Canadian Rail

September 1965 / Number 169

Our Cover

Eleventh Ave., Regina, looking west from the City Hall at Rose Street in 1920. English-built tram #1 is shown in the foreground, with Preston's #24 and #20 beyond.

LEFT: Car #3 proceeding west on Eleventh Avenue at Scarth Street in 1911.

BELOW: First street car run, Regina, on Friday, the 28th July, 1911.

Photographs courtesy of Saskatchewan Archives.

English-built Trams on the Regina Municipal Ry.

Colin K. Hatcher

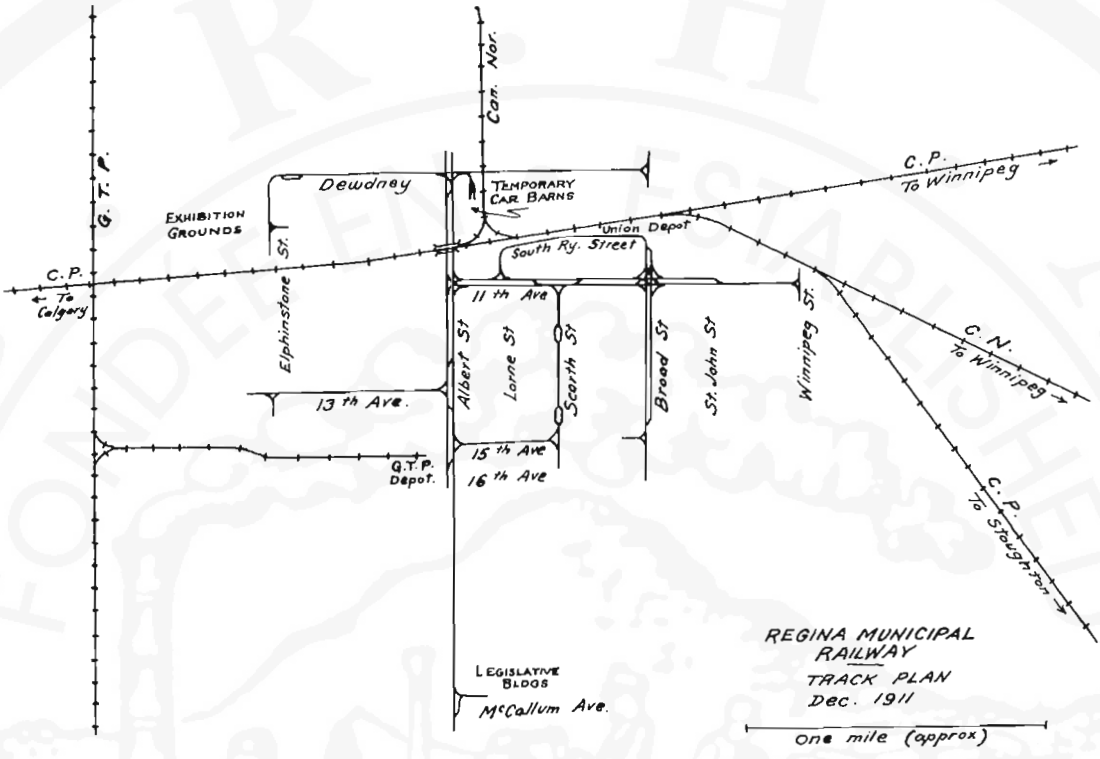
A STORY OF THE SIX ENGLISH BUILT STREET CARS THAT WERE THE MAINSTAY OF THE REGINA MUNICIPAL RAILWAY FROM JULY 1911 UNTIL EARLY IN 1913.

Regina, capital of the prairie province of Saskatchewan, was, in 1910, a proud city boasting a population of about 25,000. In May of that year, final plans were laid to enable the city to have a street railway system. Target date for completion was July 25, 1911, in order that cheap, efficient and regular transportation would be available from downtown Regina to the Exhibition Grounds about one mile away. For many years previous to 1911, the Exhibition Grounds were the centre of activity during the annual fair week generally held toward the end of July or beginning of August. In 1911, however, the Dominion Exhibition was to be hosted and the city of Regina was most anxious to have car service to transport citizens and an expected influx of visitors to the site.

In May 1910, City Council decided on a municipally-owned system to be called the Regina Municipal Railway. November, 1910, marked the calling of tenders for the provision of four single truck cars and two double truck cars. Bids were received from European, British and Canadian firms; but the latter, which included the Preston Car and Coach Company and the Ottawa Car Manufacturing Company, were unable to deliver by the July 1911 deadline because of previous commitments. A Belgian firm, Les Ateliers Metallurgiques of Brussels apparently could have provided cars to the Regina specifications, but that firm had not submitted complete prices and there was fear that further negotiations would be too time-consuming. On the other hand, the Canadian Ford Company of Montreal, negotiating for the Brush Electrical Engineering Company of London, England, could guarantee delivery by June 25, 1911. On January 30, 1911, Regina City Council gave final approval for the order to be placed with the Brush Firm. The two double truck cars were to be delivered complete with air brakes and quadruple motor equipment at $7,194.80 each and the four single truck cars with double motor equipment and hand brakes at $4,291.80 each.

During the intervening months track plans were finalized and by April 1911 crews began working day and night to lay the essential portions of line. By Exhibition time double track was completed on Eleventh Avenue West from Rose Street to Albert Street and on Albert Street north from Sixteenth Avenue to Dewdney Avenue. On Dewdney a single track was completed west from Albert to Elphinstone Street, then two blocks south to a wye at Tenth Avenue at the Exhibition ground gates.

On Tuesday July 4, 1911, the four single truck cars arrived in the C.P.R. yards. They were shortly afterward moved to the temporary barns erected at McIntyre and Dewdney just one block east of Albert Street. Here final assembly and adjustments were carried out under the direction of Mr. W.R. Nowell a representative from the Brush Electrical Engineering (Falcon Works) where the cars were built. Apparently one car was briefly tested on the afternoon of Wednesday, July 26, 1911, but major testing took place on Thursday, July 27, when at 2:25 p.m. car number 3 moved out into daylight



ran south on Albert, backed up on Dewdney Avenue, then ran west on Dewdney to the exhibition wye. When car 3 returned to the barns, each of the three remaining cars in turn made a similar trip. At 5:00 p.m., one car ran to Eleventh Avenue and Scarth Street in the heart of the city, wyed and returned to the barns, but not before drawing much favourable comment from home-bound workers. At 8:00 p.m., all four cars ran downtown, where they remained for some time allowing citizens to inspect them.

The exterior finish of these wooden cars was mahogany set off with a neat silver border around side and end sheathing as well as woodwork above the front windows. Silver digits 1, 2, 3, and 4 indicating the respective unit numbers appeared on the front centre immediately above the headlight, and on the centre of the rear panel. Centred below the car body windows on each side the words "Regina Municipal Railway" appeared in silver lettering. Each car was topped with a white deck-type square-cornered roof. On the left side there was no break in the wood sheathing at the front or rear bulkheads leaving the impression that the platforms were an integral part of the car body. The front and rear ends were very slightly curved, deviating enough from the predominantly square design to lend a pleasing touch to the somewhat otherwise severe exterior of the cars. Since the cars were built for single end, two-man, pay-as-you-enter operation, the rear platform was longer than the front. The former was fitted with brass handrails so that boarding passengers were directed past the fare box and into the body of the car through a sliding door in the left side of the rear bulkhead. Those leaving the car passed onto the rear platform through a similar door on the right side of the bulkhead. Disembarking passengers also had access to a front platform exit through a pair of sliding doors in the centre of the front bulkhead.

The interior was predominantly mahogany, with ceilings finished in a bird's eye maple veneer. Windows were fitted with pinch handle blinds. Fourteen transversely-arranged rattan seats plus two longitudinal seats at the rear provided seating space for thirty-two passengers. Overhead straps at each end provided standing room for about twelve additional passengers.

Mechanically, the cars were set on what were described as Brush Electrical Engineering's 21-E type eight foot wheelbase single trucks powered by two Brush 1204E 40 horsepower motors operated by K-10 controllers. Over the bumpers, they were thirty-three feet long. On delivery each car was equipped with storm sashes, electric heaters and platform doors, but the latter were never installed on the rear platform. Before the first winter set in the railway installed forced air coal stoves on the front platform of each car. In summer the stoves and storm sashes were removed and the permanent inside sashes could be lowered into side pockets.

On Friday, July 28, 1911, the four cars were backed a block east on Eleventh Avenue from the Scarth Street wye and spotted in numerical order in front of the city hall building. Hundreds of Reginans lined the street to witness the official opening of the Regina Municipal Railway. At 10:00 a.m. a brief ceremony took place, then with Lieutenant-Governor Brown of Saskatchewan acting as motorman, car 1 pulled away with prominent provincial dignitaries aboard. Car 2 with the city fathers as passengers and Mayor McAra as motorman followed. Members of the Board of Trade were aboard car 3 with their president, T.B. Patton, doing honours at the control. Car 4, driven by Alderman Shaw, Chairman of the Street Railway Committee and carrying street railway officials, brought up the rear. The procession operated over all of the completed portions of the system going first to the Exhibition Grounds and then to the southern terminal at Albert and Sixteenth. When the cars returned to the downtown area and safely discharged their passengers, Mayor McAra declared that all fares be suspended for the remainder of the day. Eager, curious citizens took full advantage of the declaration. Reports at the end of the day indicated that the four little cars had carried a total of some 7400 passengers. One reporter estimated that 107 people crammed aboard one car on one occasion; but average loads consisted of 50 or 60 passengers. Most enthusiastic riders were young boys who were always eager to clamber aboard for as many rides as possible. One youngster was reported boasting at 11:00 p.m. that he had made twenty-four trips to the Exhibition Grounds!

Next day twenty-minute service was available between the Scarth Street wye and the Exhibition Grounds. Fares were set at 5¢ per trip or patrons could purchase five tickets for twenty-five cents. Apparently the novelty of riding the new cars had not worn off as the system reportedly carried 5500 revenue passengers on that occasion. The exhibition opened on Monday, July 31, with cars 1, 2 and 3 providing ten minute service to the grounds from Scarth Street. Car 4 operated on a thirty minute schedule from Albert Street and Sixteenth Avenue to the Exhibition Grounds. These two routes continued until the fair closed on Saturday August 12, when the railway announced that effective Monday, August 14, two new routes would be introduced. Since the end of July double track had been laid on Eleventh Avenue east to St. John Street when it narrowed to single track and continued to Winnipeg Street. Cars 1 and 2 were designated as Red line cars providing 15 min. service from the eastern terminal at Winnipeg Street to the exhibition gates. The Blue

line offered similar service from Winnipeg Street to Albert and Sixteenth with cars 3 and 4. At night routes were identified by red and blue lights displayed on respective cars. Suitable signs in the front windows identified the routes by day.

The long overdue double truck cars numbered 5 and 6 finally arrived in Regina on August 28, having been held up in Manchester, England, by a shipping strike. Their basic design was identical to their single truck counterparts but they had twelve body windows as opposed to eight on the smaller cars. They were equipped with four Brush 1204E 40 horsepower motors, K-28 controllers and measured forty-six feet over bumpers. Forty-four passengers could be seated in two rows of eleven double rattan-covered transversely-arranged seats.

In the closing months of 1911 routes were being constantly adjusted or lengthened to accommodate newly completed sections. September 26 saw the Blue line commence service over the single track on Thirteenth Avenue from Albert Street to Elphinstone Street. A new route, the White line, began service on the same day from Eleventh Avenue and Broad Street to Albert and Sixteenth, but by November 2, this route was extended several blocks south on Albert Street to the Legislative Buildings wye at McCallum Avenue. Just over a week later on November 10, single track on Fifteenth Avenue and Scarth Street was completed and White line cars were diverted over this track on their trips between downtown and the Legislative Buildings. About the same time Red line cars were able to make their eastern terminal at Broad Street and Fifteenth Avenue. The Broad-South Railway-Lorne Street loop was opened to White line cars late in 1911 and its completion marked the fulfillment of the original track plan. The four English built single truck cars provided fifteen minute service from 6:00 a.m. to midnight six days a week on the Red and Blue lines while the two double truck cars worked the White line on a half-hourly schedule. In addition, at certain times of the day, one of the White line cars provided special service on Dewdney Avenue between Albert and Broad Streets. Early in 1912 the six cars in addition to carrying coloured lights to identify their respective routes, began to carry destination signs on the roof immediately above the front windows and on the right side below the window sills. These boards were lettered for their respective routes as follows:

Red line	BROAD DEWDNEY
Blue line	WINNIPEG THIRTEENTH
White line	UNION DEPOT PARLIAMENT BLDG.

A coloured disc appeared in the centre of each board signifying the route colour.

During 1912 and 1913 the Regina Municipal Railway tripled its original ten miles of track and increased its passenger rolling stock from six to thirty-four units. As the new cars were delivered from Canadian builders, the English cars generally held their own, but they were already suffering the effects of hard service encountered in the first two years of operation. They were apparently slower than the other cars, thus quickly becoming little more than tripper, standby or special cars. In November 1920 their original Brush motors were replaced by more conventional ones in hopes that they might be speeded up. One newspaper in 1920 reporting a very

Car No.5 on the WHITE LINE pauses on South Railway Street near Hamilton Street.
(1912)
The Union Station is shown under construction in the background at right side.
(Photograph courtesy Regina Chamber of Commerce)

minor accident involving an automobile skidding into the side of car 1, described the car as "one of the old English cars". In 1921, the front platforms of the four single truck cars were lengthened to allow them to be operated as one-man cars, but as far as can be determined the double truck Brush cars were never converted to conform with the system's one-man operation policy and doubtless saw little or no service after that time.

With the delivery of fourteen steel light weight cars in 1928 and 1929, the English cars were completely retired from service. In October 1935 cars 3, 5 and 6 were stripped of all their accessories and sold. Car 1 met a similar fate in April 1936 while cars 2 and 4 were sold about the same time. Regina's English built street cars, once the pride of the system, began their service amid cheers of welcome and colourful publicity, but they were retired from service and struck from the roster without ceremony at a time in prairie history when there was unfortunately little concern for ceremony.

Sources of Information.

1. Regina City Council Minutes (1911, 1935 and 1936)
2. Morning Leader May 1910
July 1911
August 1911
September 1911
November 1911
3. Regina Transit System
4. The Daily Standard July 1911

Notes and News

by Ferro

* The Ontario government has awarded a $4,309,840 contract to Hawker-Siddeley (Canada) Ltd. for the manufacture of 40 suburban commuter cars and nine self-propelled cars. The cars will be eighty-five feet long, electrically heated and air conditioned, and will seat 125 passengers. The nine self-propelled cars will be identical to the non-powered, locomotive-hauled cars. A $2,903,048 contract for eight suburban diesel locomotives was awarded to General Motors Diesel Ltd. The Ontario Highways Minister said that it will be more economical to use self-propelled cars instead of locomotive-hauled trains during non-peak periods. Service is to be maintained at twenty-minute intervals during peak periods and hourly during other parts of the day. The trains, between Burlington, Toronto, and Dunbarton, will operate from 6:45 a.m. to midnight and carry an estimated 15,000 commuters daily. The service will be operated by CN but losses will be paid by the Provincial government.

* Meanwhile CN has applied to the Board of Transport Commissioners to discontinue four trains operating between Toronto and Hamilton, once the Government service begins operation. Trains affected are: No. 920 which leaves Hamilton at 6:15 am, No. 922 which leaves Hamilton at 7:00am, No. 921 which leaves Toronto at 5:20pm, and No. 923 which leaves Toronto at 6:20 pm. Such a move would mean that Hamilton commuters would have to travel to the Burlington station by bus or auto and transfer there to the new Ontario Government service. The City of Hamilton will, of course, protest the proposed discontinuance.

* Still on the subject of commuters, its interesting to observe what a difference a "W" makes. C&NW is using classified advertising to encourage more people to make use of its commuter operation to and from Chicago. CN, on the other hand, recently distributed circulars to Montreal commuters inferring that if the municipalities served by its Mount Royal Tunnel service don't take the operation over, CN intends to allow the service to become inadequate for the increasing number of people using it, and that people will simply be left standing on the platform. CN has made it clear that its love for passengers in no way extends to those passengers who travel daily on CN to and from work.

* On August 16th last, Canadian Pacific announced that its transcontinental passenger train "The Dominion" would be discontinued on September 7th, and an augumented passenger service provided by the company's other transcontinental train, "The Canadian". The Canadian would offer increased passenger accommodation both for coach and for sleeping car passengers. CPR spokesmen said the cancellation of the Dominion would free some 25 diesel units for hauling grain and other valuable commodities. Originally, the Board of Transport Commissioners indicated that they would not interfere with the CP's policy, but protests continued to mount, and at the end of the month, the Board ordered the CPR to halt the planned discontinuance. The cancellation plan was frozen, pending a series of public hearings at which the railway and communities along the CPR main line will be given an opportunity to argue for and against the proposed move.

★ Canadian Pacific, meanwhile, was given permission to drop passenger service between Farnham and Newport, Vt. The B.of T.C. has authorized the CP to discontinue trains 31 and 32 running between Montreal and the U.S. border near Highwater, Que. Cancellation of the runs may take place after September 20th, provided twenty days' public notice is given.

★ Canadian Pacific has created the impression that perhaps the honeymoon is over for nearly all its passengers. Effective August first, the Railway increased its one-way passenger fares on local lines and eliminated reduced rates on round-trip tickets. On some of its lines it also established a single fare, doing away with the special rates for coach and first class. A spokesman said the changes are to "improve the financial results of rail passenger business". Examples of the improvements: the new one-way fare from Toronto to Windsor is $11.25; the corresponding CN fare is $6.20 except Friday and Sunday when it goes up to $7.20. The new CP fare from Toronto to Sudbury is $12.80; the CN fare is $7.00 except Friday and Sunday when it is $8.00.

★ CN is providing Bathurst, N.B., with a new railway station. The new building will replace a station which dates back to the building of the Intercolonial Railway in the 1870's. Forty-five percent more space in the waiting room and concourse will be found in the new structure.

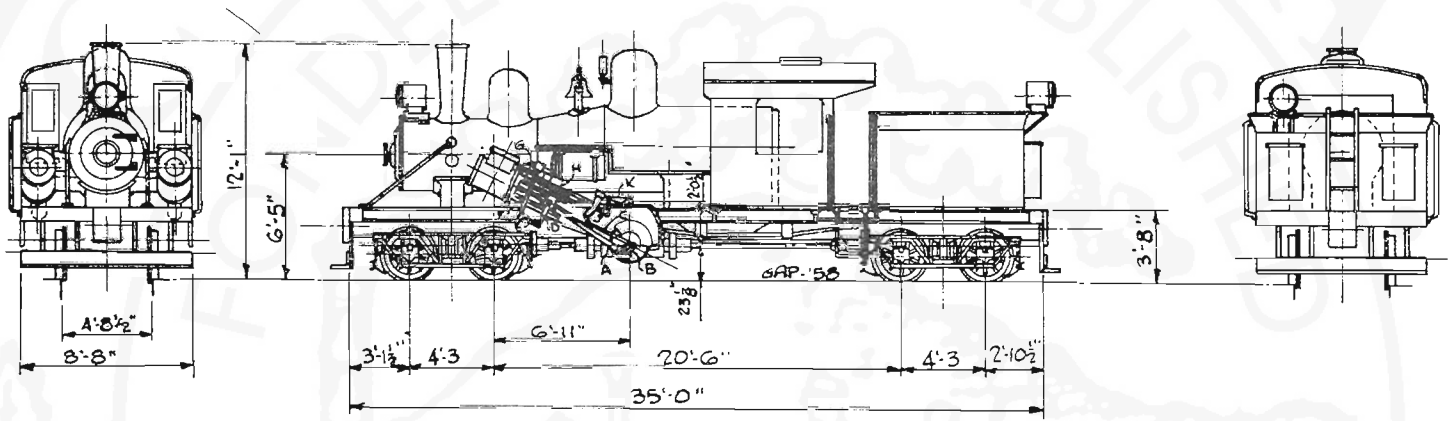
★ The Crysler Farm Battlefield Park railway museum has received a wood sheathed baggage car from CN to go with the locomotive and coach which have been on display there for the past half-decade or so. The park, near Morrisburg, Ontario, commemorates the successful repulsion of U.S. invaders in 1813.

★ CN is spending $8,600,000 for 100 seventy-ton woodchip cars and 500 seventy-ton double door box cars. The woodchip cars have a hinged door at one end and are unloaded in a fashion similar to a dump truck operation. Meanwhile CN welders at Calder, Alberta, and Port Mann, B.C., are converting a total of 65 gondola cars for similar operation in woodchip service.

★ A multi-million-dollar, 100-mile monorail system is being talked about to link Toronto and Buffalo by 1970. The system, if built, will carry 90-mph trains between the two cities in about an hour. The developer, Goodell Monorail Inc. of Houston, Texas will start this August to build the first $1,500,000 section of the line in the central district of Niagara Falls, N.Y.. The company will build the initial eight-block-long section at its own expense but has not decided whether or not to seek some public assistance from municipalities or the Provincial government for the Canadian sections. The "monorail" system will consist of two parallel rails suspended about 30 feet from the ground on columns spaced eighty feet apart. The three cars per train will look, it is said, like jetliners without wings. (Or perhaps like modern standard railway cars travelling 30 feet above the present underutilised rail lines --Ed.)

★ During the latter part of August and the first week in September, the Canadian National leased a number of coaches from the Canadian Pacific. Ten air-conditioned coaches (2100 and 2200 series) were rented and the Pacific company's red passenger equipment appeared on CN trains operating in southern Ontario.

DWG. 0440T-7



50 TON CLIMAX GEARED LOCOMOTIVE

BUILT BY CLIMAX MFG. Co., CORRY, PA. 1920

MAIN ROD - A = 4'-5¼"	LINK - F = 2'-0⅛"
CRANK - B = 7½"	LINK - G = 2¼"
LINK - C = 2'-6"	LINK - H = 3'-3¼"
LINK - D = 13½"	LINK - J = 9⅛"
LINK - E = 11½"	LINK - K = 12⅛"
CYLINDERS - 12" x 12"	WHEELS - 33" DIA.

WALSCHAERT VALVE GEAR

For this month's issue of 'Canadian Rail' Mr. G.A. Parker has produced another of his fine mechanical drawings. The CLIMAX GEARED LOCOMOTIVE was popular years ago with a number of industrial railways, particularly those with severe grade and curvature problems. Details of the locomotive illustrated are shown on the drawing.

NUMBERING OF MONTREAL METRO ROLLING STOCK

With the advent of rapid-transit rolling stock, and in order to keep all vehicle records and maintenance procedures on data processing machines, Montreal Transportation Commission has adopted a new numbering system into which all future vehicles will be fitted.

Basically, MTC vehicles will be divided into; (a) road vehicles, numbered above 5000, and (b) rapid-transit vehicles, numbered below 5000. Every vehicle will carry a 4-digit number, and in addition, a 2-digit prefix code number which will identify a particular group as to date in service, class, builder, etc. With this system serial numbers will run consecutively without break, - only the code number identifying a particular lot.

Vehicles engaged in any type of rapid-transit service, - present underground rubber-tired type or possible future surface rail type, - are divided into three general categories:-

Passenger cars without motors:	start at 0001
Passenger cars with motors:	start at 1501
Work cars:	start at 4501

Accordingly, the 369 metro passenger cars, the first of which will be delivered about September 1st., will be numbered as follows:-

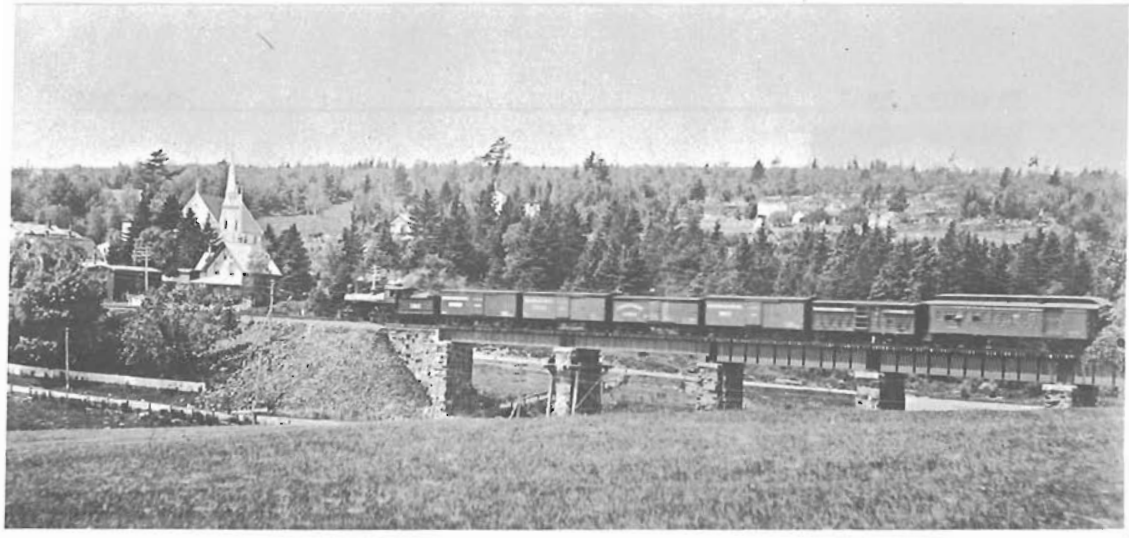
123 trailer cars:	80-0001 to 80-0123
246 motor cars:	81-1501 to 81-1746

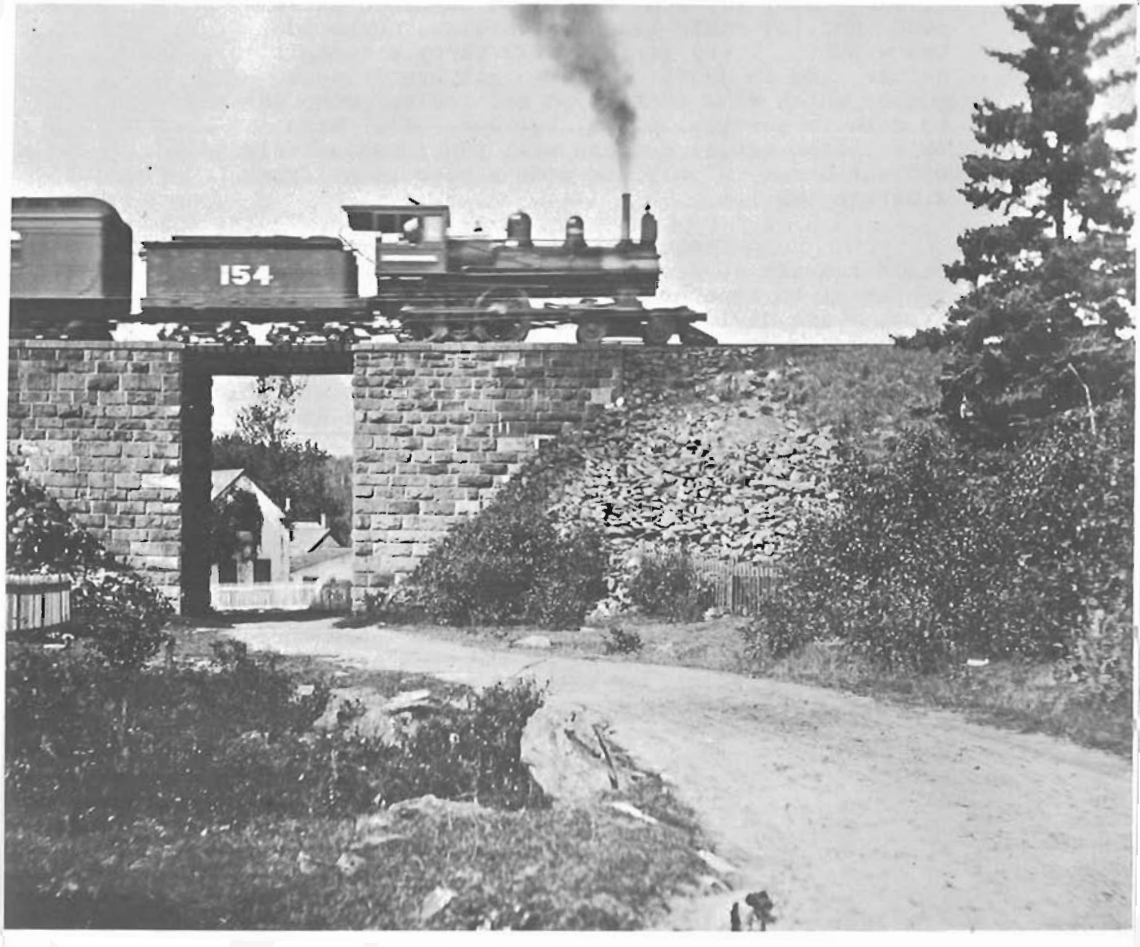
For operating purposes, each three-car set will be identified by the centre trailer car number, - regardless of which motor cars comprise the set, - namely set No. 1 to set No. 123.

Work cars are numbered as follows:-

13 flat cars:	82-4501 to 82-4513
4 diesel locos:	84-4701 to 84-4704
5 elec. cars (future):	83-4601 to 83-4605

(Autobuses will be numbered from 5001 upwards. The one hundred buses presently on order will be designated classes 35 and 36. General Motors vehicles will be numbered 35-5001 to 35-5050, while "Flexible" type buses being built by Canadair will be 36-5051 to 36-5100. No changes are contemplated in the numbering of buses at present in operation.)





Somewhere in the Maritimes many years ago, an unknown photographer recorded four railway scenes and his glass negatives were fortunately preserved.

We don't know where the views were photographed, the identity of the train, nor the occasion that prompted the picture-taking. Any information?

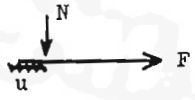
Why not a 5000 horsepower B-B diesel-electric ?

-- B. A. Biglow.

Why not indeed! After all, 5000 Horsepower 4-axle steam locomotives existed. The answer is quite simple - the limitations of the diesel engine.

But let us begin at the beginning. A fundamental law of physics states

$$F = u N$$



where F = horizontal force
u = coefficient of friction
N = normal (vertical) force

All locomotives must be designed around this simple law. Thus for a large F (tractive effort) a locomotive must have a large normal force (weight on driving axles) and a high u (clean rail).

If we want a locomotive to haul large amounts of tonnage, it must be heavy itself (at least on driving axles). In order not to waste weight, non-powered axles should be minimized. Thus the appearance of B-B diesel electric units -- all wheels contribute.

Fine! So one makes a locomotive heavier and heavier. But wait. Along comes the designer who limits us to around 30 tons per axle (This is caused by axle bearing and track limitations). And immediately the usefulness of the B-B unit has been specified. Total locomotive weight is fixed at around 120 tons.

How about u - the coefficient of friction? Here is a factor about which reams could be written. Experiments have been conducted to clean rail thus increasing u but to date an economical means has not been devised. Thus the locomotive must work using the u available, be it greasy rail or perfectly clean. The worst rail usually exists on a misty day when the contaminants form a lubricant but are not washed off.

Let's go back and look at what we have found:

(1) The maximum weight per axle is around 30 tons.
(2) The coefficient of friction is variable.

Most designers assume a coefficient of friction of 0.25, commonly called the adhesion coefficient. (Its inverse 4.0 is called the factor of adhesion). However, considering all conditions, a coefficient of adhesion down to 0.18 may be found and this figure is sometimes used by transportation departments.

Thus a design figure of 60,000/4 or 15000 lbs./axle is the tractive effort per axle of the unit leading to 60,000 lbs. total T.E. for the B-B unit. This figure may be reduced under poor rail conditions.

Now let's consider moving a train. Ideally one would like to accelerate the train quickly to running speed and maintain this speed. For constant acceleration (ignoring friction, etc.) by Newton's Law

Force = mass x acceleration

i.e. for constant acceleration a constant force is required and for maximum acceleration the maximum force is required. Well the maximum force is 15,000 lbs. axle and we would like to sustain this up to running speed.

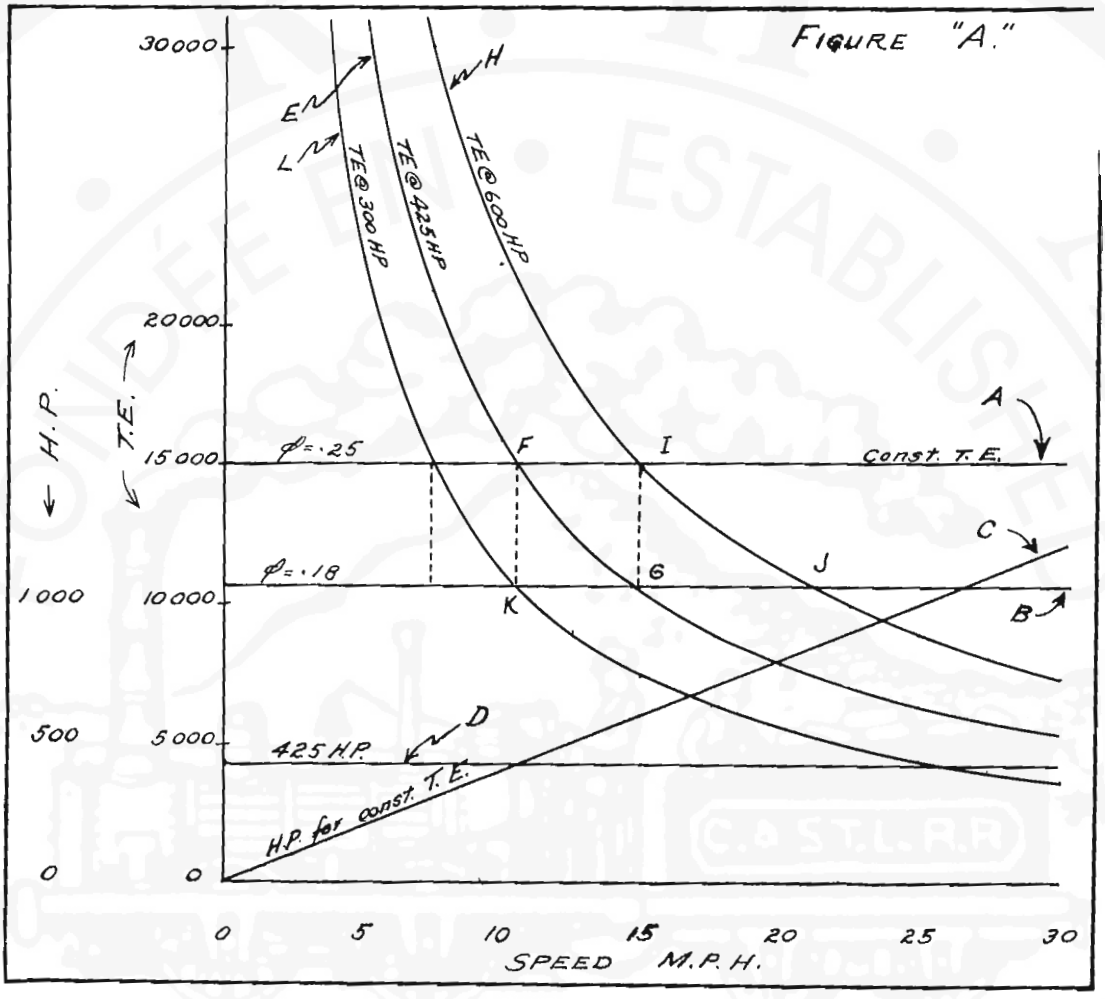
On Figure "A" the TE corresponding to 0.25 and 0.18 adhesion factors are plotted as lines A & B. The horsepower corresponding to a constant T.E. of .25 is plotted as line C. Note that this is a straight line of increasing H.P. for increasing speed. The low speed characteristic of a steam locomotive closely approximated this line. (In actual fact, the coefficient of adhesion decreases slightly with speed. This secondary factor will be ignored.)

But we have a prime mover of constant H.P., namely the diesel engine. This constant H.P. is plotted as line D. The tractive effort corresponding to this constant H.P. is a hyperbola of T.E. plotted as line E which has a sharply increasing T.E. as the speed is reduced. This sharply increased tractive effort is the secret of the diesel's ability to start cars moving. (It does not say it can move them quickly.) Obviously one hooks everything, including the kitchen sink, behind a diesel.

Such thinking ignores the fundamental law F = u N, for as the engine is slowed down eventually a point is reached where the wheel lets go and slips. If the rail adhesion is good, it slips at point F. If the rail is bad, it slips at point G. An extremely good rail may allow more T.E. than point F at a correspondingly slower speed. If more horsepower (line H) is put into the same axle it reaches the adhesion limit at higher speeds namely points I and J for adhesions of 0.25 and 0.18 respectively. Thus a high horsepower unit tends to be slippier than a low horsepower unit of the weight/axle. Placing more driving axles under the unit without increasing the total weight will have no effect since the T.E./axle decreases in exactly the same proportion as the weight/axle. Going to 6 axles and increasing locomotive weight to 180 tons allows more total T.E. to be generated at slower speeds but the T/E./axle is not increased.

Another factor is the limitation on the current fed to the traction motor. The current increases as the unit slows down and the heating effect of the increased current destroys the motor insulation and hence life. Because of the mass of iron in the motor, a certain amount of over current can be tolerated for a time before the motor is overheated. Normally a traction motor can run at speeds of around 10 m.p.h. continuously without overheating, and this speed is known as the continuous speed. Loading a train with tonnage which slows it below the continuous speed risks burning the motors as well as problems of wheel slip due to the high tractive effort and is not to be recommended.

Factors of adhesion of 0.40 have been claimed for Krauss-Maffei units and others. What about this? When a coupler force is exerted, it causes a larger percentage of the locomotive weight to be supported by the rear truck and similarly within the truck itself. Thus the leading axle supports less than its share of the locomotive weight. For this axle to exert 15,000 lbs. T.E. the coefficient of friction must be considerably higher than the nominal figure of 0.25 leading to the high coefficient of adhesion mentioned. Axles coupled with gears share the weight leading to better nominal adhesions. The dynamics of the locomotive suspension also affect the actual working coefficient of friction required for non-slippage of axles.



What then is the place of the high horsepower four axle units? First they are not "tonnage hounds"since the earliest FT could start an equivalent amount of tonnage. Indeed the misuse of high horsepower tends to make tonnage starting difficult due to slippage. If tonnage is to be moved, more axles and more locomotive weight is required. If,however, the engineman notches out carefully (and slowly) attempting to increase horse power with speed, i.e. work along a constant tractive effort line, the horsepower becomes useful in sustaining acceleration to high train speeds i.e. "hot shot" trains. Graphically the engine moves from line L to line E to line H at appropriate speeds. Opening the throttle before train speed is obtained merely puts the engine over the sustainable T.E. curve and the engine slips until the correct speed is obtained. (This method corresponds somewhat to the peaking current method usually recommended where the throttle is advanced a notch when the current peaks in the previous notch).

TWO NEW PUBLICATIONS ISSUED BY CRHA

Canadian Railroad Historical Association has published two new books on Canadian railroading.

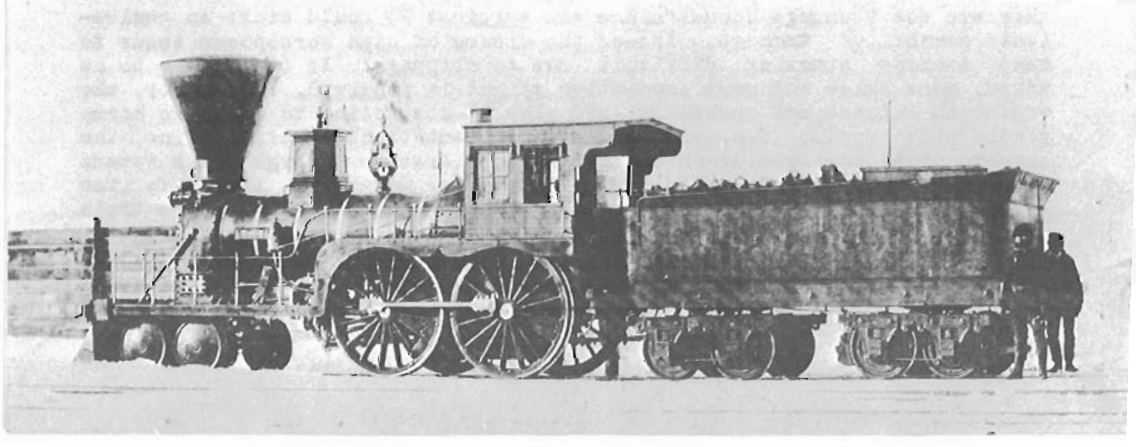
These two illustrations are from the pages of

a) "Beloeil". This is the story of Canada's worst railway disaster, in which one hundred persons lost their lives. Above is the only known photograph of the wreck which occured June 29th, 1864.

b) "The Road to the Sea". An account of the circumstances surrounding the contruction of the Saint Lawrence and Atlantic Railway, and the Atlantic and Saint Lawrence Railway, between Montreal, Canada East and Portland, Maine.

The photo, taken on December 18th, 1856, is the earliest known Canadian photograph of a steam locomotive. It shows Atlantic & St. Lawrence Railroad "Coos" locomotive, built by Portland Co's Works in 1850.

The books were written by Omer S. A. Lavallee and the late Robert R. Brown respectively. The latter is a re-issue, with extensive layout and photographic additions, of a bulletin published by CRHA in July 1953.



BACK HOME AGAIN

After a three year or more rest in the Weston Shop boneyard at Winnipeg, Canadian Pacific 2634 returned to her old stamping grounds at Moose Jaw where she worked for many a year. This engine worked on the Saskatchewan Division of the CP's Prairie Region at Regina, Moose Jaw and Saskatoon, and made many trips with trains 319-320 between Moose Jaw and Shaunavon.

A little over a year ago, a Centennial Committee was formed in Moose Jaw to secure a steam engine to be placed on display in remembrance of a past era in railroading history. CP 2634 was selected. To raise money for the locomotive's purchase, the Centennial Committee arranged to sell shares, and an unique scheme was employed to help the sale. An old CPR caboose was borrowed and placed on Main Street in front of Zellers Department Store, and remained in this location for some weeks, proving its worth as an advertising gimmick.

Finally, on Saturday, July 17th, engine 2634 arrived in Moose Jaw on Extra 8831 West from Winnipeg. The above photo, taken on the following day, shows the locomotive on a storage track near Moose Jaw Yard. The engine is to be sandblasted, repainted, and placed on display in Crescent Park.

The adjacent photo shows the caboose in its Main Street setting, as the advertising and publicity attraction.

Photos and information received from G.E. Bliss, Moose Jaw, Sask.

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Correct usage leads to improved train performance. Thus improvement in train speed with moderate tonnage is the justification for the high horsepower B-B units while the C-C high horsepower units can haul more tonnage at a lower average speed. Attempting to haul heavy tonnage with high horsepower 4 axle units will only lead to poor performance and dissatisfaction.

Because of the difficulties in using high horsepower units, sophisticated engine controls may be expected to develop, enabling better usage of high horsepower, but these controls are not expected to repeal the fundamental laws:

Horizontal force = coefficient of friction x normal force ($F = u\ N$)
Force = mass x acceleration.

BUT ARE WE ON THE RIGHT TRACK?

Recently, two U.S.magazines (Business Week 17-7-65, and Time (16-7-65) ran feature stories covering the proposals for high-speed "rail" transportation between Boston and Washington, USA. The USA Government is to spend some 90 million dollars on experiments and investigations, which are to include such innovations as hovercraft, monorails, levacars, and driverless electric buses, as well as conventional and not-so-conventional railways. Japan's Tokaido Express and a 130 mile per hour train at Munich, Germany, also come under the scrutiny of the writers.

These methods of travel may increase the speed of travel in the 100 to 1000 mile range. But is that the feature most lacking in the transportation picture today? Would increased speed lure the autoist from his car? And the other advantages of the proposed systems are already IMMEDIATELY AVAILABLE on present-day railway lines IF someone would pay the bills (or at least hide the costs in taxes).

Is that, however, where our efforts at transportation research are most needed? Is not regular and frequent service in the under-100-mile range the place where our transportation abilities are most lacking? This is the range where the most new potential travellers exist.

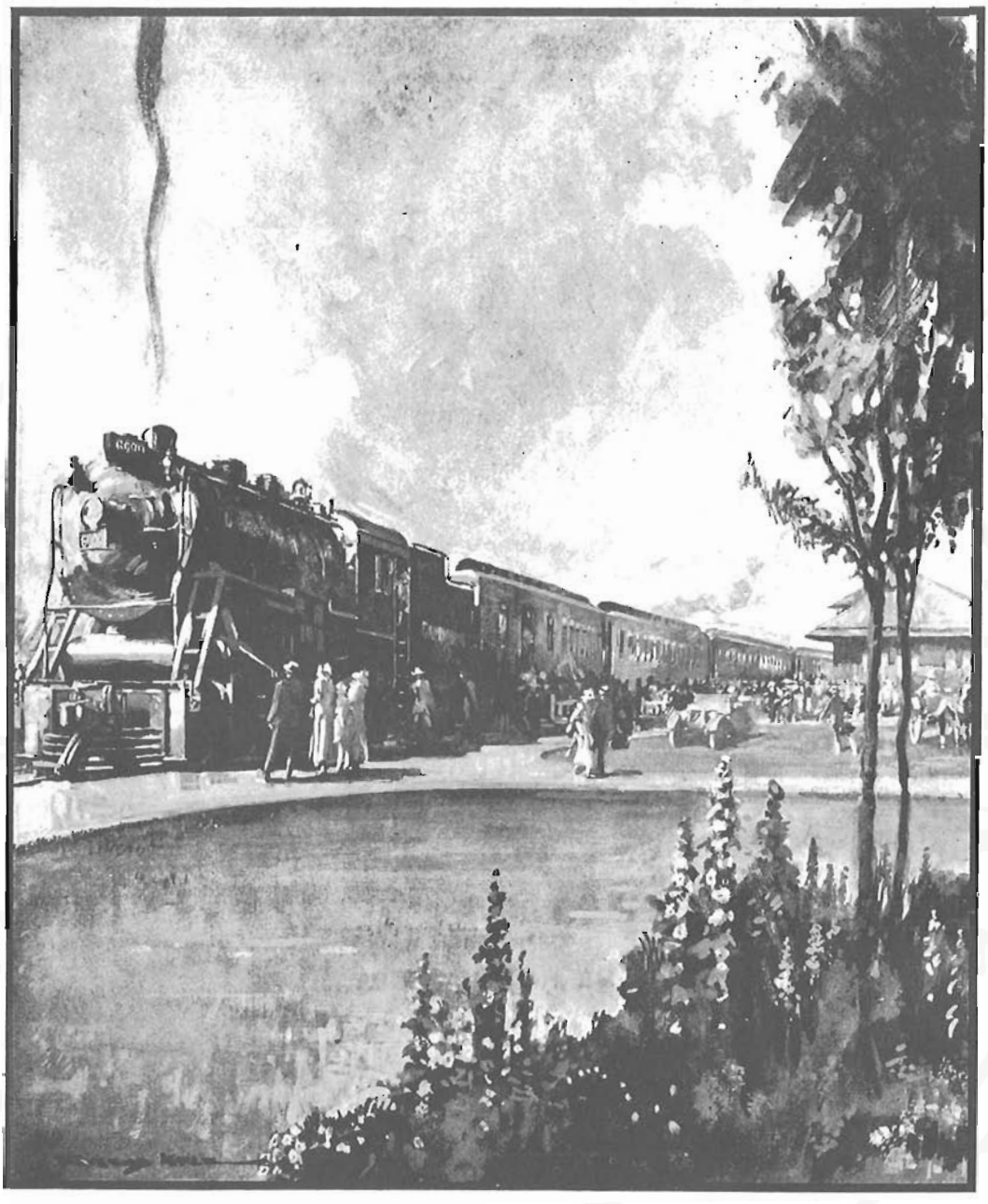
Again, rail lines can still provide the desired services most efficiently in this range, if profit and loss accounting and rate-making were geared realistically to the requirements of the patrons. (i.e.(1) such travellers do not require elaborate terminals and the expensive facilities of "Main-Line" stations: (2) it costs no more to carry a passenger to the train's destination than to carry a passenger one-tenth of that distance.)

Will hovercraft, levacars, and other such technically-possible marvels of our Engineering Age be able to solve a problem which is really not an engineering problem at all, but one of finance and the allocation of resources where they will do the most good?

Notice of meeting :

Next regular meeting of the Canadian Railroad Historical Association will be held Wednesday evening, October 13th at 8:00 p.m. in the McConnell Engineering Building within the McGill University grounds, Montreal.

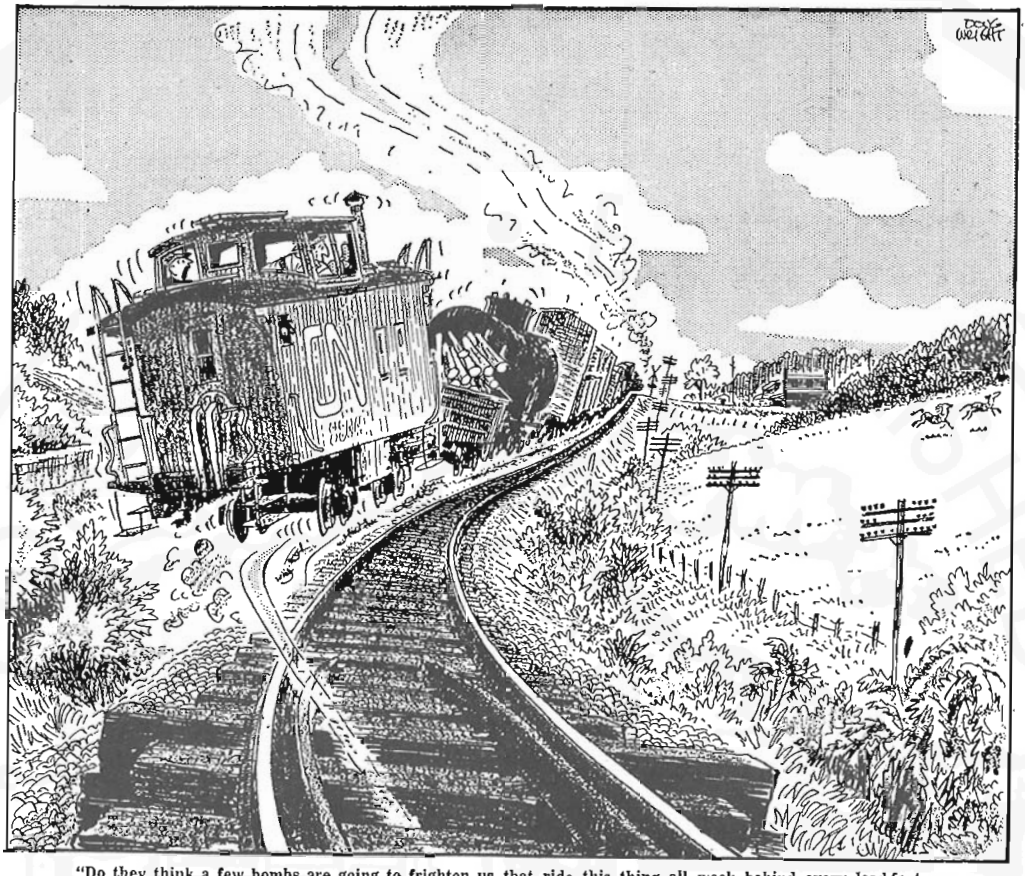
OPPOSITE: Contemporary sketch of Canadian National Railways crack train, The International Limited, which ran between Montreal, Toronto, and Chicago. From the Canadian National Railways magazine, July, 1923.



The
International
Limited

Shockproof

Doug Wright -- Montreal Star



"Do they think a few bombs are going to frighten us that ride this thing all week behind every lead-foot diesel driver on the spare list?"

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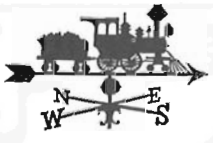

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