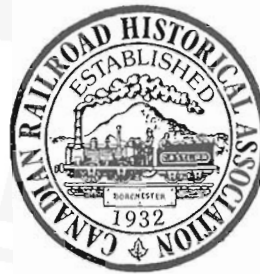


Canadian Rail

THE MAGAZINE OF CANADA'S RAILWAY HISTORY

No. 463



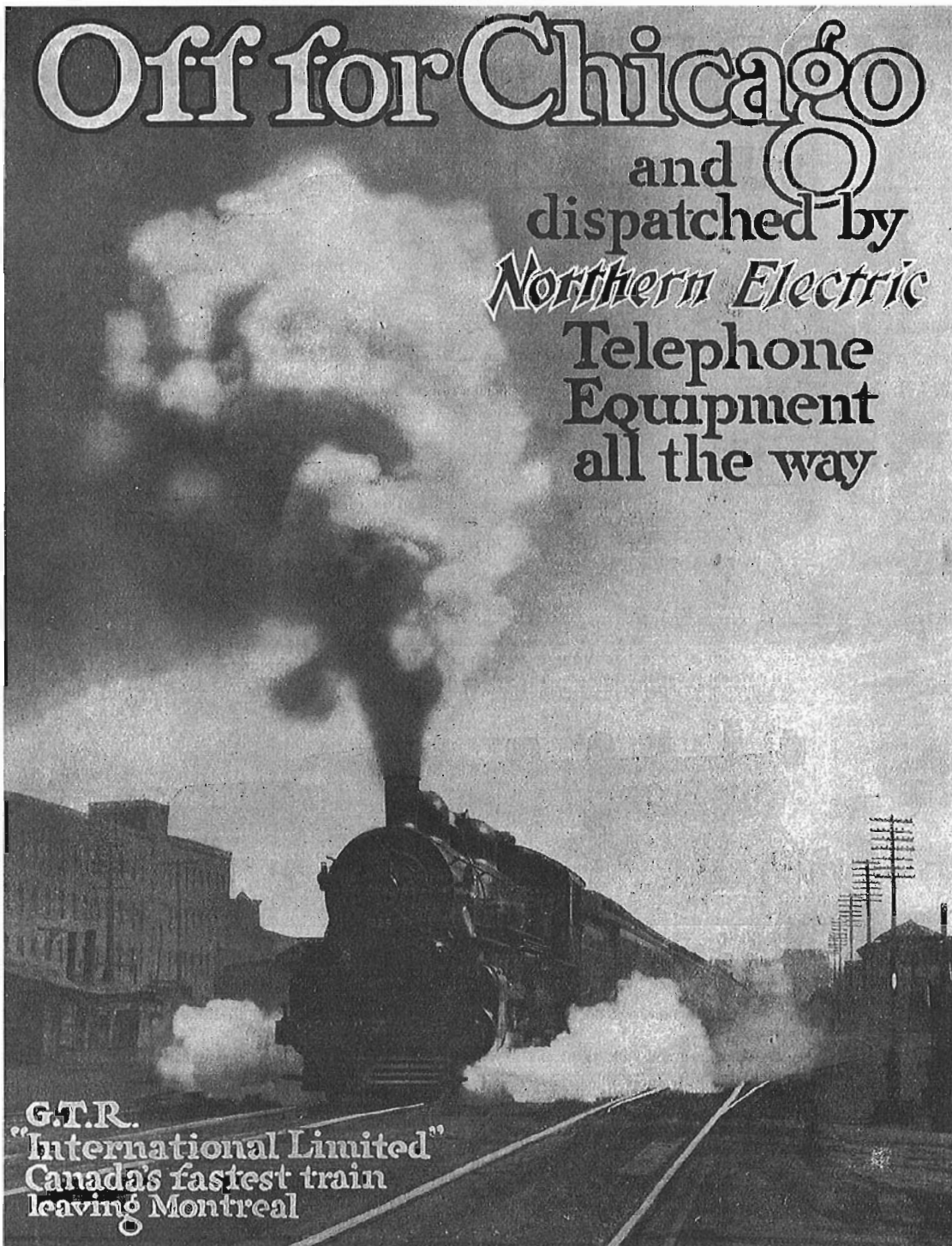
PUBLISHED BI-MONTHLY BY THE
CANADIAN RAILROAD HISTORICAL
ASSOCIATION

MARCH - APRIL 1998

PUBLIE TOUS LES DEUX MOIS PAR
L'ASSOCIATION CANADIENNE D'HIS-
TOIRE FERROVIAIRE

Off for Chicago

and 
dispatched by
Northern Electric
Telephone
Equipment
all the way



G.T.R.
"International Limited"
Canada's fastest train
leaving Montreal



CANADIAN RAIL

ISSN 0008-4875



PUBLISHED BI-MONTHLY BY THE CANADIAN RAILROAD HISTORICAL ASSOCIATION

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FRONT COVER: An example of the impressive railway advertising that appeared in the *Railway and Marine World* is this gem from *Northern Electric*. It appeared in the issue for July, 1914, only weeks after the company changed its name from *Northern Electric & Manufacturing Co.* to the *Northern Electric Company*. A month after this ad appeared Canada went to war.

BELOW: This advertisement for the *Robert Mitchell Company* appeared in March, 1928. It tells an interesting historical anecdote, albeit with two inaccuracies (the spike was driven at 9:22 A.M., not in the afternoon, and the photo was taken after the ceremony).

For your membership in the CRHA, which includes a subscription to *Canadian Rail*, write to:

CRHA, 120 Rue St-Pierre, St. Constant, Que. J5A 2G9

Membership Dues for 1998:

In Canada: \$36.00 (including all taxes)

United States: \$31.00 in U.S. funds.

Other Countries: \$40.00 U.S. funds.

Canadian Rail is continually in need of news, stories, historical data, photos, maps and other material. Please send all contributions to the editor: Fred F. Angus, 3021 Trafalgar Ave. Montreal, P.Q. H3Y 1H3. No payment can be made for contributions, but the contributor will be given credit for material submitted. Material will be returned to the contributor if requested. Remember "Knowledge is of little value unless it is shared with others".

EDITOR: Fred F. Angus

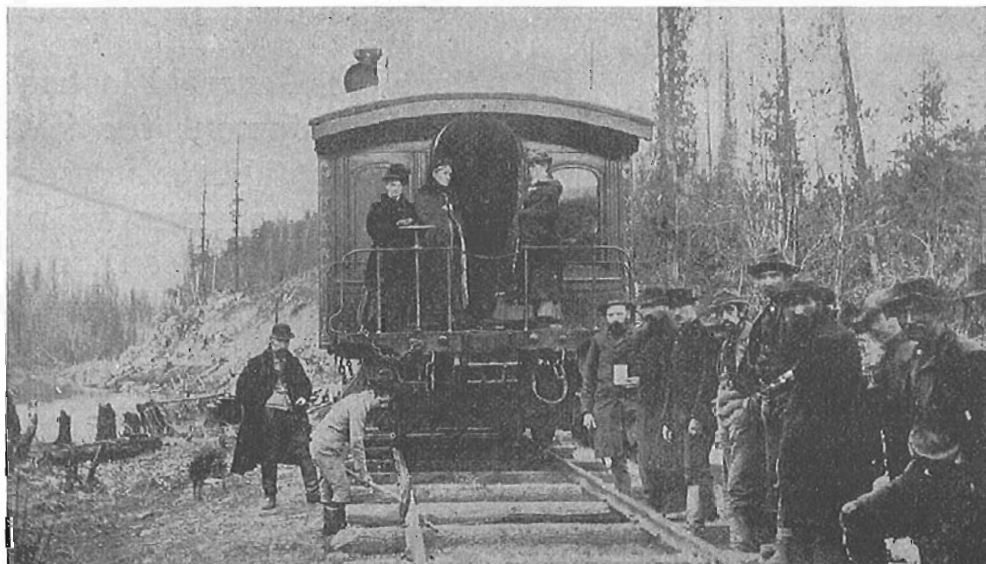
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ON the afternoon of November 7th, 1885, a little train chugged its way up through the Rocky Mountains to Craigellachie, B.C., and stopped. A crowd of whiskered men gathered about the train, waiting the appearance of Donald A. Smith (later Lord Strathcona), who was that day to drive the spike that would complete the Canadian Pacific Railway from Coast to Coast.

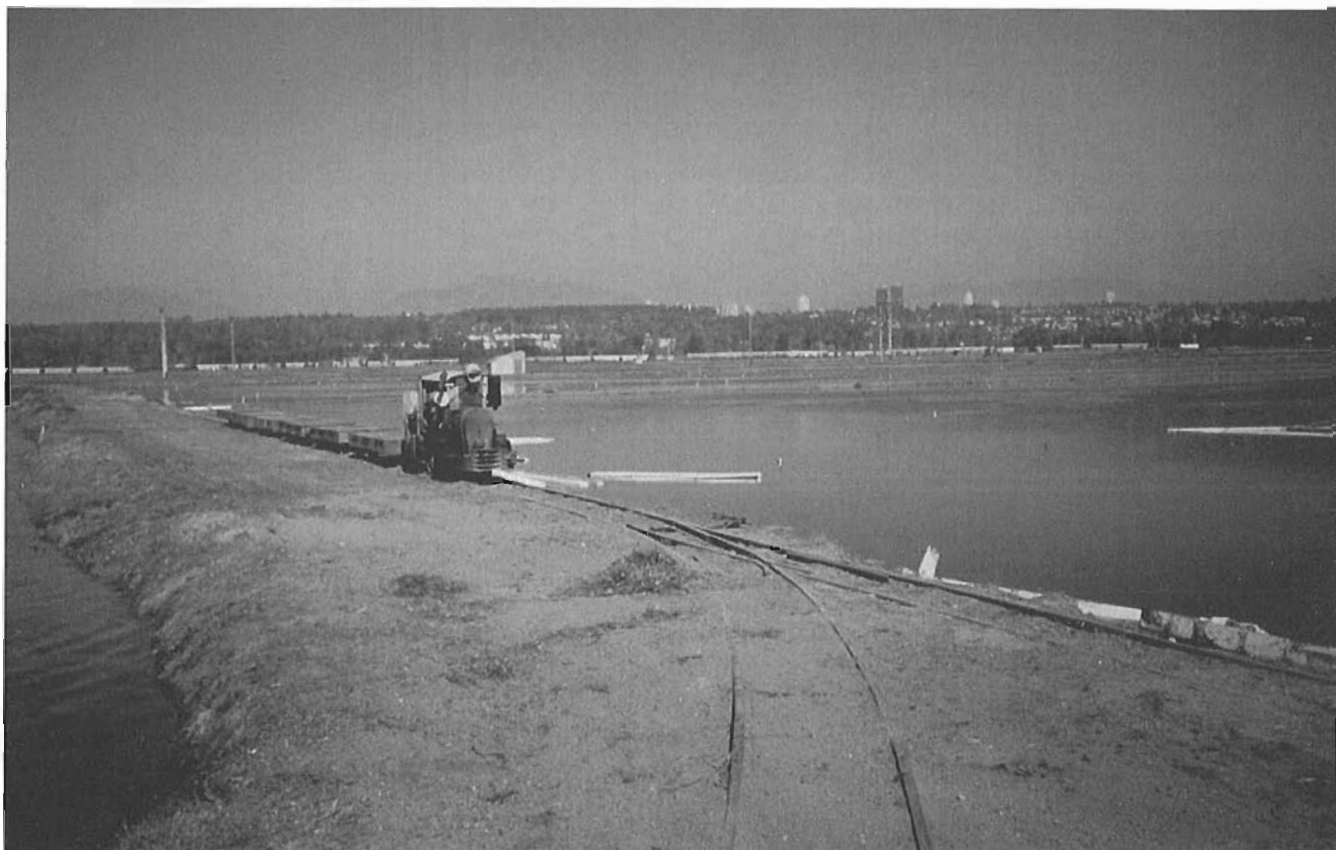
While they waited, a ten year old boy, the son of one of the railway contractors, came out, and with boyish curiosity began experimenting with a maul. The incident struck the imagination of one of the photographers, and to-day we have the above picture of J. K. L. Ross, now one of Canada's best known financiers and sportsmen, enacting a scene that was to go down in history.

THE ROBERT MITCHELL COMPANY, LIMITED

Makers of Railway Coaches and Car Fittings, Montreal

The 24-inch Gauge Columbia Cranberry Railway

By Mervyn T. (Mike) Green of Richmond, B.C.



Locomotive No. 3, running alongside a flooded cranberry bog. All photos by the author

Cranberries are much in demand at dinner time on Christmas and Thanksgiving, but are little thought of at other times. However, on the East Coast, many railfans are aware of the cranberry trains operated in Plymouth Massachusetts and the factory there, but very few are aware of the of the West Coast operations of the same owner (Ocean Spray), which are located in southwest British Columbia, in the City of Richmond. The site of the CCR occupies a peat bog area in the south central area of Richmond, between Cambie Road and the CNR Lulu Island yard, but there is no physical connection with the latter.

The two owners of the CCR are both farmers, located both north and south of Cambie Road, who own considerable acreage of cranberry bogs. They, and other owners have tried a variety of methods to move the cranberries from flooded bog site to nearby packaging plants. Because the plants live in peat and are harvested most easily by flooding the land, then agitating the plants by men walking through them, the field edges are diked with levees of 10 to 20 foot sides of earth. These have (at various times) supported farm tractors hauling short trucks, helicopters with baskets, and in the case of the CCR, an extensive 24" gauge rail line supported on standard gauge timbers cut in half, with a thin layer of granite ballast. The berries are lifted out of the water by cranes, then again by forklift truck from rail truck into road trailer. The present owners of the CCR have found that their method of transportation creates less damage to the levee surfaces than does any other method that they have tried.

The CCR has been in use since the early 1980s, but the extent of track (now about 3 miles) has been slowly extended each year, as the owners have found this method both swift and economical. At present, there are 4 diesel locos used to haul the 3 or 4 car trains, each of which holds 3 empty wooden boxes of cranberries, carried on steel underframes supported by bogies and built locally.

They are:

No. 1, an American Plymouth 4-wheel loco, serial 6196, built July 1959 of diesel-electric type FMD-00, which first worked for Birkett Creek Copper as its No. 1, from 1970 to 1982, then was sold to Nelson Machinery Co. of Savona, where it was rebuilt with a GMC engine and named "Jimmy".

No. 2, an Austrian Jenbacherwerke diesel mechanical 4-wheel loco, serial 1182, built in the 1950s for Teck Corp. at Beaverdell BC, then sold to Nelson Machinery in 1989 and then bought by CCR.

No. 3, a British Ruston & Hornsby diesel electric 4-wheel loco of type LBU, built 1958, serial 47806, for 42" gauge, but converted at Craigmont Copper Mines to 24" gauge, and bought by CCR in 1983.

No. 5, a British Ruston & Hornsby diesel electric 4-wheel loco of type LBU, built in the 1960s, serial 50683 for Northwood SK, rebuilt with a Deutz engine at NMC and bought by CCR in 1991.

The CCR operates only during the cranberry harvest, which is approximately October 8 to November 1. At other times the operation is silent, except when the owners invite children to ride behind their live steam / propane 4-4-0 loco No. 1865, named "Little Toot", built by Crown Metal Products of Wyano PA, and hauling 4 open-air steel bogie passenger cars, each painted dark green and sponsored by the Lions Club.

The CCR undertakes its own maintenance, which is done inside a one-road shed, located just to the west of 16300 Cambie Road. This is supervised by its Chief Engineer, whose other job is to keep running the huge diesel engines of one of BC Ferries ships, which are regularly berthed at Deas Docks, about a half mile to the south, on River Road. The CCR diesel locos are painted all over bright yellow on the hood & dark green over the frame.

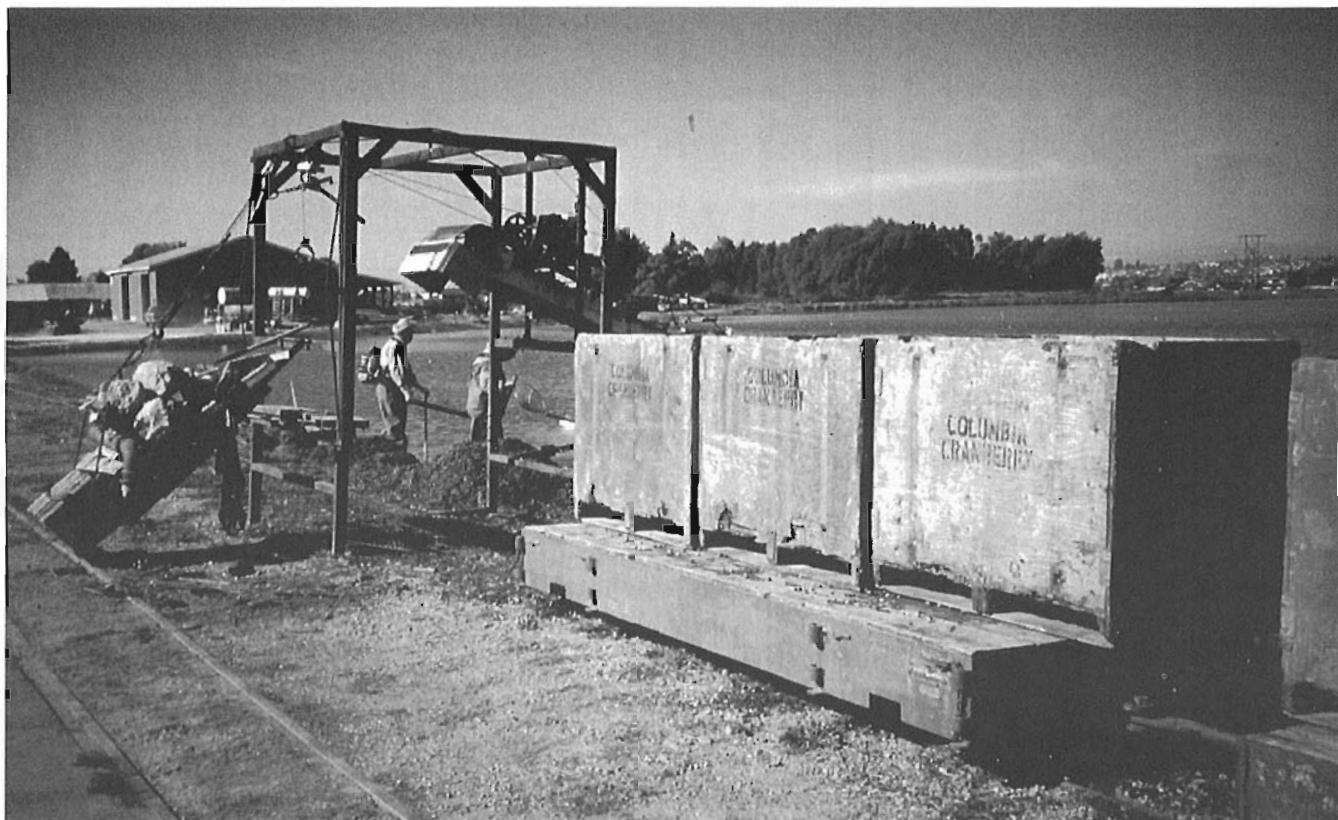
Sources:

Canadian Trackside Guide, 1997. Earl Roberts and Davis Stremes, Bytown Railway Society, Ottawa, pages 2-4.

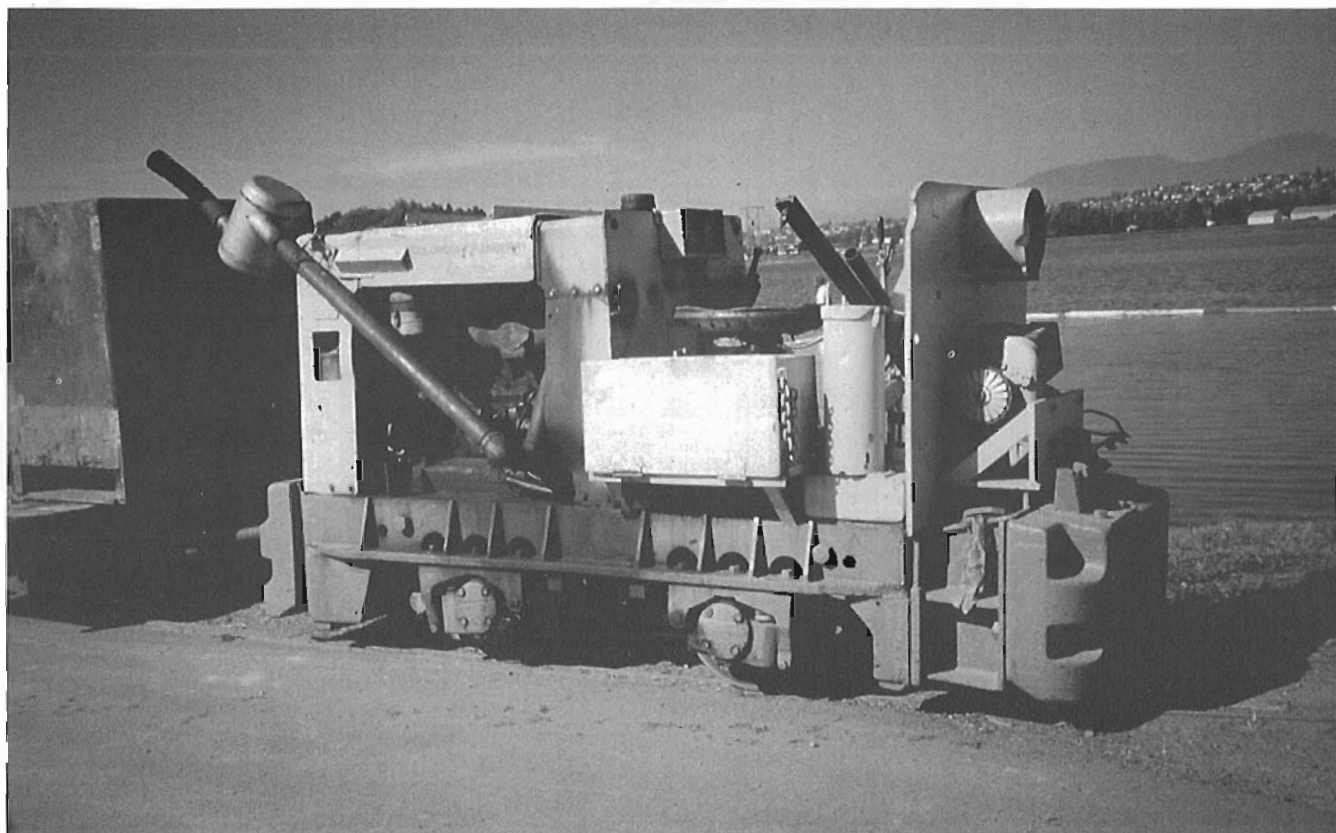
RIGHT: Elevator used to lift berries up to rail cars.

BELOW: Locomotive No. 1 alongside flooded bog.





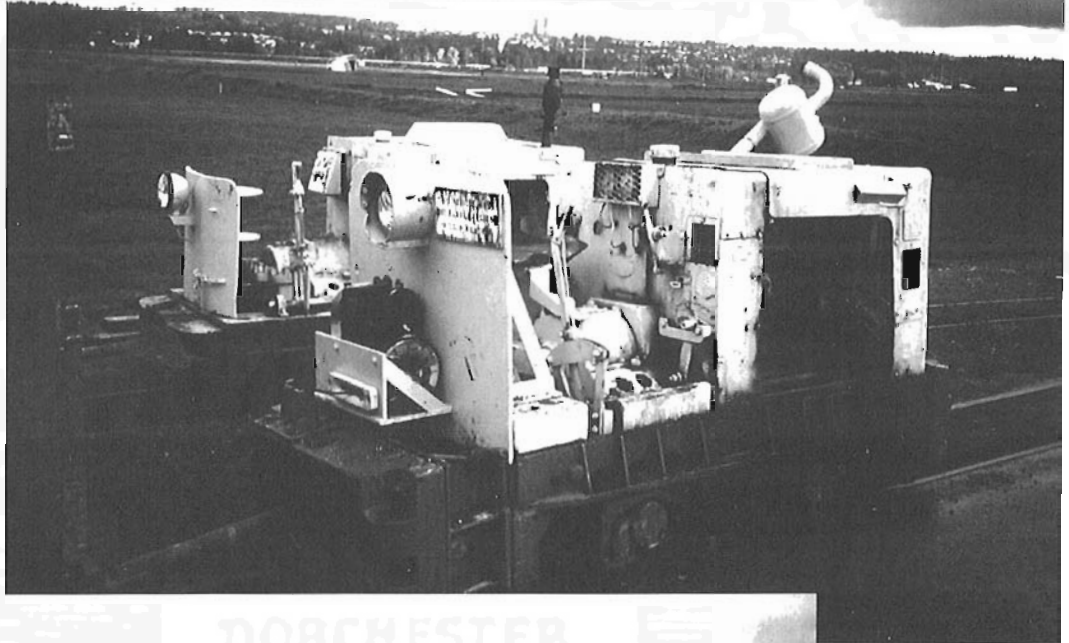
Elevator & one rail car carrying 3 boxes of berries



A close up view of locomotive No. 1 in service.



LEFT: Locomotives 3 and 1, each heading loaded trains of 4 flatcars.



RIGHT: Locomotives 1 and 5 side by side.

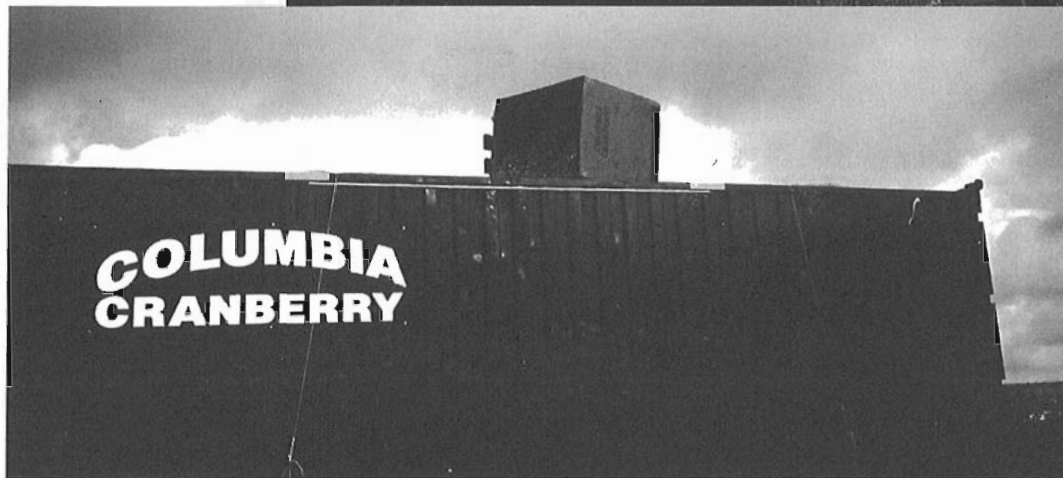


LEFT: A complete load of 4 boxes on a flat car.

RIGHT: Freshly-repainted locomotives 1 and 3.



LEFT: One of the berry boxes being tipped into the road trailer.



RIGHT: Columbia Cranberry road trailers awaiting boxes to transfer to the cranberry plants.



Napoléon Prince - Almost Famous?

By Peter Lacey

The history of the steam engine is inextricably associated with the great names who have been part of its development. Stephenson and Trevithick, Garrat, Gresley and Mallet, Baldwin and Bowen and Shay; all are as familiar to the student as is his or her own name. Almost as well known are the developers of major improvements: the Vanderbilt tender, the Belpaire firebox, the Westinghouse air brakes, come to mind. Smaller improvements are commemorated, as well; there are the Vaughan-Horsey super-heater and the Walschaert valve gear, for instance. Mr. Lunkenheimer had his steam valve and Mr. Johnson his bar; it seems that even the smallest parts of the engine are named for someone or other. Indeed, it might be an intriguing exercise to list the parts using their inventor's name instead of their proper name. But it's possible that one name would be missing from the list: that of Napoléon Prince and his connecting-rod coupling.

Napoléon Prince was the son of Pierre-Hubert Prince (whose lineage the family has traced to Jacques LePrince, who served with the regiment of Carignan in Trois-Rivieres in 1666) and Marie-Claire Lamothe. He was born in July 1852 in St. Joseph de Beauce in Quebec; his family moved to Kankakee, Illinois, near Chicago, and then to St. Boniface, Manitoba, arriving in 1875. He and Julie Gregoire married in Lorette, Manitoba, in 1886, and had six children. He died in 1925.

Prince was a rather remarkable man, not flamboyant but talented, imaginative, and hard working, who in the best tradition rose from humble beginnings to positions of authority and respect. His first documented job was that of mechanic to the ferry that ran between Winnipeg and St. Boniface from the dock near the Prince property at the foot of Dumoulin St. Napoléon was the



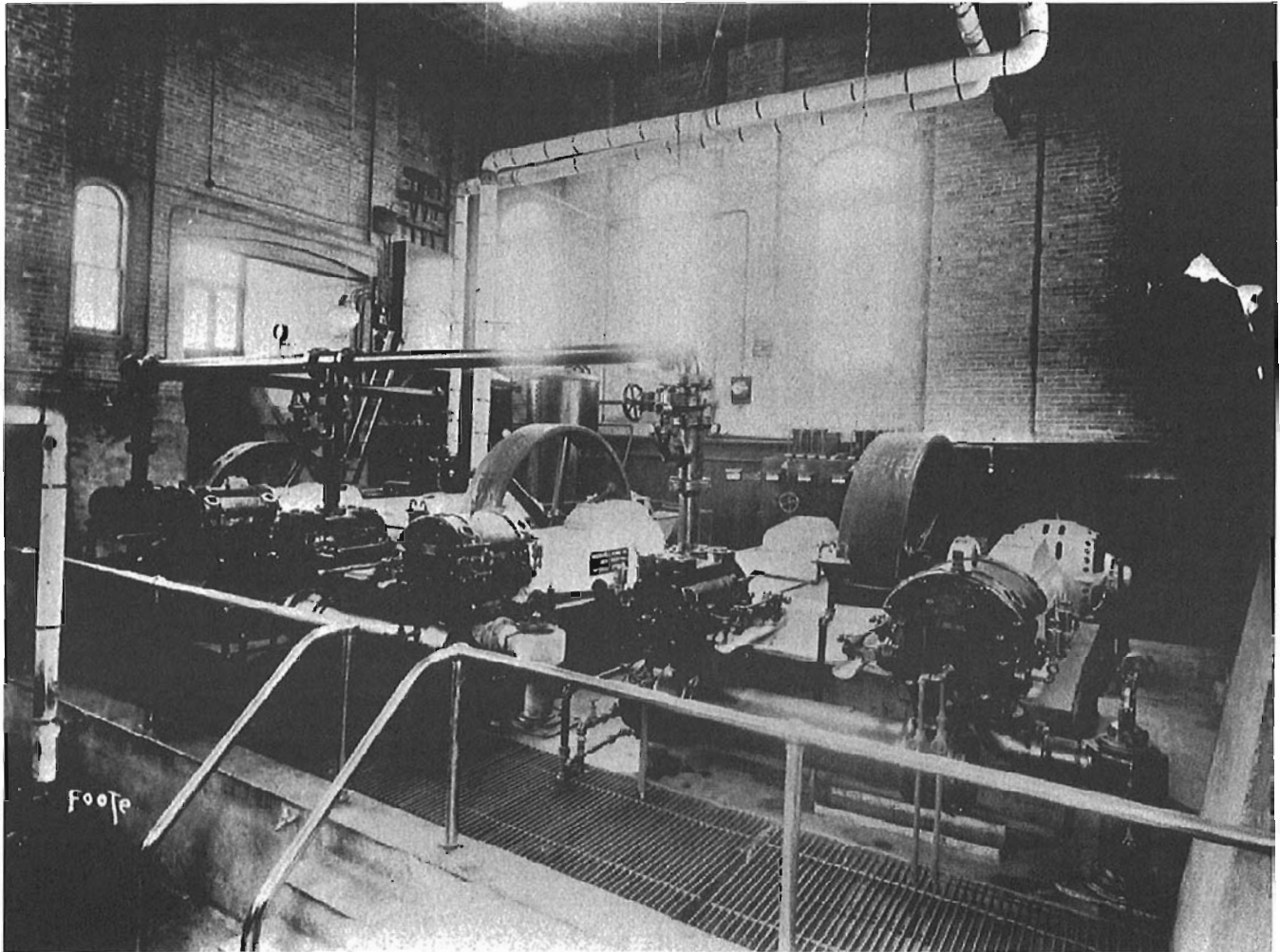
Napoléon Prince and Julie Grégoire, married at Notre Dame de Lorette, Manitoba on June 29, 1886.

Collection of Peter Lacey, published by permission of Phillipe Prince

mechanic that kept the ferry running, and he and his brother Wilbrod launched it in the spring, operated it during the season, and laid it up in the fall. Newspaper accounts and Manitoba Public Works records confirm that they performed this function in 1876 and 1877 although it isn't known how long they kept it up. In May of 1877, the brothers opened L'Hotel National in St. Boniface. This was the first commercial building in the city to have running water for its facilities; this was provided from a 15,000-gallon tank behind the hotel and was kept filled by a pump driven by a wind-turbine developed by Napoléon. He patented this before 1880 - patent No. 11,616, his first patent on record - in both Canada and the U.S., and in 1880 increased its versatility by driving a saw from it.

In 1880, at the beginning of the boom caused by the building of the CPR, the Prince brothers were offered \$25,000 for the hotel. They didn't sell, but in 1882 rented it out and moved to farm at Lorette (several miles south-east of Winnipeg, at that time quite far away).

Here Napoléon built and operated a sawmill. He also invented a counter which he attached to his threshing machine. Up until that time, it had been very difficult and time-consuming to determine the amount of grain threshed; with Napoléon's device, the job took less than a third of the customary effort and produced accurate figures. At that time, he owned a "Stevens & Burns" steam engine, for which he was in debt to the J. I. Case Company. The company heard of his counter, and, having verified its efficacy, offered to release Napoléon from his debt in return for the patent rights to it. He agreed; and although his device can be recognized as a prototype of many mechanical meters used subsequently - water and gas meters, for instance - his part in developing it is not known beyond the family.



An interior view of the pumping station of the St. Boniface water works, before 1919. This was before the Greater Winnipeg Water District took over the system.

Collection of Peter Lacey, published by permission of Phillippe Prince

In spite of his rural residence, Prince had evidently kept in touch with the larger world, for in 1903, St. Boniface Aldermen Antoine Gauvin and Telesphore Pelletier visited him to offer the position of engineer at the Pumping Station on Plinquet St. He accepted quickly and moved back into St. Boniface. As engineer, his duties included planning water mains and overseeing their construction, setting up pumps and pressure gauges, and supervising the operation of the station and ensuring that the water system maintained its pressure. Five wells had been sunk in the area to provide the supply; it was found that two were sufficient for normal purposes. These wells were 150' deep; their artesian pressure was only sufficient to raise the water to the 60 foot level. Prince employed an "air siphon" of his own design to lift the water to the surface, a device that was recognized as being more efficient than contemporary "Worthington" pumps. He didn't patent this device, as the City was supposed to compensate him for the rights, but it isn't known if the City did in fact take the patent out. Prince remained in charge of the pumping station until 1919, when Winnipeg's aqueduct was brought on line and the St. Boniface water supply was switched to it, and he remained in the employ of the city of St. Boniface until his death on January 10, 1925.

It is evident that Prince, while he might not have been too sharp a businessman, had a most inventive mind. In fact, he reg-

istered four patents beside his wind turbine: No. 26,097, in May of 1886, for a trellis-like piston-to-wheel linkage (which doesn't look as though it could possibly work); No. 73,303, in January, 1901, for a vote-registering machine; No. 121,700, in 1909, for a double-piston steam engine (which he also patented in the U.S., Great Britain, France, and Germany); and finally, a rotary engine, No. 155,772, in 1913. But, before we consider the railway connection, it is delightful to note that around 1890 he demonstrated a model bird, made of very light wood, which fluttered its wings and took to the air when he released it in a light breeze!

According to family tradition, he played another small part in railway history, in that he raised steam on the "Countess of Dufferin", on October 10, 1877, the day that she puffed and slipped and screeched her way on to land from the barge upon which Joseph Whitehead had brought her to Winnipeg.

His double-piston steam engine is described in the oppressive language appropriate to patent applications as follows:

"Our invention (this application was made by Prince and his son Rosario) relates to that type of engine in which a plurality of pistons are movable relative to each other in a single cylinder for the purpose of applying power to more than one point upon the shaft, thus effecting an economical use of the expansive medium, avoiding excessive lost motion and attaining many special advantages in construction and operation."

A.D. 1909. JUNE 28 N^o. 15,063.
PRINCE & another's COMPLETE SPECIFICATION.

· 1 SHEET ·

[This Drawing is a reproduction of the Original on a reduced scale.]

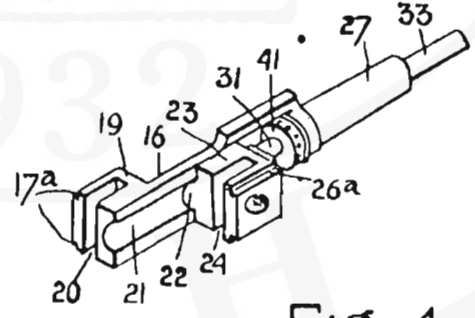
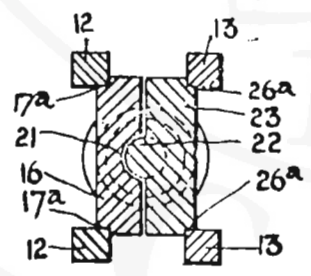
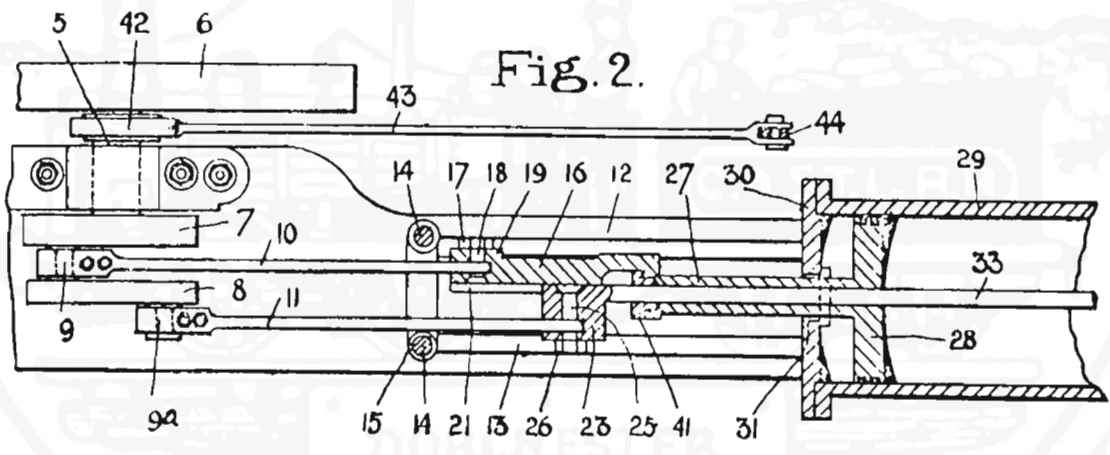
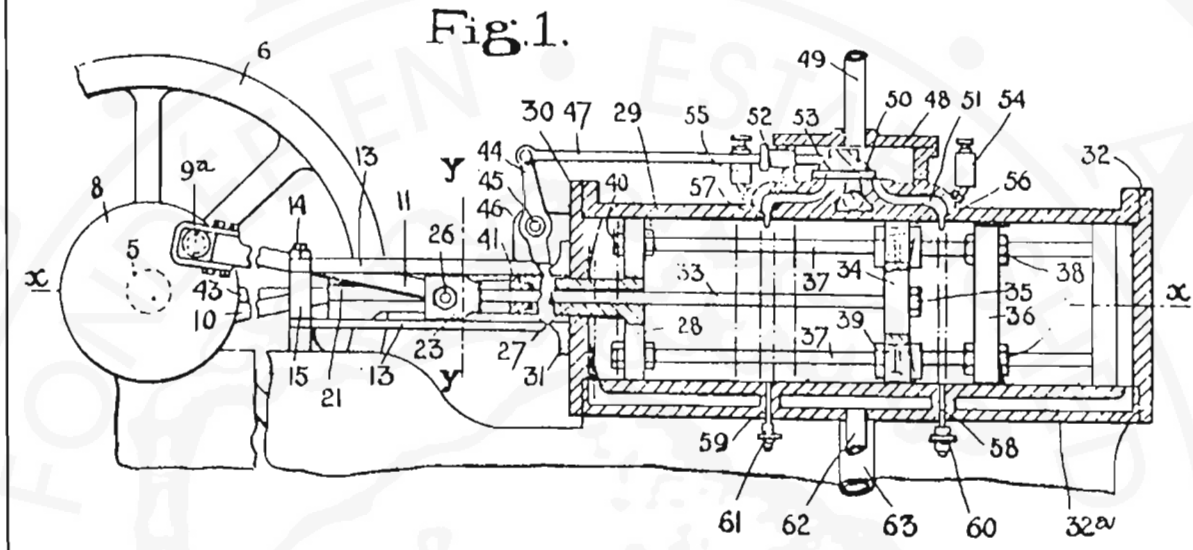
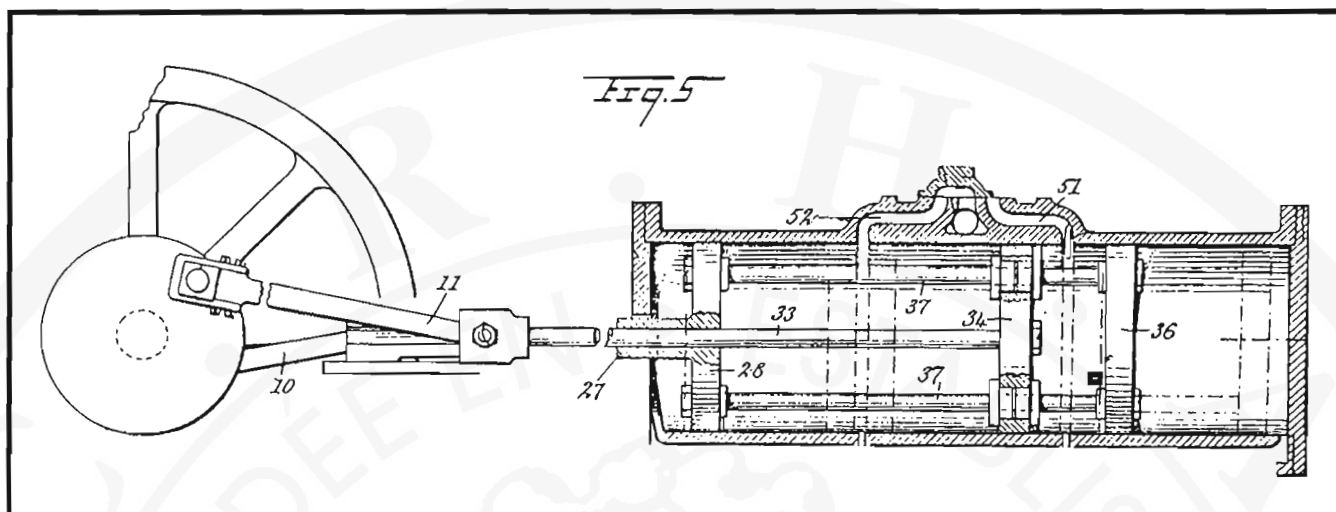


Fig. 3.

Fig. 4.



THIS PAGE AND OPPOSITE: Drawings of Patent number 15,063 issued to "Prince and another" on June 28, 1909. The method of operation of this invention is explained in the text.

"Our invention consists in the specific arrangement and combination of certain known parts as set forth in the claim hereto appended with the novel and specially constructed and compact forms of cross-head whereby the piston rods are attached to the connecting rods."

Figures 1 - 4 show the engine drawings as submitted with the applications. Each and every part is numbered and described in the ponderous manner required; and at first glance the machine appears too formidable to be comprehensible. But Figure 5, which shows only the essential moving parts, is much easier to understand.

Referring to Figure 5: the engine works as follows. Piston 34 is attached by rod 33 to the front or outer crank-disk on the wheel through rod 11. Pistons 36 and 28 are attached to each other by the two rods 37. Piston 28 is connected through sliders 27 and 16 to rod 10, which is attached to the rear or inner crank-disk, 180 degrees around the axle from rod 11. At the beginning of the cycle, with the pistons in the position shown, steam is admitted through steam passage 51; this forces pistons 36 and 34 apart, pulling piston 28 towards piston 34; rod 11 pushes on the wheel while rod 10 pulls on it. At the end of this part of the cycle, pistons 34 and 36 will be at their maximum separation whereas 34 and 28 will be at their minimum. Steam now enters through passage 52, forcing pistons 28 and 34 apart again and 34 and 36 towards each other, while rod 11 now pulls on the wheel and rod 10 pushes on it. The pistons return to their original positions and the cycle begins anew.

Several advantages of this design over the conventional single-piston approach are obvious. The wheels are balanced by the nature of the design, needing no counterweights; the stresses on the wheel from the rods are also balanced, since the rods are always exerting forces opposed to each other; there is no lateral force on the main bearing, for the same reason; and an increase in efficiency, using the same volume of steam, of 33% is claimed to be obtained. Prince published a small brochure titled "Prince's Improvement in Engines", the cover of which is reproduced here. The brochure gives the calculations which establish the claim of improvement in efficiency; the figures aren't difficult to follow (even though they involve integrals!), but are too lengthy to be included here. It would seem that further power could be gained

by admitting steam behind pistons 28 and 36 in the first and second parts of the cycle respectively, but either Prince didn't think of it or else the gain is not sufficient to justify the increased complexity of the mechanism.

Some disadvantages are evident, as well. There are considerably more parts than in the standard design; the rods 33 and 37 must go through moving parts - pistons 28 and 34 - rather than through a fixed wall, which must cause extra problems in sealing; and maintenance would have been more complicated. Most importantly, two main rods would be required on each side of the engine; the fastening of the inner one would be complicated, and the crank-disk assembly would have to be of very great tensile strength. (I am not entirely convinced that the expansion of the steam against two moving pistons rather than one would be as efficient, but then I'm no engineer).

But on balance, it would seem that the advantages outweigh the disadvantages of Prince's design. Considering that the railways were generally willing to try anything new and reasonably plausible, it's odd that one of the few known uses of this or a similar system (if not in fact the only one) was on the Intercolonial (supposedly according to an article by Omer Lavallée. Unfortunately this has not been verified as Phillippe Prince has lost the original of the article), which used a "Cleveland" patented system. Family tradition has it that the CPR, through Grant Hall, then Superintendent of Motive Power at the Weston Shops in Winnipeg, and a good friend of Prince, offered him the use of a locomotive on which to test and develop his invention, but he couldn't afford the investment in time and money needed, and so the opportunity was lost. It is not known if Prince's patent was taken up, by anyone, anywhere.

But (again according to family tradition), Hall was more interested in the "Prince" coupling between the cylinder and the wheel (items 23 and 26 on Figure 1). He told Napoléon that "you have an invention right there", but Prince was blasé - "just a mechanical detail", he said. Even so, the CPR was prepared to offer \$25,000 for the patent rights to the coupling, but Prince's son Rosario, acting as his business manager, held out for \$1 million! Needless to say, the CPR would not agree to this and no deal was ever made. It is possible that the CPR patented the idea in its own name but this is not known presently.

PRINCE'S IMPROVEMENT IN ENGINE

PATENTED JAN. 5th. 1909

R. J. A. PRINCE, B.A.
J. N. PRINCE, Engineer
INVENTORS

ST. BONIFACE, MANITOBA
CANADA

NO VIBRATIONS
PERFECT BALANCE OF CRANK WITHOUT EXTRA
WEIGHT
LESS LOST MOTION
MORE SPEED POSSIBLE
NO FRICTION ON MAIN BEARING
MORE ECONOMICAL USE OF EXPANSIVE MEDIUM

THIS IS WHAT IS OBTAINED WITH

THE

PRINCE'S PATENT

BY APPLYING POWER TO MORE THAN ONE POINT
ON THE SHAFT

WHAT DOES ALL THAT MEAN?

IT MEANS

MORE POWER WITH LESS EXPENDITURE

The front cover and introductory page of Napoléon Prince's brochure, describing his invention, and published about 1909.

So it would seem that Napoléon Prince missed two chances for fame, in the sense of his name being permanently associated with a locomotive part. Fame is usually a matter of making the right choice at the right time, but unfortunately it isn't given to most of us, Prince being no exception, to know when the right time is. He seems to have missed at least two chances at fortune, as well. But there is no evidence that he suffered thereby; rather he would have to be considered a success from most points of view, and to have had a life of interest and satisfaction. It is fairly certain that he had a good deal of influence on the state of the art in several mechanical areas, and it's for this that posterity should judge him.

POSTSCRIPT. Phillippe Prince has been conducting research on his grandfather Napoléon's life for many years now. Most of the assertions in this article are backed up by the documentation he has gathered - newspaper articles, patent grants, etc. Anything not so attested is related as being "family tradition" - which doesn't mean to say that it is fabulous. The purported im-

portance of the connecting-rod coupling is neither confirmed nor refuted by the available documentation; that must await discovery of patent grants or engineering drawings on the subject. It may be significant that Omer Lavallée, in chapter 9 of "Canadian Pacific Steam Locomotives", remarks on the general replacement of slide valves with piston valves in new engines, just about at the time implied above. Perusal of the photos in the book seems to show that the coupling did change along with the piston valves. Lavallée was unable to find any drawings or other relevant documentation when queried by Phillippe, but he pointed out that many plans and technical documents were destroyed along with the phasing out of steam by the 1960's. So the story is in the category of "possible but not proved". If any readers can shed any light on any part of this, we would be delighted to hear from them.

I am pleased to have been able to present this interesting sidelight on railway history, and I'm very grateful to Phillippe for his work and permission to use it here.

Track and Cars of the Toronto Transit Commission

One of the notable events of 1997 for Toronto commuters, and railway enthusiasts in general, was the opening, on July 27, of the street car line on Spadina. Although the track was in place on much of Spadina, it had not been used in regular service for many years, and it had to be rebuilt completely for the new service. Some of the southbound cars turn at the Spadina loop, while others go all the way to Union Station by means of the new Harbourfront line, opened a few years ago. Two of these photos are of the new line, while the third is a nostalgic flashback to the last run of Toronto's PCC cars.

Mr. Ray Corley has very kindly sent us an updated track plan of the entire Toronto street car system, as well as a roster of all electric passenger vehicles, including subway cars expected to be delivered in 1998 and 1999. This very impressive map appears on the next two pages, while the roster is on page 44. They show clearly how extensive the TTC street car system is in the late 20th century.



ABOVE: TTC car 4150 heading south on the new Spadina line on November 8, 1997.

BELOW: The same route and same day. This time it is 4177, bound for Union Station, crossing the bridge across the railway.

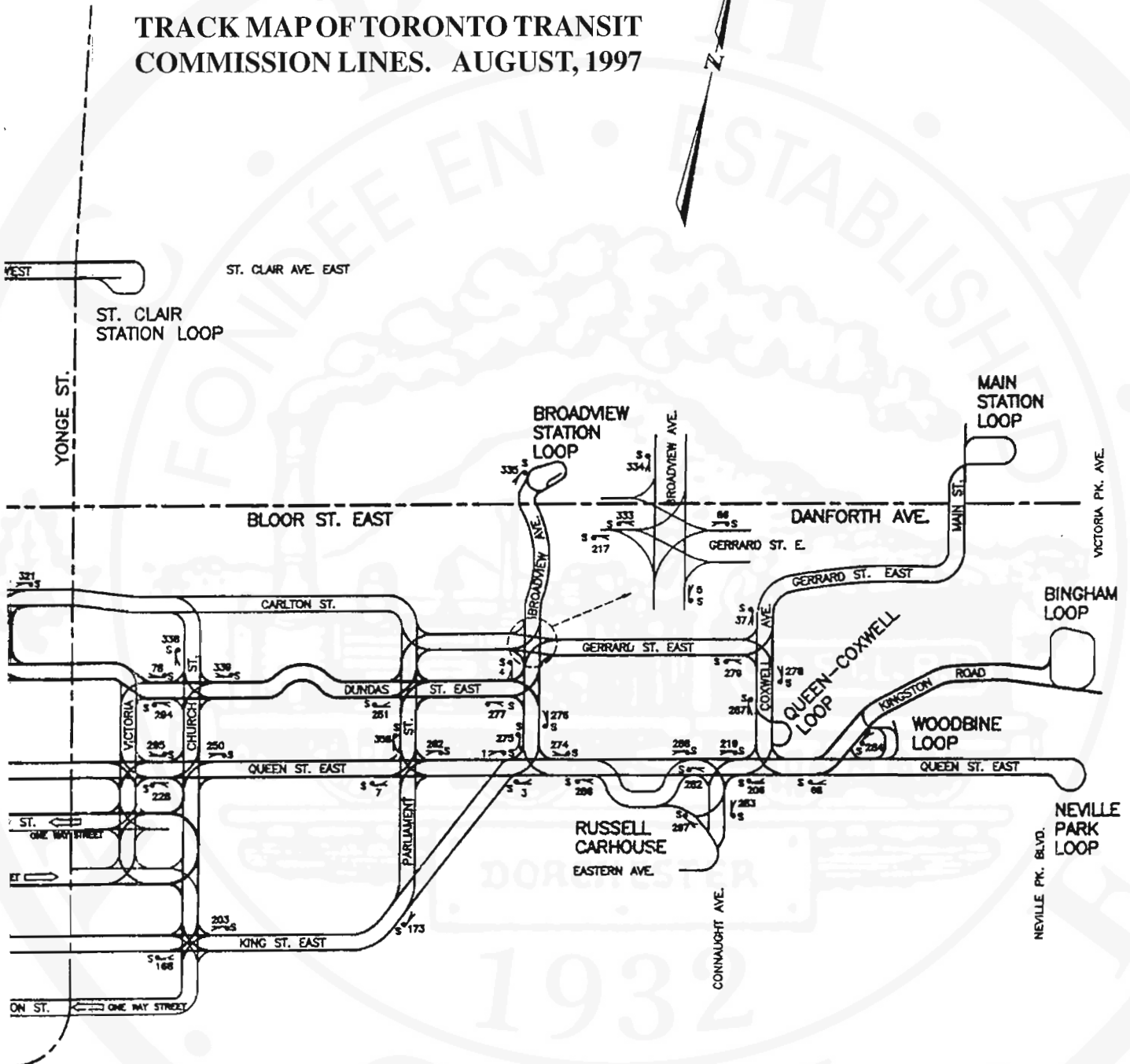


ABOVE: Two years before, it was the end of an era as the last PCC cars were officially retired. This view was taken at Roncesvalles car barn on December 8, 1995. Two PCCs are still on the TTC roster and are used for special trips.

All photos on this page are by Fred Angus



TRACK MAP OF TORONTO TRANSIT COMMISSION LINES. AUGUST, 1997



LEGEND

- SUBWAY LINE
- R NECESSITY ACTION SWITCH (SEL OPERATION WITH REMOTE)
- S NECESSITY ACTION SWITCH (SEL OPERATION)

STREET CARS

| CLASS (Note 3) | CAR NOS. IN GROUP (Note 2) | NO. OF CARS IN SERVICE (Note 1) | BUILDER | DATE BUILT | DATE ACQUIRED/ ACCEPTED | TYPE | SEATING CAPACITY (Note 5) | LENGTH OVERALL (Note 4) | WIDTH OVERALL (Over Belt Rail) | HEIGHT | | TARE/EMPTY WEIGHT (Note 5) | TRUCKS | | |
|-------------------|----------------------------------|--|--------------------------------------|---------------|-------------------------------|-------------|---------------------------------|-------------------------------|---|--------------|------------------------------------|----------------------------------|--------|---------------|---------|
| | | | | | | | | | | OVER ROOF | OVER TROLLEY HOOD OR BASE | | TYPE | WHEEL BASE | CENTRES |
| L-1 | 4000-4005 | 6 | UTDC/SWISS INDUS- TRIAL CO. (SIG) | 1977-78 | SEPT.-DEC. 1978 | CLRV 4-1 | 46 | 50'-8" | 8'-6" | 11'-0 1/2" | 12'-1 1/8" | 50,000 | SIG | 6'-0" | 25'-0" |
| L-2 | 4010-4199 | 190 | UTDC/HAWKER- SIDDELEY(CANADA) | 1978-81 | SEPT. 1978- FEB. 1982 | CLRV 4-1 | 46 | 50'-8" | 8'-6" | 11'-0 1/2" | 12'-1 1/8" | 50,000 | SIG | 6'-0" | 25'-0" |
| L-3 | 4200-4251 | 52 | UTDC/CAN CAR RAIL | 1987-89 | DEC. 1987- AUG. 1989 | ALRV | 61 | 78'-0" | 8'-6" | 11'-0 1/2" | 12'-1 1/8" | 80,900 | MAN | 8'-0" | 25'-0" |

SPECIAL SERVICE STREET CARS

| | | | | | | | | | | | | | | | |
|-------|-----------|---|------------------------------|--------------------------|-------------------|---------------|----|------------|-------|------------|------------|--------|-----------------------------|-------|--------|
| P-1 | 2766 | 0 | C.C. & F. CO. | 1923 | JAN. 1923 | SMALL WITT | 49 | 47'-0" | 8'-6" | 10'-8 5/8" | 11'-7" | 39,700 | C.C. & F. CO. | 5'-4" | 22'-6" |
| A-15H | 4500,4549 | 2 | C.C. & F. CO. REBUILT TTC | 1951 RB 1988 -1989 | JULY-DEC. 1989 | PCC RB | 45 | 46'-5 3/8" | 8'-4" | 10'-2 7/8" | 11'-3 7/8" | 38,500 | CLARK EQUIP. CO. PCC B-2 | 8'-0" | 22'-9" |

SCARBOROUGH ICTS CARS (Operation in married pairs)

| | | | | | | | | | | | | | | | |
|-----|-----------|----|---------------------------|---------|-----------|------|----|--------|-----------|--------|-----|--------|----------|-------|--------|
| S-1 | 3000-3023 | 24 | UTDC/METRO CANADA LTD. | 1983-84 | DEC. 1985 | ICTS | 30 | 41'-8" | 8'-2 1/2" | 10'-3" | N/A | 34,050 | UTDC/MCL | 5'-7" | 28'-0" |
| S-1 | 3024-3027 | 4 | . | 1988 | JULY 1988 | . | . | . | . | . | . | . | . | . | . |

SUBWAY CARS (Operation in married pairs)

| | | | | | | | | | | | | | | | |
|-----|-----------|------------------|---------------------------|---------|---------------------------|---------------|----|------------|-------------|-------------|-----|----------------------|-------------------------|--------|--------|
| T-1 | 5000-5215 | 80 PLUS (136) | BOMBARDIER INC. | 1995-99 | MARCH 1996- | SUBWAY CAR | 66 | 74'-5 5/8" | 10'-3 3/8" | 11'-11 1/2" | N/A | A-73,240 B-72,860 | M.A.N. FULL BOLSTER | 8'-10" | 54'-0" |
| M-1 | 5300-5335 | 36 | M.L.W. LTD. | 1962-63 | APR. 1962- FEB. 1963 | . | 83 | . | 10'-3 7/16" | . | . | A-59,850 B-59,950 | DOFASCO CAST INBOARD | . | . |
| H-1 | 5336-5499 | 82 | HAWKER SIDDELEY CANADA | 1965-66 | MAY 1965- JAN. 1966 | . | . | . | 10'-4" | . | . | A-56,855 B-56,175 | . | . | . |
| H-2 | 5500-5575 | 78 | . | 1971 | JUNE-NOV. 1971 | . | . | . | . | . | . | A-56,700 B-56,150 | . | . | . |
| H-4 | 5576-5663 | 88 | . | 1974-75 | SEPT. 1974- DEC. 1975 | . | 77 | . | . | . | . | A-57,800 B-57,850 | . | . | . |
| H-5 | 5670-5807 | 134 | . | 1976-79 | MARCH 1977- AUG. 1980 | . | 78 | . | . | . | . | A-67,865 B-68,350 | . | . | . |
| H-6 | 5810-5935 | 128 | UTDC/CAN CAR RAIL | 1988-89 | APRIL 1988- APRIL 1990 | SUBWAY CAR | 78 | 74'-5 5/8" | 10'-3 7/16" | 11'-11 1/2" | N/A | A-71,865 B-72,050 | M.A.N. | 8'-10" | 54'-0" |

NOTE 1: SUMMARY OF VEHICLES ON PROPERTY

| | IN SERVICE | STORED | AUTHORIZED FOR DISPOSAL | SPECIAL SERVICE | ON PROPERTY NOT ACCEPTED | TOTAL ON PROPERTY |
|------------------|---|-----------|----------------------------|--------------------|-----------------------------|-------------------------|
| SMALL WITT | - | 1(C) | - | - | - | 1 |
| CLRV | 198 | - | - | - | - | 198 |
| ALRV | 52 | - | - | - | - | 52 |
| PCC | 0 | - | - | 2(D) | - | 2 |
| SICTS/SRT | 28 | - | - | - | - | 28 |
| SUBWAY | 622 | 9(A) | 36(E) | - | 2(B) | 669 |
| TOTAL | 898 | 10 | 36 | 2 | 2 | 948 |
| VEHICLE NUMBERS: | (A) 5342-43, 5394-95, 5408-09, 5720-21, 5754 (B) 5080-81 | | (C) 2766 (D) 4500,4549 | (E) 36 H-1 CARS | | |

NOTE 2: SUBWAY CAR NUMBERING

H-1 to 4, M-1: M.A. CARS ARE EVEN NUMBERS (NOTE: ALL H-5 & 6 CARS HAVE M.A.'S, ALL T-1 CARS HAVE STATIC INVERTERS)
ALL CLASSES: COMPRESSOR CARS ARE ODD NUMBERS

NOTE 3: CLASSES RETIRED & LAST CAR REMOVED

| | | | |
|---------------|----------------|----------------|----------------|
| PCC | A-1 1989-4055 | A-6 1992-4386 | A-11 1982-4668 |
| A-2 1974-4199 | A-7 1992-4481 | A-12 1982-4897 | |
| A-3 1972-4247 | A-8 1996-4529 | A-13 1983-4704 | |
| A-4 1971-4281 | A-9 1982-4558 | A-14 1977-4786 | |
| A-5 1974-4275 | A-10 1975-4578 | A-15 1996-4610 | |

NOTE 4: LENGTH OVERALL

| CLASS | OVER BODY | OVER ANTI-CUMBER(A) ON BUMPER(B) | COUPLED LENGTH COUPLED ONE END | COUPLED LENGTH COUPLED BOTH ENDS |
|-------------------------|------------|-------------------------------------|--------------------------------------|--|
| A-15H | 46'-5 3/8" | 48'-5 3/8" (A&B) | - | - |
| L-1, L-2 | 50'-0" | 50'-5" (A) | 51'-7" | 52'-5" |
| L-3 | 50'-0" | 50'-5" (A) | - | - |
| S-1 | 40'-3 1/2" | 40'-8 1/4" (A) | 41'-2 1/8" | 41'-5" |
| M-1, H-1 to H-5, T-1 | 75'-7" | 74'-5 5/8" (A) | 74'-7 3/8" | 74'-8 1/8" |

Some Accounts About Canada's First Railway

Submitted by Carl Riff

Mr. Carl Riff has sent us two very interesting nineteenth century accounts relating to the early days of the Champlain and St. Lawrence Rail Road. One is from the March, 1896 issue of the magazine "The Canadian Engineer", while the other is an article from the newspaper "The Montreal Daily Witness" of March 25, 1881; this article is reprinted from "The St. Johns News" of an unknown date.

The 1896 article concerns the recollections of one George Ostrout who had worked for the C&StL in 1836 - sixty years before. While the reminiscences of an old timer are often notorious for their inaccuracy, especially after the long time of sixty years, the details that Mr. Ostrout gives about the engineering aspect, and the mechanism, of the "Dorchester" suggest that he had considerable knowledge of the workings of both the "Dorchester" and the "Jason C. Peirce", and the story may well be accurate. While the drawing has obvious inaccuracies, notably the size of the wheels, it was probably only meant as a schematic sketch. Whether the story of the little dog chewing up the notes is true, or is merely a quaint addendum, we will leave the reader to judge.

The 1881 account brings out some interesting points. Apart from the obvious error in the date of the opening of the C&StL (August instead of July), and the probable typo error of "scrap iron" instead of "strap iron", the article appears remarkably accurate. Several points are of interest. One is that the problem of "snake head" rails did not appear until the heavier locomotive "Jason C. Peirce" went into service, and also that these occurrences were less frequent than some accounts would lead us to believe. Another point is the spelling of the last name of Mr. Peirce. For years, historians spelled it "Pierce"; however his tombstone, and this contemporary account (copied from the local paper), which refer to his then-living son, all spell the name "Peirce", which must be accepted as the true spelling. This article says that Mr. Peirce's namesake locomotive was then still in use on the Joliette railway; in fact it survived long enough to be taken over by (and later sold by) the CPR. Its final fate is unknown but it probably lasted as late as the turn of the century, remarkably long for a locomotive of 1837. The final point to be noted in this account refers to the original station at St. Johns. The 1881 article says that it was then still in use as a freight shed; there is good reason to believe that it survived until as recently as 1993, only five years ago! That it was then destroyed, without at least part of it being saved, is a sad story, and another great loss to our railway heritage.

REMINISCENCES OF CANADA'S FIRST RAILWAY.

From "The Canadian Engineer", March, 1896.

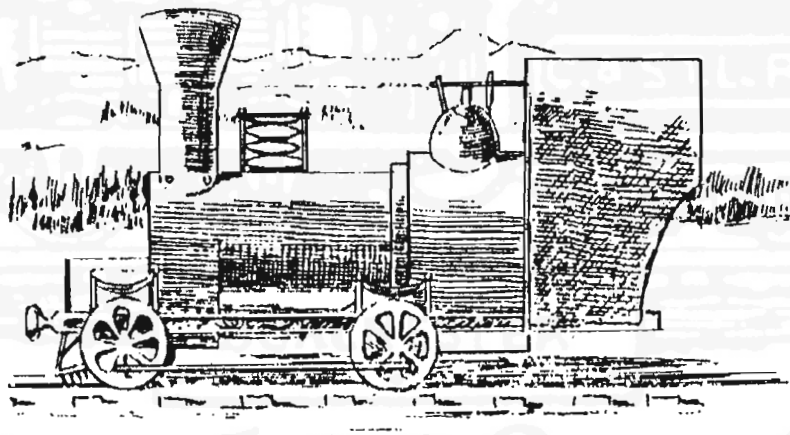
A representative of The Canadian Engineer recently had an opportunity of gathering some interesting facts about early locomotive engineering in Canada, from Geo. Ostrout, late of Montreal, who drove the first engine on the Laprairie and St. John Railway, and who at the age of 70, could sit down, and with a steady hand, prompted by a perfectly clear technical memory, draw his first love, the "Dorchester", so well that the sketch needed only to be brought up to the requirements of modern illustration for reproduction here. Mr. Ostrout was born in Montreal, on February 28th, 1826, and records as his first recollection the building of the wharf for Bronson & Spiers, in 1830 and 1831. In 1832, during the cholera epidemic, young Ostrout and his mother boarded a steam ferry. Near them sat an old lady who, like many others at that time, had a superstitious horror of any powerful agent whose pedigree she did not know. She informed the Ostrouts that nought but unavoidable circumstances could have forced her into such a wicked contrivance, and that the devil himself must be aiding the engine driver. Young Ostrout replied that he meant to learn how to start an engine, devil

or no devil, and a few years afterwards, when the lad had attained the advanced age of 12 years, he was actually running an engine on a three-mile journey, while the responsible driver lolled in a shed playing checkers.

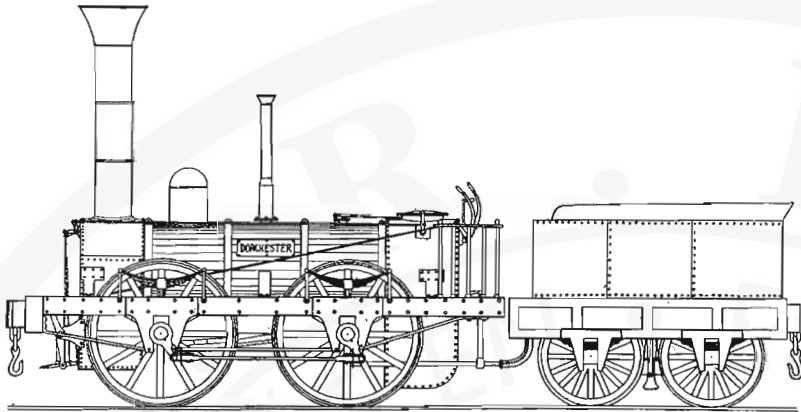
Previous to this, the cars been drawn by horses driven tandem. Most of these cars were made in Troy, N.Y. were mounted on four wheels, and had a high seat and a brake, acting on one pair of wheels. at each end. They were divided into three compartments, each having its own door, and with two leather-

cushioned seats running athwart the car. The conductor had to travel on the step-rail which ran round the outside, unless he too got inside to play checkers.

This was the state of things when the first locomotive - the "Dorchester", - arrived. She was built by Stephenson & Son, of Newcastle-upon-Tyne, of the type known as the "inside connection". The wheels were four in number, having felloes and spokes of English oak, with iron hubs and tires. She had two safety valves. That over the steam chest had a rod running back to the engineer, with a spring balance attached to the end by a screw, which could be shifted at will. The other valve was placed forward, as shown. It was pressed down by a number of elliptic springs, placed back to back between two little pillars, with cross-bar and nuts. The



The "Dorchester" as depicted in "The Canadian Engineer", March, 1896.



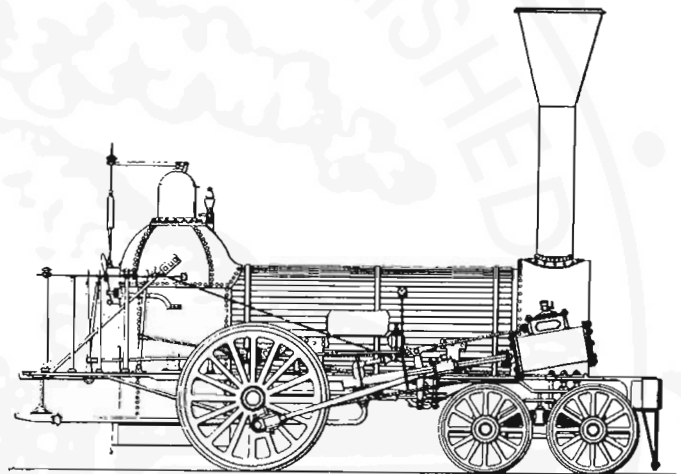
The "Dorchester" as it is believed to have looked when it was new. From a drawing by the late Robert R. Brown.

valve motion in the steam chest was produced by one eccentric for each cylinder, the back and forward motion being caused by raising or lowering what is called a double gab. The lever on the rock shaft being double-ended, the lowering of the gab caused the lips of the lever to thrust the pin into the gab, and thus the forward motion was produced. The backward movement was produced by raising the gab, which caused the upper lips to strike the upper pin, and this shifted it to go backwards.

The smoke-stack was funnel-shaped with a heavy wire screen, having a piece of boiler plate about 12 inches diameter in the centre, stretched across the opening. The frame was made of boiler iron filled in with oak. The protection of the driver seems not to have been thought of, for the "Dorchester" had no cab. A frame of iron was bent over the steam chest, and by stretching canvas over this some protection was obtained. The "Dorchester" was considered a grand engine in her day, but she was no light undertaking for her driver. For instance, the heat of the boiler at the bottom of the smoke-stack was often so intense as to burn the packing in the cylinders, and he had to pack the bottom of the smoke-box with clay.

The rails were of wood, with an iron strip running along the top about 5/8 inch thick and 2 3/4 inches wide. These served every purpose until the "Jason C. Pierce" appeared on the scene in 1837. This engine was built at the Norris works, Philadelphia, and was gigantic for her time. She had outside connections, a rather high boiler, cylinder on the incline, and four driving wheels - one set fore and the other aft of the fire-box. "She had the oddest rig I ever saw for valve motion", says Mr. Ostrout. "She had four eccentrics, four hooks or gabs, all disengaged at once, and tripped by small rock shaft with four short levers with friction rollers. To move ahead, two of the rollers were lowered to drop on pins, but the pins would not engage with hooks until the valve rods were manipulated by the engineer, who shifted the valve rods by levers on a slewed rocking shaft connected with the valves, and put the pins under the hooks. To back, it was necessary to reverse the small rock shaft to its full extent. This engine was much too heavy for the primitive wooden track, and would twist the iron strap into all imaginable shapes. On one occasion the strap rail curled up just behind the driving wheel, struck under the tender forward of the flange connection of the feed hose, running up through the bottom and top sheet of the tender and through the tool chest".

Mr. Ostrout remembers with amusement the first cut-off. It was a common throttle on which they set a band shaft with the lugs of two half hoops. As each lug revolved it would thrust a valve connected to a hinged post by an iron rod, rubbing on the shaft valve and closed or bumped out the opening valve. Some steam, he says, was saved, but the later introduction of the drop valve with dash pots was a great improvement. Mr. Ostrout is continually recalling, while he talks, little events which mark advances in both railway and marine engineering, and was recently engaged in writing his experiences when a calamity befell him like that which happened to Sir Isaac Newton - a little dog captured and tore into fragments his technical, though lucid descriptions.



The "Jason C. Peirce", from a drawing by the late Robert R. Brown

THE FIRST RAILWAY IN CANADA

From "The Montreal Daily Witness", March 25, 1881.

The first railway not only in this province but in Canada was the old Champlain & St. Lawrence line between St. Johns and Laprairie. It was opened in August [sic], 1836. Lord Gosford, the Governor-General, and other distinguished gentlemen were present at the inaugural and participated in the banquet, which was served in the station - the time-honored building, which, defying the ravages of time, still does duty as freight shed. One of the chief promoters of the railway was the late Mr. Jason C. Peirce, father of Mr. C.S. Peirce, of St. Johns, and associated with him were the late Hons. Peter McGill and Robert Jones, Mr. John Shuter, &c. Mr. James Macdonald, of St. Johns, was also connected with the early management of the line. The road was originally built of scrap [sic] iron - that is, thin plates of iron nailed on to wooden sleepers, and the rolling stock was very light. For about fifteen years after construction the road was not operated in the winter time. Then the track was changed from Laprairie to St. Lambert, and the line continued from St. Johns to Rouse's Point. The second locomotive used on the old Champlain & St. Lawrence Railway was called the Jason C. Peirce, and it is still in use on the road at Joliette. - *St. Johns News*.

The Centennial of the Railway and Marine World

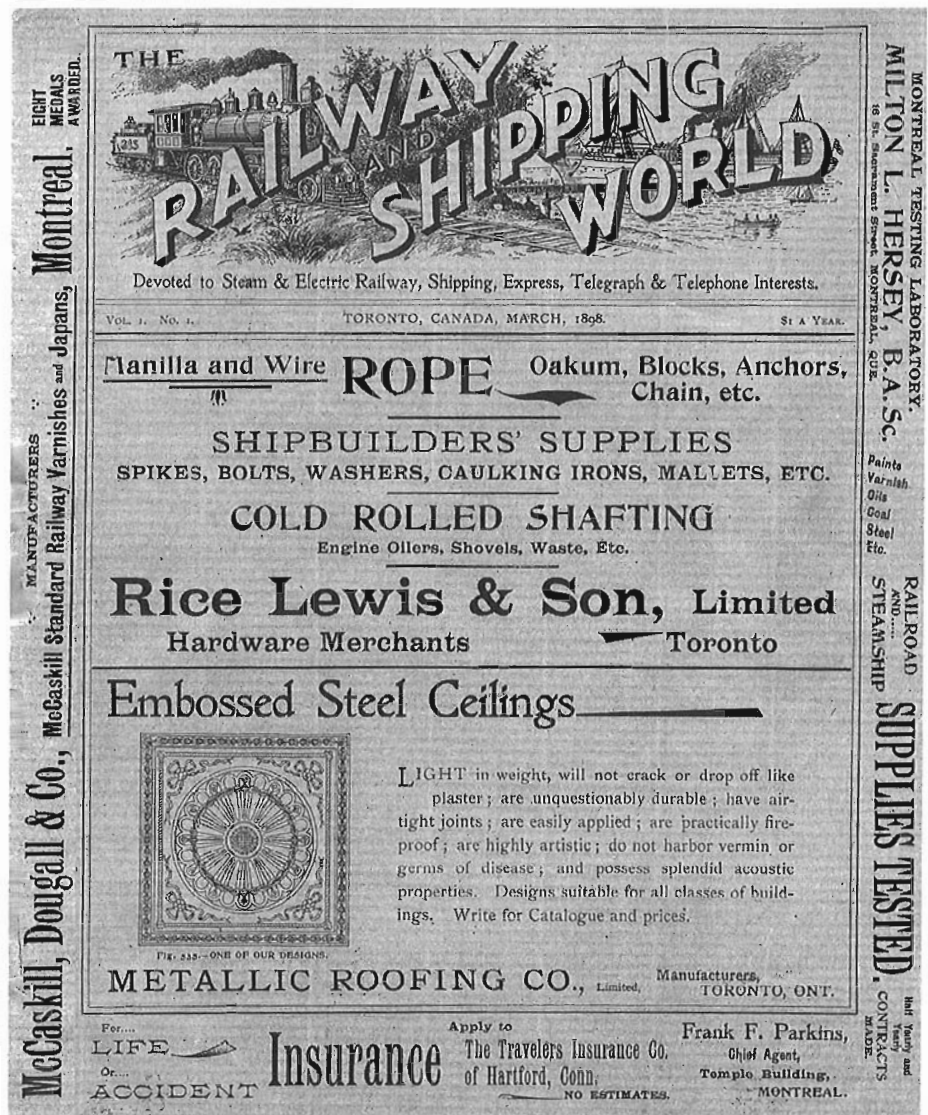
By Fred F. Angus

One hundred years ago the first issue of a new magazine appeared in Toronto. This in itself does not sound like a particularly significant event, since many new magazines, and other periodicals, were started in Canada in the latter days of the nineteenth century. However to the railway historian of today the event was of great importance, for this magazine, whose first issue was dated March 1898, was the Railway and Shipping World, better known by its later name of the Railway and Marine World.

In many historical books and articles, both in Canadian Rail and elsewhere, the bibliography, or list of source materials, includes the entry "CRMW" or "Canadian Railway & Marine World", or perhaps "Railway and Shipping World" or, for later material, "Canadian Transportation". This publication, which has had four names over the years, is an excellent, possibly the very best, source of information for the historian of Canadian railways or, for that matter, shipping, road transport, or even airlines. It is safe to say that most events of major importance to Canadian railways in the first half of the twentieth century were reported in this publication.

The idea of a special magazine on transportation in Canada had been thought of, and even tried, for many years before 1898. However the man who succeeded in the attempt, and who was the founder of the Railway and Marine World was Acton Burrows (1853-1948). Born at The Grange, Bosbury, Herefordshire, England on September 18, 1853, he came to Canada in 1873 and, after a brief time in Montreal, went to Elora, Ontario where he edited the "Standard". Later he moved to Guelph where he became the editor, and part owner, of the "Guelph Herald". In 1879 Mr. Burrows moved to Winnipeg where he was successively President and Editor of the "Manitoban" (1885-1887), "Morning Call" (1887-1889) and "Nor-West Farmer" (1889-1895). One important event in his Winnipeg years occurred on December 31, 1881 when he became the first person in Canada to meet William C. Van Horne, the new General Manager of the CPR, who arrived that day from St. Paul, and began his new job the next day. This began a lifelong friendship between Messrs. Burrows and Van Horne; a friendship which lasted almost 34 years and only ended with Sir William Van Horne's death on September 11, 1915. Also in Winnipeg, in 1890, Mr. Burrows established a periodical known as the "Western World" which would later be amalgamated with the magazine that is the subject of this article.

The next phase in the career of Mr. Burrows began in 1895 when he moved to Toronto, the city that would be his home for 53 years, until his own death at the age of 95. It was there, in 1898, that he started The Railway and Shipping World, and he contin-



The front cover of the first issue, March, 1898.

ued as editor for thirty seven years until he retired in January, 1935 at the age of 81. He remained president of the publishing firm Acton Burrows Ltd. until his death, and he lived to see the 50th anniversary of the establishment of his magazine. After a very long, active life, Acton Burrows died in Toronto on November 15, 1948. At that time it was said that "all the great railway developments, which the present [1948] generation looks upon merely as matters of historical importance were witnessed at first hand by Mr. Burrows, and most of them he saw, not as an inexperienced youth, but as a man in the prime of life, with excellent sense of values and mature judgment".

In the late 1890s, Acton Burrows began seriously to consider establishing a periodical devoted to transportation in Canada. By mid 1897 the decision had been made and diligent work was done to publicize the forthcoming publication among officers and employees of transportation companies. So it was that a considerable subscription list was built up, and many articles submitted, well before publication actually began. Early in 1898 all was ready, and the first issue of "The Railway and Shipping World" made its debut, bearing the date "March 1898" and the designation "Vol. 1. No. 1.". Due to the extensive foresight and preparation, this first issue was not a simple small offering; it was a full grown magazine of 28 pages, 9 by 12 inches, well worthy of comparison with any of its successors. A sampling of the contents of the March 1898 issue well shows this: "The Canadian Yukon Railway" by W.T. Jennings, 6 pages with photos and a large coloured folding map; "The Victoria Jubilee Bridge", 4 pages with photos and diagrams of the rebuilding of the bridge; "The Hall Signals at Montreal"; "The Crows Nest"; "The Contract with Mackenzie & Mann"; "The Wabash in Canada"; "By Ocean and River to the Great Yukon Gold Fields", 5 pages. In addition there were very many reports of development, finance etc. of railways and steamship companies and, what was always to be a feature of the magazine, biographical and personal accounts of the people that kept all the systems running. All in all it was a very impressive start to a very impressive publication.

The first change in the designation of the magazine occurred with the issue of January, 1899. Instead of being called "Vol. 2, No. 1", it was called "Old Series No. 93, New Series No. 11", the "old Series" referring to the "Western World" (established in 1890) which was now amalgamated with the new publication. This dual series continued until June 1912 (new series 172), after which the "Western World" series was dropped, and only the 1898 sequence was used. In the next few years the number of pages grew as other features were added. By the beginning of 1906 there were 60 pages (and it reached 136 by 1921) and, starting with the issue of January 1906 (No. 95) there was a new name. Gone was the 1898 name and masthead, and instead a brand new cover layout and title: "The Railway and Marine World". This is the name by which the railway historians of today know this publication.

Starting with the August 1912 issue (No. 174) there was a slight change in title. It was now called "Canadian Railway and Marine World", since most of its contents referred to Canada. Under this title it continued to chronicle the years of the First

World War, the 1920s, and the Depression. By this time other means of transportation were becoming more and more important. Better roads led to truck and bus transport and the development of aviation resulted in passengers and cargo going by air as well. By 1936 the title did not accurately describe the contents so, effective with the issue of January 1937 (No. 467), it was changed to "Canadian Transportation". The format was much the same, and coverage now included development in rail, sea, air, bus, truck and miscellaneous types of transportation. Well into the 1950s and beyond, one still finds chronicled the latest developments in the Canadian railway industry.

From the earliest days the contents were divided by basic subject, i.e. railways ships and telegraphs. Electric railways had a separate section from April 1898 to April 1900, but, in May 1900, this section was discontinued and electric lines were included with steam railways. Starting in February 1905, there was once again a separate Electric Railway department, and this continued from then on. As the years went on there were added road and air departments. In addition to the feature article there were very numerous small items under such headings as "Betterments", "Rolling Stock Additions", "Financial", "Mainly About People" and miscellaneous small items. Many of these were not indexed, but are a very rewarding source of information for the historians.

In a class by themselves are the advertisements. In many cases they are just as interesting as the text since they depict the products actually used by the railways exactly as the potential purchaser would see them. In the early days the ads were on pages along with text, sometimes at the bottom of a page. Gradually the intermixing of text and advertisements declined, until by 1905 most of the ads were on the left-hand pages, while the text was on the right. With the issue of January 1912, there was a major change. Effective that date, most advertisements were in their own section (with their own page numbers), placed before and after the text pages. This had one unfortunate consequence. When a year's magazines were bound, the ads were often removed and so, from 1912 on, are lost to posterity. For earlier years they are present, because they were on the back of the text pages. To illustrate some of these, we are reproducing one advertisement for each five years from 1898 to 1948.

It is pointless to try and enumerate all the subjects covered by the Railway and Marine World. Suffice it to say that few events of importance escaped its pages. Reading them is like experiencing first

THE RAILWAY & SHIPPING WORLD.

AN ILLUSTRATED PERIODICAL DEVOTED TO STEAM & ELECTRIC RAILWAY, SHIPPING, EXPRESS, TELEGRAPH & TELEPHONE INTERESTS.

THE RAILWAY & SHIPPING WORLD CO., PUBLISHERS,
33 MELINDA STREET, TORONTO, CANADA.

SUBSCRIPTION PRICE, postage prepaid, to Canada & the United States, \$1 a year; to Great Britain & other countries in the Postal Union, \$1.25 (5 shillings sterling). The best & safest way to remit is by express or post office money order payable at Toronto.

ADVERTISING RATES furnished on application to the publishers.

TORONTO, CANADA, MARCH, 1898.

PUBLISHERS' ANNOUNCEMENT.

THE RAILWAY & SHIPPING WORLD takes its place to-day in the field of periodicals for the purpose of representing the transportation interests of Canada—steam & electric railways and shipping—and the allied express, telegraph & telephone interests.

It is not entering into competition with any existing publication, as while the field of what is known as trade journalism is well filled in regard to almost every other industry & interest, there is no other publication in Canada devoted to the transportation interests.

Hitherto the officials of Canadian transportation companies have had to depend on foreign publications for their "trade" reading, & careful enquiry among them shows that only a small minority get any periodical devoted to their business. Necessarily the space devoted by foreign publications to Canadian matters is limited, & of secondary importance. THE RAILWAY AND SHIPPING WORLD will endeavor to give a full & accurate record of everything transpiring in Canada relating to the interests enumerated above, supplemented by technical & other articles of interest & value to the class of readers to which it addresses itself. Its publishers believe in performances rather than promises, & will content themselves with saying that no effort will be spared to make the publication a thoroughly up to date one, editorially, typographically, & in every other respect. Illustrations will be freely used whenever they can be made to serve a practical purpose.

In political affairs, as such, THE RAILWAY AND SHIPPING WORLD has no interest, & is absolutely independent of either party, but this does not imply neutrality, & it will not hesitate to freely criticise whenever public interests so demand.

It is also absolutely independent of any railway or other corporation, & while being entirely impartial in giving the facts in regard to the operations of all these corporations, it will never forget that it is a Canadian publication first, last & all the time, & that it is its duty to do everything possible to assist in the development of transportation as far as possible within Canadian territory & to Canadian ports.

The publisher's announcement at the start of publication of the Railway and Shipping World, one hundred years ago.

THE CANADIAN RAILWAY ACCIDENT INSURANCE COMPANY, OTTAWA, CANADA.
A PURELY CANADIAN COMPANY.
JOHN SMO, General Manager; J. P. BICKSON, Secretary-Treasurer; G. MURPHY, President
AUTHORIZED CAPITAL, \$200,000. SUBSCRIBED CAPITAL, \$200,000
Insures all classes of Accident and Sickness Insurance at lowest rates and in accordance with safety.
Agents wanted in unrepresented districts.

The Railway and Marine WORLD
With which are incorporated The Western World and The Railway and Shipping World, Established 1890
Devoted to Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Interests

Old Series, No. 177. New Series, No. 105. TORONTO, CANADA, JANUARY, 1906. 10c. A Copy for a Year.

FOR 1906
You will want better equipment than ever.
We wish to help you make this year a successful one.

A "SMITH" CONCRETE MIXER
Will give you the right start. It will also see you through your work to a successful completion.
It is on record that a SMITH MIXER was never known to fail.

W. H. C. MUSSEN & CO.
Railway, Mining and Contractors' Supplies MONTREAL

CANADIAN LOCOMOTIVE CO LTD.,
KINGSTON, ONT.,
LOCOMOTIVES
Builders of Simple and Compound Adapted to every variety of service.

H. W. PETRIE MACHINERY
Write for my monthly STOCK LIST containing list of all kinds of NEW AND SECOND-HAND

For Steam and Electric Railways, Steamship, Express, Telegraph, Telephone and Advertising Purposes. For Prices, Etc., address THE ACTON BURROWS CO., 29 MELINDA STREET, TORONTO.

Enameled Iron Signs

McSkill, Dougal & Co., Railway V. Machines, Lamps and Fittings, Montreal, Canada.

Canadian Railway AND Marine World
ESTABLISHED 1898.
Number 114. TORONTO, CANADA, AUGUST, 1912. Subscription Rates Page 76.

Imperial Wire & Cable Company, Limited
Successors to THE WIRE AND CABLE COMPANY, MONTREAL
Electrical Wires and Cables for all Purposes—Paper and Rubber Insulated
Lead Covered Cables; Rubber Covered Wire; Weather-Proof Wire; Flexible Lamp Cords; Bare Copper Wire, Etc.

The Northern Electric and Manufacturing Co., Limited
TORONTO WINNIPEG CALGARY REGINA VANCOUVER

SAXBY & FARMER, LIMITED LONDON, ENG.
RAILWAY SIGNALS AND SAFETY APPLIANCES, SIGNALLING AND INTERLOCKING WORK OF EVERY DESCRIPTION, ELECTRICAL AND MECHANICAL.
CANADIAN BRANCH: 611 Canadian Express Building, McGill St., MONTREAL

Dominion Steel Castings Company, Limited
Acid Openhearth for heavy machinery and locomotive castings. HAMILTON ONTARIO
Stock Process for Automobile and miscellaneous light steel castings.

ENAMELED IRON SIGNS
For Steam and Electric Railways, Express, Telegraph and other purposes.
ACTON BURROWS LIMITED, TORONTO

Railway Signal Co. of Canada, Limited
GENERAL OFFICE AND WORKS, LACHINE, P. Q.
Makers of Standard Appliances as Approved by Railway Signal Association and Board of Railway Commissioners.

SMALL TOOLS
PRATT & WHITNEY CO. of Canada, Limited DUNDAS ONTARIO

THE PRESTON Car & Coach Co.
PRESTON, ONT., Limited
Manufacturers of Steam and Electric Railway Cars and Special Cars

"PALMETTO"
In the Electric Locomotive for Air Pumps, Thrust Valves, Small Valves, etc.
GREENE, TWISS & CO. 507 Broadway, 112 East 30th St., New York
Canadian Representatives: The Acton Burrows Co., Limited, Toronto

THE OTTAWA CAR CO.
BUILDERS OF Locomotive Electric Cars, Fine Carriages, Wagons, Sleighs, Etc.
Office and Works, Slater St., OTTAWA

The Parry Sound Lumber Co.
Limited.
1218 Traders Bank Bldg., Toronto
PLYMOUTH, CANADA
THE BELL, HALLWAY, TIE, TELEGRAPH PULLEY, LATHY, BRINDLE, BOX SHEDS.

BRASS TUBING
Prompt delivery from stock.
THE IRON PIPE CO. OF CANADA

The Union Switch and Signal Co. PROTECTION FOR STEAM AND ELECTRIC RAILWAYS

SWISSVALE, PENNA.; WORKS Home Office and Western District 20 CHURCH STREET, NEW YORK; Sales and Western District PEOPLE'S BUILDING CHICAGO; Western District

LINGERWITZ
The DOUGALL, VARNISH CO., Limited
VARNISHES of Prime Quality
A comparison for the satisfactory treatment of concrete or cement.

KONKRETO

ABOVE LEFT: The first issue as "The Railway and Marine World"; January, 1906.

ABOVE RIGHT: The August, 1912 issue was the first one to use the name "Canadian Railway and Marine World".

LEFT: By the time this number came out, the name "Canadian Transportation" had been in use for eleven and a half years (since January, 1937).

C.T.A. Convention Issue
Canadian Transportation
Founded 1898 by Acton Burrows, formerly Canadian Railway and Marine World
TORONTO, JUNE, 1948
STEAM RAILWAY ELECTRIC RAILWAY AUTOMOTIVE AIR MARINE

More street cars for TORONTO
Queen City adds new type PCC ELECTRIC TRAMS

Faster stops and starts • Faster Loading
Greater comfort for both standing and seated passengers

Manufactured by **CANADIAN CAR & FOUNDRY COMPANY LIMITED**
Head Office: Montreal, Que.
Plants: Montreal (8) Fort William, Brantford, Amherst

Stream Railways, pp. 176. Electric Railways, pp. 221. Locomotive Transport, pp. 222. Motor, pp. 218. Air Transportation, pp. 272. Contents Index, pp. 313

PRESSURE ON SPACE
Instead of having a dearth of matter for publication, THE RAILWAY & SHIPPING WORLD finds itself in the position of having far more than can be accommodated within the limits which have been fixed on for the present. So much space has necessarily had to be devoted to the Canadian Yukon Railway, the Victoria Jubilee Bridge, the ocean & river navigation to the Yukon, & the C.P.R. annual report, that a considerable amount of matter relating to other railways has had to be held over, & it has been found impossible to give any space to the electric railway, express & telephone interests in this issue. These departments will be commenced in the next issue, & will form important & regular features of the publication.

The Railway and Shipping World, March 1898.

hand what it was like to read for the first time such famous events as the rebuilding of Victoria Bridge, the acquisition of the first steel passenger cars, the collapse of the Quebec Bridge, the sinking of the *Titanic*, the outbreak of both world wars, the Halifax Explosion, the formation of the CNR, the development of the street car, the first diesels, and so on almost ad infinitum. Not all the articles were about contemporary events. There is a good selection of historical accounts, relating events that had taken place long before, sometimes as far back as the beginning of railways. Thus we have a good source of material on events that took place even before 1898.

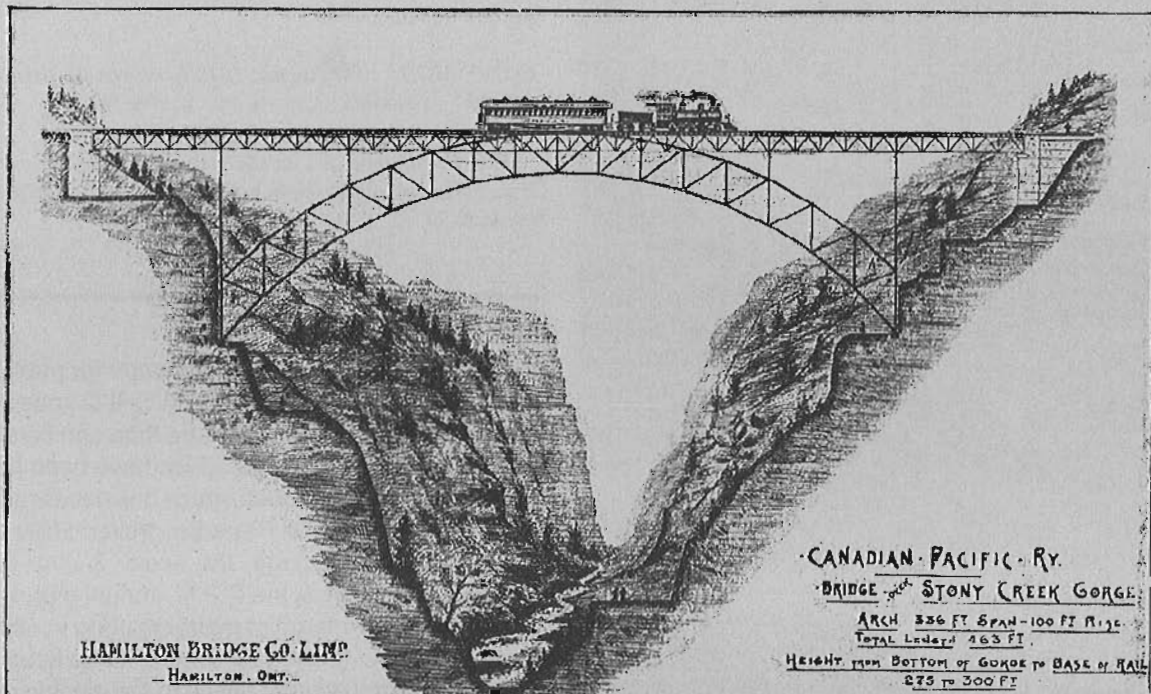
A magazine has been defined as a storehouse, as in powder magazine or in Magasin, the French word for store. In the case of a publication, it is a storehouse of information. For the Canadian railway historians of today, there could be no better example of this definition of a magazine than the *Railway and Marine World* and its predecessors and successors. It is a true storehouse of information on almost every subject relating to railways and other means of transportation. On the one hundredth anniversary of the establishment of this magazine we are thankful for the work of Acton Burrows and all who were associated with him and followed him for a century.

A Selection of Advertisements from the *Railway and Marine World*

In company with most periodicals, "The Railway and Shipping World" carried numerous advertisements. Most of these, of course, related to the various industries covered in the magazine. The study of the advertising is, in many ways, as interesting as the study of the text itself, for the ads are for products and services that the railway people actually needed and used. Often these advertisements are works of art, for it was advantageous for an advertiser to promote his product in the most attractive way possible. It should be borne in mind that most of these items appeared long before television, and even radio; at that time the printed page was the most important medium of mass dissemination of information. Unfortunately it often happened that, when periodicals were bound for preservation, the advertising material was removed and discarded. Luckily, the run of this periodical to which we have access is in the form of unbound magazines, and all advertisements are present.

To commemorate the 100th anniversary of this periodical, we present a selection of significant ads, slightly reduced in size, from its pages. We have chosen one for each five years of the first half century; 1898 to 1948. As the magazine started in March, we have picked the March issue of each multiple of five years starting in 1898. An effort has been made to cover a wide variety of subjects. We hope you will enjoy looking at the same advertisements that the railway employees themselves read during the great years of Canadian railway development.

The HAMILTON BRIDGE WORKS CO., Limited, Hamilton, Canada.



STEEL BRIDGES FOR RAILWAYS AND HIGHWAYS.

Steel Structural Work, Steel Piers and Trestles, Steel Water Towers and Tanks, Steel Turntables, Roofs, Buoys, Caissons. Steel Beams, Channels, Angles and Plates, always on hand.

Estimates Furnished on Application.....

Every Facility for the Construction and Launching of Steel and Iron Ships.

MARCH 1898

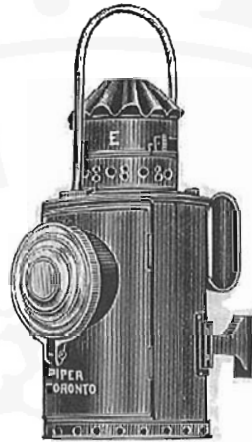
THE N. L. PIPER RAILWAY SUPPLY CO., LIMITED

TORONTO

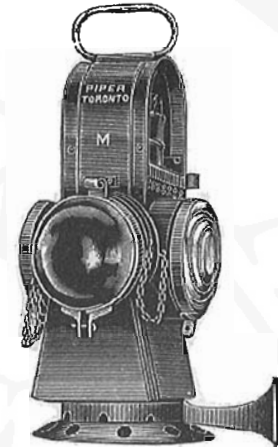
**MANUFACTURERS
OF**



(Registered 1902) CLASSIFICATION LAMP



(Registered 1902) ENGINE TRI-COLOR LAMP



(Registered 1902) MARKER LAMP

**RAILWAY
LAMPS
ETC**

MARCH 1903

N. CURRY, President
N. A. RHODES, Vice-President

CAPITAL, \$1,000,000

J. M. CURRY, Sec.-Treas.

RHODES, CURRY & CO.

AMHERST, NOVA SCOTIA

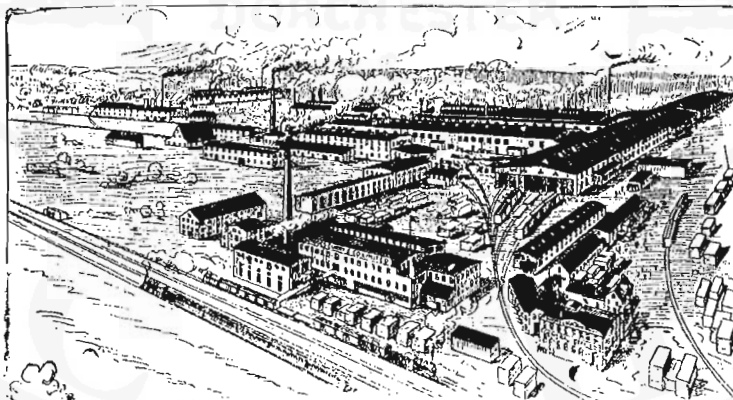
LIMITED

RAILWAY AND STREET CARS

SPECIAL CARS FOR ALL PURPOSES

Capacity per Month

- 300 Freight Cars
- 4 Passenger Cars
- 4 Snow Plows
- 3,000 Car Wheels



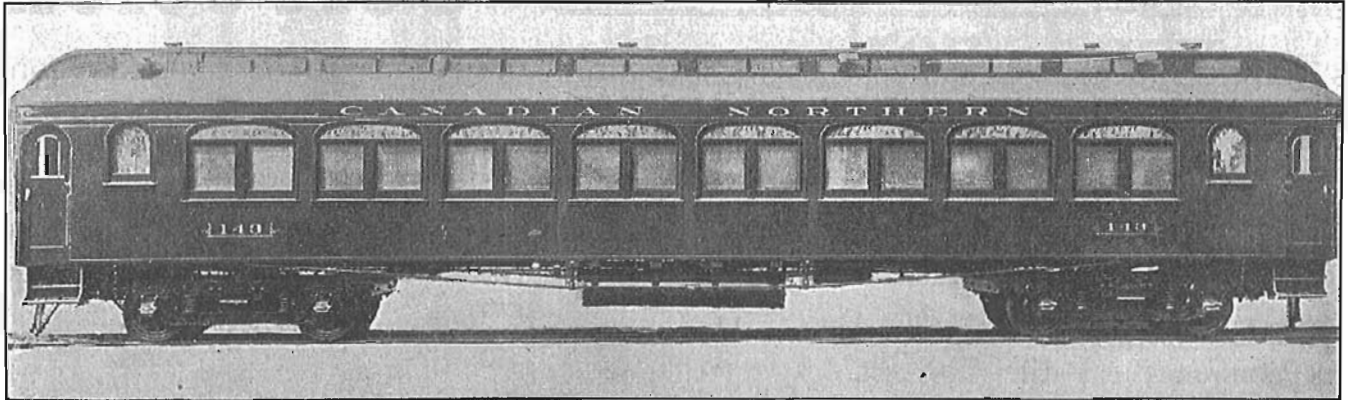
Capacity per Month

- 2,500 Car Axles
- 500 Tons Castings
- 1,000 Tons Forgings
- 1,000 Tons Bar Iron and Steel

Car Wheels, Axles, Forgings, Castings, Bar Iron & Steel, Etc.

MARCH 1908

MODERN HIGH-CLASS
ROLLING STOCK



PASSENGER FREIGHT AND ELECTRIC RAILWAY
 RUGGLES' ROTARY SNOW PLOWS
 CAR CASTINGS, FORGINGS AND REPAIR PARTS

CROSSEN CAR COMPANY, LTD.
 COBOURG - ONTARIO

MARCH 1913

CONNECTING THE
ATLANTIC
 with the
PRAIRIES

Canadian Government Railways

WINNIPEG COCHRANE QUEBEC MONCTON SYDNEY
 TORONTO MONTREAL ST. JOHN HALIFAX

Through Express Trains

| | |
|----------|----------|
| Winnipeg | Toronto |
| Winnipeg | Quebec |
| Montreal | Halifax |
| Halifax | Sydney |
| Halifax | St. John |

500,000 SOLDIER LADS HAVE TRAVELLED THIS ROUTE WITHOUT MISHAP

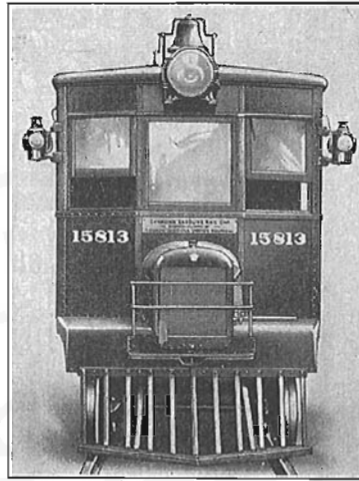
500,000 SOLDIER LADS HAVE TRAVELLED THIS ROUTE WITHOUT MISHAP

H.H. MELANSON, Passenger Traffic Mgr. MONCTON, N.B.

Jack Canuck

MARCH 1918

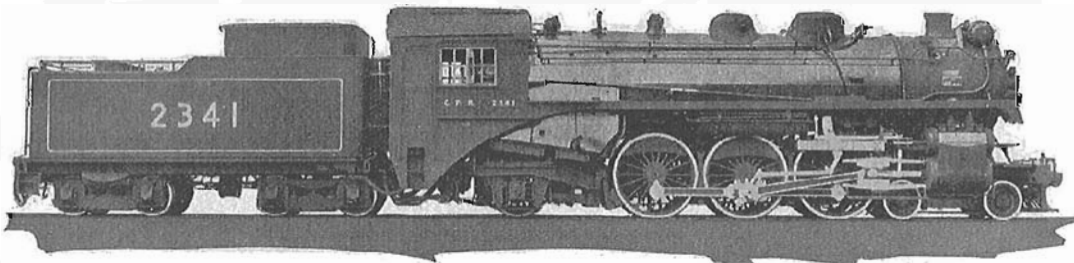
**LEDOUX
JENNINGS,
LIMITED
Montreal**



*Builders
of*
**AUTOMOTIVE
EQUIPMENT**

Front View of
A "Canadian Gasoline Rail Car"

MARCH 1923



Built for the Canadian Pacific Railway

Total Weight of Engine, 306,500 pounds; Weight on Driving Wheels, 183,900 pounds;
Diameter of Driving Wheels, 75 inches; Boiler Pressure, 250 pounds;
Cylinders, 23 x 30 inches; Maximum Tractive Power, 45,000 pounds.

Twenty-four of these locomotives were built by the Montreal Locomotive Works, Limited.

They have fully justified the expectations of improved performance and efficiency due to the higher boiler pressure and other improvements in design.

MONTREAL LOCOMOTIVE WORKS, LIMITED

Montreal

Canada

MARCH 1928



BATTERED RAIL JOINTS

—Cost Less to Repair Than Replace

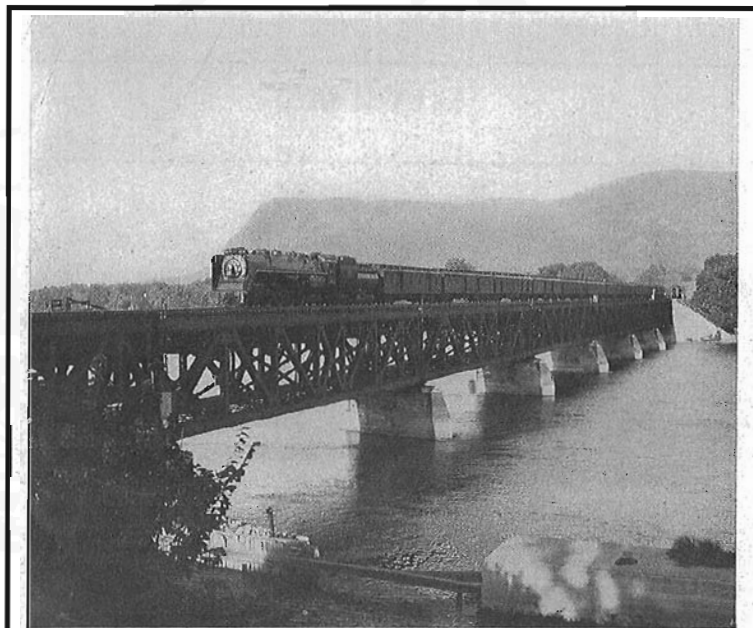
—Battered and worn rail joints are costly to railroads. Why not rebuild them at a fraction of cost with the Oxy-Acetylene Process and save capital expenditure and re-laying?

Specialists with years of experience in this work are available to users of our service for the training of operators. Full particulars gladly given on request.

CANADIAN RAILROAD
SERVICE CO. LIMITED
TORONTO CANADA



MARCH 1933



"THE OCEAN LIMITED"

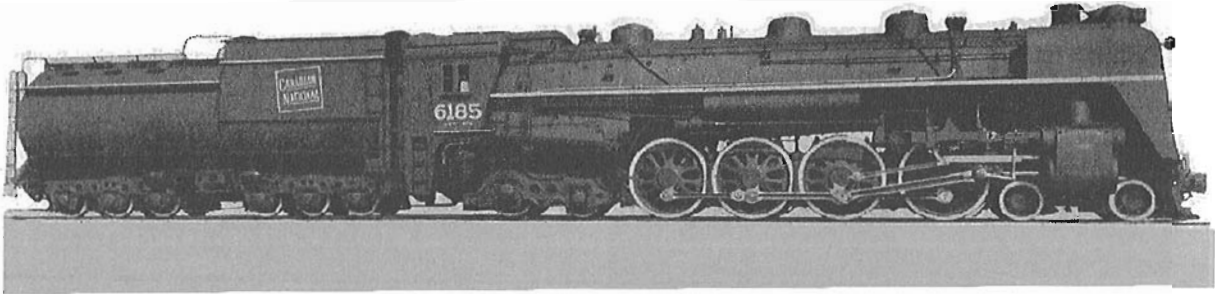
Canadian National Railways

The fine, fast modern service that attracts passenger travel calls for modern locomotives such as these—fired, of course, by Standard Stokers.

Developed in Canada
Built in Canada

THE STANDARD
STOKER COMPANY, INC.
NEW YORK • CHICAGO • ERIE

MARCH 1938



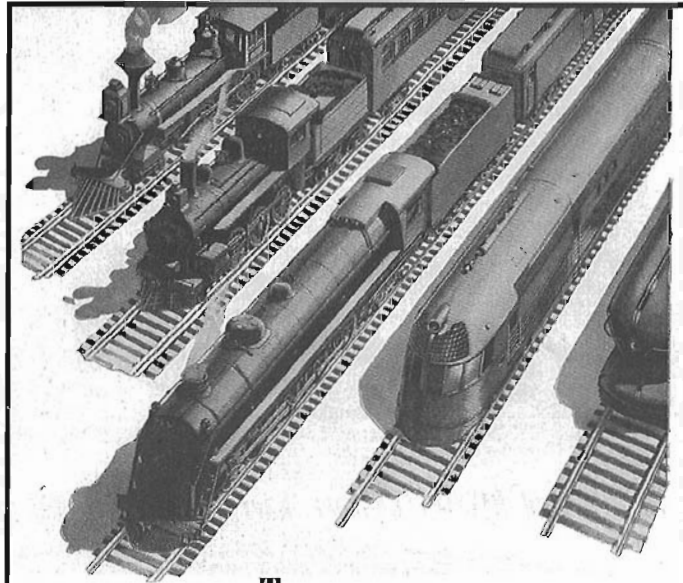
4-8-4 Type Locomotive Built for Canadian National Railways

| | | | |
|-------------------------|------------|--------------------------------|--------------|
| Cylinders | 25½" x 30" | Maximum Tractive Power | 56,800 lbs. |
| Driving Wheel Dia. | 73" | Total Weight of Engine | 389,000 lbs. |
| Boiler Pressure | 250 lbs. | Weight on Driving Wheels | 237,000 lbs. |

Canadian Locomotive Company

Kingston LIMITED Ontario

MARCH 1943



Trains have come a long way since '69

... and so have Air Brakes

It wasn't many years ago that a 30-car freight was something to talk about, and the average speed of ordinary passenger runs was 25 miles an hour.

The tremendous strides in rail transportation reflect the engineering, operation and management contribution of countless brilliant men, and the continuing co-operation of generations of loyal employees. Each step forward has made greater demands on men

and equipment—especially the air brakes. Each step has brought new braking problems, for trains can't go faster and haul more without a compensating increase in braking efficiency.

Continuing research in collaboration with the railways enables Westinghouse to meet the exacting brake requirements of each advance in rail transportation.

Brakes are basic to railroad progress . . . and progress is basic in Westinghouse Air Brakes.

200 T 3038



CANADIAN WESTINGHOUSE CO. LIMITED, HAMILTON, ONTARIO

MARCH 1948

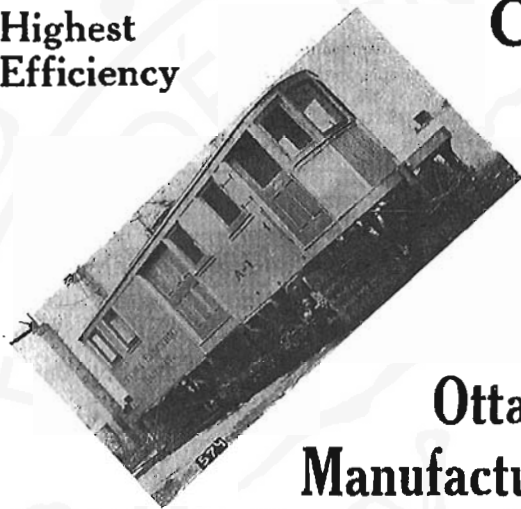
BACK COVER: This advertisement for the Ottawa Car Manufacturing Co. appeared in the Canadian Railway and Marine World for July, 1914. The two top cars were for Ottawa, the middle one was for Montreal, and the two bottom ones were for Calgary and Quebec City.

Canadian Rail

120, rue St-Pierre, St. Constant, Québec
Canada J5A 2G9

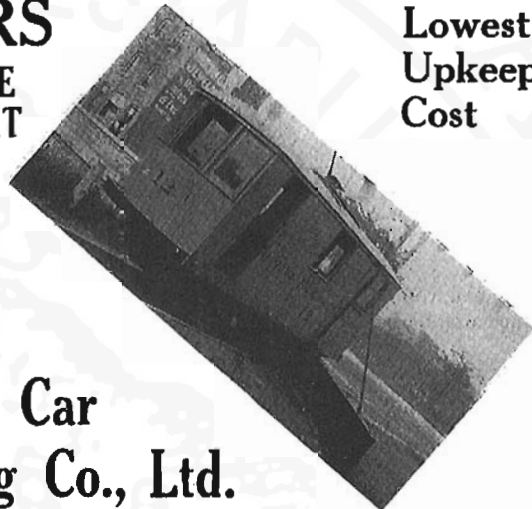
Postmaster: if undelivered within
10 days return to sender, postage guaranteed.

**Highest
Efficiency**



**CARS
MADE
RIGHT**

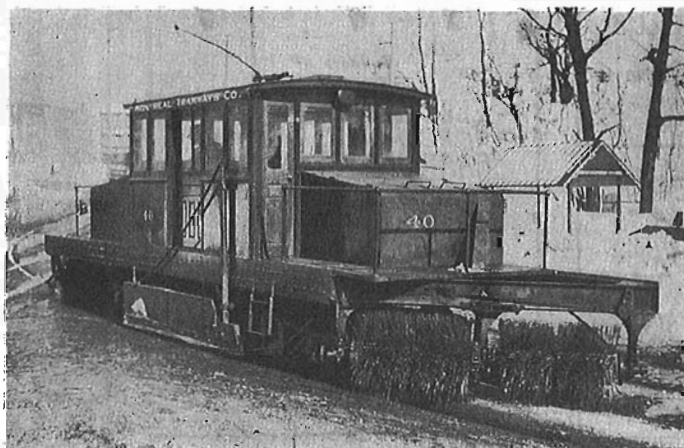
**Lowest
Upkeep
Cost**



The
**Ottawa Car
Manufacturing Co., Ltd.**

are Designers and Builders of

Electric City and Interurban passenger cars. Electric express cars and locomotives. Sprinklers and work cars. Car seats, car curtains and a very large variety of brass and bronze car fittings.



Snow Sweepers and Plows — the most perfect design and construction, simple mechanism, quick and effective operation. An immediate delivery can be made of Standard Sweepers, special types designed and built or built to your own specifications.

“Send Them Your Inquiries”

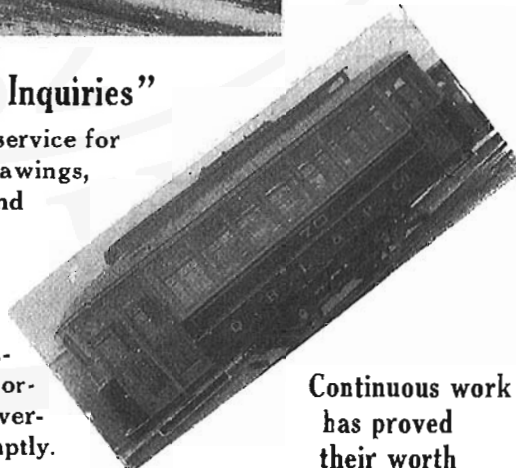
as they are at your service for specifications, drawings, estimates and prices.

**Always
Ready
for Service**



Satisfaction assured on all orders and deliveries made promptly.

**Continuous work
has proved
their worth**



Remember the Address : **COR. KENT AND SLATER STS., OTTAWA, ONT.**