicates third rail installed this date.

OUR MUSEUM BRANCHES OUT

To dispel any impression that CRHA museum activity is confined to the project at Delson, Que., near Montreal, we reproduce the photograph at right showing members of the Rocky Mountain Branch of the Association busily engaged in restoration work on Edmonton Transit System No.1, a double-truck deck-roofed electric car built by Ottawa more than half-a-century ago. ETS No. 1 not only inaugurated service in the Alberta capital, but was also in service until streetcar service ceased in the early 1950s. Stored outdoors for many years, No. 1 is now inside the ETS garage where our members work on it in comfort, recalling the fact that the parent society's museum project started in exactly the same way at Montreal in 1950, working on MSR 274.



CANADIAN PACIFIC RAILWAY: DISPOSITION OF STEAM LOCOMOTIVES, 1962

During 1962, Canadian Pacific's steam locomotive scrapping programme was noticeably decelerated, owing to lower prices for scrap prevailing during the year. As a consequence, only 57 locomotives were scrapped, as compared to 176 in 1961. As a result, 131 locomotives remained to be disposed of as of December 31st, 1962, being 11 locomotives held for our Association, plus 120 others which included several held for possible historical preservation by various groups and individuals.

Steam locomotives scrapped were:

Class G-5 (4-6-2): 1215, 1228, 1237, 1240, 1244, 1245, 1249, 1251, 1265, 1266, 1267, 1268, 1274, 1292, 1264.
Class G-3 (4-6-2): 2338, 2376, 2377, 2387, 2428, 2435, 2437, 2439, 2447, 2448, 2450, 2452.
Class G-4 (4-6-2): 2709.
Class H-1 (4-6-4): 2812, 2830, 2835, 2837, 2843, 2845, 2846, 2847, 2849, 2852, 2853.
Class P-1 (2-8-2): 5203, 5207, 5227, 5233, 5253, 5255, 5256, 5258.
Class P-2 (2-8-2): 5381, 5427, 5437, 5438, 5440, 5443, 5451, 5470, 5472.
Class V-4 (0-8-0): 6943.

Gas-electric unit cars scrapped were:

9003, 9005 at Angus in October.

Two electric locomotives of the Lake Erie & Northern Ry. were sold:

333, 335 sold to Cornwall Street Ry., Light & Power Co., in June.

A list of the steam locomotives remaining as of January 1st, 1963, will be published in a forthcoming issue of our publication.

NOTES AND NEWS

- * The onslaught of winter has proved to be as troublesome to British Columbia highway authorities maintaining the new road over Rogers Pass, as it was to the Canadian Pacific Railway before construction of the Connaught Tunnel in 1916. Up to early January, it was reported that the highway had been obstructed by no less than four major wet snow avalanches. Authorities are giving consideration to plans to lengthen some of the highway snowsheds.
- * On January 4th, Canada's two major railways agreed to a temporary "freeze" on western branch line abandonments, while the then Federal Government sought to obtain Parliamentary approval for an overall plan of branch line closures. The conference was called by the Government, and was attended by the railway presidents and heads of major prairie grain-handling interests. While the railways would continue to file applications for abandonment with the Board of Transport Commissioners for Canada, action would be suspended. The railways' agreement was conditional upon legislative action

(cont'd page 43)

CANADIAN PACIFIC

3015

C. P. R.

3015

CONDUCTORS VAN





The following donations to the Museum Fund, made during 1962 and during January of this year, are gratefully acknowledged:

N.E. Kistner	\$10.00	Lawrence Meloling	\$5.00
Northern Electric Com- pany.....	250.00	C.E. Homuth	5.00
L. Eric Reford	100.00	H.D. Johnson	1.00
James M. Mitchell	5.00	Harry Martin	5.15
The Royal Trust Com- pany	200.00	David A. Swendsen	10.00
F. Clayton Snyder	5.00	Roland O. Doig	25.00
E. Ratcliffe	10.00	Edward H. Bensley	25.00
Edward G. Schimke	5.00	J.W. Durnford	15.00
C.A. Moore	3.00	G.R.E. Tucker	15.00
International Harvester Company	250.00	E.A. Durnford	25.00
William S. Billings ...	5.00	William E. Weighill	5.00
Bruce B. Shier	5.00	R.H. Tivy	10.00
Lawrence C. Haines ...	5.00	R.G. Harris	5.00
Jean-Guy Major	5.00	Cecil F. Harding	10.00
D.J. Appleby	5.00	Orville Robinson	5.00
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Norman Kistner	5.00	Foster M. Palmer	10.00
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Anthony J. Martin	6.00	Charles L. McGovern	3.00
David C. Knowles	5.00	Carroll C. Sait	10.00
James R. Barney	5.00	D.S. Anderson	10.00
Maurice Bleau	5.00	Lawrence C. Haines	5.00
Paul McGee	20.00	Arnold Wainwright	100.00
W. Luper Hay	8.80	William Clarke	10.00
O.M. Taylor	5.00		
G.L. Brown	2.50	Total	\$1,442.48
A.D. Westland	25.00	Previously ack- nowledged	48,808.24
John R. Davis	5.00		
J.A. Collins	25.00	GRAND TOTAL	\$50,250.72
Ross Peever	5.00		
Anonymous	5.15		
W. Luper Hay	11.38		
Anonymous	50.00		
-- End of 1962 --			

FURTHER CONTRIBUTIONS ARE
URGENTLY NEEDED !!

THIS MUSEUM IS YOUR MUSEUM !!

LEFT: Back in those eventful times when people were wont to call a spade a spade, without worrying about the effect on an impressionable public, the purpose of Canadian Pacific car 3015 was proclaimed for all to see, in letters no less large than those of the company name itself. This photograph, taken at CP Hochelaga car shop in Montreal back in the 1890s, shows a side-door conductor's car converted from a boxcar. Note the quaint arch-bar trucks and outside brake hangers.

Métro Montréal

Recently, the City of Montreal awarded its fourth contract for construction of the Montreal Metro rapid transit system. It was awarded to Spino Construction Company Limited, who submitted the lowest tender of \$3,122,429 for the work. The contract, No. 2-A-3, covers that portion of the so-called "North-South" subway, Line No. 2, under Pronovost and Berri streets, from Rosemont Blvd. to a point north of Cherrier Street. It is the fourth contract to be awarded covering construction of the system, and brings to almost seven miles, the length of rapid transit line under contract, for which \$18,285,000 had been committed so far.

Early in February, the Montreal City Council was informed by Public Works Director Lucien l'Allier that about 6,000 feet of tunnel had been excavated so far, on the seven miles under contract. This consisted of 3,600 feet of excavation on contract 2-A-1, and 2,300 feet on contract 2-A-2. On the remaining two contracts, work to date consists only of digging of access ramps and wells.

Another matter brought to light early in 1963 has been a study for a proposed rapid transit link to Montreal airport at Dorval. A committee of La Chambre du Commerce du District de Montreal is advocating extension of the proposed rapid transit system from the CNR Val Royal station to Montreal airport, a distance of approximately four miles. Val Royal, it should be recalled, would be served by the proposed Line No.3, to operate over the present CNR electrification through the Mount Royal Tunnel. The City administration has taken this project under advisement, and have indicated that it would not be undertaken in any event until the rest of the system is in operation, probably by 1966.

by Omer S.A. Lavallee

ASSOCIATION NEWS -----

The Annual Meeting of the Association was held in Montreal at McGill University on Wednesday, January 23rd. The officers and committee chairmen presented their reports covering 1962, a year of unprecedented activity, and the thirtieth full year of the Association's existence.

Following the reading of reports, the members present elected twelve Directors by acclamation, there being only that number of nominations at meeting time. The incumbents for 1963, in alphabetical order, are:

Messrs. R.M. Binns, D.R. Henderson, O.S.A. Lavallee, F.S. Lewin, I.D. Macorquodale, P.R. McGee, R.V.V. Nicholls, J.W. Saunders, L.A. Seton, Chas. Viau, A.S. Walbridge and S.S. Worthen.

Subsequently, at a meeting of the new Executive Committee held on Monday, January 28th, individual executive positions and standing committee chairmanships were appointed as follows:

PRESIDENT: Dr. R.V.V. Nicholls; VICE PRESIDENT; Charles Viau. VICE PRESIDENT: O.S.A. Lavallee; TREASURER: A.S. Walbridge; SECRETARY: Leonard A. Seton, Q.C.; MUSEUM COMMITTEE: Dr. Nicholls; RAILWAY COMMITTEE: Mr. Lavallee; PUBLICATIONS COMMITTEE: David R. Henderson; EDITOR, CANADIAN RAIL: Anthony Clegg; MEMBERSHIP COMMITTEE: Stephen Cheasley.

NOTES AND NEWS (from page 39)

being taken at the current session of Parliament. Since the minority Conservative Government fell following a want-of-confidence vote on February 5th, and Parliament was dissolved pending elections on April 8th, it is not known what effect this will have on the application "freeze".

- * Canadian National Railways has called for conditional tenders on clearing, grubbing and stripping route and preparing sub-grade for a 23-mile branch line in northern New Brunswick to be completed one year hence, connecting the CNR Montreal-Halifax main line near Bathurst with a zinc, lead and copper operation of the Brunswick Mining & Smelting Company Limited. The first 2.8 miles of line were to be located on the old Northern New Brunswick & Seaboard Railway line, now abandoned, and the remaining 20 miles are to be run over new ground. The project, to cost 1.5 million dollars, was, like the branch line abandonment "freeze" referred to above, to be conditional upon approval by Parliament.
 - * Canadian National's "red-white-blue" fare plan has been reported to have been successful to date, with the year-long test ending on April 30th next. The new reduced fare system has resulted in some lines carrying 200% more passengers than in 1961, with the overall revenue being considerably higher.
 - * A 273-foot railway barge, built recently at Vancouver for F.M. Yorke & Sons, and named YORKE 21, was recently launched by making two high-speed runs from the Second Narrows Bridge to outer reaches of the North Shore. The 800 h.p., \$250,000 craft carried three railway lounge cars in which the guests travelled during the trials. The Vancouver Sun commented that this equipment would probably be the "fanciest" rolling stock that the craft would ever take to sea. Its normal complement is 18 freight cars on deck, with room for some 160,000 gallons of caustic soda in internal tanks.
- and a few notes from our Pacific Coast Representative, Mr. Peter Cox.....
- * CN locomotives 4702, 4703, 4708, 4711, 4715 and 4732, recently used as stationary boilers, were moved to Transcona at Winnipeg and scrapped last fall.
 - * Canadian National 6043, on display at Winnipeg, has just been repainted by Canadian National Railways. This engine forms the motif of the menu at the Union Station cafeteria in the Manitoba capital.
 - * The potash mine at Yarbo, Sask., is in full production, loading more than 1,000 carloads in January.
 - * Manitoba Paper Company (Abitibi) 2-6-0 No. 30 is still in use, though the Company is expected to acquire a diesel locomotive shortly, releasing No. 30 to our Association. The smoke deflectors, which were the only ones ever applied to a 2-6-0 in Canada, were recently removed.
 - * The two 0-6-0 steam locomotives owned by Pacific Coast Terminals at New Westminster, B.C., were recently retired. One of them, No. 4012, was used on an excursion out of Vancouver last year. It is believed that both locomotives will be saved from scrapping and put on display or preserved.



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