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FRONT COVER: Leaving Montreal's McGill Street terminal, a convoy of five, all different, M&SC cars heads for the South Shore on Sunday, February 15, 1948. Visible here are 104, a 320-class car, an 11-class car, 621 and trailer 220. When they reach St. Lambert they will each head for their respective destinations. Car 104, the first in the "procession" is now preserved at the Canadian Railway Museum, while 621 is at the Seashore Trolley Museum in Maine. CRHA Archives, Toohey Collection, photo No. 48-41.

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As part of its activities, the CRHA operates the Canadian Railway Museum at Delson / St. Constant, Que. which is about 14 miles (23 Km.) from downtown Montreal. It is open from late May to early October (daily until Labour Day). Members, and their immediate families, are admitted free of charge.

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The Montreal and Southern Counties Railway

By T.C.H. Smith

Editor's note: Recently there has been much interest in the conversion of Montreal's electric commuter line from the old 3000 volt D.C. equipment to the new 25,000 A.C. cars. This is a fitting time to remember that Montreal once had another electric commuter line. This was, as any traction enthusiast knows, the Montreal and Southern Counties Railway; a true interurban railway that also operated extensive suburban commuter service. Its been gone for almost forty years now, but will always be fondly remembered by those who had the privilege of seeing and riding on these distinctive green cars.

It is still possible to ride a regular passenger train over a small part of the M&SC. Amtrak's "Adirondack", running between Montreal and Washington, D.C., runs over part of the M&SC from near Cannon Junction (named for the M&SC's last manager) to Castle Gardens.

The following article by T.C.H. Smith is a reprint of a lecture presented at a meeting of the CRHA at the Chateau de Ramezay in Montreal on October 13, 1937, only five years after the year in which the Association was founded. It was first published in the Bulletin of the CRHA, issue No. 9, in May 1939. It should be noted that some of the comments, especially those at the beginning of the first paragraph, do not hold true today!

Electric railways have not the same popular appeal as steam railways. They lack the glamour of the steam locomotive. Small boys do not gaze with awe as the electric car hums past; nor do grown men run about with cameras to get a "shot" at the interurban as it quietly comes to a stop at the terminal station. However, electric railways have done as much for the development and progress of the territory, through which they pass, as have the steam railroads. The Canadian Railroad Historical Association is a society interested in railroad history, so some part of our interest should be given to the study and recording the development of electric railways.

Electric railways are especially suited for fast and frequent service. They can be operated economically by small trains of one or two cars, and so have a great advantage in this respect over steam trains. Single cars can be run at frequent intervals, instead of trains of several cars pulled by a steam locomotive, and manned by a crew of five or more, running several hours apart.

An electric railway was first operated in Canada in 1885 [the date is now known to be 1884. Ed.], when this novelty was shown at the Toronto Exhibition grounds. This was only of an experimental nature and operated for only two weeks in the year. In 1886 the City of Windsor had an electric street railway one and a quarter miles long. The City of St. Catharines, this past September [1937] celebrated the 50th anniversary of what they claim to be the first thoroughly practical electrified all-year transportation system in Canada. This commemorated the replacing of horse cars on the railway between St. Catharines and Thorold by electrically powered cars. This was on the Niagara, St. Catharines and Toronto Railway, now a part of the Canadian National Electric Railways.

The Ottawa Electric dates from 1891, and in 1892 the street railways of Montreal and Toronto were electrified. There was a great boom of electric railway building in southwestern Ontario from this time up to about 1914. Lines were built connecting the various towns and cities, but many of these are now abandoned, as the automobile has encroached on their field of service. The Province of Quebec has only a small number of electric railways in its territory, none of which has been abandoned. The largest of these I am to speak about to-night is the Montreal and Southern Counties Railway. This electric road is closely related to the steam railroads, as it belongs to the Canadian National and operates in part over right-of-way that was once steam railroad.

The Montreal and Southern Counties Railway Company was chartered on June 29, 1897 under chapter 56 of the statutes of Canada, amended in 1892, 1902, 1905 and 1910. However, nothing was done with this charter for some time after it was first granted.

In March, 1904 the first transportation system to the South Shore opposite the Island of Montreal, apart from the steam trains and boats, was inaugurated by the Montreal and South Shore Auto Car Co. This was the first [motor] bus line in Canada, and was started when the automobile was in its infancy [by the end of 1904 there had been a total of only 48 automobiles registered in Montreal; provincial registration began only in 1906 with 167 cars]. The company operated three open and two closed buses. They were made in Harvey, Illinois and were 25 h.p.

The bus route started at the west side of Victoria Square, ran along St. James St., down Inspector, across Chaboillez Square, along Notre Dame, down Murray, across the Wellington St. bridge, and out St. Etienne St., now Bridge St., to the Victoria Bridge. The line terminated at Aberdeen Ave., St. Lambert. The purpose was to give a passenger service between St. Lambert and Montreal, but the company was financed mostly by Montreal citizens. The bus line did not last long as the streets in Montreal and St. Lambert were in such poor condition that operation became impractical.

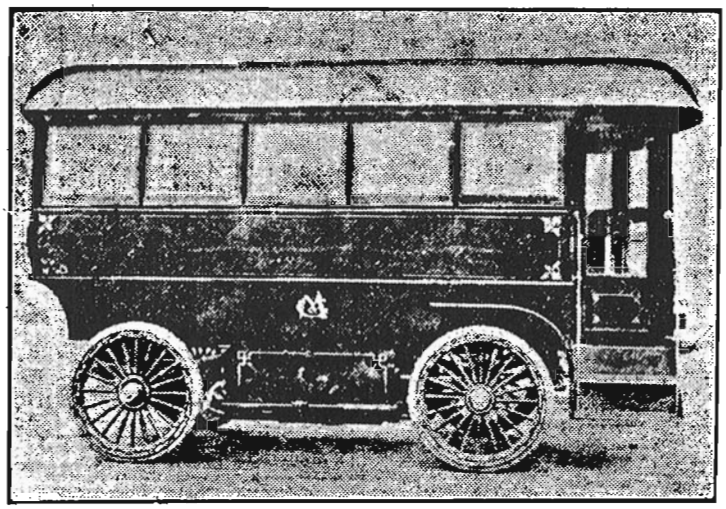
AUTOCARS WILL JOIN MONTREAL TO THE SOUTHERN SHORE OF THE RIVER

The Distance Has Never Been Great But to Solve the Difficulty of Crossing is What the New Company Has Set Itself to Do.

The vital question of "where shall we live?" is one to which Montrealers are no more strangers than the dwellers in other great and growing cities, and many a place is mentioned in the family circle as being so nice and healthy for Jimmie or Maudie, only to be abandoned in deference to Daddy's unanswerable question "How on earth am I to get backward and forward?"

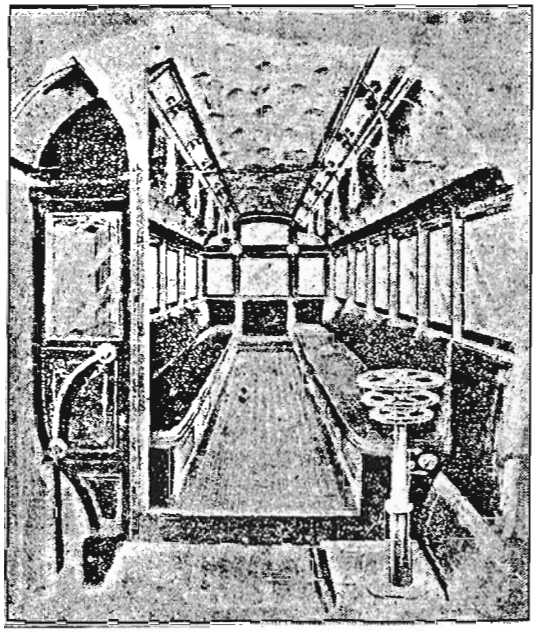
The South Shore of the St. Lawrence offers a number of charming and ideal spots for residences, and rents are comparatively low, but the difficulty of how to get there has for years stood in the way of the suburbanite. But St. Lambert, Montreal South, Longueuil and the rest of the south shore villages and towns have a new era in store for them... The wizard who is going to work these changes in the near future is the "Montreal and South Shore Auto Car Company" which has for its object the opening up, by means of a regular frequent and convenient service of motor 'busses, the towns and villages lying on the opposite side of the river...

The intention of the company is to inaugurate, within a very few weeks, a regular service of commodious motor vehicles which will leave Victoria Square en route for the South Shore and travel by way of the Victoria Jubilee Bridge, the passage over which has been granted them by the terms of a special agreement made with the Grand Trunk Railway System...



A PUBLIC AUTOCAR TO CARRY TWENTY PEOPLE

The construction of the cars has been carefully thought out with every regard for the conditions under which they will have to operate; they are of 20 horse power each, with seating accommodation for 22 passengers; access will be obtained by steps, entrance and vestibule on the right front of the vehicle; the main frame of the car is of white ash, the outside finish of poplar and the inside finish of cherry wood. The interior presents a handsome and luxurious appearance, being upholstered in leather and decorated with bevelled plate glass mirrors, and drop windows, roll curtains and electric push call-bells will all combine towards the comfort and convenience of the passengers. Nor has the exterior appearance been overlooked. The body of the car is black, with brewster green panels; the running gear is dark red; the whole tastefully lined in gold and on the panels the full name of the company in gold lettering. Acetylene head lamps will answer the double purpose of giving notice of approach and lighting the road for the motorman.



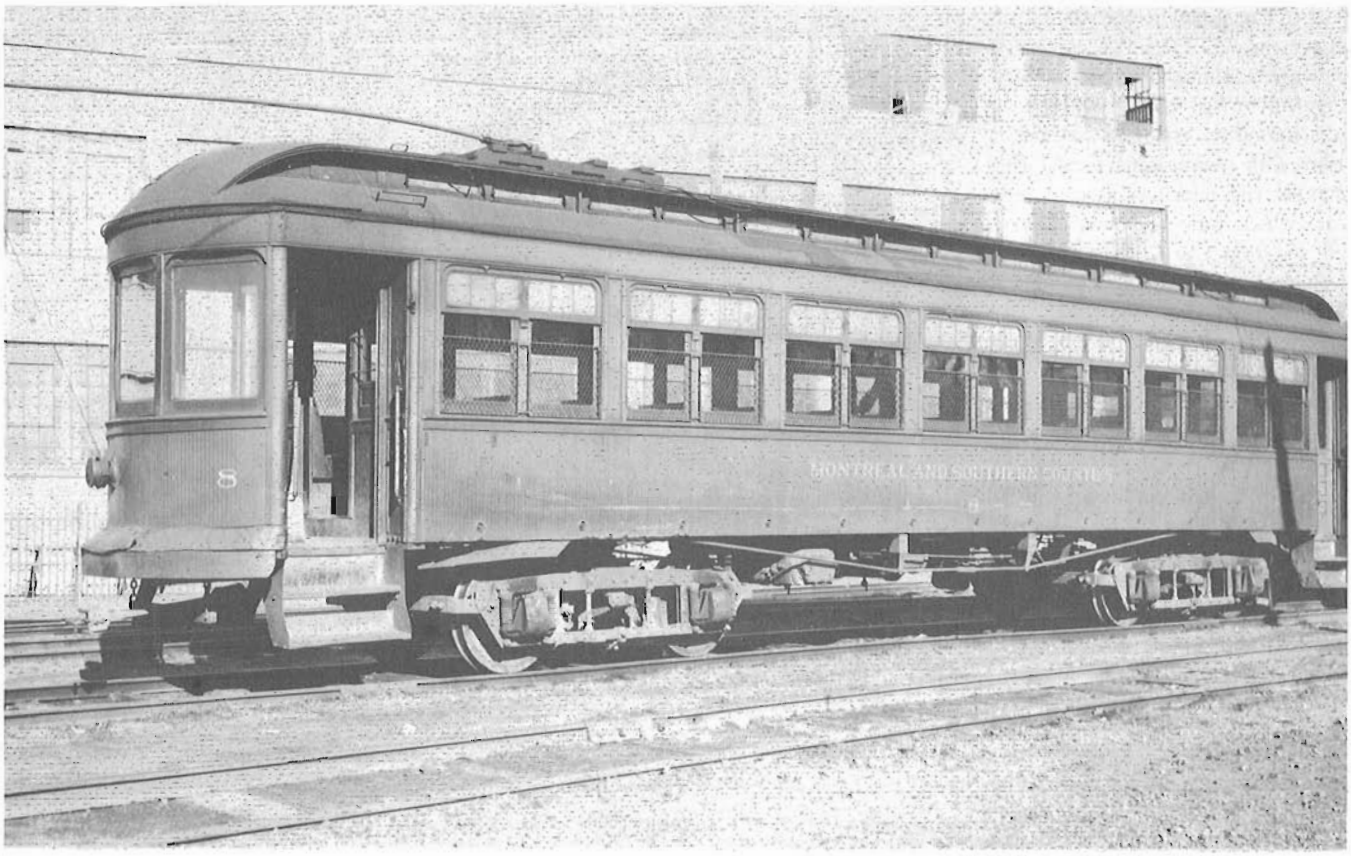
THE INTERIOR OF A PUBLIC AUTOCAR WHICH WILL CARRY TWENTY PEOPLE

The first shipment of cars is expected to arrive on the 20th March, soon after which date the service will be inaugurated. The first batch are being built in the States, on the lines of cars already doing similar work, but future orders for cars will be placed with Canadian firms. The Terminal buildings and waiting rooms will be situated at St. Lambert.

"That's alright", we can hear the cynical reader say, "but your service won't be any use in the winter". That, however, will be a bad mistake on the part of the cynical one. The service will run all the year round alike, and even a winter like the past one - beg pardon, the present, ever-present, one - will offer no terrors to the pioneers of the South Shore service. Experiments with a similar type of car have been made in places which are happy enough to enjoy all the blessings of "our glorious winter", and no depth of snow, or degree of frost, or any Craig Street conditions interferes with the progress of the car. For winter use, a tyre of a modified pattern will be used, as the car is fitted with a hot-water circulating system, comfort for winter travellers is assured; the heating system, moreover, will not be of the "heatless" variety to be met with in the cars of, well, never mind what company.

This is the first attempt of its kind in the country, and should success crown the efforts of the company, and there seems little doubt that it will, the new method of transportation will be exploited on a large scale throughout the Dominion, as the company's charter empowers them to carry on their business in any part of the Dominion. It is quite probable that the towns on the South Shore will, ere a few years are past, become conceited over the fact that they were the first towns to be served by a system having its ramifications throughout Canada.

Montreal Herald. March 12, 1904.



What replaced the bus! One of the first cars of the Montreal and Southern Counties, number 8 was built by Ottawa Car Co. in 1909, the year the line opened. This car had a very long life on the M&SC, serving for 46 years, until the end of service over Victoria Bridge in 1955. In that year the busses took over again. This photo was taken at St Lambert on May 3, 1948.

Photo by R.F. Corley.

When application was made to the aldermen of St. Anne's ward to improve St. Etienne St., the enthusiastic reply they gave was "By J---- we'll put a new skin on it". This new skin, however, consisted of a layer of old macadam which tore the bus tires to pieces. Another incident, which will appear strange in this age of the motor car, is complaint from the City Engineer that the oil and gasoline dripping from the buses on Victoria Square was ruining the asphalt.

By 1905 the bus company was in serious trouble, and in that year, by an amendment to their charter, the M&SC Ry. Co. was empowered to take it over and replace it by an electric railway. Here is an instance where a bus line succumbed to the railway. We shall not likely live to see this occur again.

In order to build a railway between Montreal and the South Shore it was necessary to cross the river by a bridge, so application was made to the Grand Trunk Railway for a right-of-way on the down-stream side of the Victoria Bridge. At that time vehicular traffic used both sides of the bridge, the double train tracks being in the centre. There was only one approach to the bridge at the east end so it was necessary for vehicles to cross the railway tracks at both ends of the structure. Today this has been entirely eliminated.

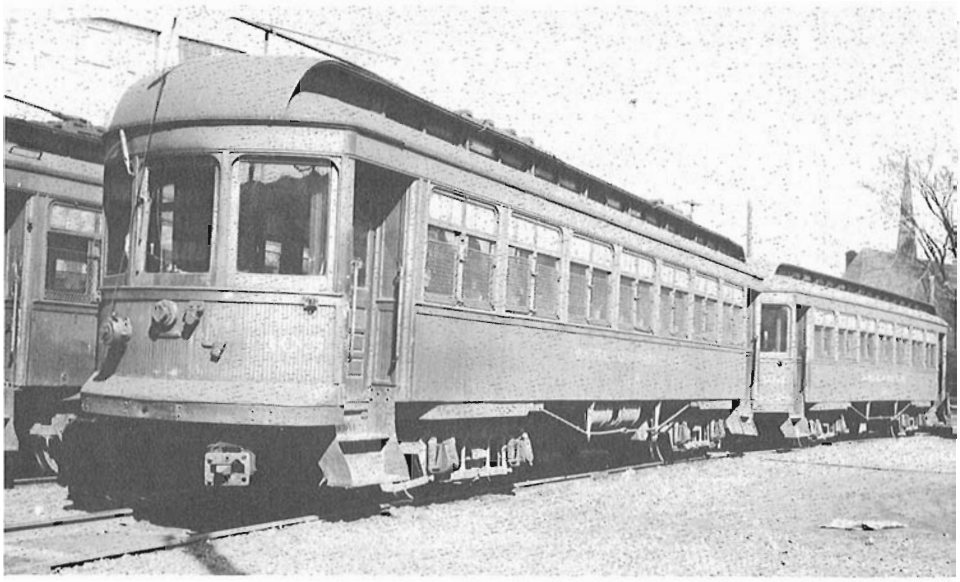
After considerable negotiation with the GTR authorities, and with a personal inspection of the situation by Sir Alfred Smithers, Chairman of the Board, permission was granted to the M&SC to build a track on the down-stream side of the bridge. The up-stream side was to be used for vehicles moving in both directions as it is today [1937]. The GTR took a controlling interest of the stock, and undertook to finance the construction of the railroad.

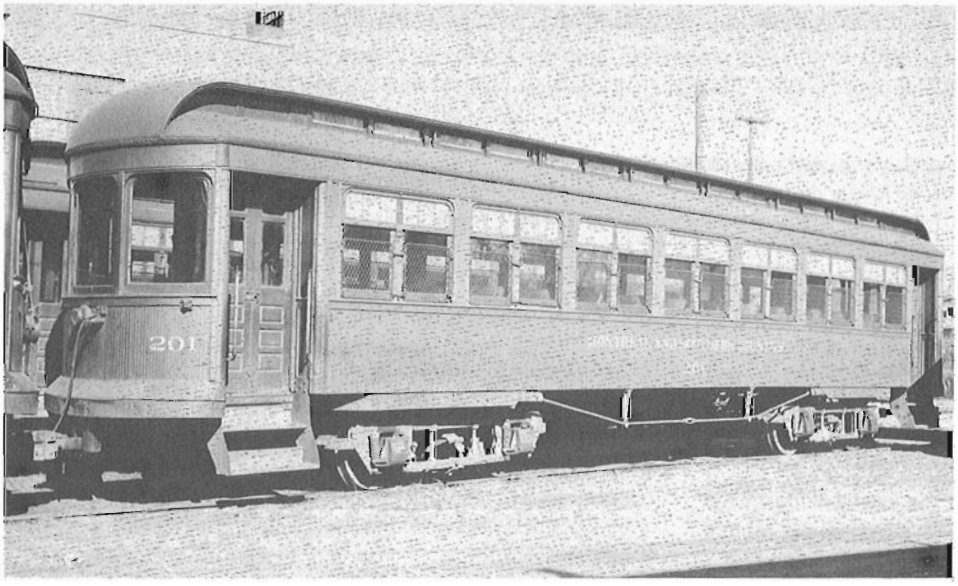
The M&SC next secured rights over government property by lease, along Riverside, Mill St. and Black's Bridge to Common St. Application was made to the City of Montreal to operate over the city streets along Youville, Grey Nun and Common Streets. The tracks of the Montreal Street Railway were to be used on McGill St.

The granting of the lease and franchise was strongly opposed by the Montreal Street Railway and others. It was necessary for the representatives of the M&SC to attend 145 regular and special meetings of the City Council before this right was granted. The balance of the trackage through the South Shore towns is on CNR property or largely by perpetual rights from the original owners.

Construction was started on the line early in 1909 and was completed between Montreal and St. Lambert City Hall by November, 1909. Service was started on Friday, November 1, 1909 with two passenger cars. This number was later increased to eight cars which were numbered consecutively from 1 to 8. The terminal at Montreal on the present site, foot of McGill Street, consisted of a combination baggage-passenger car as a station.

The line was extended to Montreal South and Longueuil on May 28, 1910. The tracks in Longueuil ran along St. Laurent St. down to St. Charles on Montarville, at which point a spur was built a short time later down to the wharf. The main line continued along St. Charles St., the main street of Longueuil, to Chambly Road, up Chambly Road to the station at the corner of Chambly Road and St. Laurent, then returning along St. Laurent to Montreal South, so forming a loop.





As the M&SC was extended, more cars were needed. Double-end motor car 105 (above) and trailer 201 (below) were built in 1912 and 1911 respectively. Both cars remained in use until the end of service in 1956. These photos were taken by Ray Corley at St. Lambert on May 3, 1948.

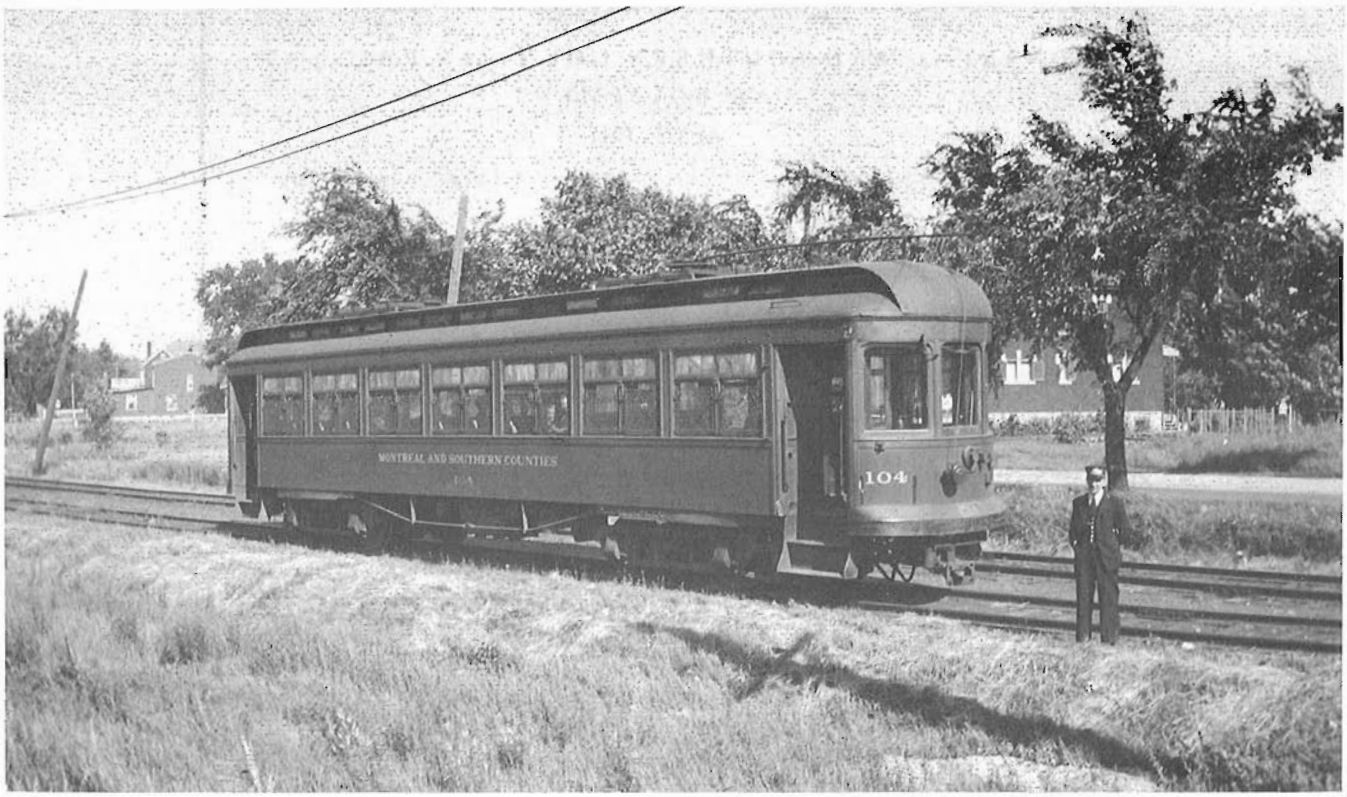
On September 2, 1911 an extension was completed from St. Lambert to the Ranelagh Country Club to accommodate golfers.

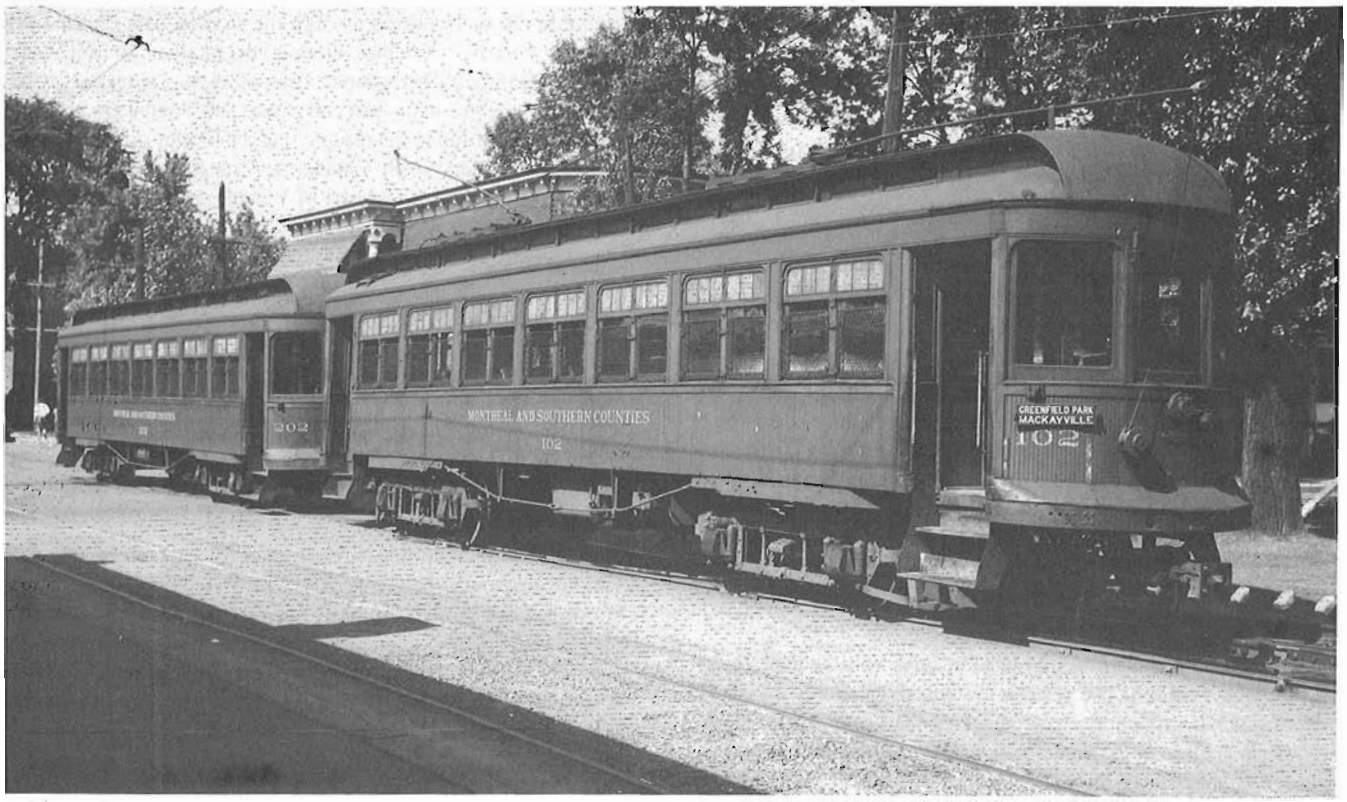
On November 1, 1912, the line was completed from Ranelagh, where the GTR St. John's line is crossed, through Greenfield Park and Mackayville to the junction with the GTR line to St. Hyacinthe. At this point, the line which was formerly the Montreal and Province Line Railway is met. It might be interesting to give a brief review of this line.

Chartered in 1871 as the Montreal Chambly and Sorel, the line was opened on September 25, 1873 from Longueuil to Chambly under the name of the Montreal Portland and Boston. The line was continued on through Marieville, St. Angele and Farnham to Freleigsburg in 1877. It was operated until July 1, 1891 by the Southeastern, and then by the Central Vermont. On March 2, 1896, the company was foreclosed and the name changed to Montreal and Province Line Railway, the Central Vermont obtaining control of all the stock. The Central Vermont operated trains over this line from Sheldon Vt. to Montreal. The part from Longueuil to the junction with the GTR had been abandoned some year previous, and the GTR tracks used from the junction to Montreal.

The Montreal and Southern Counties obtained the rights to electrify this line of the Central Vermont and to operate their trains over it as far as Richelieu, service starting on June 28, 1913. The work was completed to Marieville on September 28, 1913, and to St. Cesaire on May 3, 1914. The M&SC built tracks from St. Cesaire to Granby, commencing service to that place on April 30, 1916. The Central Vermont received $1500 a year for the privilege of allowing electric power poles on their right of way, and $22,027.45 a year for joint use of their tracks as an electric railway.

From 1913 until 1925 there was joint operation of electric and steam trains over portions of the M&SC route. Due to this it was necessary that the M&SC be operated by standard rules in use





TOP: 104 at St. Lambert, on the main line, in August, 1943.
BOTTOM: 102 and 202 standing near the car barn at St. Lambert on June 9, 1949.
Both photos from CRHA Archives, Bailey Collection.

MONTREAL AND SOUTHERN COUNTIES RAILWAY
CAR EQUIPMENT
APRIL, 1911

CLASS	SERIAL NUMBERS
Electric Motor, Passenger Cars	1 to 8
Elecrtic Motor, Pass. and Baggage Cars	9 and 10
Trailer Cars	200 and 201
Electric Motor, Flat Car	500
Electric Sweeper	XI
Snow Plow	XII

The above list of M&SC equipment is from a small book entitled "Grand Trunk Railway System, Grand Trunk Pacific Railway, Montreal and Southern Counties Railway, List of Car Equipment". It is shown as having been "Re-issued April, 1911", and is presumably updated to that month.

on steam roads, and this system is still the practice. On August 31, 1925 the operation of the steam trains of the Central Vermont from Farnham, through St. Angele and Marieville to Montreal was abandoned, the trains being routed via St. John's. The line between Marieville and St. Angele was electrified and M&SC service began on January 6, 1926.

Service on certain portions of the M&SC tracks has been discontinued. The spur down to the wharf at Longueuil was abandoned about 1915, but the tracks are still there and in good condition. A car used to run from the station to the wharf connecting with a ferry to Montreal. Considerable freight was handled over this line from boats, being delivered by the M&SC to Longueuil and St. Lambert. The line in Longueuil running along St. Charles St. was abandoned about 1926. And when the Harbour Commission bridge was built, all service to Longueuil was abandoned, a loop being built at St. Helene St. in Montreal South, where the cars now turn about. The tracks are still in place through the streets of Longueuil. The spur into the Golf Club has also been abandoned.

The source of power for this railway, at the start, was obtained from the Grand Trunk Point St. Charles shops, generated by steam, from 1909 to 1913. From that date to the present time power is purchased from Montreal Light, Heat & Power Co. Direct current is used, and there are substations at St. Lambert, East Greenfield, Chambly, Marieville, Rougemont, D'Arcy's Corners and Granby. Multiple control is in use on the trains. By this device two or more motor cars may be coupled together and a motorman on the front car controls the operation of the motors on the individual cars. Trailers without motors are also in use.

The trains are operated by standard rules, with the dispatching office at St. Lambert. The selector system of telephones connects the dispatcher with various stations along the lines. There are ten telegraph stations with operators in charge, which may be used in case of failure of the telephone system. All first class trains are run on timetable schedule and additional service is given by the use of one or more sections of the scheduled train. The dispatching office is at the main office building at St. Lambert. The dispatcher used to be located in the tower at East End Junction, Victoria Bridge.

An excellent suburban passenger service is given, with cars running between Montreal South and Montreal every twenty minutes, and a service from Mackayville, through Greenfield Park, connecting with Montreal every forty minutes. The interurban service affords three trains each way between Montreal and Granby. A way freight operates each way daily giving freight service between Granby and Montreal, including St. Angele. Owing to the sharp curves through the subway beneath the CNR tracks at East End Junction, electric locomotives or freight cars cannot pass through. Freight cars from Montreal are taken by CNR to M&SC Junction, at the east end of the CNR Southwark yard, and are there transferred to the electric line for Granby and intervening points. Freight cars for St. Lambert are transferred from the CNR at the cross over track just east of Victoria Bridge.

An express service runs three times each way, daily, between Granby and Montreal. A mail service is carried twice daily from Montreal to Granby and intervening points, with letter boxes on the cars.

The weight of rail was originally 60 lbs. This was increased to 80 lbs. and replacements are being made at St. Lambert at the present time with 100 lb. rail. The equipment at present consists of: Passenger cars 35, Baggage and express 8, Locomotives 3, Work and miscellaneous cars 10. In 1936 the number of passengers carried was: Suburban 1,772,451. Interurban 331,202. Total 2,103,653.

The suburban fare to Montreal is three tickets for 25 cents. There is also a weekly pass sold for $1.00 which entitles the holder to ride as often during that week as he wishes. This is extensively used by the daily commuters. In 1909, when the line started, the fare was 15 cents single, 25 cents return, and a 10-ride strip of tickets for 75 cents. Mr. W.B. Powell is in possession of the first ticket of each series issued on November 1, 1909.

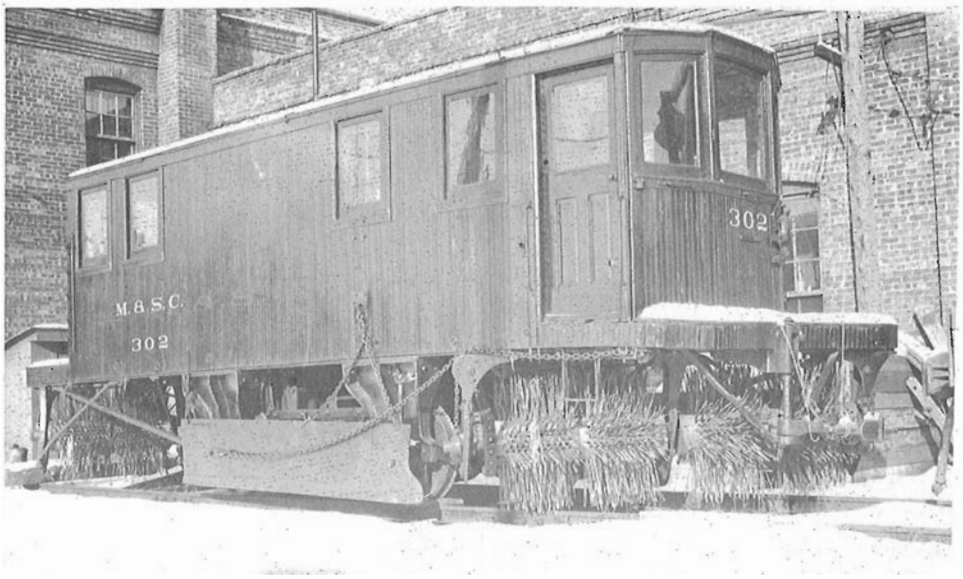
We wish to acknowledge the kind assistance given by Mr. W.B. Powell, former General Manager, and Mr. A. Carbee, Assistant Superintendent of the Montreal and Southern Counties Railway. Most of the information contained in this paper was given by these men.

MONTREAL AND SOUTHERN COUNTIES PASSENGER TRAIN CARS IN SERVICE IN 1937

CAR	TYPE	BUILDER	DATE	OTHER PARTICULARS
2	S.E. Suburban motor	Ottawa Car Co.	1909	Retired in 1939.
3	S.E. Suburban motor	Ottawa Car Co.	1909	Retired in 1939.
4	S.E. Suburban motor	Ottawa Car Co.	1909	Retired in 1939,
5	S.E. Suburban motor	Ottawa Car Co.	1909	Retired in 1955.
6	S.E. Suburban motor	Ottawa Car Co.	1909	Retired in 1955.
8	S.E. Suburban motor	Ottawa Car Co.	1909	Retired in 1955.
9	D.E. Suburban motor	Grand Trunk	1910	Retired in 1956. Now at Branford.
100	D.E. Suburban motor	Grand Trunk	1911	Retired in 1956.
101	D.E. Suburban motor	Grand Trunk	1911	Retired in 1956. Last car to run on M&SC.
102	D.E. Suburban motor	Ottawa Car Co.	1912	Retired in 1956.
103	D.E. Suburban motor	Ottawa Car Co.	1912	Retired in 1956.
104	D.E. Suburban motor	Ottawa Car Co.	1912	Retired in 1956. Now at Delson.
105	D.E. Suburban motor	Ottawa Car Co.	1912	Retired in 1956.
106	D.E. Combine motor	Ottawa Car Co.	1912	Rebuilt to express trailer 506 in 1940. Retired 1955.
107	D.E. Combine motor	Ottawa Car Co.	1912	Retired in 1956. Now at Rockwood.
200	D.E. Suburban trailer	Ottawa Car Co.	1911	Had been rebuilt in 1924. Retired in 1955.
201	D.E. Suburban trailer	Ottawa Car Co.	1911	Retired in 1956.
202	D.E. Suburban trailer	Ottawa Car Co.	1912	Retired in 1956.
204	D.E. Interurban trailer	National Steel Car	1913	Retired in 1956.
205	D.E. Interurban trailer	Ottawa Car Co.	1917	Retired in 1956.
206	D.E. Interurban trailer	Ottawa Car Co.	1917	Retired in 1956.
207	D.E. Interurban trailer	Ottawa Car Co.	1917	Retired in 1956.
208	D.E. Interurban trailer	Ottawa Car Co.	1923	Retired in 1956.
209	D.E. Interurban trailer	Ottawa Car Co.	1923	Retired in 1956.
501	S.E. Express motor	National Steel Car	1913	Retired in 1956.
502	S.E. Express motor	National Steel Car	1913	Retired in 1956.
503	D.E. Express trailer	Grand Trunk	1916	Retired in 1955.
504	S.E. Express motor	Ottawa Car Co.	1924	Retired in 1956. Now at Seashore.
512	D.E. Milk trailer	Grand Trunk	1915	Retired in 1951.
513	D.E. Milk trailer	Grand Trunk	1915	Retired in 1951.
514	D.E. Milk trailer	Grand Trunk	1915	Retired in 1951.
515	D.E. Milk trailer	Grand Trunk	1915	Retired in 1951.
600	S.E. Interurban motor	National Steel Car	1913	Retired in 1956.
601	S.E. Interurban motor	National Steel Car	1913	Retired in 1956.
602	S.E. Interurban motor	National Steel Car	1913	Rebuilt in 1928 from trailer 203. Retired in 1956.
603	S.E. Interurban motor	National Steel Car	1913	Burned in December 1951.
604	S.E. Interurban motor	National Steel Car	1913	Retired in 1956.
605	S.E. Interurban motor	National Steel Car	1913	Retired in 1956.
607	S.E. Interurban motor	Ottawa Car Co.	1917	Wrecked in 1956.
608	S.E. Interurban motor	Ottawa Car Co.	1922	Retired in 1956.
609	S.E. Interurban motor	Ottawa Car Co.	1922	Retired in 1956.
610	S.E. Interurban motor	Ottawa Car Co.	1922	Retired in 1956. Now at Seashore.
611	S.E. Interurban motor	Ottawa Car Co.	1917	Originally 606. Retired in 1956. Now at Delson.

Note: This roster includes only cars which were operated in passenger trains. The M&SC also had numerous work cars, locomotives and special service cars which are not listed here.

Sixteen second hand passenger cars (11, 12, 13, 14, 15, 220, 320, 321, 322, 323, 324, 326, 620, 621, 622, 623), as well as some work equipment, came to the M&SC between 1939 and 1947, but they were not on the M&SC in 1937 so are not included in this list.

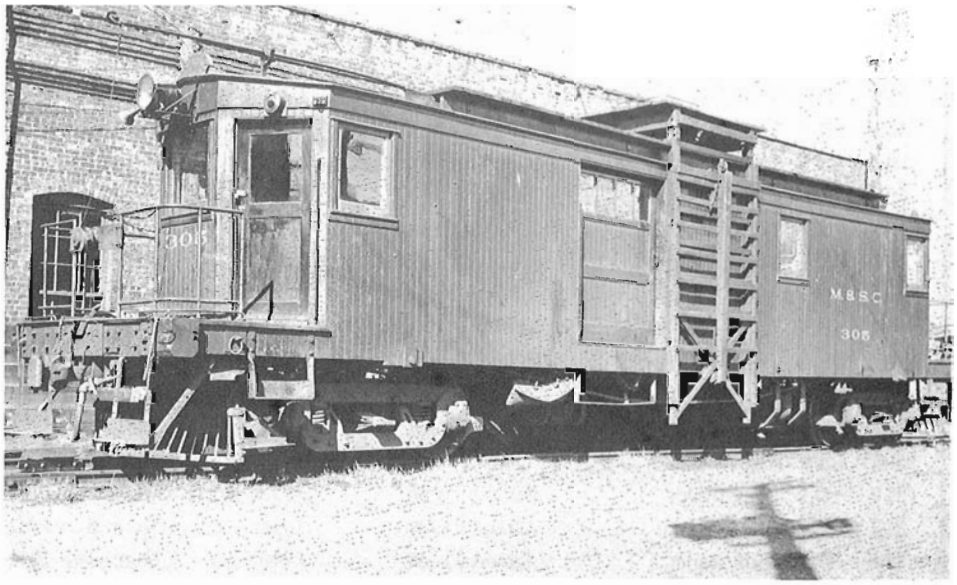


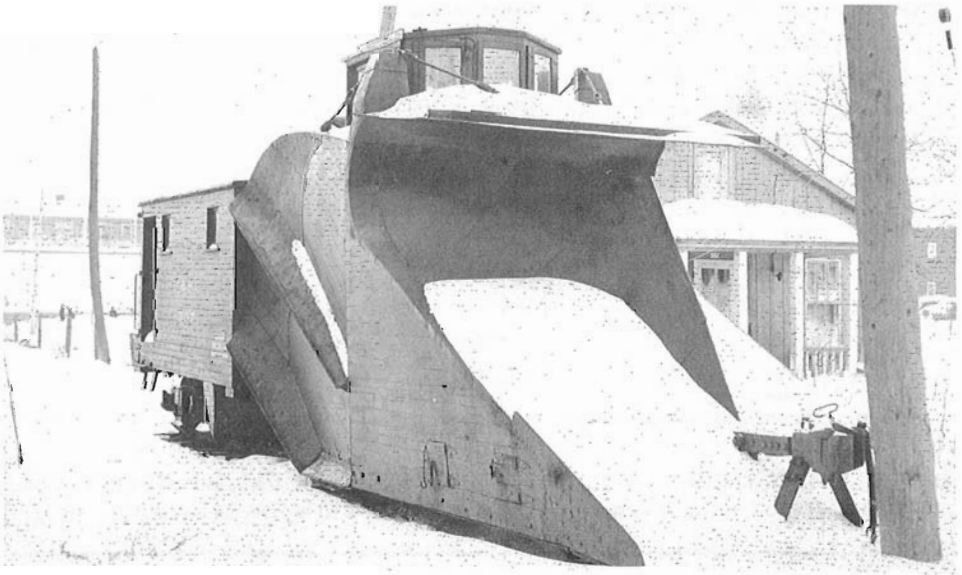
LEFT: Sweeper 302, seen here at St. Lambert on January 15, 1949, was built by Ottawa Car Co. in 1911, and survived until the end of service in 1956.

Photo by R.F. Corley.

RIGHT: Line car 305, built in 1924, had originally been on the Toronto Suburban Railway. After the M&SC closed it went to Quebec for further service on the QRL&P. It is seen here at St. Lambert on May 3, 1948.

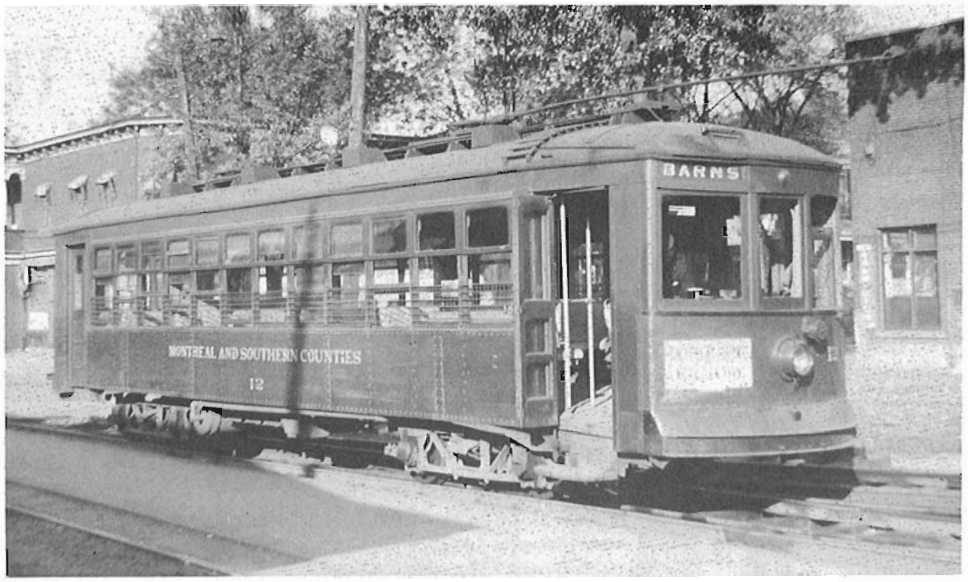
Photo by R.F. Corley.





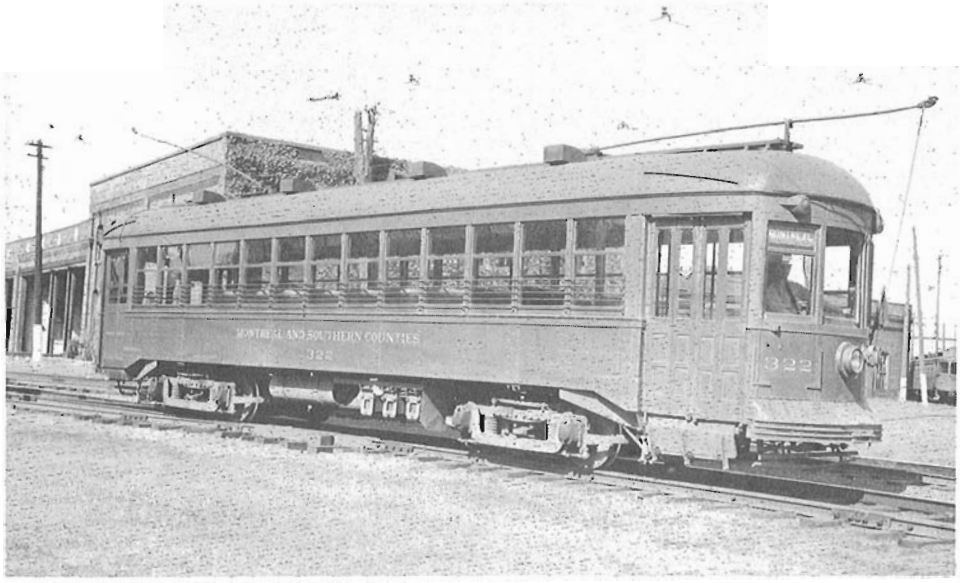
LEFT: Snow plow 307 had come from the CNR in 1940. Built by Russell in 1917, it did not have any electric equipment. This photo was taken at Granby in January, 1951.

CRHA Archives, Toohey Collection, photo No. 51-60.



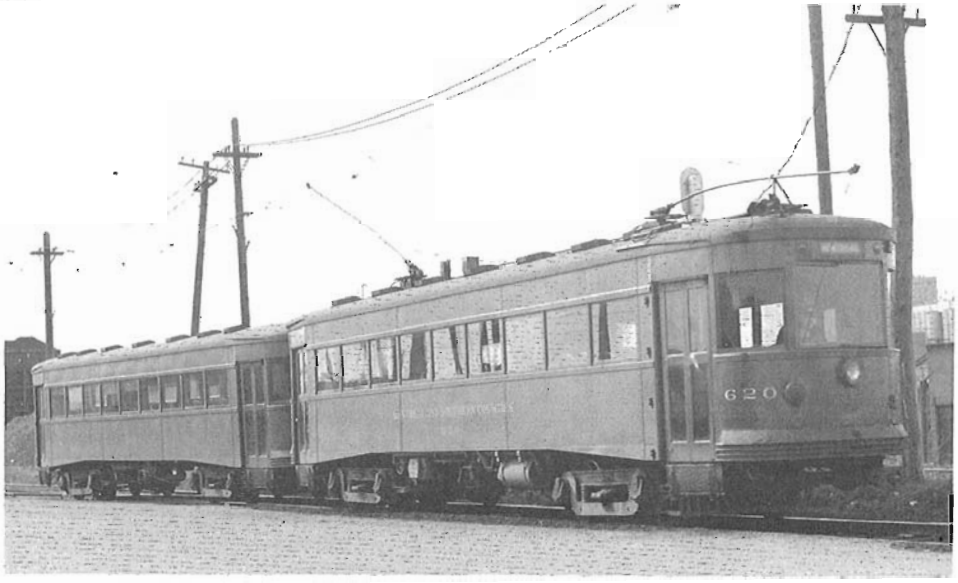
RIGHT: Car 12 was photographed at St. Lambert in 1949. It was one of five cars acquired by the M&SC from the Oshawa Railway in 1940. These cars had been built by Osgood Bradley in 1926 for a line in New Jersey.

CRHA Archives, Toohey Collection, photo No. 49-751.



LEFT: Car 322 was another one that came to the M&SC second hand. Built by Brill in 1917 for a line in Virginia, it went to the Niagara St. Catharines and Toronto in 1929, and then to Montreal in 1947. It had been there for only two years when this photo was taken on June 9, 1949.

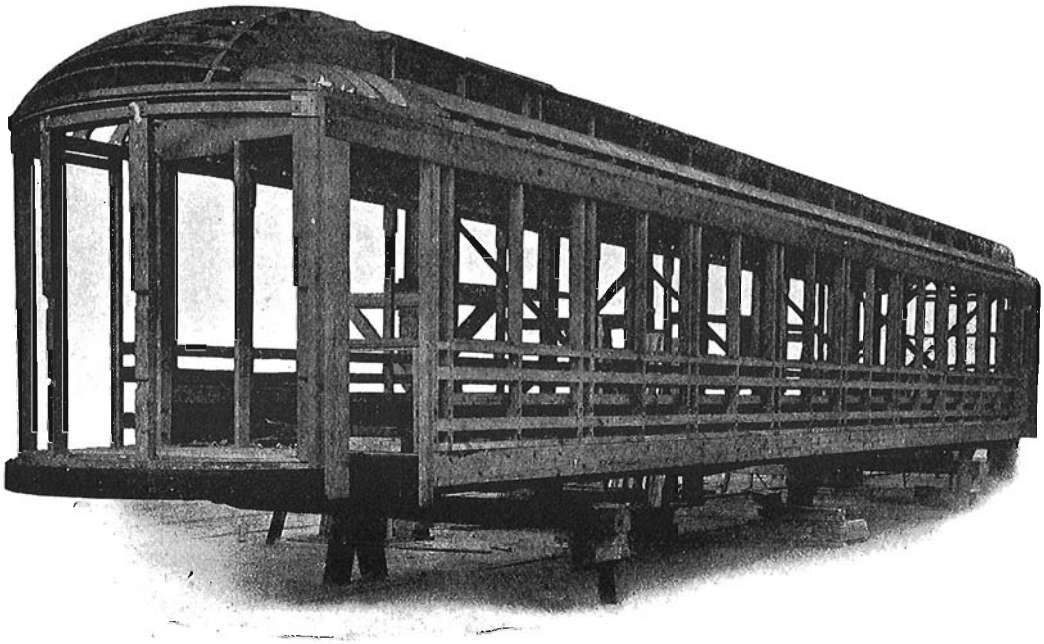
Photo by R.F. Corley.



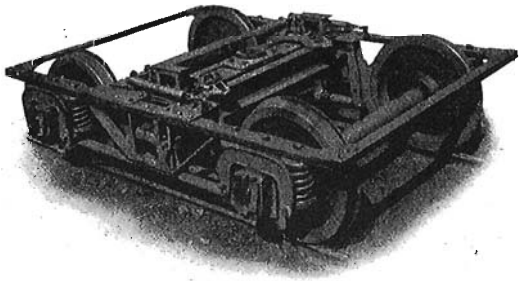
RIGHT: The de-luxe 620-class steel motor cars, with trailer 220, arrived at the M&SC in 1939. They had been built by Ottawa Car Co. in 1930 for the Windsor Essex & Lake Shore which closed soon after. They were then stored until they came to Montreal. After the M&SC closed, 623 went to Seashore Trolley Museum, while the others went to the Niagara St. Catharines & Toronto where the motor units served until 1959. This view of 620 and 220 was taken at Montreal about 1949.

CRHA Archives, Toohey Collection.

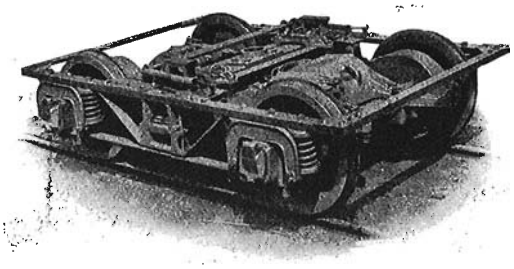
It's What You Cannot See That Counts In Car Construction



View of Superstructure Framing of High Speed Interurban Passenger Cars built for Montreal and Southern Counties Railway.



WITHOUT MOTORS



WITH MOTORS

Views of High Speed Trucks Used on Interurban Passenger Cars built for Montreal and Southern Counties Railway.

After the sheathing, the paint and varnish is put on a car, the only way to find out whether that car is built right is to operate it. Wear and tear in operation over the modern high speed interurban road will soon show whether the framing is of the proper kind, and whether the trucks are designed right.

OUR REPUTATION IS BEHIND OUR METHOD OF INTERURBAN CAR CONSTRUCTION, AND THE TRUCKS WE BUILD WILL WITHSTAND THE HARDEST KIND OF SERVICE.

AN INQUIRY WILL BRING ALL THE PROOFS TO YOU.

National Steel Car Company, Limited

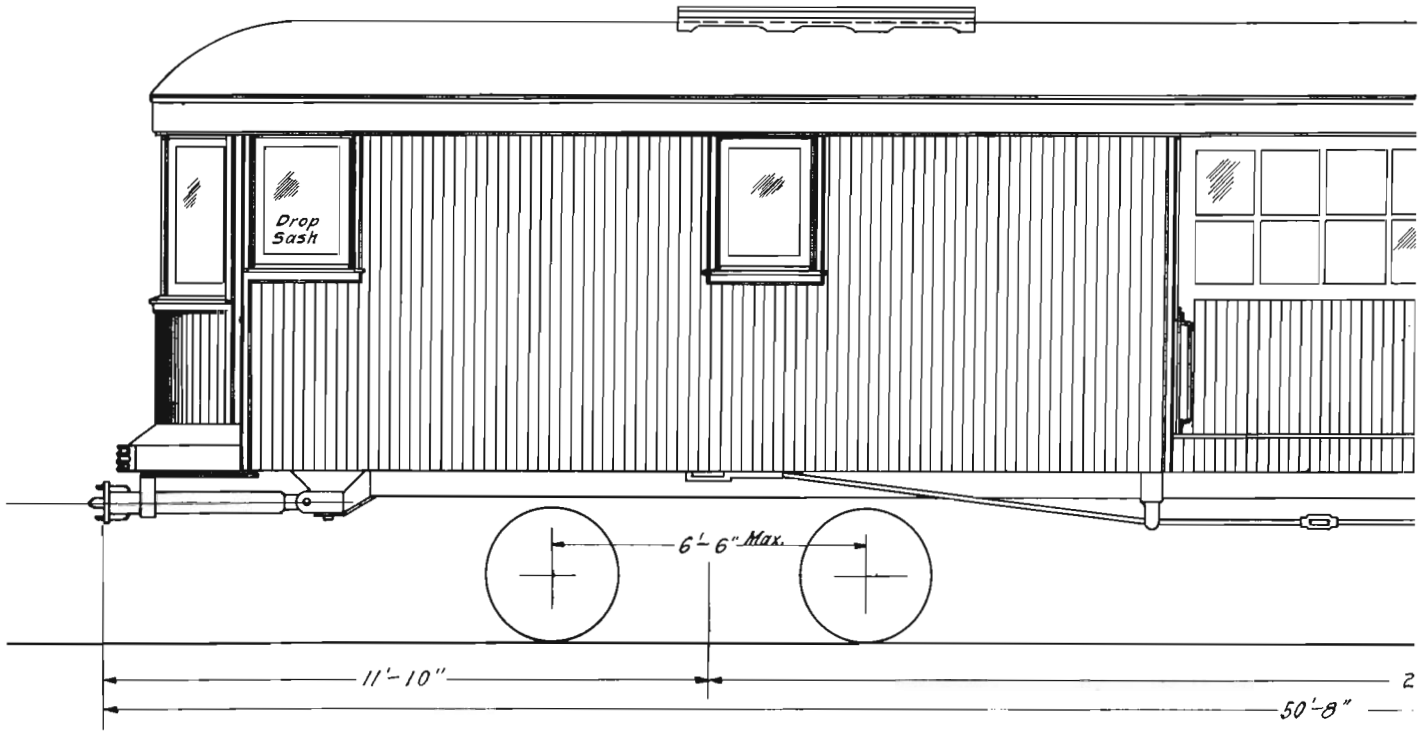
ADDRESS INQUIRIES TO HAMILTON
Western Union Code

Montreal Office
Shaughnessy Building

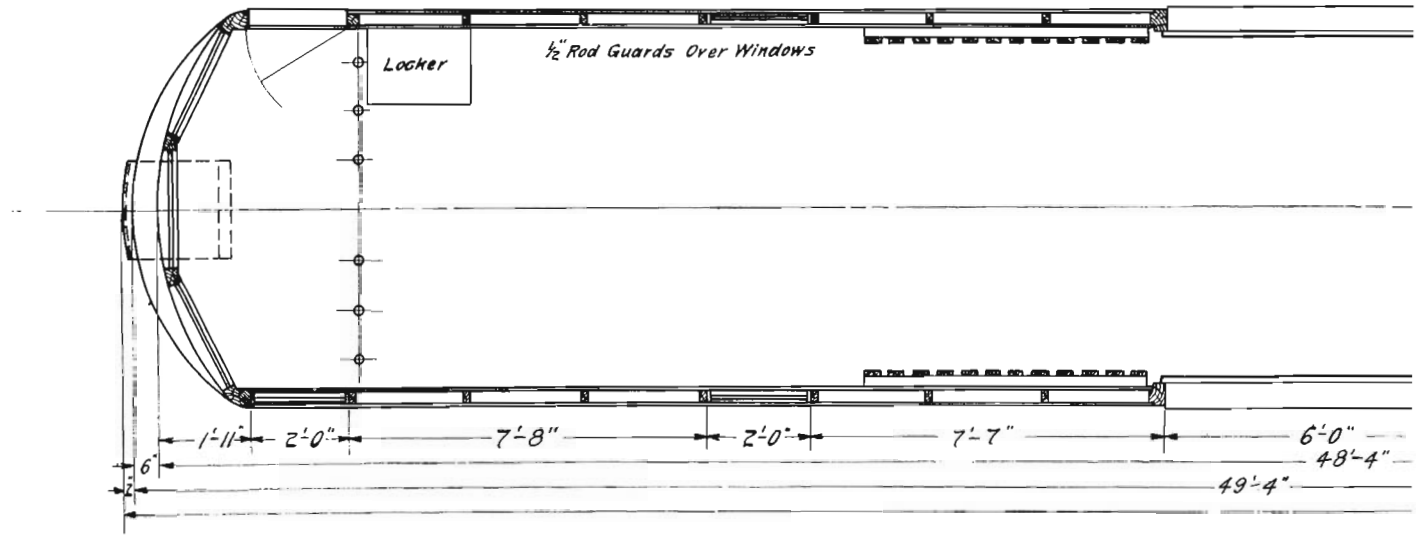
Works and Operating Offices
Hamilton, Ontario

Canadian Railway and Marine World. July, 1914.

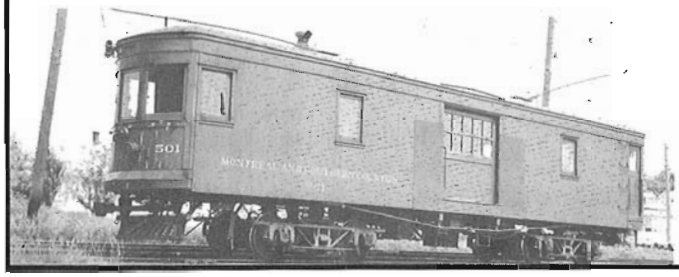
Canadian Railway and Marine World. June, 1914.



ELEVATION

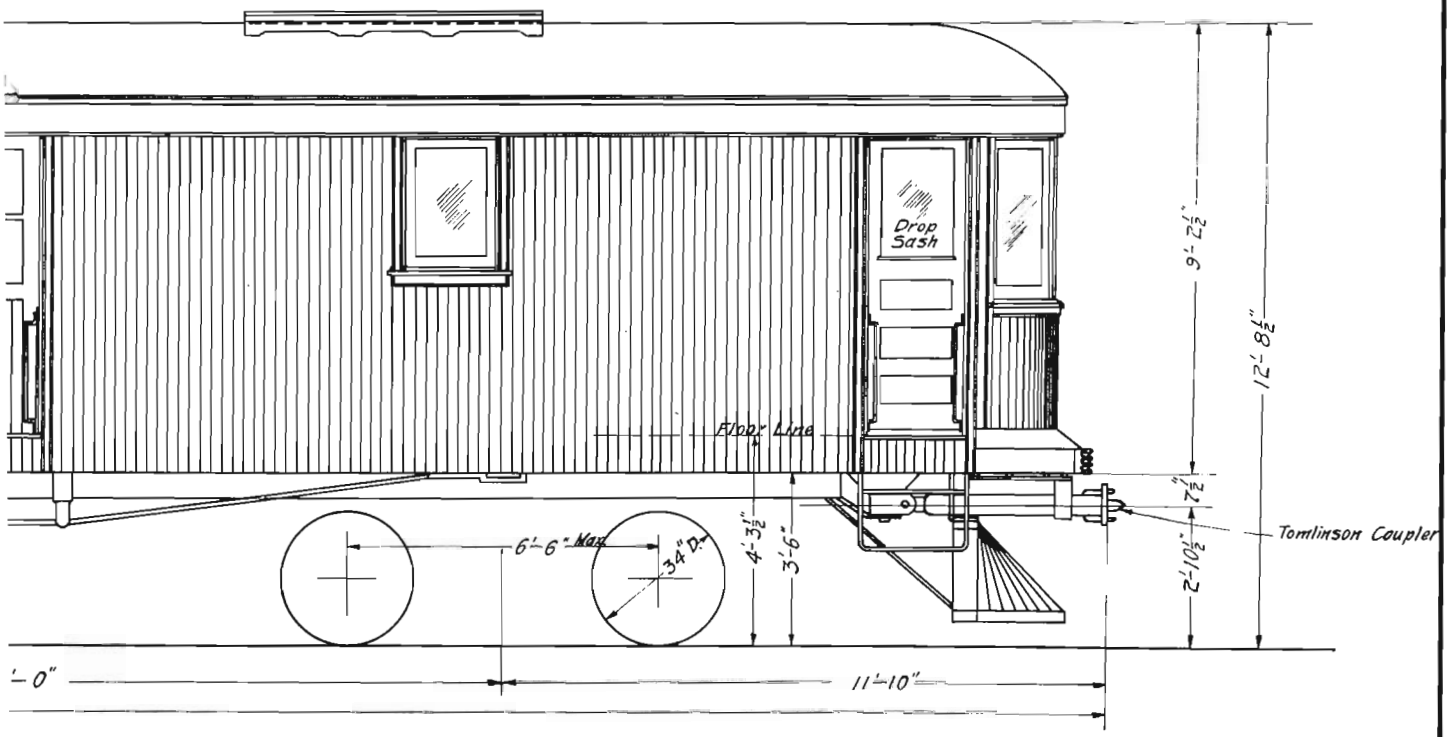


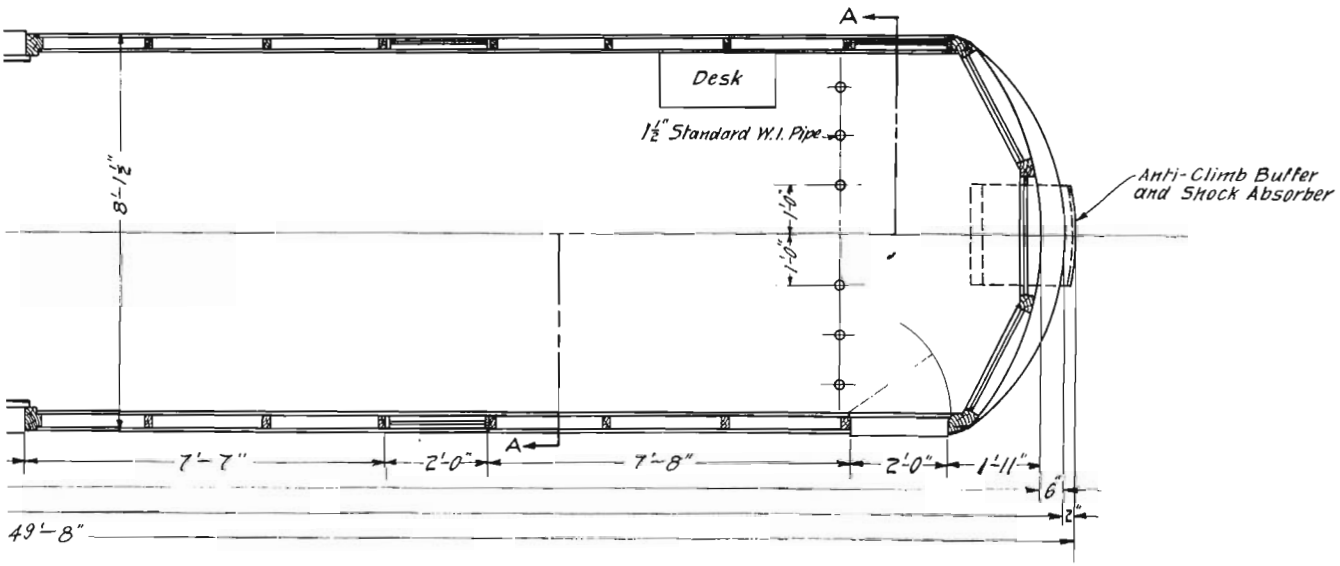
PLAN



A 1916 drawing of an interurban baggage motor of the M&SC. This drawing is reproduced to a scale of a quarter inch to the foot, for the benefit of modellers in "O" gauge.

The photo to the left was taken by R.F. Corley at Granby West on June 12, 1949.

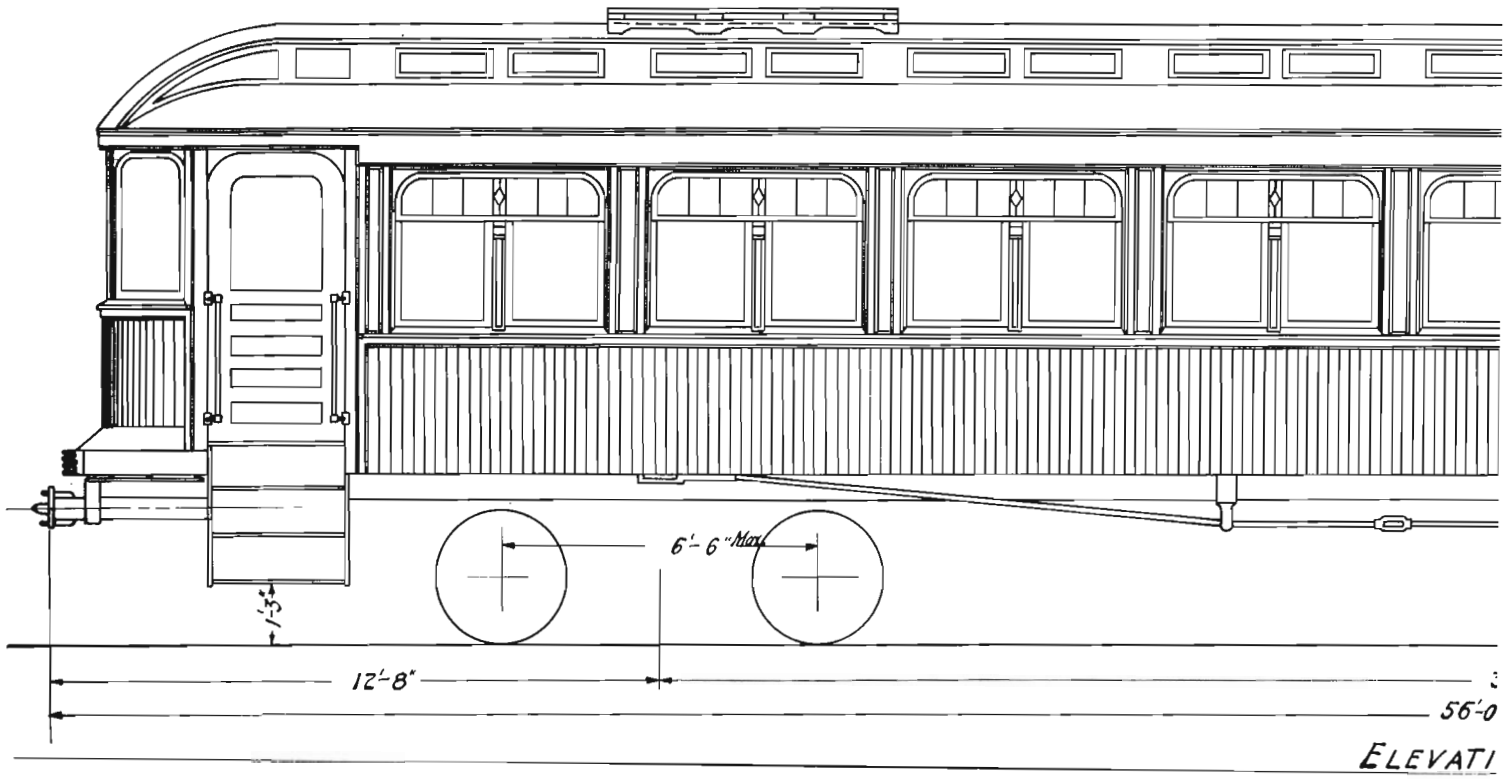


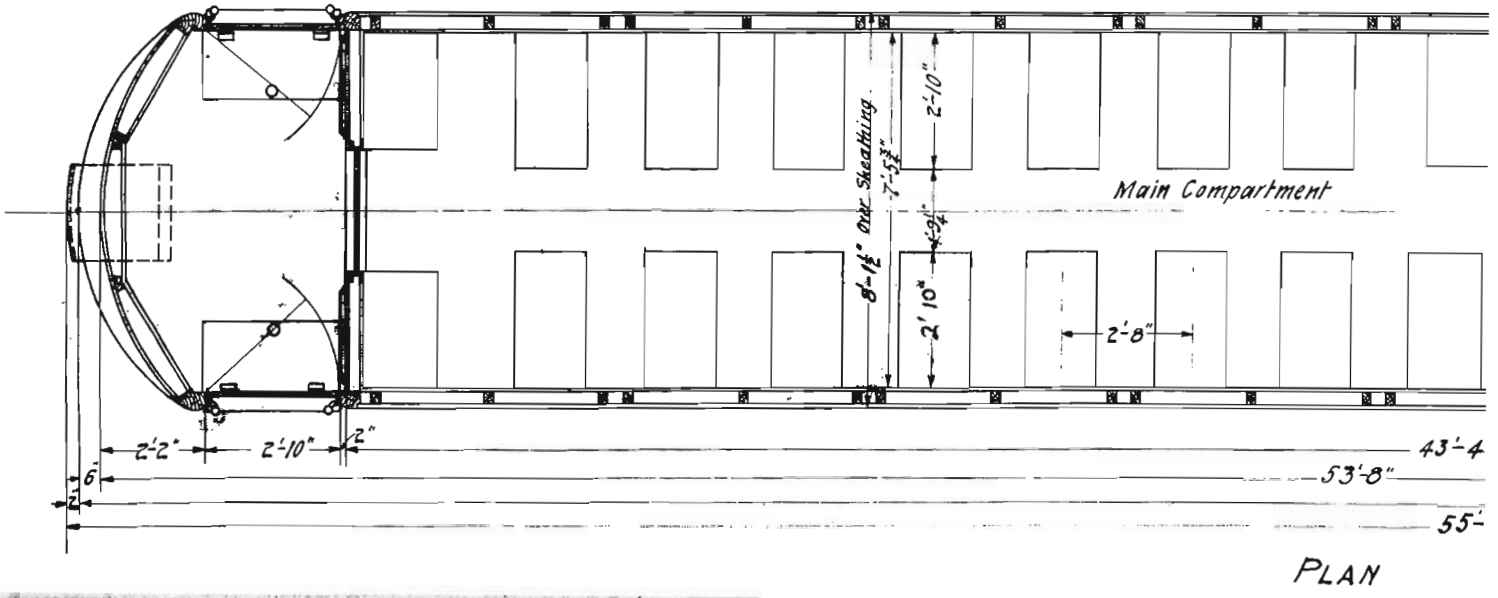


INTERURBAN MOTOR BAGGAGE CAR

MONTREAL & SOUTHERN COUNTIES RY. CO.
MONTREAL, QUEBEC, CANADA

DATE: Oct 20 - 1916
SCALE: 1/4" = 1'

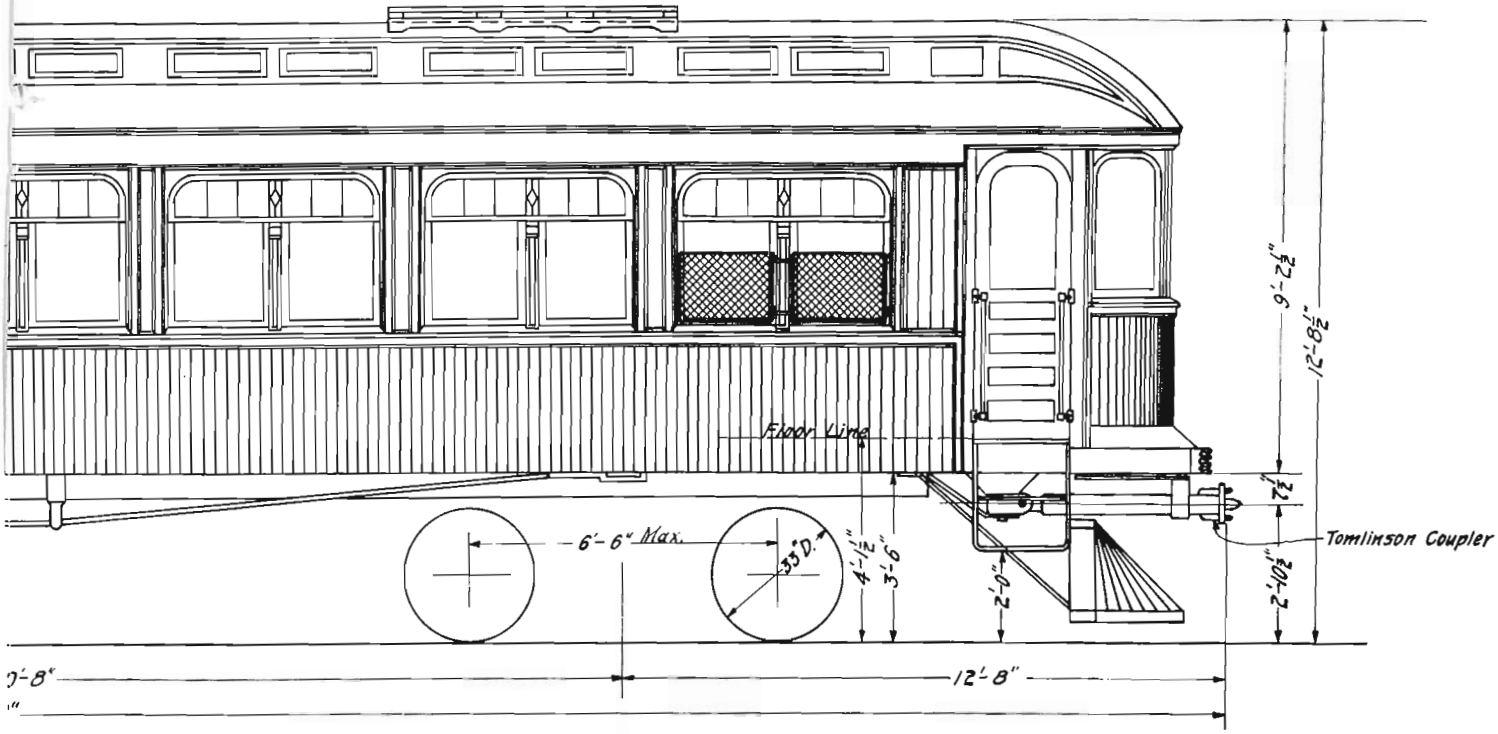


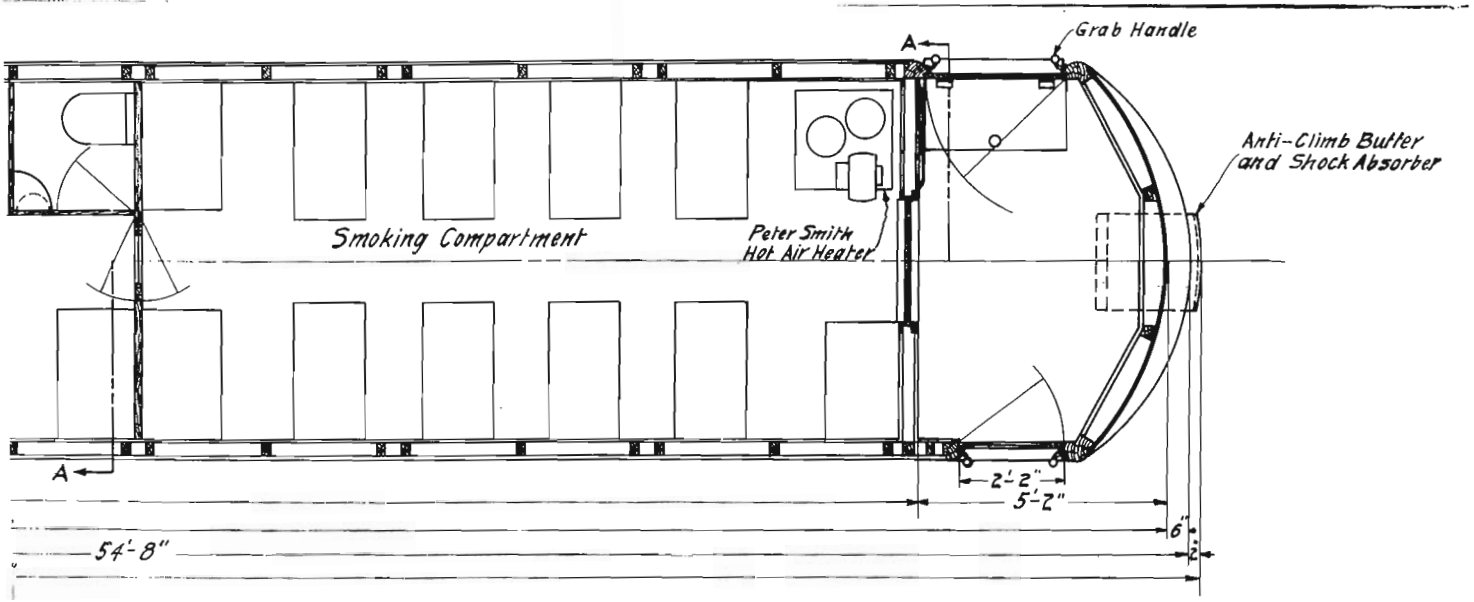


PLAN

This drawing was also made in 1916 and shows one of the 600-class interurbans built in 1913. The drawing has been reproduced here to a scale of one-quarter of an inch to one foot, corresponding to "O" gauge. Note the date, October 14 1916, which is exactly forty years to the day before the M&SC made its final run! The car shown in the drawing would be around for the end.

The photo to the left was taken at Marieville in June 1955 by Fred Angus.





INTERURBAN MOTOR PASSENGER CAR

MONTREAL & SOUTHERN COUNTIES RY. CO.
MONTREAL, QUEBEC, CANADA

DATE: Oct. 14 - 1916
SCALE: 1/4" = 1'

TOP. Clumping across Black's Bridge, a three car M&SC train is inbound to Montreal about 1949.
CRHA Archives, Toohey Collection.

BOTTOM: A scene which endured unchanged for many years, this view could have been taken at any time between about 1935 and 1955. M&SC car 9 is coming off the Victoria Bridge at West End, en route to Montreal's McGill Street station. This car, M&SC's first double-ender, was built by the Grand Trunk Railway, for the M&SC, in 1910 and was originally a combine car. Rebuilt as a regular passenger car about 1934, it remained in service until 1955 and is now at the Shoreline Trolley Museum (Branford) in Connecticut.
CRHA Archives, source unknown.

Locomotives of the Grand Trunk 100 Years Ago

The year 1896 was an important year of great change for Canada and for the Grand Trunk Railway. That was the year that Canadians elected a new government, that of Wilfrid Laurier (1841-1919), who was to become Sir Wilfrid the following year, ousting the previous government which had had no less than five leaders (and hence five Prime Ministers) in the previous five years. So began the longest unbroken term of service by any Canadian Prime Minister; 15 years, during which Canada did enjoy prosperous times. Changes were in store, and the promised prosperity was aided by a general improvement in economic conditions in North America after many years of stagnation. Within a few years Sir Wilfrid would predict that the new twentieth century would "belong to Canada". That these hopes were not realized could not be foretold in 1896, and it did seem that a great era was ahead. In fact the optimism was so great that the Laurier government would authorize two new transcontinental railways, in addition to the already existing CPR, a decision that would have far reaching adverse effects in later years.

Coincidently, 1896 also saw the arrival at the Grand Trunk, from the United States, of a new General Manager, Charles Melville Hays (1856-1912). Under the Hays administration, the GTR was greatly reorganized, made more efficient, and many of the old procedures were discarded. The main line between Montreal and Toronto was double-tracked, the Victoria Bridge was rebuilt, old equipment was retired and new locomotives and cars built. After these changes the railway, for a time, actually showed a profit. In 1900 Hays left the Grand Trunk to become President of the Southern Pacific, but in 1901 he returned to the GTR and later became its President. It was in the prosperous first decade of the new century that the Grand Trunk Pacific determined to reach the Pacific coast, and to establish the new port of Prince Rupert.

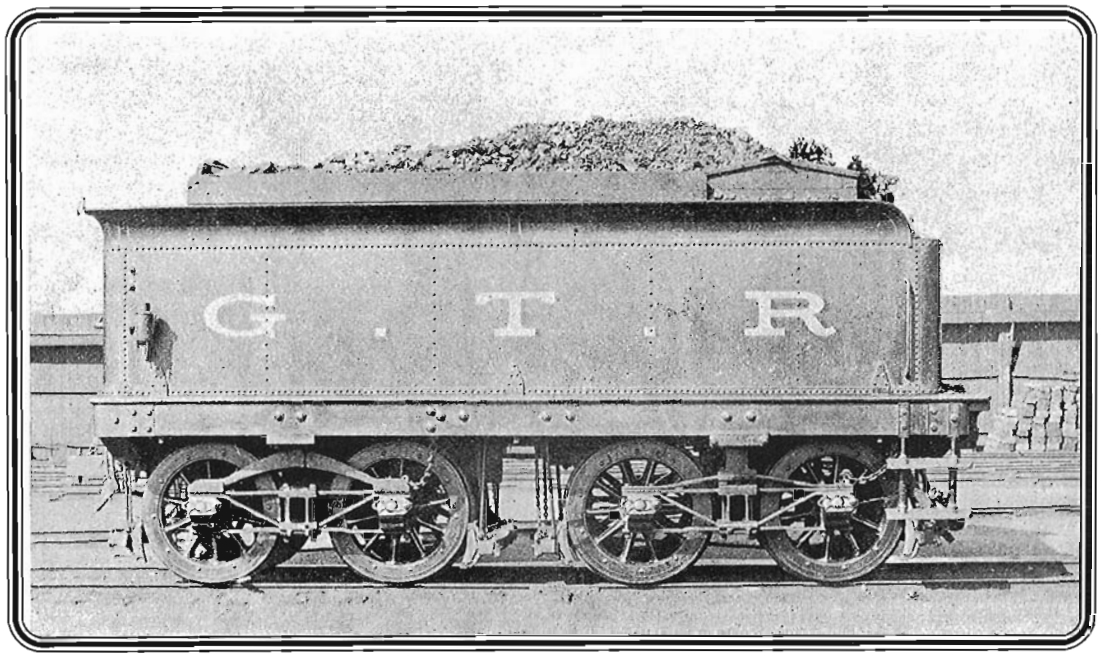
Soon after 1910, the prosperity of the Grand Trunk began to fade again. The Laurier government was defeated in 1911, and Charles M. Hays died in the sinking of the *Titanic* in 1912. Then, in 1914, came the worst disaster of all, the outbreak of the First World War. The prosperous years were over and the Grand Trunk plunged into such heavy debt that its shares were declared valueless when it was taken over by the government in 1923 and became part of Canadian National Railways. It is only within the last few months that the old GTR lines have been returned to private ownership with the sale of CN shares to the public.

In February 1896, exactly 100 years ago and just before the great changes in the GTR, the Magazine "American Engineer" published an article on the standard locomotives of the Grand Trunk. This article took the form of tables of very detailed specifications of six selected types of locomotives, all of which were illustrated, along with a photograph of a standard GTR tender. The six locomotives chosen were numbers 39, 82, 93, 196, 326, 572, which had been built between 1881 and 1895 in the GTR shops. Amazingly all six, after numerous renumberings and modifications, survived to be taken over by the CNR in 1923. Under CN ownership they became numbers 42, 286, 313, 126, 642, 615 respectively. Three were scrapped in 1925, two more in 1928, and the last was cut up in 1931.

The tables and photographs are reproduced in their entirety, as well as additional historical information on dates of building, retirement and renumbering of these locomotives. The photos themselves are fairly early examples of photo engraving, but are surprisingly good and show considerable detail. They give an excellent idea of the motive power used on the Grand Trunk exactly a century ago.

The cover of a Grand Trunk timetable of 1888, before the railway's image and operation was changed beginning in 1896. Soon the Victorian look shown here disappeared as the GTR faced the twentieth century.

G. T. R. TENDER



STANDARD TYPE OF TENDER USED ON THE GRAND TRUNK RAILWAY

HISTORICAL DATA ON THE SIX GRAND TRUNK LOCOMOTIVES IN THIS ARTICLE

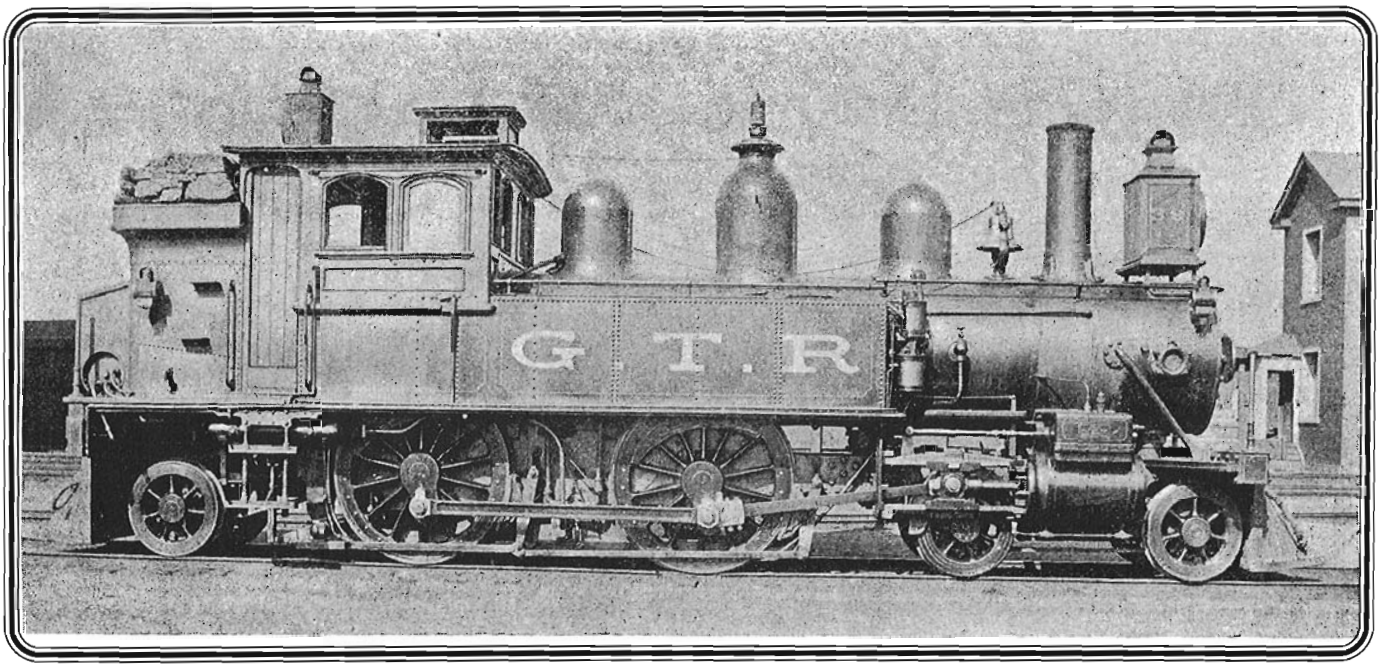
LOCOMOTIVE	39	82	93	196	326	572
Wheel arrangement	4-4-2T	4-4-0	4-4-0	4-4-0*	2-6-0	2-6-0
Class (starting 1904)	K 1	H 5	H	L	E 3	E 3
Type of service	Suburban	Express	Express	Lt. Psgr.	Freight **	Freight
Builder	G.T.R.	G.T.R.	G.T.R.	G.T.R.	G.T.R.	G.T.R.
Construction number	1249	1274	1066	1126	1254	1223
Date built	Feb. 1892	Jun. 1893	Nov. 1881	Jul. 1883	Feb. 1895	Mar. 1891
Re.numbered 1898	271	553	576***	264	700	724
Renumbered 1904	206	424	462	199	522	546
Renumbered 1910	1531	2214	2333	1996	2508	2481
Renumbered 1923	42	286	313	126	642	615
Date scrapped	Mar. 1925	Dec. 1925	Jul. 1928	Aug. 1925	Nov. 1931	Sep. 1928

Note * 196 was built as a 4-4-2T in July 1883, and was converted to a 4-4-0 in 1888.

Note ** 326 was an experimental Rhode Island compound locomotive. It was converted to a simple in February 1905.

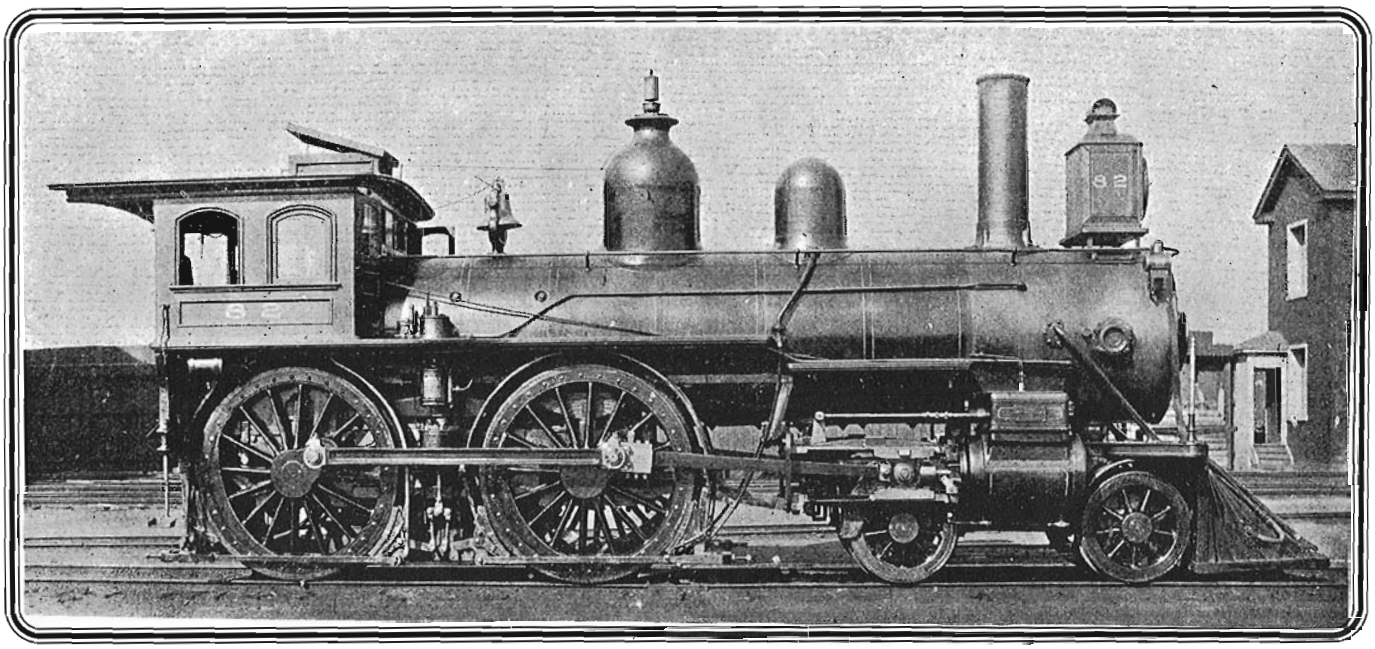
Note *** 93 was renumbered in 1899 from 576 to 595.

G. T. R. 39



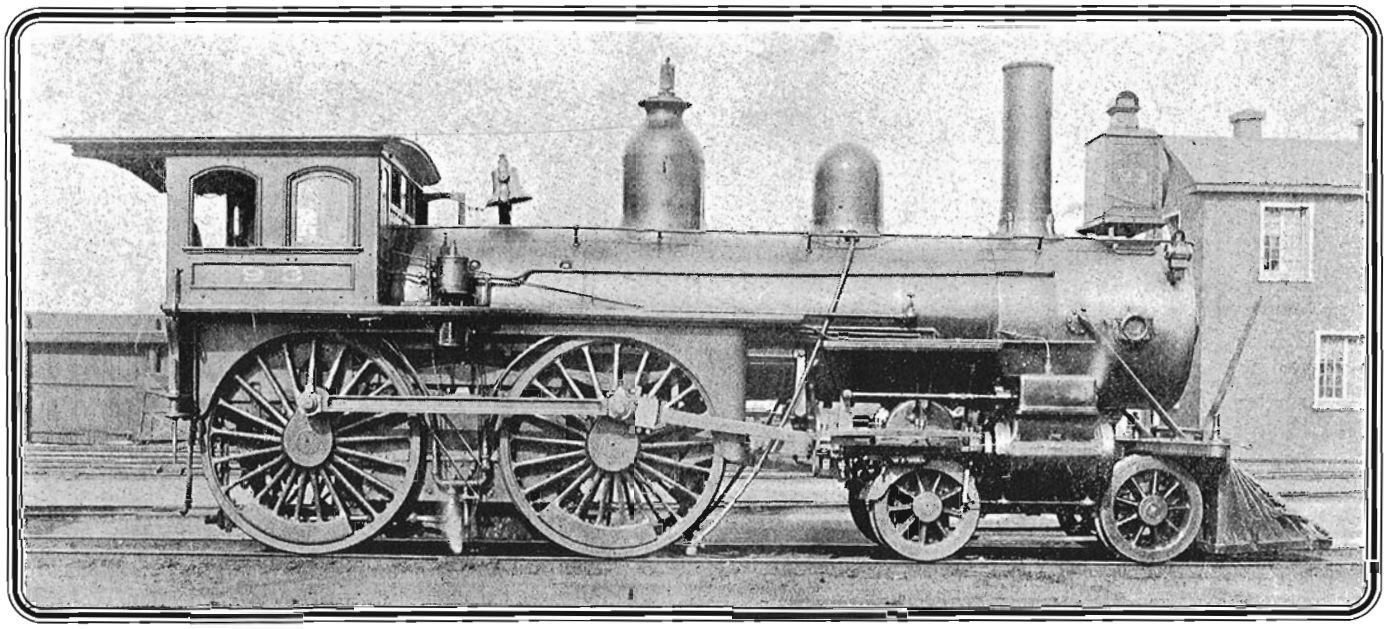
DOUBLE ENDED SUBURBAN PASSENGER LOCOMOTIVE WITH 17-INCH BY 22-INCH CYLINDERS

G. T. R. 82



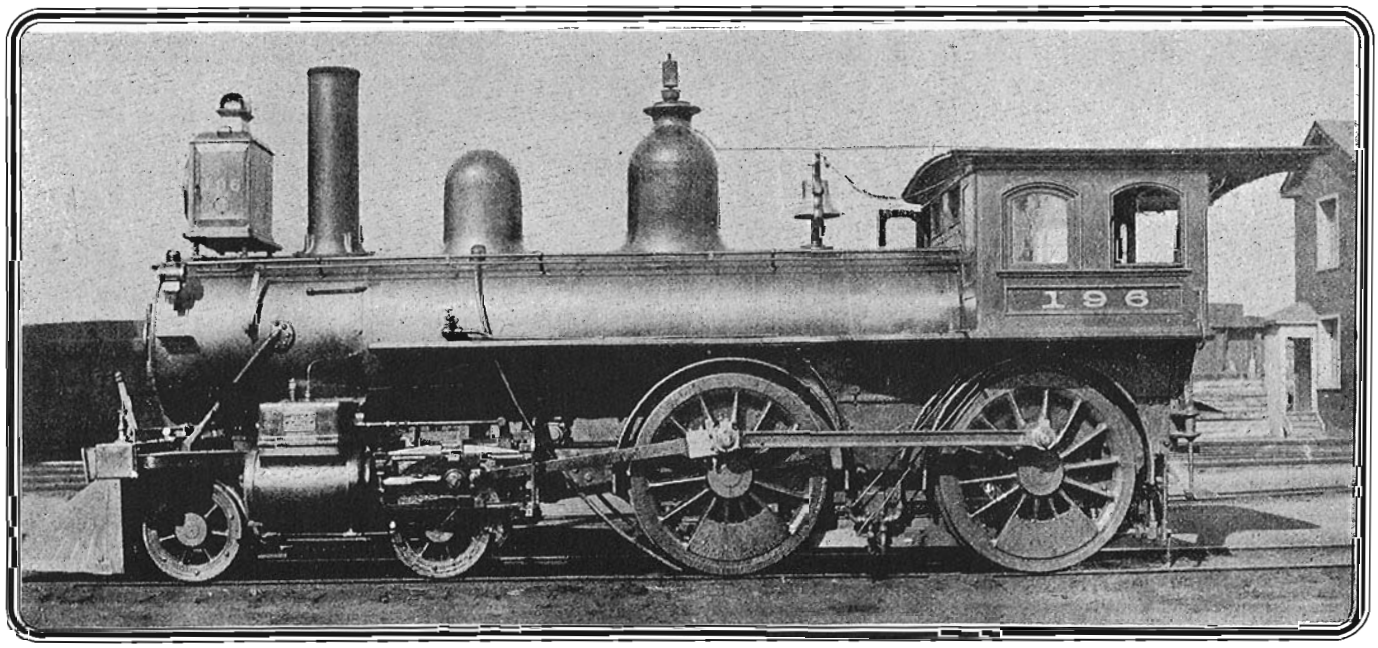
EXPRESS PASSENGER LOCOMOTIVE WITH 18-INCH BY 24-INCH CYLINDERS

G. T. R. 93



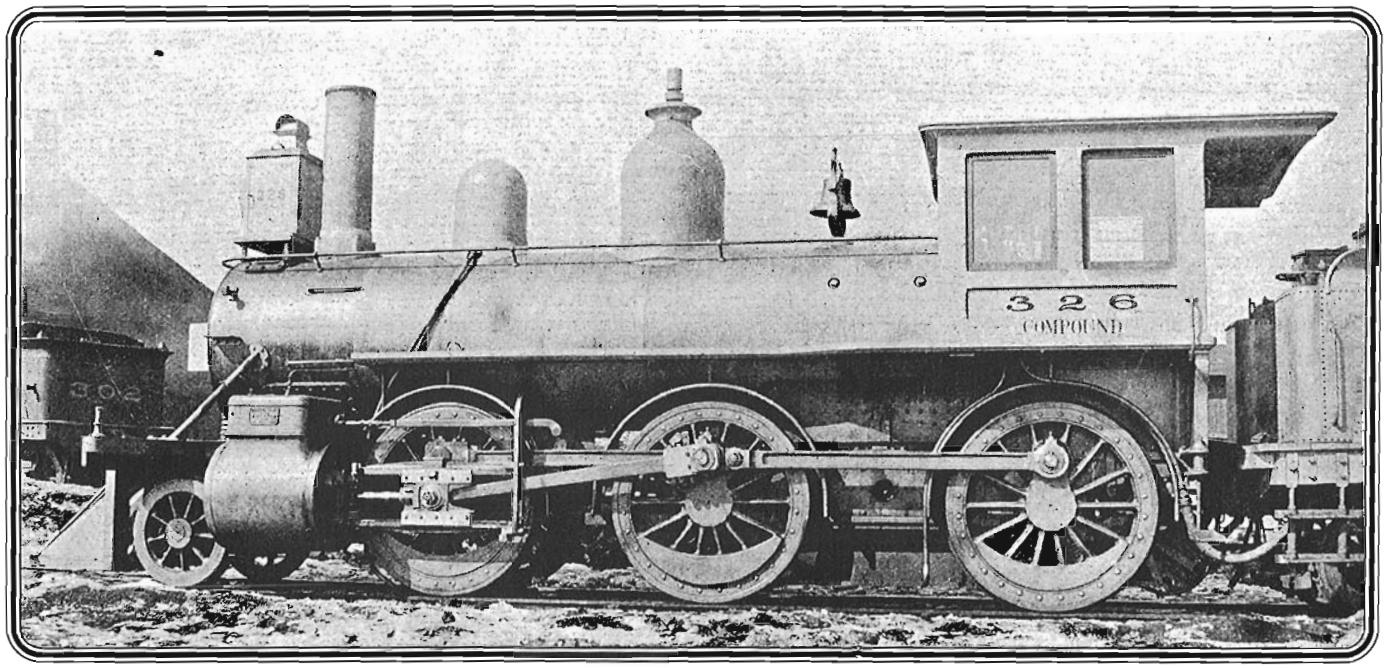
EXPRESS PASSENGER LOCOMOTIVE WITH !8-INCH BY 26-INCH CYLINDERS

G. T. R. 196



LIGHT PASSENGER LOCOMOTIVE FOR LOCAL SERVICE WITH 17-INCH BY 22-INCH CYLINDERS

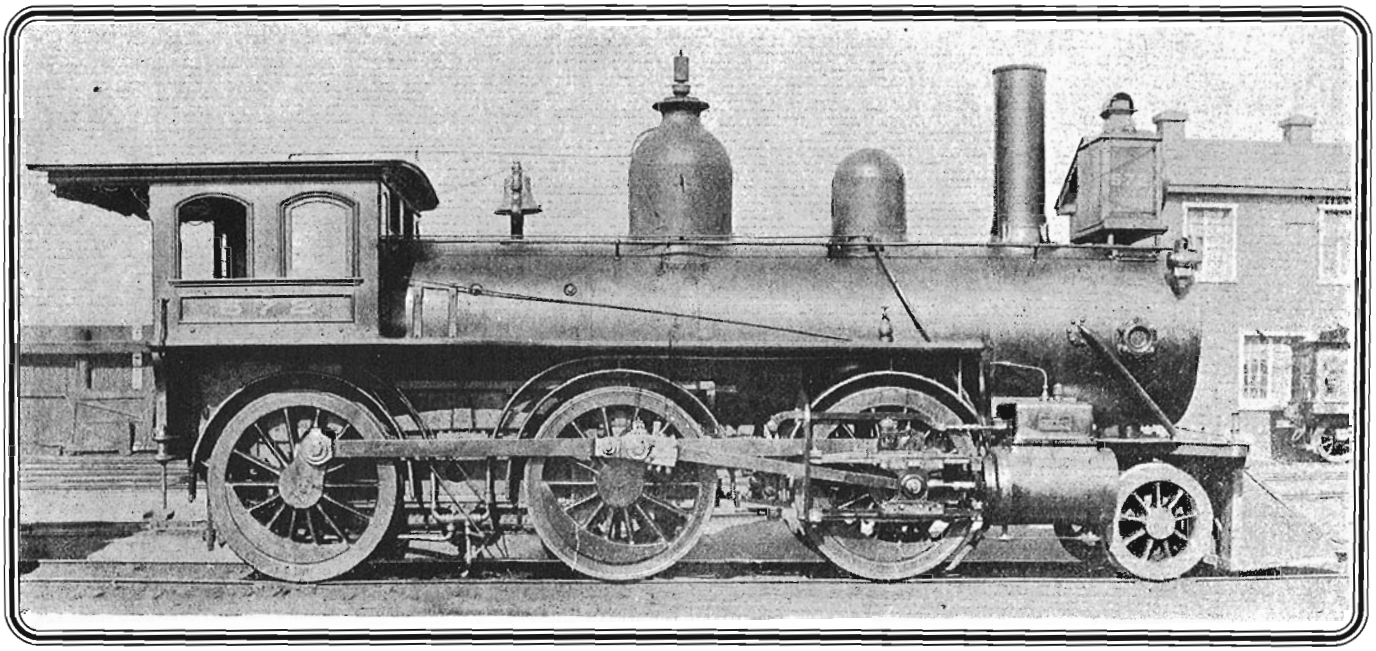
G. T. R. 326



EXPERIMENTAL COMPOUND LOCOMOTIVE OF THE RHODE ISLAND SYSTEM

(Note that it is painted a light colour, probably the primer, for better visibility in the photo)

G. T. R. 572



MOGUL FREIGHT LOCOMOTIVE WITH 18-INCH BY 26-INCH CYLINDERS

GENERAL DIMENSIONS OF THE VARIOUS CLASSES OF LOCOMOTIVES ON THE GRAND TRUNK RAILWAY.

Class of engine	No. 39 double ender with side and back tanks 17 in. × 22 in. × 5 ft. 2 in.	No. 82 express, 18 in. × 24 in. × 6 ft. 1⅝ in.	No. 93 express, 18 in. × 26 in. × 6 ft. 6 in.	No. 196 light passenger, 17 in. × 22 in. × 5 ft. 2 in.	No. 326 compound mogul ("R. I." system), 19 in. and 29 in × 26 in. × 5 ft. 2 in.	No. 572 simple mogul 18 in. × 26 in. × 5 ft. 2 in.
Gage	4 ft. 8½ in.	4 ft. 8½ in.	4 ft. 8½ in.	4 ft. 8½ in.	4 ft. 8½ in.	4 ft. 8½ in.
Kind of fuel used	Bituminous.	Bituminous.	Bituminous.	Bituminous.	Bituminous.	Bituminous.
Weight on front truck, in working order	35,112 lbs.	38,528 lbs.	33,908 lbs.	32,704 lbs.	21,840 lbs.	16,184 lbs.
" " back " " " "	19,712 "					
Total weight on driving wheels " " "	66,584 "	67,424 lbs.	52,360 lbs.	53,592 lbs.	96,572 lbs.	84,028 lbs.
" " of engine " " "	121,408 "	105,952 "	86,268 "	86,296 "	118,412 "	100,212 "
" " " and tender " " "	No tender.	190,848 "	160,868 "	160,896 "	199,388 "	180,412 "
From center of front truck to center of main driving wheels	10 ft. 8 in.	12 ft. 2 in.	12 ft. 2 in.	10 ft. 8 in.	15 ft. 2 in.	14 ft. 8½ in.
" " " cylinders " " " " "	10 " 8 "	12 " 2 "	12 " 2 "	10 " 8 "	11 " 7 "	11 " 4¾ "
" " to center of front truck wheels	6 " 6 "	6 " 6 "	6 " 6 "	6 " 6 "		
" " of front truck to center of front driving wheels					8 ft.	7 ft. 6¼ in.
" " " " driving wheels " " " main " "	8 ft.	8 ft. 6 in.	8 ft. 6 in.	8 ft.	7 ft. 2 in.	7 " 2 "
" " " main " " " " back " "	7 " 4 in.				8 " 6 "	8 " 6 "
" " " back " " " " " " truck	8 "	8 ft. 6 in.	8 ft. 6 in.	8 ft.		
Rigid wheel base	8 " 3 "	23 " 11 "	23 " 11 "	21 ft. 11 in.	15 ft. 8 in.	15 ft. 8 in.
Total wheel base of engine	No tender.	47 " 1½ "	46 " 11 "	45 " 2⅜ "	23 " 8 "	23 " 2¼ "
" " " " " and tender	39 ft. 7¾ in. on only	57 " 11⅛ "	57 " 11⅛ "	56 " 2½ "	46 " 7¼ "	46 " ⅞ "
" length of engine and tender over all	6 ft. 10 in.	8 "	7 " 10 "	6 " 10 "	56 " 7¼ "	56 " ⅞ "
Length of main connecting rod, center to center					7 " 3 "	7 " 3 "

CYLINDERS, VALVES, ETC.

Transverse distance from center to center of cylinders	6 ft. 4 in.	6 ft. 4 in.	6 ft. 3½ in.	6 ft. 4 in.	6 ft. 9 in.	6 ft. 9 in.
Diameter of high pressure cylinder	17 in.	18 in.	18 in.	17 in.	19 in.	18 in.
" " low " "					29 "	
Stroke of piston	22 in.	24 in.	26 in.	22 in.	26 "	26 in.
Kind " "	"C. I." box.	"C. I." box.	"C. I." box.	"C. I." box.	"C. I." box.	"C. I." box.
Horizontal thickness of H. P. piston bead in the center	4¾ in.	4¾ in.	4¾ in.	4¾ in.	4¾ in.	4¾ in.
" " " " L. P. " " " "					5¾ "	
Kind of piston packing	"C. I." rings sprung in.	"C. I." rings sprung in.	"C. I." rings sprung in.	"C. I." rings sprung in.	"C. I." rings sprung in.	"C. I." rings sprung in.
Diameter of H. P. piston rod	2⅞ in.	3⅛ in.	3⅛ in.	2⅞ in.	3⅜ in.	3½ in.
" " L. P. " "					3⅜ "	
Size of H. P. steam ports	16 in. × 1¼ in.	18 in. × 1¼ in.	16 in. × 1¼ in.	16 in. × 1¼ in.	18 in. × 1½ in.	16 in. × 1¼ in.
" " L. P. "					22½ " × 1½ "	
" " H. P. exhaust "	16 in. × 3 in.	18 in. × 3¼ in.	16 in. × 3 in.	16 in. × 3 in.	18 " × 3 "	16 in. × 3¼ in.
" " L. P. "					22½ " × 3 "	
Greatest travel of slide valves	5 7/16 in.	5⅜ in.	5⅜ in.	5 7/16 in.	6¼ in.	5¼ in.
Throw of eccentrics	5½ "	5½ "	5½ "	5½ "	5 "	5 "
Inside lap of H. P. slide valve (or inside clearance)	1/32 "	Line and line.	Line and line.	1/32 "	Inside clear., ⅜ in.	Line and line.
" " " L. P. " " " "					" " ¼ "	
Outside " " H. P. " " "	⅛ in.	⅜ in.	⅜ in.	⅛ in.	1 in.	⅜ in.
" " " L. P. " " "					⅜ "	
Lead of H. P. slide valve in full gear	1/16 in.	1/8 in.	1/8 in.	1/16 in.	3/32 "	1/8 in.
" " L. P. " "					3/32 "	
Throw of upper end of reverse lever from full gear forward to full gear backward, measured on the chord of the arc of its throw	4 ft. 1⅞ in.	4 ft. 1⅜ in.	4 ft. ⅛ in.	4 ft. 3⅞ in.	3 ft. 11¼ in.	3 ft. 11¼ in.
Sectional area of opening of H. P. steam pipe	15.9 sq. in.	17.72 sq. in.	16.80 sq. in.	15.9 sq. in.	23.76 sq. in.	17.72 sq. in.
" " dry pipe	28.29 " "	28.29 " "	28.29 " "	28.29 " "	28.29 " "	28.29 " "
Cubic capacity of receiver					4.25 " ft.	

WHEELS AND AXLES.

Diameter of driving wheels, outside of tire	5 ft. 2 in.	6 ft. 1⅝ in.	6 ft. 6 in.	5 ft. 2 in.	5 ft. 2 in.	5 ft. 2 in.
Material of centers and style of tire fastenings	"C. I. Mansell" clip.	"C. I. Mansell" clip.	"W. I." forged spoke, Beattie clip and tire bolts.	"C. I." tire bolts.	"C. I. Mansell" clip.	"C. I. Mansell" clip.
Diameter of front truck wheels, outside of tire	33 in.	37 in.	37 in.	33 in.	37 in.	37 in.
Material of centers and style of tire fastenings	"C. I. Mansell" clip.	"C. I. Mansell" clip.	W. I." forged spoke, Beattie clip and tire bolts.	"C. I. Mansell" clip.	"C. I. Mansell" clip.	"C. I. Mansell" clip.
Diameter of back truck wheels, outside of tire	33 in.					
Material of centers and style of tire fastenings	"C. I. Mansell" clip.					
Size of front driving axle journals, diameter × length						
" " main " " " "	7 in. × 8 in.	8 in × 9 in.	8 in. × 9 in.	7 in. × 8 in.	7 in. × 8 in.	7 in. × 8 in.
" " back " " " "	7 " × 8 "	8 " × 9 "	8 " × 9 "	7 " × 8 "	7 " × 8 "	7 " × 8 "
" " front truck " " " "	4½ " × 7½ "	5½ " × 10 "	5 " × 7¾ "	4½ " × 7½ "	5½ " × 10 "	5 " × 7¾ "
" " back " " " "	5½ " × 10 "					
" " main crank pin " " "	4 " × 5 "	5¼ in. × 5½ in.	4½ in. × 5 in.	4 in. × 5 in.	4½ in. × 5 in.	4½ in. × 5 in.
" " wrist pin " " "	3¼ " × 3¾ "	3¾ " × 3¾ "	3½ " × 3 "	3¼ " × 3¾ "	3¾ " × 3 "	3¾ " × 3 "
" " front coupling rod " " "					5 " × 3½ "	5 " × 3½ "
" " Main " " " "	3¼ in. × 4 in.	3¾ in. × 3¾ in.	3¾ in. × 3¾ in.	3¼ in. × 4 in.	5½ " × 4½ "	5½ " × 4½ "
" " back " " " "	3¼ " × 4 "	3¾ " × 3¾ "	3¾ " × 3¾ "	3¼ " × 4 "	5 " × 3½ "	5 " × 3½ "
Length of front truck springs, center to center of hangers	2 ft. 11½ in.	2 " × 11½ "	2 " × 11½ "	2 ft. 11½ in.	2 ft. 6 in.	2 ft. 6 in.
Number of plates	10.	13.	13.	11.	8.	7.
Section of steel	3½ in. × ½ in.	3½ in. × ½ in.	3½ in. × ½ in.	3½ in. × ½ in.	3½ in. × ½ in.	3½ in. × ½ in.
Length of driving springs, center to center of hangers	3 ft. 3½ in.	3 ft. 3½ in.	3 ft. × 3½ "	3 ft. 3½ in.	2 ft. 10 in.	2 ft. 10 in.
Number of plates	12.	12.	12.	10.	10.	9.
Section of steel	4 in. × ½ in.	3½ in. × ½ in.	3½ in. × ½ in.	4 in. × ½ in.	3½ in. × ½ in.	3½ in. × ½ in.
Length of back truck springs, center to center of hangers	2 ft. 6 in.					
Number of plates	8.					
Section of steel	3½ in. × ½ in.					

BOILER.

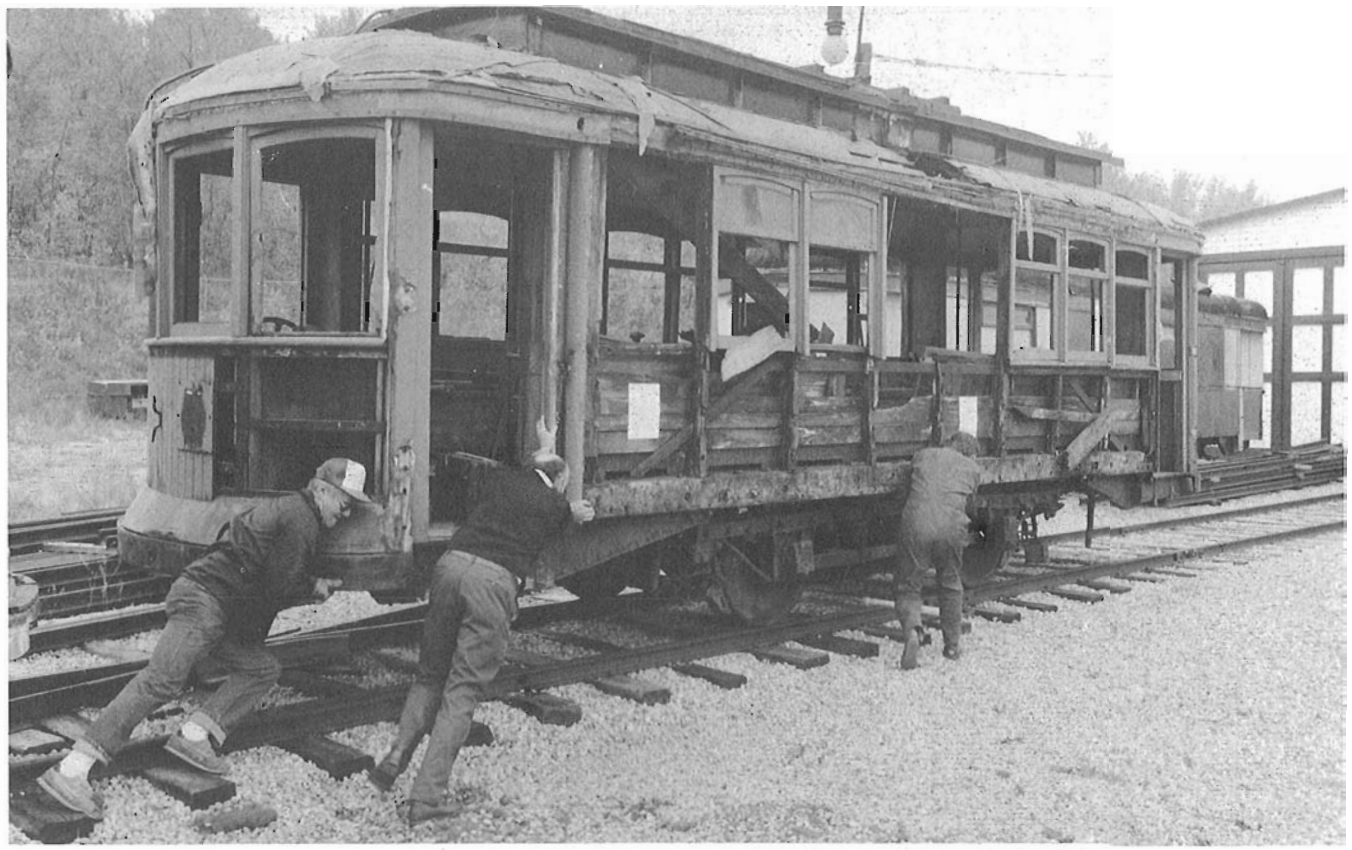
Description of boiler	Straight back.	Straight back.	Straight back.	Straight back.	Straight back.	Straight back.
Inside diameter of smallest ring of boiler	4 ft. 0⅝ in.	4 ft. 2¾ in.	4 ft. 2¾ in.	4 ft. 0⅝ in.	4 ft. 2¾ in.	4 ft. 2¾ in.
Material of barrel of boiler	Steel.	Steel.	"Bowling" iron.	"Bowling" iron.	Steel.	Steel.
Length of barrel from back of front tube plate to front of throat	10 ft. 4 in.	11 ft. 10¾ in.	11 ft. 10¾ in.	10 ft. 4 in.	11 ft. 2¼ in.	11 ft. 2¼ in.
Thickness of plates in barrel of boiler	⅜ in.	½ in.	½ in.	7/16 in.	½ in.	½ in.
Kind of horizontal seams	Butt, inside and outside welts, double riveted.	Butt, inside and outside welts, double riveted.	Butt, inside and outside welts, double riveted.	Lap, double riveted.	Butt, inside and outside welts, double riveted.	Butt, inside and outside welts, double riveted.
" " circumferential seams	Lap, double Riveted.	Lap, double riveted.	Butt, with welt outside and single riveted.	Lap, double riveted.	Lap, double riveted.	Lap, double riveted.
Material of tubes	Charcoal iron.	Charcoal iron.	Charcoal iron.	Charcoal iron.	Charcoal iron.	Charcoal iron.
Number " "	173.	190.	212.	196.	190.	190.
Diameter " " outside	1¾ in.	1¾ in.	1¾ in.	1¾ in.	1¾ in.	1¾ in.
Distance between centers of tubes	2 1/16 "	2 1/16 "	2⅝ "	2⅝ "	2 1/16 "	2 1/16 "
Length of tubes over tube plates	10 ft. 8⅛ in.	12 ft. 5 9/16 in.	12 ft. 3 1/16 in.	10 ft. 8 1/16 in.	11 ft. 9 1/16 in.	11 ft. 9 1/16 in.
" " firebox outside	6 " 2 "	6 " 9 "	6 " 9 "	6 " 2 "	6 " 9 "	6 " 9 "
Width " "	Mean, 3 ft. 10¼ in.	3 " 6⅜ "	3 " 6½ "	Mean, 3 ft. 10¼ in.	3 " 6⅜ "	3 " 6⅜ "
Length " " inside at foundation ring	5 ft. 6 5/16 in.	6 " 2 1/16 "	6 " 1 1/16 "	5 ft. 6 5/16 in.	6 " 2 1/16 "	6 " 2 1/16 "
Width " " " " "	Mean, 3 ft. 2⅞ in.	2 " 11⅛ "	2 " 11 "	Mean, 3 ft. 2⅞ in.	2 " 11⅛ "	2 " 11⅛ "
Depth " " " from bottom of foundation ring	" 5 " 0⅝ "	5 " 9¼ "	6 " 2½ "	5 ft. 4¼ in.	5 " 9¼ "	5 " 9½ "
Water space, sides of firebox at foundation ring	3 in.	2½ in.	3 in.	3 in.	2½ in.	2½ in.
" " back " " " " "	3 "	2½ "	3 "	3 "	2½ "	2½ "
" " front " " " " "	3 "	2½ "	3 "	3 "	2½ "	2½ "
Material of outside shell of firebox	Steel.	Steel.	"Bowling" iron.	"Bowling" iron.	Steel.	Steel.
Thickness of plates of outside shell of firebox—throat, face, sides, saddle	7/16 in., ⅜ in., ⅜ in., ½ in.	9/16 in., ½ in., 7/16 in.	9/16 in., ½ in., 7/16 in.,	7/16 in., ⅜ in., ⅜ in., ½ in.	9/16 in., ½ in., 7/16 in.,	9/16 in., ½ in., 7/16 in.,
Material of inside of firebox	Steel.	Steel.	Steel.	Steel.	Steel.	Steel.
Thickness of side sheets of firebox	5/16 in.	5/16 in.	5/16 in.	5/16 in.	5/16 in.	5/16 in.
" " back sheet " "	⅜ "	⅜ "	⅜ "	⅜ "	⅜ "	⅜ "
" " tube sheet	½ "	½ "	½ "	½ "	½ "	½ "
" " crown sheet	⅜ "	⅜ "	⅜ "	⅜ "	⅜ "	⅜ "
Material of front tube sheet	Steel.	Steel.	"Bowling" iron.	"Bowling" iron.	Steel.	Steel.
Thickness " " "	⅝ in.	¾ in.	¾ in.	⅝ in.	¾ in.	¾ in.
How crown sheet is stayed	Radial, 1⅛ in. diameter.	Radial, 1⅛ in. diameter, two front rows fitted for expansion.	Radial, 1⅛ in. diameter, two front rows fitted for expansion.	Radial, 1⅛ in. diameter.	Radial, 1⅛ in. diameter, two front rows fitted for expansion.	Radial, 1⅛ in. diameter, two front rows fitted for expansion.
Diameter of dome inside	2 ft. 1 in.	2 ft. 5½ in.	2 ft. 1 in.	2 ft. 1 in.	2 ft. 5½ in.	2 ft. 5½ in.
Height " " to joint face	2 " 9 "	2 " 11⅝ "	2 " 9 "	2 " 9 "	2 " 11⅝ "	2 " 11⅝ "
Extension smokebox, outside diameter by length from joint face of front to face of tube sheet	4 ft. 5⅛ in. × 5 ft. 3⅞ in.	5 ft. 0 in. × 5 ft. 8¼ in.	5 ft. 0 in. × 5 ft. 7¾ in.	4 ft. 5⅛ in. × 5 ft. 8⅞ in.	5 ft. 0 in. × 4 ft. 5½ in.	5 ft. 0 in. × 5 ft. 8¼ in.
Maximum working pressure per square inch	140.	180.	160.	140.	180.	160.
Kind of grate	"C. I." rocking.	"C. I." rocking.	"C. I." rocking.	"C. I." rocking.	"C. I." rocking.	"C. I." rocking.
Width of grate bars	½ in. at points and ⅞ in. at root.	½ in. at points and ⅞ in. at root.	½ in. at points and ⅞ in. at root.	½ in. at points and ⅞ in. at root.	½ in. at points and ⅞ in. at root.	½ in. at points and ⅞ in. at root.
" " air space between grate bars	⅝ in. ½.	⅝ in.	⅝ in.	⅝ in. ½.	⅝ in.	⅝ in.
Grate area	17.85 sq. ft.	18.25 sq. ft.	17.75 sq. ft.	17.85 sq. ft.	18.25 sq. ft.	18.25 sq. ft.
Heating surface, firebox	96.50 "	106.50 "	119.50 "	102.20 "	106.50 "	106.50 "
" " outside of tubes	848.00 "	1,077.35 "	1,184.07 "	950.00 "	1,015.61 "	1,015.61 "
Total heating surface	944.50 "	1,183.85 "	1,303.57 "	1,052.20 "	1,122.11 "	1,122.11 "
Effective cross sectional area through tubes	2.21 "	2.44 "	2.71 "	2.50 "	2.44 "	2.44 "
Kind of blast nozzle	Single.	Single.	Single.	Single.	Single.	Single.
Diameter of blast nozzle	4 in.	4¼ in.	4¼ in.	4 in.	4 1/16 in.	4¼ in.
Smallest inside diameter of stack	1 ft. 3⅝ in.	1 ft. 5⅝ in.	1 ft. 5⅝ in.	1 ft. 4⅝ in.	1 ft. 1 in.	1 ft. 5⅝ in.
Height from top of rail to top of stack	13 " 0 "	14 " 5 "	14 " 9 "	14 " 1 "	14 " 1⅞ "	14 " 1⅝ "
" " " " " " center of boiler	6 " 3½ "	6 " 10⅝ "	7 " 0 "	6 " 3½ "	7 " 0 "	6 " 7¾ "
Style of frames	Bar in front and slab at back.	Bar throughout.	Bar throughout.	Bar in front and slab at back	Bar throughout.	Bar throughout.
" " driver brakes	American equalized on drivers and trailers	American equalized, clasp on drivers and trailers.	None.	None.	None.	None.
System of sanding	"Gresham's" patent steam sanding for D.& T.	"Gresham's" patent steam sanding.	"Gresham's" patent.	Ordinary, by hand.	Ordinary, by hand.	Ordinary, by hand.
Style and size of injectors	G. T. R. Nos. 7 and 8.	Holden & Brook's Combination, 1892. Nos. 8 and 9.	G. T. R. Nos. 8 and 9.	G. T. R. Nos. 7 and 8.	Holden & Brook's Combination, 1892. Nos. 8 and 9.	G. T. R. Nos. 8 and 9.
Engines are fitted with baffle plates, firebrick arches and water tubes for carrying same						
Service for which engine is intended	Suburban.	Express.	Express.	Light passenger.	Freight.	Freight.
Water capacity of side and back tanks in gallons of 231 cubic inches	1,500 gals.					
Capacity of coal space, cubic feet	93 cu. ft.					

FEBRUARY, 1896

Toronto Suburban Railway 24
Canadian National 15702

By Don Scafe and Tony Kernahan

Edmonton Radial Railway Society

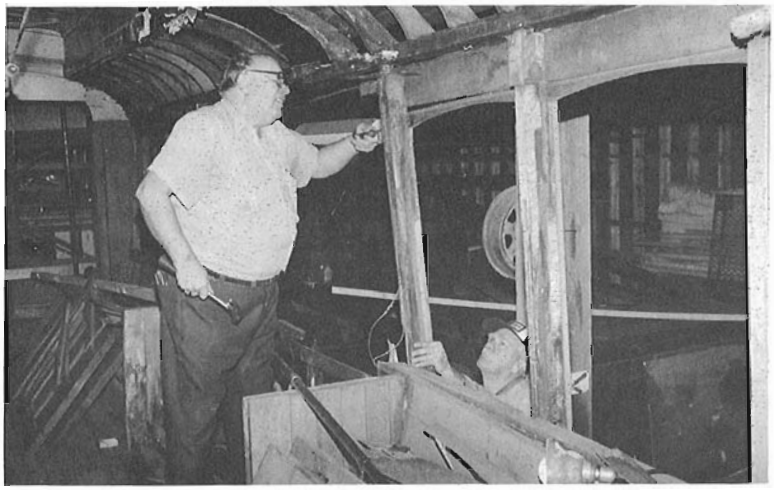


Edmonton Radial Railway Society members Ogilvie Thomson, Doug Parker and Barry Biglow push ex-CNR 15702 into the car barn to start restoration, October 1, 1988. High Iron Photos 356-92-36.

A unique piece of Canadian urban transportation history lives on at the street car line of the Edmonton Radial Railway Society in the form of restored Toronto Suburban Railway car 24. This car may have the most varied and interesting history of any Canadian street car.

The earliest years of the car are somewhat uncertain. It appears that it could have been built by the Toronto Railway Company before the turn of the century [the TRC began to build flat sided tongue-and-groove sheathed cars in 1894], and was acquired by the Toronto Suburban Railway in 1913, after the car body had been rebuilt by the Preston Car and Coach Company. It operated as a double-ended car in the Weston area of Toronto on the TSR's city line franchise.

When the TSR became part of the CNR in 1924, the city franchise was turned over to the TTC, with the suburban service to Guelph being operated by CN. Thus, the city cars were no longer required by CN. Fortunately the company had plans to use No. 24 at their new Neebing rider-hump yard at Fort William. Car 24 was modified for service to take yard crews to and from yard offices at the new facility. Becoming CN 15702, it was fitted with footboards along each side for easy transportation of the workers. Later, for added comfort in winter, a stove was installed. After some 40 years of service at Neebing, CN 15702 was retired and donated to the CRHA, coming to the Canadian Railway Museum at Delson in 1964. Unfortunately, the car had to be stored outdoors and it deteriorated. It could have been easily and quietly forgotten, in which case our story would be at an end. But read on!



Edmonton Radial Railway Society members Larry Roche and Bill Betts dismantle side supports of 15702 in the car barn on October 22, 1988. High Iron Photos 356-93-46.

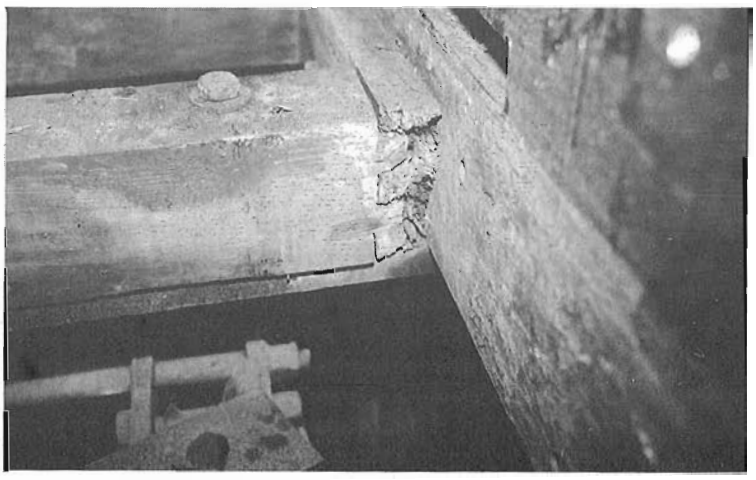
The Edmonton Radial Railway Society's plans for an extension outside Fort Edmonton Park identified the need for a double-ended car. When Malcolm Whittall visited the CRHA museum in the early 1980s he realized that 15702 could (potentially) meet the Society's needs. It was a double-ended four wheel street car with handbrakes, and virtually a twin to Edmonton Radial Railway No. 7, the only single-truck car ever to operate in Edmonton! Initial discussions were held with the CRHA concerning the possibility of a long term lease. By November 1986 the CRHA had agreed to the car's transfer to the ERRS and its restoration and operation by the Society as Toronto Suburban Railway 24 for a period of twelve years. As the most recent owners of the car, Canadian National very kindly donated the transportation of the car from Delson to Edmonton. It finally arrived at the ERRS car barn on November 14, 1987.

With its prolonged outside storage, the car was in much poorer condition than anticipated. In contemplating total restoration, the Society was faced with a formidable task. Some preliminary "tidying up" and removal of loose parts was performed soon after arrival in Edmonton. However, it was not until after the end of the 1988 operating season that the car was moved inside the barn for the rebuilding to begin in earnest. The plan of attack for its restoration was to be as follows:

i). Strip the car to its frame to determine what wood needed to be replaced. It was clear from the condition of the car when it arrived that a virtually new car body would have to rise phoenix-like from the frame.

ii). Inspect the condition of the truck and motors and undertake whatever mechanical and electrical rehabilitation was necessary.

Dismantling of the rear vestibule was complete by December 10, 1988, when this photo was taken, and a new subfloor was under construction. High Iron photos 356-95-5e.



The bottom side beams consist of a metal plate bolted between wooden stringers on either side. About one half of the inner wooden stringers had rotted away on one side of the car, and good wood ended at this mortise and tenon joint to a cross beam. July 29, 1989.

High Iron Photos 356-104-7c.

ABOVE: The truck of 15702 / 24 is almost completely dismantled in this view at the car barn on May 18, 1991. One side frame is to be replaced by a new one constructed in the shops.
High Iron Photos 356-131-6b.

ERRS members Harvey Seagrave and Bill MacLean fit vestibule roof struts to 15702, on March 3, 1990.
High Iron Photos 356-114-7c.

iii). Design and install a complete hand braking system.

iv). Install "hardware" - two controllers and breaker switches - and completely re-wire the car.

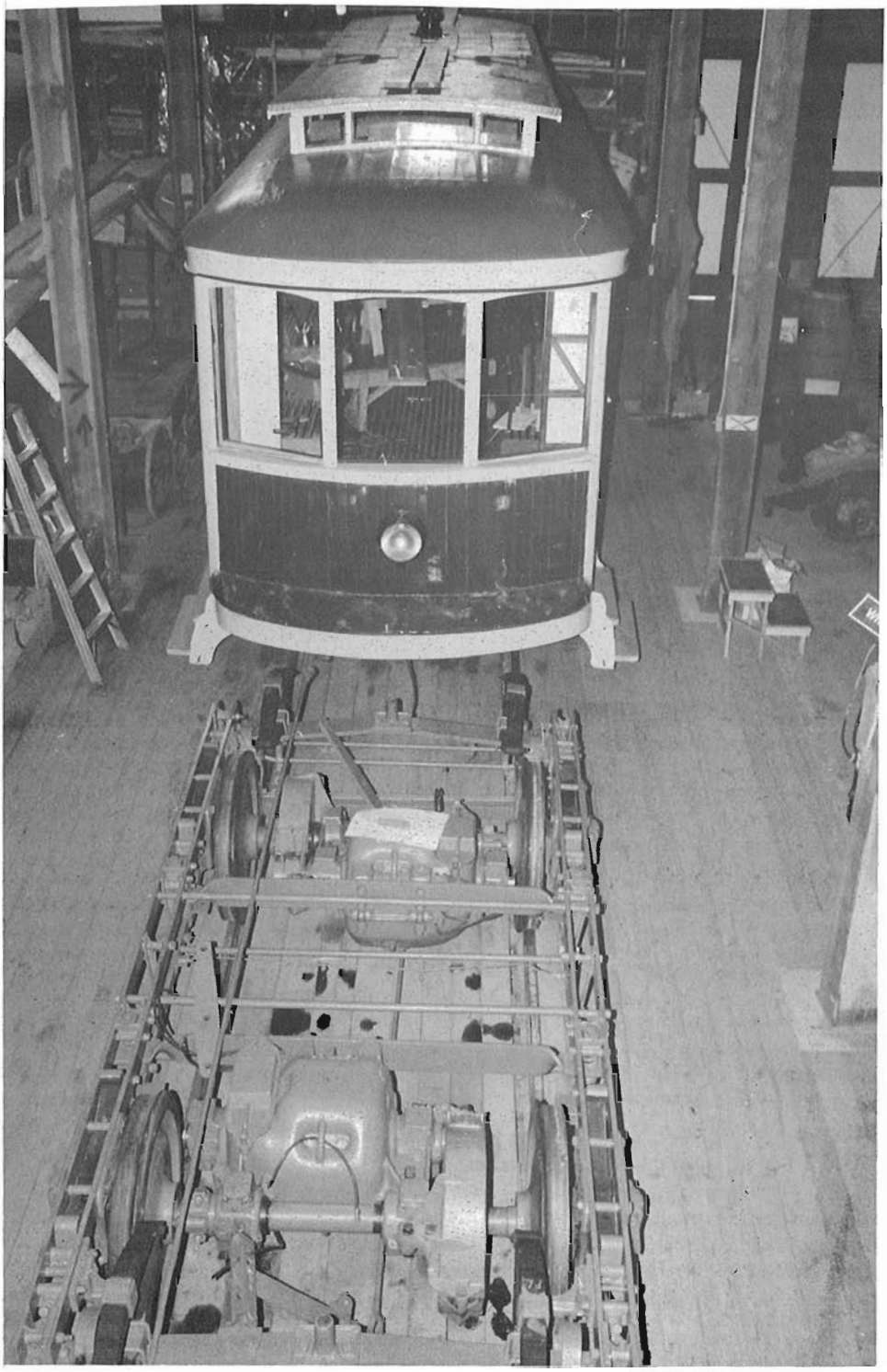
v). Reunite the reconstructed car body with its overhauled truck, and perform rigorous tests to ensure that the car would perform satisfactorily in service.

By the end of 1988 the sides had been completely stripped - in many cases a not too hefty push was sufficient to remove a rotted pillar - as well as the flooring and vestibules. After the construction of a new sub-flooring and side pillars, the roof was the next phase tackled, and by the spring of 1991 it was replaced completely with new wood and canvas.

While the "carpentry" was in progress, the Taylor truck was totally disassembled and one complete side frame was replaced by a new one fabricated in the shop. As well, the two electric traction motors (GE 1000 type) were thoroughly overhauled, although they were found to be in remarkably good condition. It is interesting to note that the plate on the motors indicates a patent date of 1896, exactly 100 years ago, so it is likely that these are now the oldest street car motors in working order in Canada. [The GE 1000 was introduced about 1892 and was one of the first fully enclosed traction motor made. It took its name from the fact that, with suitable gearing and 33 inch wheels, it would provide a tractive effort of 1000 pounds. There was also a smaller version called the GE 800.] With the truck and motors "as good as new", the restored car body was reunited with its truck on August 24, 1991.

The remaining work was by no means trivial. The hand braking system had to be designed and constructed *in situ* and the complete electrical system installed. As a double-end car, two General Electric K10 controllers were required, and the lighting circuits and breakers were installed. The car was fitted out with two longitudinal wooden benches that ran the length of the car, four new doors and two "cow catchers". Then, after the whole car had been painted, it was ready for its final testing prior to "re-commissioning".

On May 9, 1992, restored Toronto Suburban Railway car 24 moved under its own power as it was driven gingerly out of the car barn (albeit with an incomplete braking system!), to emerge into the sunlight for the first time since the Fall of 1988. Complete testing and shakedown took place over the next few months, and the car was able to assist Edmonton cars 1 and 42 in passenger service at the annual Harvest Fair held in early September at Fort Edmonton Park. The Society's thirty or so qualified motormen all take special training and refresher sessions on car 24 before the start of each operating season because of its hand braking system. Now the car is used regularly in summer service (normally weekday mornings) along with the two restored Edmonton cars on the Society's 2 kilometre street car line. It is proving to be a unique attraction for Park visitors.



The rebuilt truck of ex-CNR 15702, (ex-Toronto Suburban Railway 24) ready to be run under the body on August 24, 1991. Note the GE 1000 traction motors, almost 100 years old and still fully functional. High Iron Photos 356-135-3a.

ACKNOWLEDGEMENTS AND REFERENCES

Canadian Rail No. 223, Summer 1970.

C. Hatcher and T. Schwarzkopf "*Edmonton Electric Transit*" (Railfare Enterprises Ltd. 1983)

D. Parker, *The Trip Sheet* (Newsletter of the ERRS), June 1992

C. Hatcher, private communication 1995

D. Scafe (High Iron Photos)

NOTE: For a view of 24 / 15702 as it appears completely restored please see the back cover.

The Church That Began In A Box Car

The recent news that the former CNR Point St. Charles shops (now AMF) in Montreal may close makes one recall the great railway heritage of "The Point" dating back to the early days of the Grand Trunk, and especially the construction of Victoria Bridge. The present shops trace their ancestry to those built by the Grand Trunk in the 1850s, and the site has been used for railway purposes ever since.

Another story about the area, less known among railway historians, concerns Grace Anglican Church which was founded in Point St Charles in 1871, 125 years ago this year, and which has always been a railwayman's church. In fact the first church building was a Grand Trunk box car! The following account is based on newspaper articles that appeared in 1971, on the church's 100th anniversary.

Point St. Charles, which has been so long identified with the life of railways and railwaymen, is located on the old Bourgeois Seigneury, and prior to that the Robert Seigneury. The site of the present Grace Church, at Wellington and Fortune Streets, is a portion of the old Bourgeois Seigneury. It was bought from the Sisters of the Congregation of Notre Dame who had been given the property by a daughter of the Seigneur Bourgeois, a member of the religious order.

Anglican church services for those of that faith living in the area of Goose Village, Griffintown and the eastern end of Point St. Charles were first held in 1871 in a brick-coloured Grand Trunk box car. It is recalled that the services were conducted on a packing box used as an altar, and the box car was heated in winter by a pot-bellied stove, consuming large amounts of wood.

The Grand Trunk authorities were, from the first, interested in seeing that their workers settling in Point St. Charles had places of worship within a suitable distance of their homes, but until 1871 there was no nearby church at which Anglicans could worship. Hence the GTR supplied the box car, and very soon provided a piece of land at the corner of Wellington and Centre Streets where the first mission building was constructed.

Within a few years the congregation had grown so much that the building became far too small. In fact, because of the limited seating available, many people were turned away Sunday after Sunday. Because of this, and the fact that much concern was brought about because of children living in the western part of the Point having to cross the tracks, it was decided to erect a new larger building in a more convenient location.

Rev. Canon S. Belcher, the first rector, approached the Grand Trunk management suggesting that the company buy the land on which the church was then built so that the congregation would be able to buy another property. The pastor rightly foresaw that in the future the majority of his parishioners would reside on the western side of the tracks. A suitable deal was concluded and the congregation acquired the land at the corner of Wellington and Fortune Streets.

The new church building was of gothic design, and is a very fine piece of Montreal church architecture. It was erected in accordance with the plans of John James Brown, a widely known architect around the turn of the century. The foundation stone was laid on September 12, 1891, and it opened for its first service just over a year later, on September 18, 1892. The seating capacity was 800, a far cry from the old box car of 1871, and the interior decor, with visible wooden framework, is beautiful because of its distinctive

1871

neat and quiet lines. It still stands, minus the tower, today. In this day of high prices and inflation, it is hard to realize that the total cost of the church was about $45,000. For many years there were some 800 children enroled in the church's sunday school, and the strength of the parish lay in the congregation's ability to teach so many, and also provide competent teachers for all those children.

From 1907 until the early 1920s the rector was Rev. (later Canon) J. Ellis Ireland, who was a very capable organizer, deeply loved by his parishioners. During this time the church enjoyed its maximum membership, with more than 700 families belonging. This period also included the years of the First World War during which, for the first time in Canadian history, railways, and the mechanical skill of railwaymen, were used in fighting a war overseas. Many of these Canadian Railway Troops were members of Grace Church. During World War II, the pastor was granted a leave of absence to serve as Chaplain to the Canadian armed forces, which he did until the end of the war.

In more recent times, the decline of the English speaking Anglican population of Point St. Charles has meant that the church has more of an at-large membership, and many of its members come from surrounding parts of the city. However its distinguished history has continued, and it must be recalled that it all began with a few devoted people holding divine service in a Grand Trunk box car a century and a quarter ago.

The Business Car

CRHA CONVENTION AND ANNUAL GENERAL MEETING

Members are reminded that the annual convention of the CRHA will be held at Prince George, B.C. from Friday, June 28 to Monday, July 1, 1996.

During the convention, the Annual General Meeting of the Association will be held on **Saturday, June 29, 1996**. Please note that the date of June 30, previously announced, is incorrect. At this meeting, four directors will be elected. Any member wishing to submit nominations for candidates for these positions should submit them to the Secretary, Mr. Bernard Martin, no later than the end of May 31, 1996. To be valid, nominations must be made and seconded, in writing, by two members, and must also bear the indication, in writing, that the candidate will serve if elected.

A full program of events is planned for the convention, and more information will be given as it is available.

HELP WANTED

Gloria J. Hersak, 4 Fairway Place, Winnipeg, Manitoba, R3R 2P3 writes:

"My family has been involved with the railway, first the Grand Trunk and then the CNR, since they arrived in Canada from the Manchester area of England circa 1903. My great-grandfather, William Henry Smith, was employed at the Point St. Charles shops in Montreal until his death at age 60 on 2 April 1916. His son and my grandfather, Robert Henry Smith, was also employed there as a machinist until 1914 / 15 when he moved to Transcona, Manitoba to work in the shops of what became the CNR. Two further generations of the Smith family have also been employed there. I am currently engaged in family history research and need information concerning the background of William Henry Smith. From what his eldest grandson remembers of life in Point St. Charles, W.H. Smith worked in an area of the shops with large stationary engines. I gather that there was a great deal of pride involved on the part of my great-grandfather and his family concerning the particular position he occupied. Directories of the day, and his death / burial records list his occupation as engineer. From what I can tell, his places of residence in Point St. Charles were as follows:
1905-07 12 Knox Street, 1907-09 175 Island Street,
1909-10 445 Wellington Street, 1910-12 110 Knox Street,
1914 12A Ryde Street, 1916 608 Mullins Street.
Understandably, a Smith from England of about 60 years old is almost impossible to trace back to England. Of course, what I really need are personnel records which might allow me to search into his background, date of arrival in Canada, parents names, place of birth, place of previous employment in England, etc. I understand, however, that such records are hard to come by. Please inform me as to the availability of the information which I require and the cost to provide the same".

If any of our members could provide any information, Mrs. Hersak would greatly appreciate if they could write directly to her.

NEWFOUNDLAND VIDEO AVAILABLE AGAIN

Back, by popular demand! In August 1988, shortly before the Newfoundland Railway was abandoned, some members of the CRHA made a trip to Newfoundland and rode the mixed train between Bishops Falls and Corner Brook. Peter Murphy made an excellent 90-minute video, called "The Gaffer", about this trip, and other railway scenes at St. John's. This video was offered to the members for $27.00, and a considerable number were sold, before the production of the tape ceased. Now, by popular demand, "The Gaffer" is once again available, and at the same price, $27.00, including postage. To purchase this video, please write to Fred Angus, 3021 Trafalgar Ave., Montreal P.Q., H3Y 1H3, and enclose cheque for $27.00 made payable to the CRHA.

TWO NEW BOOKS ON CANADIAN RAILWAY STATIONS

Directory of Railway Stations of Ontario,
and Directory of Railway Stations of Ontario, Volume II.
Published by: Canadian Station News
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These two volumes list more than 550 stations (300 in volume I and 250 in volume II), including active, relocated, and recently demolished structures. There are more than 170 photographs, and each listing gives a brief outline of the station structure, year built and points of interest. Each listing provides where possible the exact address of the station and easy access roads leading to it. For stations in rural areas, an approximate driving time is given. The listing includes stations of: VIA Rail, CN, CP, Algoma Central, Ontario Northland, Port Stanley Terminal Railway and the Goderich & Exeter Railway. These books make the location of stations, in cities, towns, or the country, easy.

A HEAVY CABOOSE

Caboose No. 27 had to have a new set of springs put under it on account of being loaded too heavy with links, pins, etc. There were taken out of this caboose 2,020 pounds of unnecessary material. Conductors will only allow such material in their cabooses as may be actually necessary, and not load the boxes down for the purpose of making the springs ride easier; and it is unnecessary to haul a ton of this material around month after month.

Locomotive Engineering, January, 1896.

WET TRAINMEN

Trainmen will please discontinue throwing water at each other on the road. The party receiving the water is liable to slip or fall and injure themselves [sic], perhaps very seriously. The stormy weather will afford the brakemen all the outside application of water that is necessary.

Locomotive Engineering, January, 1896.

THE BIRTH OF OUR NUMBER 5?

The Pittsburgh Locomotive Works are now quite busy building new engines and on repair work. The shops have an order from the Pittsburgh & Lake Erie for ten 10-wheel freight engines with 18-inch by 24-inch cylinders, which will be larger than any now used by that company.

American Engineer, February, 1896.

Editor's note: One of these engines may well be our Maritime Railway No. 5, which was one of ten locomotives (Nos. 81 to 90) built by Pittsburgh in 1896 for the P&LE.

BACK COVER: Toronto Suburban Railway 24, ex Canadian National Railways 15702, leaving Melon Farm curve at Fort Edmonton Park on August 8, 1992. This car has been completely restored to its pristine appearance by the members of the Edmonton Radial Railway Society. High Iron Photos 356-148-5d.

Canadian Rail

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