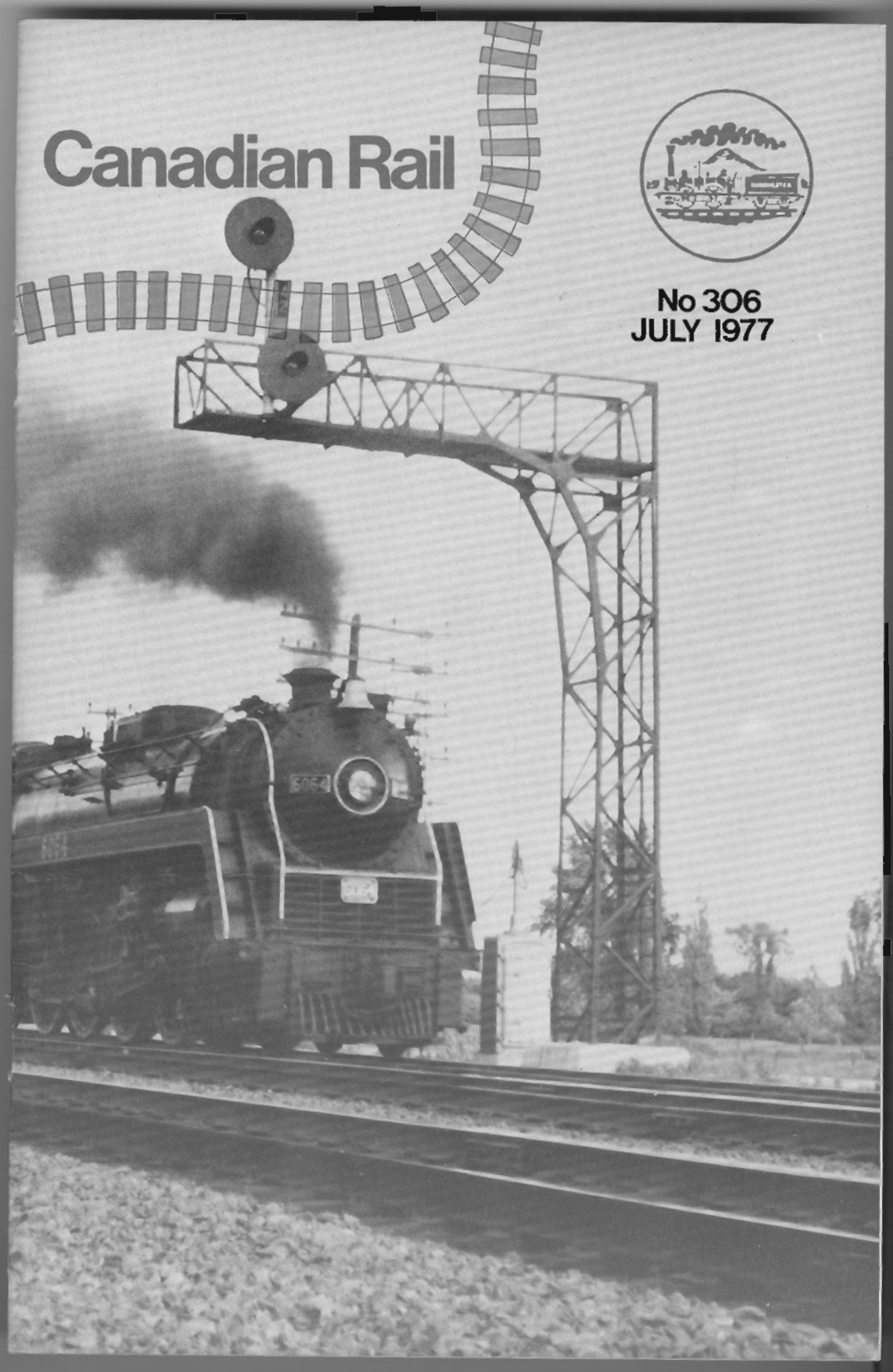
Canadian Rail



No 306
JULY 1977


5935
CANADIAN PACIFIC

CANADIAN RAIL

ISSN 0008-4875

Published monthly by The Canadian Railroad Historical Association
P.O. Box 22, Station B
Montreal Quebec Canada H3B 3J5

EDITOR: M. Peter Murphy
EDITOR EMERITUS: S. S. Worthen
BUSINESS CAR: John Welsh
LAYOUT: Joe Smith

CALGARY & SOUTH WESTERN
L. M. Unwin, Secretary
1727 23rd Ave. N.W., Calgary Alberta
T2M 1V6

OTTAWA
D. E. Stoltz, Secretary
P. O. Box 141, Station A, Ottawa,
Ontario K1N 8V1

PACIFIC COAST
R. Keillor, Secretary
P. O. Box 1006, Station A, Vancouver
British Columbia V6C 2P1

ROCKY MOUNTAIN
C. K. Hatcher, Secretary
P. O. Box 6102, Station C, Edmonton
Alberta T5B 2N0

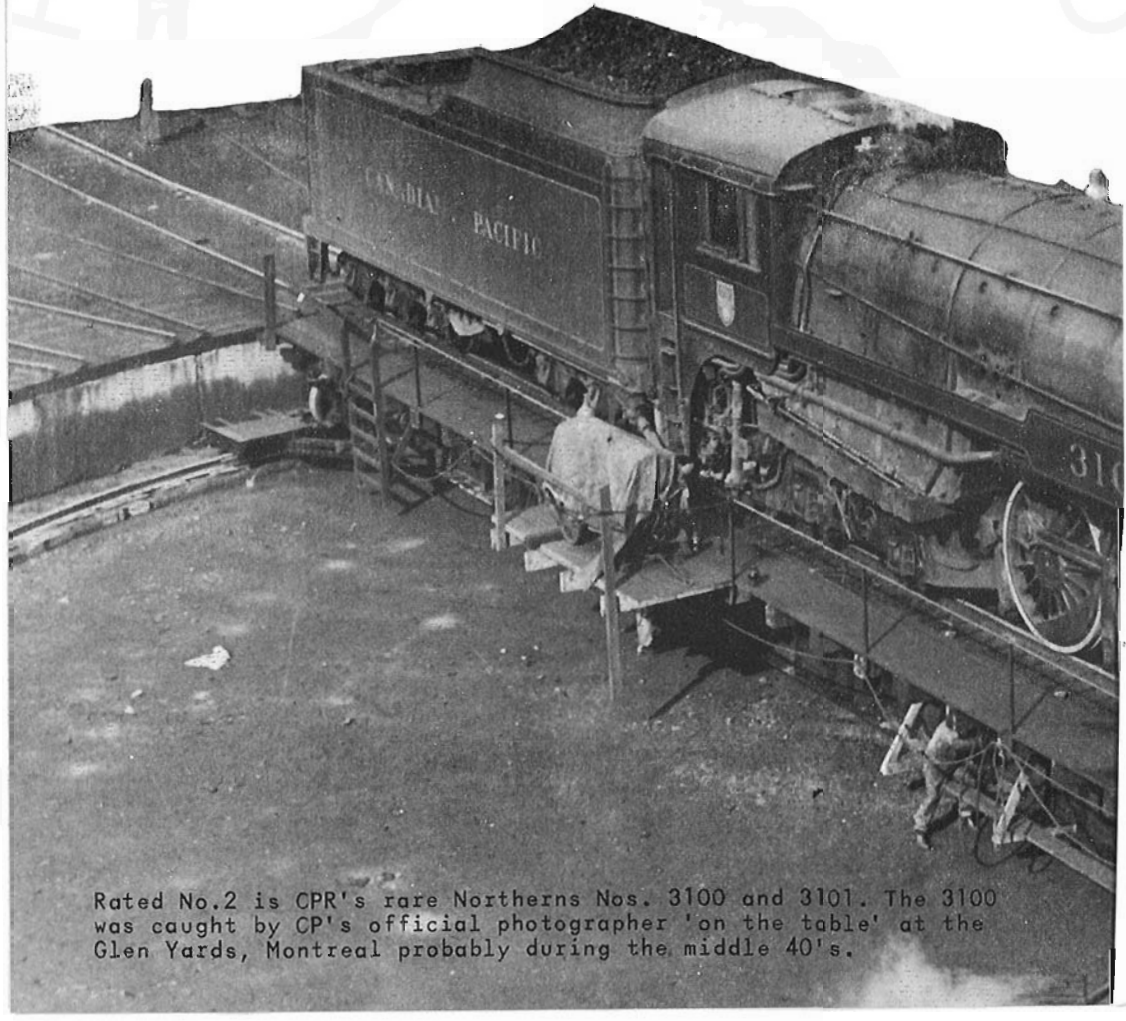
TORONTO & YORK DIVISION
J. C. Kyle, Secretary
P. O. Box 5849, Terminal A, Toronto
Ontario M5W 1P3

WINDSOR-ESSEX DIVISION
R. Ballard, Sr., Secretary
300 Cabana Road East, Windsor,
Ontario N9G 1A2

COVER PHOTO:
Rated fifteenth in the point score of the top twenty Canadian Steam Locomotives is CNR class U-1-f, 4-8-2 road numbers 6060 to 6079 represented here by No. 6064 in pool train service at the cross-over from the CPR line to CN at Dorval, Québec on August 8, 1948. Photo from the CRHA Archives, E. A. Toohey Collection.

OPPOSITE:
Rated No. 1 in the overall point score is CPR's famous SELKIRK series road numbers 5930 - 5935 and represented here by the last in the series. 5935 was the last steam locomotive built for the Canadian Pacific Railway, and is presently on display at the CANADIAN RAILWAY MUSEUM in St. Constant, Québec. Photo courtesy Canadian Pacific Railway.

Canadian Steam Locomotives



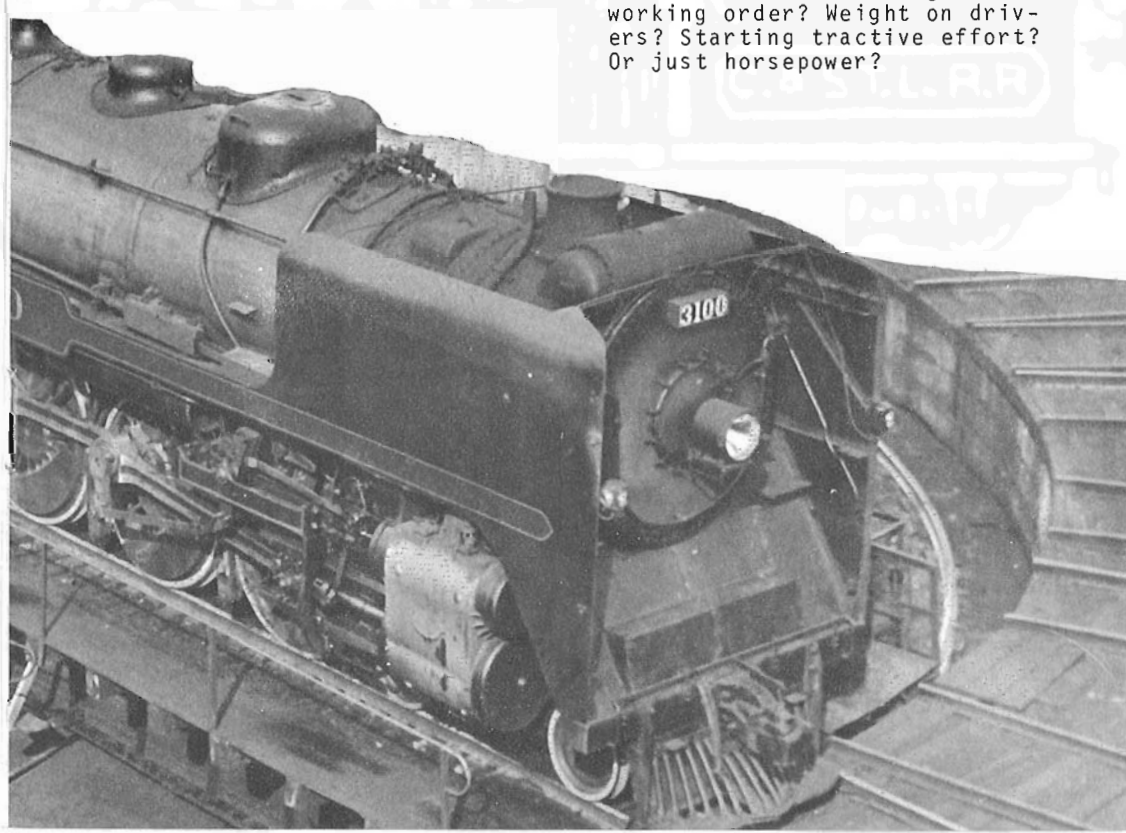
Rated No.2 is CPR's rare Northerns Nos. 3100 and 3101. The 3100 was caught by CP's official photographer 'on the table' at the Glen Yards, Montreal probably during the middle 40's.

The Top Twenty

William G. Blevins, P. Eng.

During and after the age of the steam locomotive on Canada's railways, one question has persisted and has not, to date, been answered satisfactorily: which was Canada's largest steam locomotive?

On the surface, this seems to be an easy question to answer, until you begin to examine it in a little more detail and, in the process, become a little more specific. "Largest" in what sense? Total weight in working order? Weight on drivers? Starting tractive effort? Or just horsepower?



An evaluation and answer based on any of these factors alone will yield a different response and thus the original question will still remain unanswered.

As a mechanical engineer specializing in motive power for Canadian National Railways, I have had occasion to calculate the performance of steam locomotives, the information being required to rate the Company's remaining steam engines for purposes of scheduling and tonnage capacity. These calculations have interested me in further independent research on steam locomotive technology.

One fundamental conclusion can be drawn from this research: the best mechanical engineers of the steam era were never able to predict precisely the ultimate performance for a particular locomotive, because there were a myriad of factors affecting its performance.

Chief amongst these was the manner in which the air supply was conducted into and through the firebox, boiler and smokebox. This drafting was, obviously, critical to the production of steam. To the end of the steam era, this remained a "black art", which could only be perfected to its highest degree by testing, ideally in a stationary test plant. Significant increases in locomotive horsepower capability could be realized simply by making small adjustments, one after another ("fiddling"), with smokebox and blastpipe arrangements until the maximum evaporation rate of the boiler was achieved.Occasionally, on older engines, these improvements were frustrated by the diameter and stroke of the cylinders and pistons, which could not make use of all of the steam produced by the boiler.

In spite of this problem, towards the end of the steam age methods were developed for determining the "average" maximum performance of a steam locomotive. W.F.Kiesel, Motive Power Officer, Pennsylvania Railroad, working with extensive test data from the Company's stationary test plant at Altoona, Pa., developed a formula,subsequently named for him, which accounted for most of the factors essential to the computing of the horsepower of a reciprocating steam locomotive. An excellent treatment of this whole subject of steam locomotive technology, including this most important aspect, may be found in "The Steam Locomotive" by R.P.Johnson, Chief Engineer, Baldwin Locomotive Works, Eddystone, Pa.,U.S.A.(1944).

Armed with the data generated by my research work, I have decided to risk incurring the wrath of the proponents of the various "largest" Canadian steam locomotives by rating the latter on a scientific basis, taking into account the various dimensional and performance factors which suggest their candidacy for the title of "the largest steam locomotive in Canada".

The Factors:

Table I, which follows, sets forth the statistical data for my "top twenty" steam locomotives in Canada. A word of clarification is necessary regarding the engines which have been included.Locomotives belonging to United States railroad companies, occasionally running in Canada, such as those of the Delaware & Hudson and SOO Line, have not been included, although the direct U.S. subsidiaries of Canadian National Railways (Central Vermont Railway and Grand Trunk Western Railroad) have been included, since their engines did run in Canada for considerable distances. Canadian Pacific Railway Company's class T-4-a, 2-10-4 Number 8000, has been excluded because it was an experimental locomotive whose features did not lend themselves to a

direct comparison with conventional steam locomotives. Where engines of various subclasses existed, the one with the highest evaporative boiler capacity and horsepower has been selected. Locomotive length over couplers has been dismissed as a rating factor, being essentially meaningless in the evaluation.

The following is a brief explanation of the rating system for the factors selected. For each factor chosen for comparison, the largest engine in that category has been given 100 points. All the other locomotives being compared were then given points proportional to the ratio of their factor to the largest in that factor-category. In all, seven factors were selected for comparison, to determine the "largest" locomotive; hence, 700 points would be the maximum possible score.

Now for the "group of seven":

1. Total engine weight:

   While the heaviest engine is not necessarily the "largest", weight is one measure of size.

2. Percent of total weight on drivers:

   The greater the proportion of the locomotive's weight on her drivers, the better she does the basic job of producing traction; thus, the better the rating score for this factor.

3. Nominal tractive effort:

   The low-speed, "drag"-hauling capacity of the engine is one important measure of "largeness". Tests often showed a TE greater than the nominal, which was based on 85% of the boiler pressure. However, since all locomotives have been rated on the same basis, the relative ranking should be sufficiently accurate. In this respect, the older, pre-1925 locomotives are given a slight advantage by this method, as advances in steam porting and passage design in the valves and cylinders in the 1930 and '40 engines have been excluded.

4. Firebox grate-area:

   The firebox grate-area is a good measure of the ability of the steam locomotive to sustain the combustion process and thus the production of steam in the boiler, to maintain a constant, high-horsepower output.

5. Calculated maximum sustained boiler evaporation rate:

   Each word in this rather long expression is important. The rapid, sustained production of steam by the boiler is essential optimum operation of the engine. The formula used for this calculation is a relatively conservative one, recommended by the Baldwin Locomotive Works. This formula takes into account the firebox and tube-heating areas, with an allowance for a feedwater heater and a deduction for auxiliaries. Once again, tests showed that locomotive boilers were able to produce steam in excess of the nominal rating, always at the expense of pityfully low thermal efficiencies. For comparison purposes, the use of a formula with consistent coefficients of heat transfer will yield accurate relative results

TABLE I

Basic Statistical Data

Rail-way	Rwy. class	Whyte class	Road numbers	Year built	Engine weight '000 lbs.	% on drivers	Nom. tract. eff.'000	Grate area ft^2	Cal.max. sust.evap. lbs./hr.	Calc. max. DB hp	Diam. drivers ins.
CPR	T-1-c	2-10-4	5930-35	1949	449	69.3	89.4(B)	93.5	72420	3160	63
CPR	K-1-a	4-8-4	3100-01	1928	435	57.4	72.8(B)	93.5	72480	3370	75
CNR	T-2-a	2-10-2	4100-04	1924	409	79.4	91.7(B)	80.3	71970	3015	57
TH&B	As	2-8-4	201,202	1928	383	65.1	81.0(B)	100.3	68690	3320	63
CVR	T-3-a	2-10-4	700-709	1928	419	68.0	89.1(B)	84.4	69270	3020	60
GTW	U-3-a	4-8-4	6300-11	1927	399	59.6	59.0	84.3	68970	3170	73
CNR	U-2-a	4-8-4	6100-19	1927	396	59.9	66.1(B)	84.4	66200	3020	73
CNR	T-3-a	2-10-2	4200-09	1919	352	78.4	69.6	76.3	66770	2795	57
CNR	U-4-a	4-8-4	6400-04	1936	380	62.1	52.5	73.6	59510	2750	77
CPR	S-2-a	2-10-2	5800-13	1919-20	362	78.7	65.9	74.2	56930	2355	58
CPR	H-1-b	4-6-4	2810-19	1930	369	51.2	57.3(B)	80.8	58950	2780	75
TH&B	(J1d)	4-6-4	501,502	1930	363	53.3	53.3(B)	81.5	58820	2650	79
CNR	T-1-a	2-10-2	4000-09	1916	320	80.0	64.5	77.3	59380	2490	57
T&NO/ONR	-	4-8-4	1100-03	1936-37	371	58.8	54.5	70.3	58410	2655	68
CNR	U-1-f	4-8-2	6060*-79	1944	356	66.6	52.3	70.2	57370	2610	73
CNR	S-4-b	2-8-2	3801-05	1936	339	69.9	60.6	70.3	56150	2600	63
CPR	P-2-h	2-8-2	5417-36	1943	339	73.3	57.5	70.3	54030	2480	63
CNR	T-4-a	2-10-2	4300-14	1929	348	73.3	70.5(B)	66.8	55050	2325	57
CNR	K-5-a	4-6-4	5700-04	1930	356	52.9	53.3(B)	73.6	54820	2575	80
AC&HB	-	2-10-2	50, 51	1929	339	73.3	60.3	66.7	54990	2340	57

* Canadian National Railways' Number 6060 is the last steam locomotive in revenue passenger service on the CNR.

(B) Booster.

6. Calculated maximum sustained drawbar horsepower:

   Tractive effort at speed is produced by horsepower and thus the latter represents an index of the speed to which a train of known tonnage can be accelerated. The elements utilized in the calculation of drawbar horsepower are the steam production capacity of the boiler, the boiler pressure, the cylinder volume, the drag resistance of the engine and tender and the speed of the train.

7. Driving-wheel diameter:

   While small driver size does not necessarily prevent high-speed operation, it can generally be taken as an index of the maximum permissible operating speed of a locomotive. In addition, at a given speed, larger diameter driving wheels result in a lower rpm of the engine and less pressure loss in the steam supply to the cylinders, through the piston valves and cylinder-saddle passages.

In sum, therefore, these seven factors, evaluated on a point-rating system, should produce an accurate definition of the largest Canadian steam locomotive.

The Locomotives:

Table II, which follows, presents the point-ratings for each candidate locomotive and the latter are presented in the order of their overall score. The following additional comments are offered:

1. Canadian Pacific Railway 2-10-4 class T-1-c:

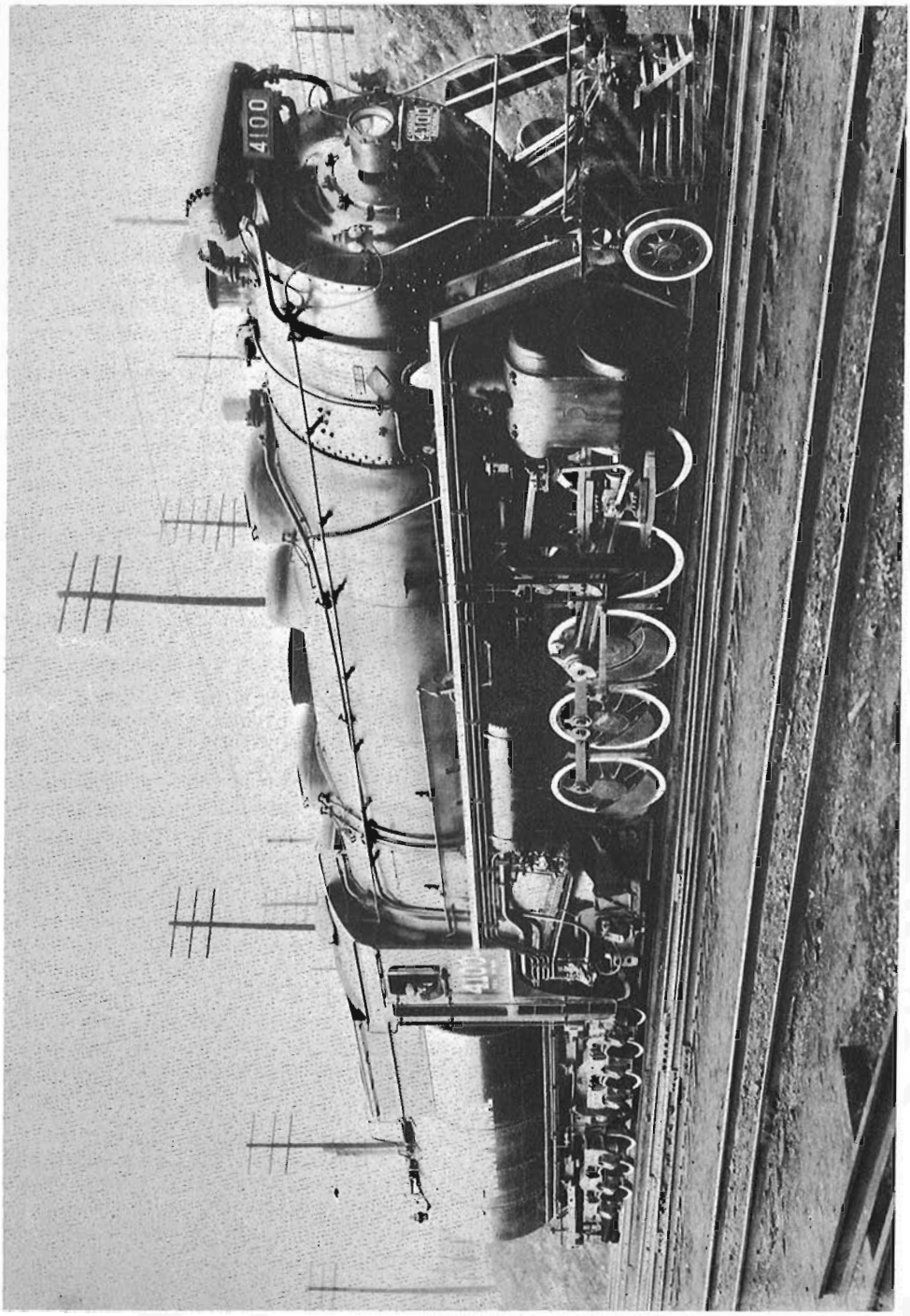
   At the top of the list are the last steam locomotives built for a Canadian railway. The earlier classes, T-1-a and T-1-b, would receive similar but slightly lower ratings. The T-4-a multipressure derivative of these units would probably outscore all the other contestants. However, as a single, short-lived, low mileage, experimental locomotive is the only representative, any comparison would be unfair.

2. Canadian Pacific Railway 4-8-4 class K-1-a:

   The CPR's two-only 4-8-4 locomotives are second in the rating primarily on account of their boiler size, which is identical to the class T-1-a 2-10-4 locomotives. Stories of poor steaming of these engines probably arose from the fact that the fireboxes were of a large size, there being no similar engines on CPR's eastern lines; thus, firemen, except on the Montréal-Toronto night runs, were generally unfamiliar with the best methods of firing these engines. It is possible that the conversion of these engines to oil firing in their latter years in western Canada disproved this unfortunate rumour.

3. Canadian National Railways 2-10-2 class S-2-a:

   One look at these locomotives would confirm that they were designed for low-speed freight transfer, "drag" and helper duty. While they had the highest tractive effort rating of any class of steam engine in Canada, they lose out in the rating due to smaller grate-area, drawbar horsepower and driving-wheel diameter, the latter severely limiting their maximum speed.



While the top two spots were awarded to CP steam power, CNR earned the No. 3 position with their 4100 class 2-10-2's. 4100 boasted of 91,700 lbs. tractive effort and was photographed in Toronto probably soon after being received from her builders in Kingston, Ontario. Photo courtesy CN.

4. Toronto, Hamilton and Buffalo Railway 2-8-4 class As:

It is a surprise to find these locomotives appearing fourth in the ratings, as they are virtually unknown contestants, being the Montreal Locomotive Works-built sisters of the Boston and Albany (New York Central) Railroad's class A-1 Berkshires. The two locomotives built for the TH&B, then jointly controlled by the NYC and the CPR, had the highest power-to-weight ratio of the score of engines rated and represented the closest approximation to the "Super-Power" of the Lima Locomotive Works (USA) to be found in Canada.

5. Central Vermont Railway 2-10-4 class T-3-a:

The Central Vermont's "Texas"-type 2-10-4 locomotives were fifth in the rating. These were the largest steam engines in New England, although they were probably the smallest 2-10-4s in the United States.

6. Grand Trunk Western Railroad 4-8-4 class U-3-a:

The United States-built version of the basic "Northern" design of Canadian National Railways was a larger locomotive than the Canadian unit, but the overall ratings scored by the two classes were close because the GTW class U-3-a was not equipped with a booster.

7. Canadian National Railways 4-8-4 class U-2-a:

Locomotives in the original group of 155 CNR U-2 class 4-8-4s were also the largest dimensionally. The addition of a booster increased the overall score for these engines by about eight points.

8. Canadian National Railways 2-10-2 class T-3-a:

These engines were of United States Railroad Administration light 2-10-2 design, built in the United States by ALCO (Brooks) in 1919 for the Boston and Albany Railroad (New York Central System) as Numbers 1100-1109, class Z-1-a.They were purchased by the CNR in August 1928. The author has an undated diagram sheet of the Grand Trunk Railway for these locomotives. Since the Grand Trunk was absorbed into the Canadian National Railway Company in 1923, there is some uncertainty as to when these engines were actually acquired.

9. Canadian National Railways 4-8-4 class U-4-a:

The CNR's streamlined 4-8-4s were significantly smaller than the non-streamlined U-2 class, although the visual impression suggests that the former were larger.

10. Canadian Pacific Railway 2-10-2 class S-2-a:

Tenth in the rating are the "drag" locomotives that were built by the Canadian Pacific just after World War I, for service on the heavy grades in the mountains of Alberta and British Columbia.

11. Canadian Pacific Railway 4-6-4 class H-1-b:
&
12. Toronto, Hamilton and Buffalo Railway 4-6-4 class NYC J1d:

These two hudson-type locomotive classes tied for eleventh

THE *Quill of*

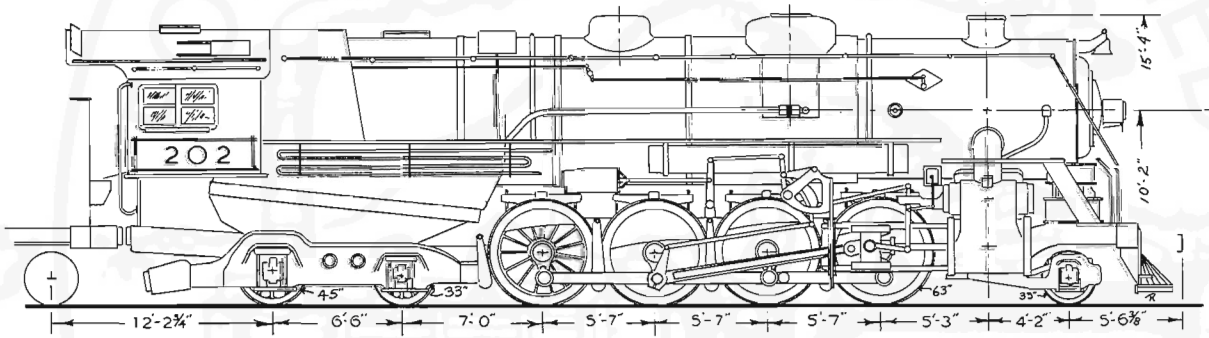
O SHO ME

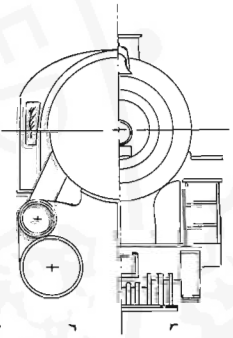
● TORONTO, HAMILTON & BUFFALO

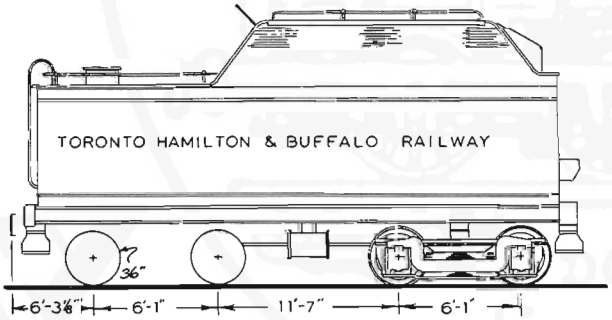
TH&B

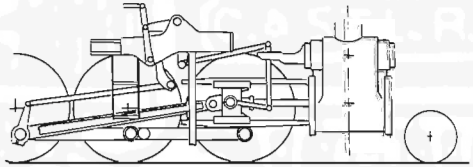
● 2•8•4 BERKSHIRE TYPE ● CLASS A

● ROAD NUMBERS 201-202 ● 28"x30" CYLINDERS ● 63" DRIVERS ● 621,000 lbs. ENGINE & TENDER ● 240 P.S.I. BOILER PRESSURE ● 81,000 lbs. TRACTIVE EFFORT WITH BOOSTER ● BUILT 1928 BY MONTREAL LOCOMOTIVE—THE ONLY KNOWN ENGINES OF THIS WHEEL ARRANGEMENT EVER BUILT IN CANADA FOR OPERATION ON AN EVEN PARTIALLY CANADIAN-OWNED ROAD









● THE HANGER OF THE BAKER VALVE GEAR WAS MORE LIKE THE STYLE SHOWN IN SKETCH TO THE LEFT ● ORIGINAL SOURCE MATERIAL WAS NOT TOO CLEAR ON THIS POINT

● PHOTO IN "LOCOMOTIVE CYCLOPEDIA OF AMERICAN PRACTICE"—1941 EDITION

● TRACTIVE FORCE AT 65% CUTOFF 69,000 lbs. ● DRIVING WHEELBASE 16'-9" ● ENGINE WHEELBASE 39'-8" ● FUEL SOFT COAL ● TENDER CAPACITY 12,000 gals. WATER & 16 tons COAL ● TYPE "E" SUPERHEATER ● ENG. WT. 383,000 lbs., TENDER 228,000 lbs. LOADED

● A FEW DIMENSIONS ON THE DRAWING HAVE BEEN ESTIMATED

● DRAWN BY ROD RODDICK
● DATA COURTESY HUBERT BROOKS & GEORGE OLIVER
● FULL SIZE H.O. SCALE

● BLACK WITH WHITE LETTERING

● TECHNICAL ASSISTANCE: GORDON RHODES

and twelfth places, although the edge should be given to the CPR 4-6-4 for having a higher calculated drawbar horsepower. Incidentally, tests conducted on the New York Central Railroad's J1 class (the TH&B engines were formerly J1d-class locomotives from the NYC) showed peak evaporation rates and drawbar horsepower greater than that calculated; however, on a relative basis, the CPR 4-6-4 would still have a slight advantage.

14. Temiskaming & Northern Ontario/Ontario Northland Railway:

These locomotives were built as 4-8-4s simply because it was necessary to distribute their total weight over four axles, so that they could operate on the lighter track of the T&NO/ONR. Power considerations would have necessitated only a 4-6-4 type of engine.

15. Canadian National Railways 4-8-2 class U-1-f:

One engine of this class, the last steam locomotives to be delivered to Canadian National Railways, remains in service. Her power output at the drawbar ranks her as equal to a 3000 hp, 4-axle diesel-electric locomotive. However, Canadian National has conservatively reduced this equivalence to equal the horsepower of a GP 35 (2500 hp for traction). It should be noted that the nominal diesel-electric unit traction horsepower rating drops considerably on a drawbar basis.

16. Canadian National Railways 2-8-2 class S-4-b:

These engines were built for use in the hard-water districts of western Canada and generous boiler proportions were provided to allow for the build-up of scale.

17. Canadian Pacific Railway 2-8-2 class P-2-h:

The final development of the mikado-type locomotive on the Canadian Pacific Railway, these engines were representative of the standard heavy 2-8-2, used in most mainline freight services.

18. Canadian National Railways 2-10-2 class T-4-a:

That these engines with such modest dimensions were built as late as 1929 attests to the requirement for five coupled axles for weight distribution, rather than for tractive effort.

19. Canadian National Railways 4-6-4 class K-5-a:

In next to last place in the rating are CNR's only hudson-type locomotives, whose main claim to fame resides in the fact that their driving wheels were 80 inches in diameter.

Rated No. 4 is TH&B's Nos. 201 and 202 the diagram of which is presented here through the courtesy of the Ontario Society of H.O. Model Engineers.

20. Algoma Central & Hudson Bay Railway 2-10-2s:

These locomotives were, for practical purposes, duplicates of Canadian National Railways' class T-4-a engines (Number 18 in the rating). The absence of a booster on the AC&HB engines lowered their position in the rating.

Summary.

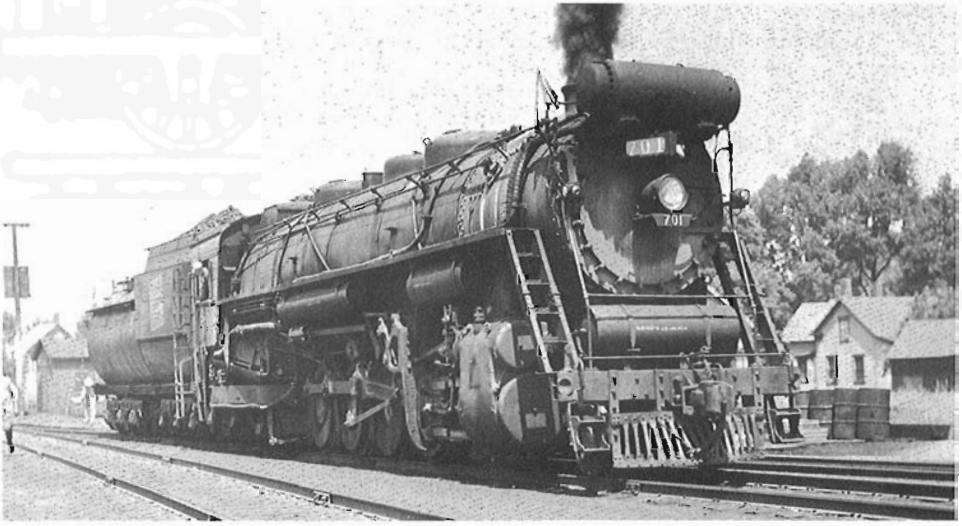
From Table II, it can be seen that Canadian Pacific Railway's class T-1-c 2-10-4 "Selkirk"-type locomotives are the overall winners of the title "largest Canadian steam locomotives", with 650 points scored out of a possible 700.

To put this score in the proper perspective, however, similar calculations for the largest United States' articulated locomotives were made, based on a comparison with the maximum Canadian engine in each category. Thus, scores of over 100 points in any single category were possible.

The Union Pacific Railroad's 4-8-8-4 "Big Boy" and the Chesapeake and Ohio Railroad's 2-6-6-6 each score over 950 points. The largest British steam locomotive, the "Duchess" class of the London, Midland and Scottish Railway, a 4-6-2 type, scored only 448 points, well below the twentieth-ranked Canadian engine.

It is the optimistic view of the author that this article will resolve some old arguments about this contentious question. However, knowing the determined nature of students of steam locomotive technology, he suspects that this method of measuring "largeness" will only add fuel to the fire of argument.

- - - - - - - - - - - -



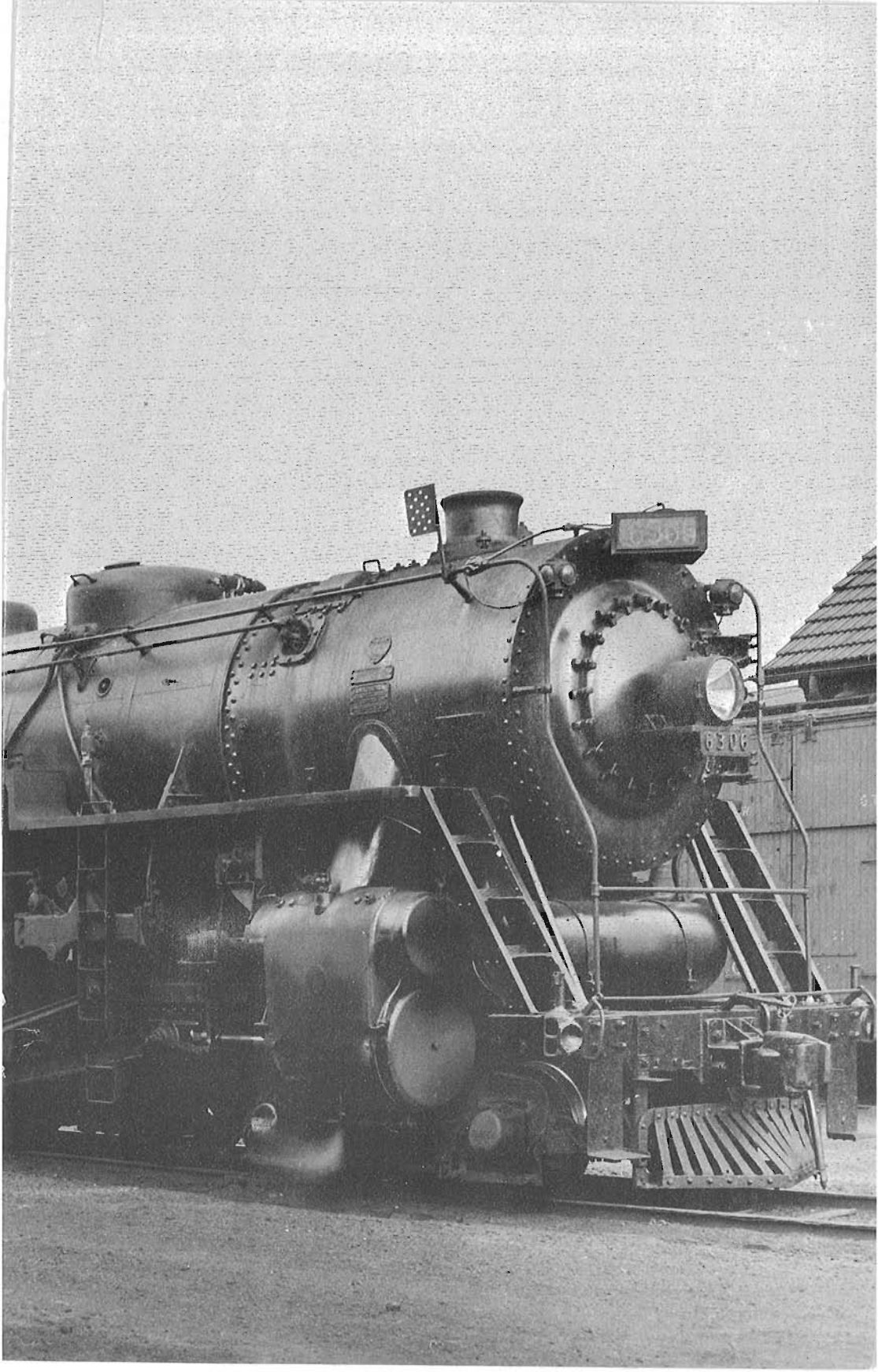
Rated No. 5 and our first US representative of a Canadian Road is Central Vermont's class T-3-A , 2-10-4 represented here by No. 701 probably at St.Albans vermont. Photo courtesy CN.

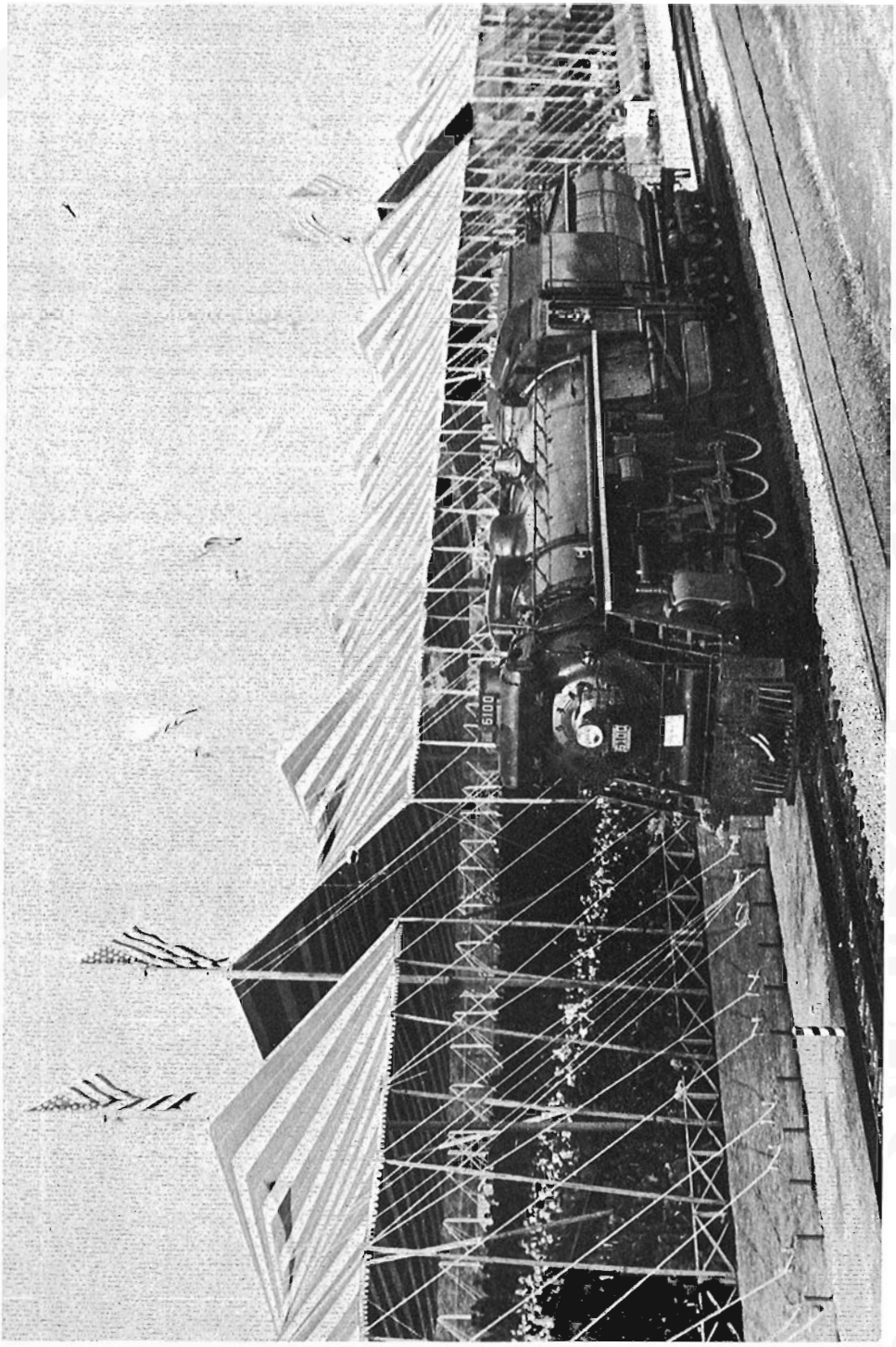
TABLE II

Point Scores

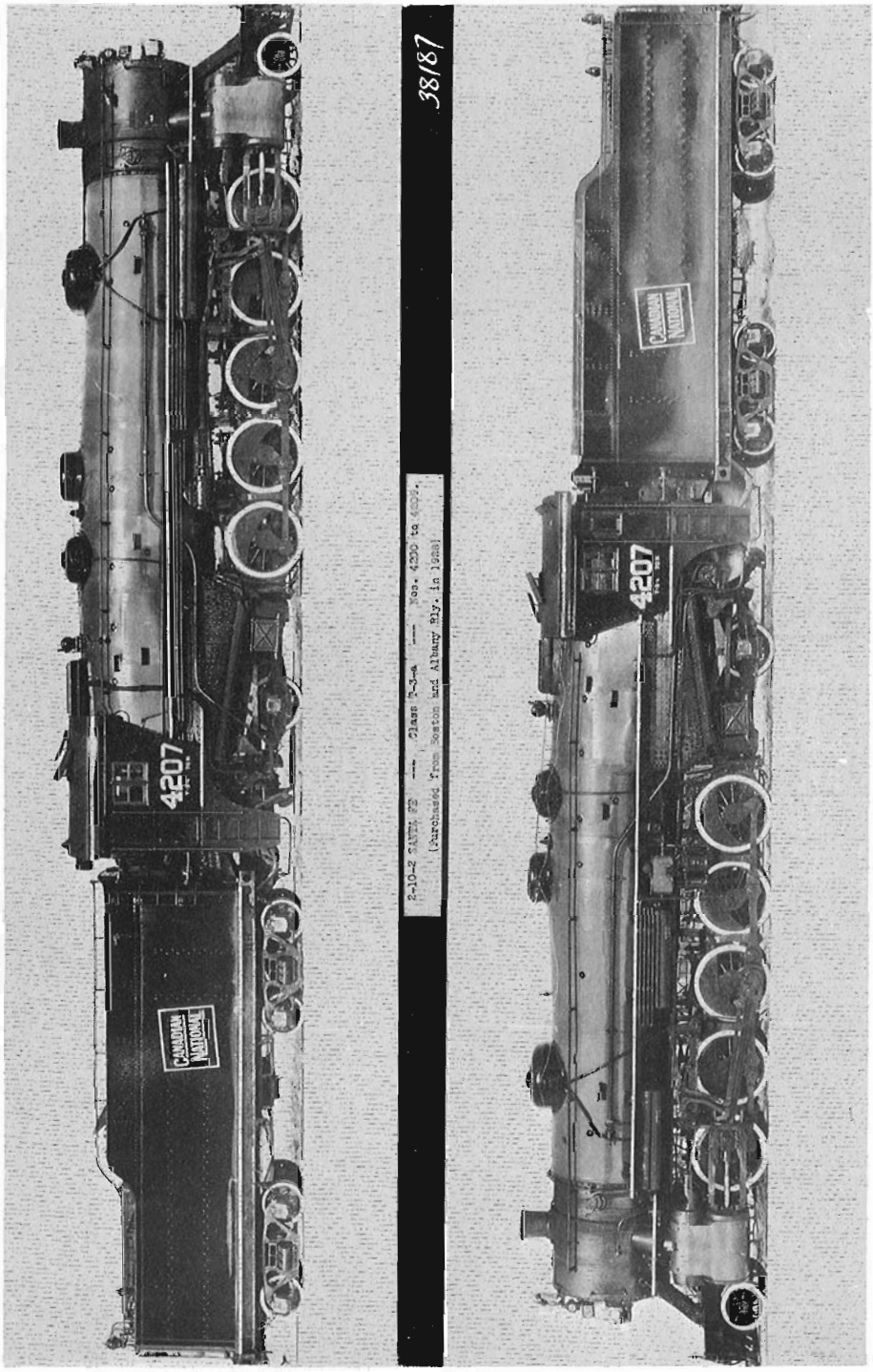
Rank	Rail-way	Rwy. class	Whyte class.	Total eng.wt.	% wt.on drivers	Nom. TE inc. booster	Grate area	Calc.max. sust.evap.	Calc. max. sust.DBhp.	Diam. drivers	Total points
1	CPR	T-1-c	2-10-4	100	87	97	93	100	94	79	650
2	CPR	K-1-a	4-8-4	97	72	79	93	100	100	94	635
3	CNR	T-2-a	2-10-2	91	99	100	80	99	89	71	629
4	TH&B	As	2-8-4	85	81	88	100	95	99	79	627
5	CVR	T-3-a	2-10-4	93	85	97	84	96	90	75	620
6	GTW	U-3-a	4-8-4	89	75	64	84	95	94	91	592
7	CNR	U-2-a	4-8-4	88	75	72	84	91	90	91	591
8	CNR	T-3-a	2-10-2	78	98	76	76	92	83	71	574
9	CNR	U-4-a	4-8-4	85	78	57	73	82	82	96	553
10	CPR	S-2-a	2-10-2	81	98	72	74	79	70	73	547
11	CPR	H-1-b	4-6-4	82	64	62	81	81	82	94	546
12	TH&B	(J1d)	4-6-4	81	67	58	81	81	79	99	546
13	CNR	T-1-a	2-10-2	71	100	70	77	82	74	71	545
14	T&NO/ONR	-	4-8-4	83	74	71	70	81	79	86	544
15	CNR	U-1-f	4-8-2	79	83	57	70	79	77	91	536
16	CNR	S-4-b	2-8-2	76	87	66	70	77	77	79	532
17	CPR	P-2-h	2-8-2	76	92	63	70	75	74	79	529
18	CNR	T-4-a	2-10-2	77	92	77	67	76	69	71	529
19	CNR	K-5-a	4-6-4	79	66	58	73	76	76	100	528
20	AC&HB	-	2-10-2	76	92	66	67	76	69	71	517

Rated No. 6 is Grand Trunk Western's 6300 class Northerns and pictured here is No. 6306, photograph courtesy CN.

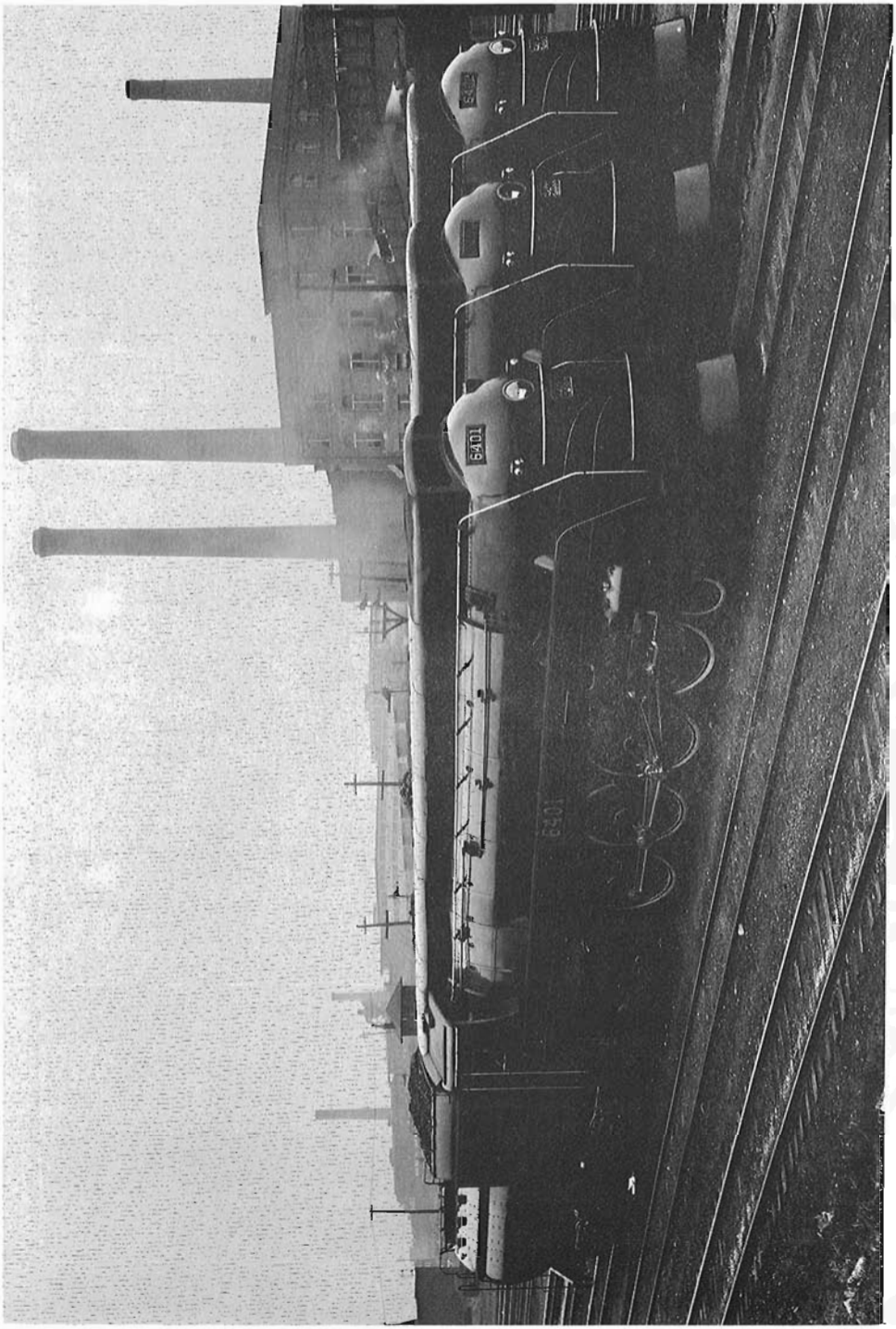




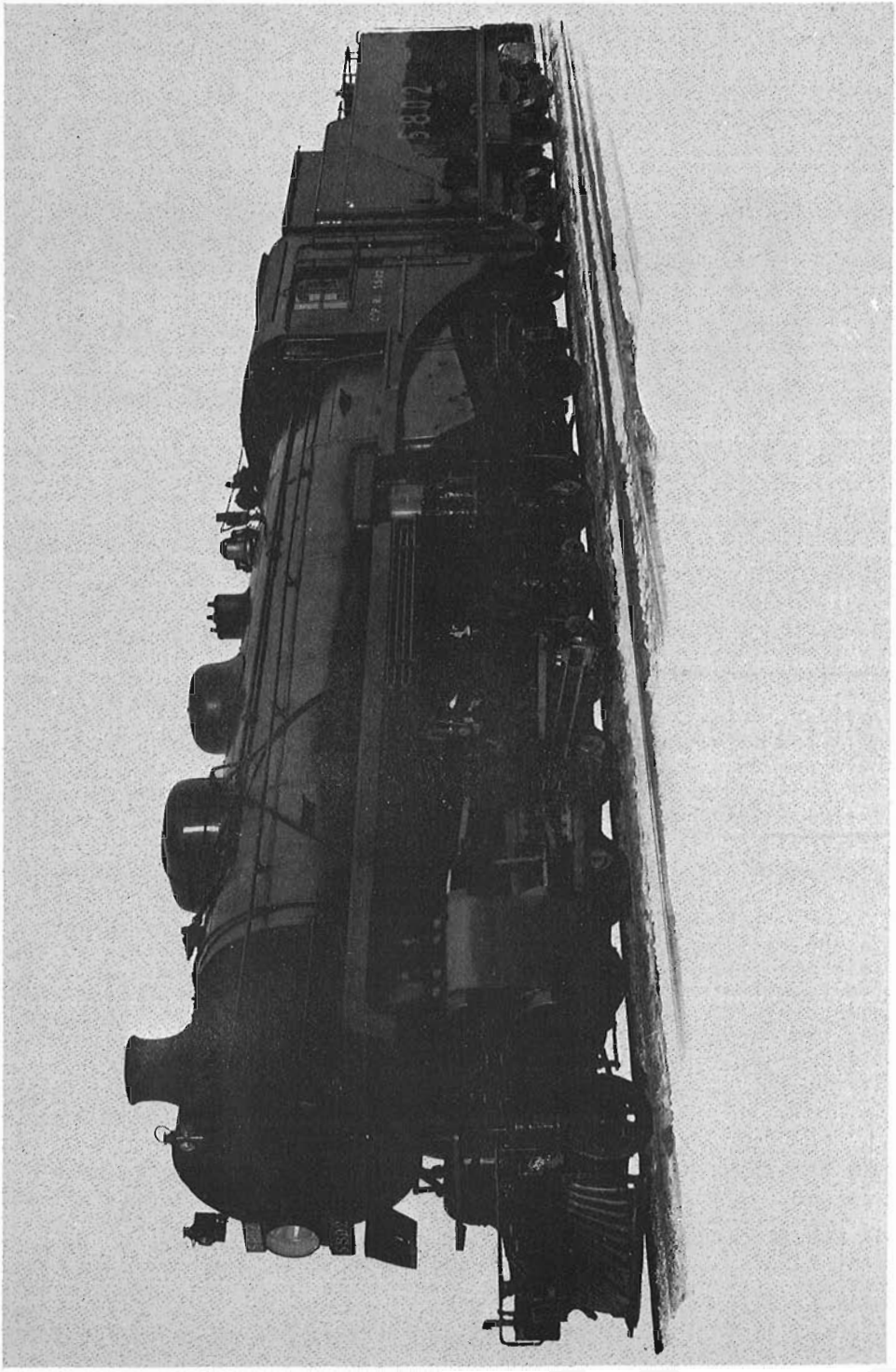
Back in September 1927 CNR was represented at the "Fair of the Iron Horse" by the 6100 which is pictured here steaming past the grandstand in her moment of glory. The 6100 class was rated 7th. in our overall point score. Photograph courtesy CN.



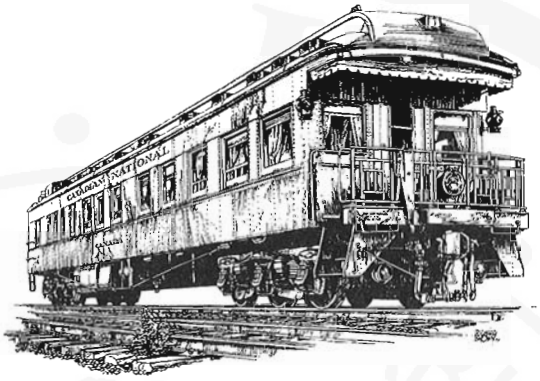
CNR's T-3-a class, road numbers 4200-4209 rated 8th. in the overall point score. Purchased from the Boston & Albany in 1928 the photo of 4207 is reproduced through the courtesy of CN.



Rated 9th. is CNR's streamlined Northern's road numbers 6400-6404 Built in 1936 by MLW three of the giants are pictured here side by side probably at Pointe St. Charles Shops soon after delivery. Photo courtesy CN.



Lucky No. 10 is none other than CPR's class S-2-A, 2-10-2 road numbers 5800-5813 and represented here by 5802. Photo courtesy CP.



The business car

CN MARINE - THE FEDERAL GOVERNMENT IS SAID TO BE "ALARMED" AT THE rise in water-transport subsidies, according to the Globe & Mail's Albert Sigurdson (May 12/77). The sinkhole has been the Newfoundland services, operated by CN Marine, which had a 1976 deficit of more than $72.8 million. Canadian National loses another $25 million in operating the Newfoundland railway. The railway's share of freight into the island has dropped from 87 percent in 1972 to 61 percent in 1976, highway haulers being the gainers. A four-man commission, set up by the federal government to study transportation in Newfoundland, is now outlining its plans. The chairman, Arthur Sullivan of Memorial University, said it was possible that the commission could recommend abandonment of the railway. But it will be weighing the social impact of changes as well and it may well decide that it is cheaper to employ 700 men at Port-aux-Basques by an inefficient railway than to change to a system that would put them on the dole. Findings are to be presented to the federal government by next March 31.

VIA UPDATE - TRANSPORT MINISTER OTTO LANG SAYS THAT THE FEDERAL government is moving toward assuming part of the cost of benefits for railway employees affected by changes in the rail passenger system. Regulations allowing Ottawa to take this step are being drafted in consulation with the railways and the labor unions. Government aid will apply to federally-ordered changes in the rail passenger system, such as route abandonments and the recent creation of Via Rail Canada Inc. Terms and conditions of existing job security arrangements will be honored.

(Globe & Mail, May 13/77)

VIA PRESIDENT FRANK ROBERTS, INTERVIEWED FOR THE MONTREAL STAR (May 14/77) expects Montreal headquarters staff to total about 150. Overall, VIA will employ up to 4,000 people. If the CTC's "preferred plan" for transcontinental service is put into effect, some construction will have to be undertaken at CN's Central Station in Montreal to accommodate CP Rail's dome cars that will be using that terminus. Also, both railways will have to make changes at North Bay, to permit CN-operated trains to change to/from CP tracks.

Mr. Roberts told the Toronto Globe & Mail (May 10/77) that VIA will take over the marketing of all rail passenger services from CN/CP in June 1977.

Queried by "Canadian Rail", Transport Minister Otto Lang wrote (May 6/77) that "thus far, only VIA's relationships with the Canadian National and CP Rail have been considered. No consideration has been given to a take-over of the services currently provided by three of the railway companies you identified (Editor's Note: Algoma Central, Ontario Northland, British Columbia Railway). An exception is the T.H. and B. company which operates from Hamilton to Fort Erie and currently receives a subsidy as it is a subsidiary of the CPR. The other lines are either owned or regulated by the provinces. There is nothing to prevent VIA's entering into contracts with such companies, although the terms of such contracts would reflect, no doubt, the responsibilities of the owners for the service and would have to be carefully considered."

BRITISH RAIL RAN ONE OF ITS HIGH-SPEED TRAINS WITH 380 PASSENGERS from Bristol to London (Paddington) in 68 minutes, 20 seconds, May 7/77 - 117 3/4 miles at an average speed of 103.5 m.p.h. This is claimed to be a world record, reports The Daily Telegraph (London).

BRITISH COLUMBIA RAILWAY MAY HAVE A NEW $140-MILLION LINK WITH A northeastern coal development, providing a vital service route from Prince George. Provincial Economic Development Minister Donald Phillips says that engineering studies will begin immediately on construction of a 70-mile link from Tumbler Ridge, 100 miles northeast of Prince George, to Anzac, 70 miles north of Prince George. Actual construction go-ahead depends on when markets favor development of coal deposits having the potential to produce eight million tons a year. Coal would come by B.C. Rail to Prince George and then be transported west by CN to the port at Prince Rupert.

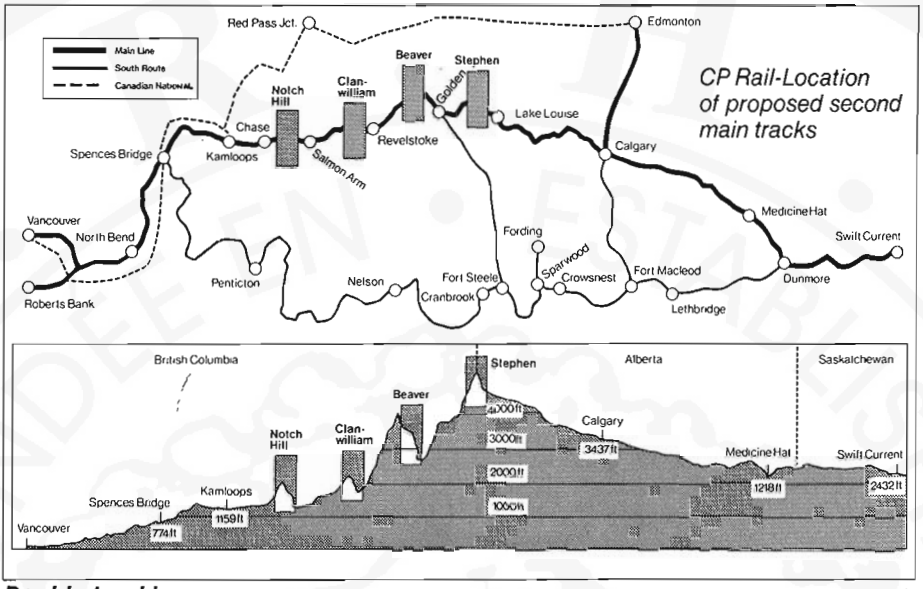
Meanwhile, a royal commission of enquiry into the affairs of the provincial railway heard a submission from the White Pass & Yukon suggesting that two major rail lines be scrapped, the Fort St. John-Fort Nelson line and the Dease Lake extension. It also recommended that British Columbia Railway consolidate its existing lines and switch emphasis from north-south to east-west. Work on the Dease Lake line has been halted until the enquiry is completed.

(Globe & Mail, May 28/77)

CP RAIL IS CONSIDERING A $90-MILLION TUNNEL PROJECT IN THE SELKIRK Mountains to increase tract capacity for the 1980's. The tunnel project would be the second phase of a double-tracking program the railway is to begin this year to improve main-line track Vancouver-Calgary at a cost of $45-million.

The first phase calls for construction of 4.5 miles of track west of Revelstoke, 11 miles west of Salmon Arm, and 6 to 9 miles between Lake Louise and Stephen.

The tunnel phase would involve construction of some 19 miles of new track in the Beaver River valley east of Rogers Pass. An eight-mile tunnel would extend under the present Connaught Tunnel in the Rogers Pass area and would be used for westbound traffic while the Connaught Tunnel would be used for eastbound traffic.



Double tracking: *Diagram shows location of proposed improvements to the mainline. The project is scheduled for completion by 1980.*

CP Rail is also giving consideration to providing double track between Field and Golden, which could require the boring of a seven-mile tunnel through the Beaverfoot Range, by passing the Kicking Horse River gorge with its extreme curves and heavy grades. This tunnel would extend from the vicinity of Leanchoil to McMurdo. In a study of the project, mention is made of possibly diverting the Kicking Horse River to provide additional space for a second track along the gorge. With such a diversion, hydro power could be generated.

With CP Rail called on to handle a larger volume of freight through the mountain area, especially coal, potash and sulphur to west coast points, line improvements are sought to permit increased train capacity with the same (or reduced) motive power.

(GLOBE & MAIL, May 21/77)

B.C. HYDRO TRANSPORTATION IS COLLECTING ARTIFACTS RELATING TO THE history of the Greater Vancouver transit system for display in a public museum. A historical committee, working to set up the museum, is appealing to transit users for such items as "old tickets, tokens, pictures, fareboxes, copies of The Buzzer and the like".

(The Buzzer, April 7/77)

IN SOUTH AUSTRALIA THE TITLES OF ENGINE DRIVER AND FIREMAN HAVE been abolished in favor of a new structure incorporating grades of trainee enginemen and six classes of enginemen. Men are to be recruited directly into locomotive driving positions.

(Australian Railway Historical Society Bulletin, March/77)

ONTARIO HYDRO ORDERS FOR 432 100-TON ROTARY DUMP GONDOLA CARS and 20 diesel locomotives have been placed by Canadian National acting on behalf of Ontario-Hydro. The equipment, operated by CN, will be used in the movement of coal from western Canada to Ontario Hydro plants.

The gondola car order, worth more than $14 million, was awarded to National Steel Car Corporation of Hamilton, while the locomotives, total cost over $14 million, will be produced by General Motors of Canada in London. Delivery of both kind of equipment will start in July 1978, with the locomotive order completed by September and the car order by October the same year.

Shipments of western coal to Ontario Hydro are scheduled to begin in the latter half of 1978 and are expected to reach planned capacity by mid 1979. Over the next 15 years 30 million tons of coal from western Canada will be shipped to Ontario Hydro over CN lines.

JAPAN NATIONAL RAILWAYS, PLAGUED WITH FINANCIAL PROBLEMS, HAS DEvised a business scheme it hopes will eat into years of accumulated losses - the breeding of earthworms for fishbait, chicken feed and fertilizer. (JNR loses about £4 million a day and has been ordered by the government to balance its books every year from 1979.) The idea is to turn over the strip of land under the elevated tracks of the Bulletin train to private firms who will be invited to bid for JNR earthworm breeding contracts. Experts are divided in opinion about whether the earthworm, in its formative weeks, can withstand the noise and vibrations of express trains passing overhead.

(The Guardian, May 24/77)

RAILROAD RADIO IS REPORTED ON IN THE SEMAPHORE (WINDSOR-ESSEX DIVision, CRHA) of April/77. Comments on suitable monitor radios are followed by a complete, detailed list of frequencies for the eleven Windsor-Detroit area railroads. A new 16-page list giving radio frequencies used by Canada's Class I railroads, short lines and industrials is published as the "Canadian Railway Radio Guide" and can be ordered from Gansel Publications, 124 William Street, Niagara-on-the-Lake, Ont. LOS 1J0 ($3.00 postpaid in Canada).

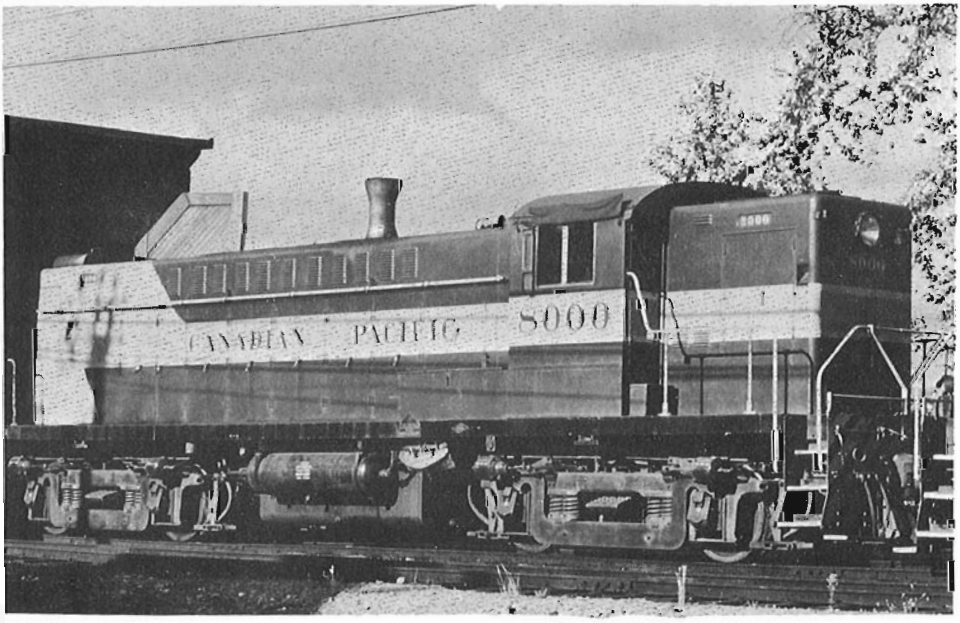
A REPORT THAT THE LONG ISLAND RAILROAD IS FAST BECOMING AN EMD line as since the first of March 1977 they have received 8 SW 100's Nos. 100 to 107, 6 GP38-2's Nos. 272 to 277 and 23 MP15AC's Nos. 150 to 172. These 37 EMD's join the 22 GP38-2's Nos. 250 to 271 the L.I. received in February and March 1976. The L.I. now has 59 EMD diesels, only 8 ALCO C-420's Nos. 222 to 229 will remain on the roster. All leased EMD's will be returned to their owners within two months (3 to the Bangor and Arrostook and 9 to the Precision Corp.). The new GP38-2 No. 277 has been named after the Long Island's Late President "WALTER L. SCHLAGER Jr." and will carry his name under both cab windows. Our thanks to Bob "Choo-Choo" Gayer (the railroading bus driver) of Flushing, N.Y. for the report.

CP RAIL IS PRESERVING FOUR VETERAN DIESELS FOR HISTORICAL PURposes. Units 4065, 8000, 8554 and 8905 are the sole survivors in each class still in operational condition and will be used by the company "for various historical displays of or for special loan to museums". The units have been officially preserved as static exhibits and there is no possibility at the moment to use them for "amateur excursions". No permanent home has been established for the units as yet. CP Rail intends to select a Montreal Locomotive Works A and B unit to add to the collection. "Naturally we can't preserve one of every class but we do intend to try and put together a collection of the more significant designs of motive power that will best represent the company fleet over the years", said Dennis Peters, Public Relations Department - Special Projects. (Editor's Note: In addition, CP Rail is holding a Trainmaster in the 8900 series to be allocated to the CRHA on permanent loan for exhibition at the Canadian Railway Museum.)

(CP RAIL NEWS, April 20/77)

C-Liner 4065, originally named The City of Kingston and used as a demonstrator for the Canadian Locomotive Company, worked in western Canada until retired and is a distinctive addition to CP Rail's collection of preserved diesels.

CLC road switcher 8554 hauled CP Rail freight until March 1975 and now represents its class among the company's preserved diesels.



BALDWIN 8000 served (with 11 others) on CP Rail lines on Vancouver Island and has now been saved from scrapping for preservation.

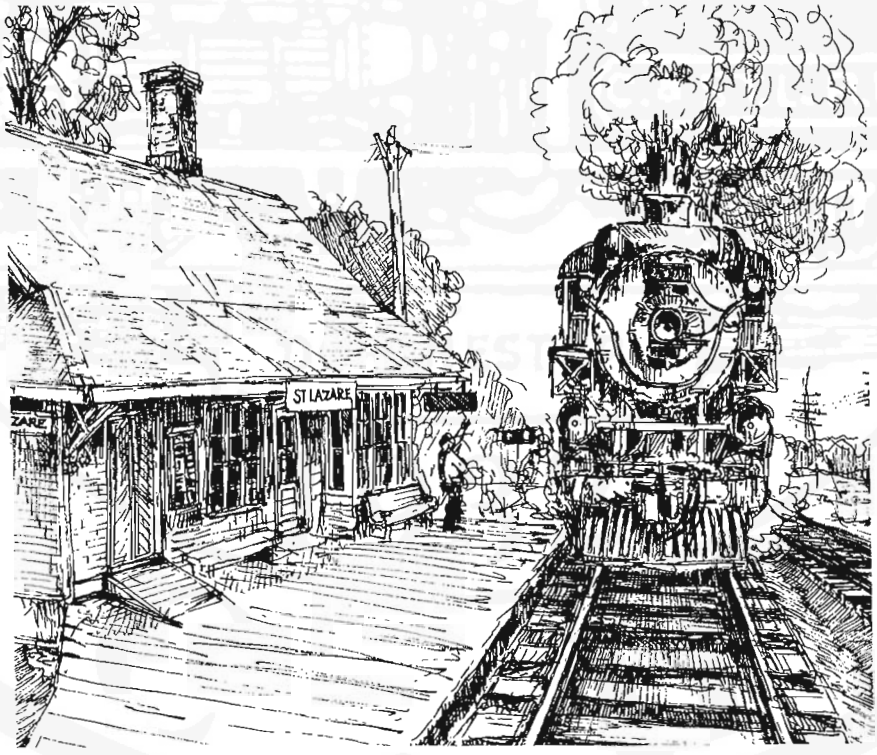
A SOUTH AFRICAN RAILWAYS 2 FT. GAUGE 2-6-2+2-6-2 GARRAT HAS been acquired by a Texas firm for operation on a wildlife ranch in the vicinity of Hempstead. It is due to arrive sometime in April.

(Pacific News, quoted in "the 470", May/77)

MONTREAL - WASHINGTON DAILY FREIGHT SERVICE HAS BEEN IMPROVED with establishment of The Washingtonian (southbound) and Le Montréalais (northbound) by CN/CV/B&M/Conrail, on the following schedules:

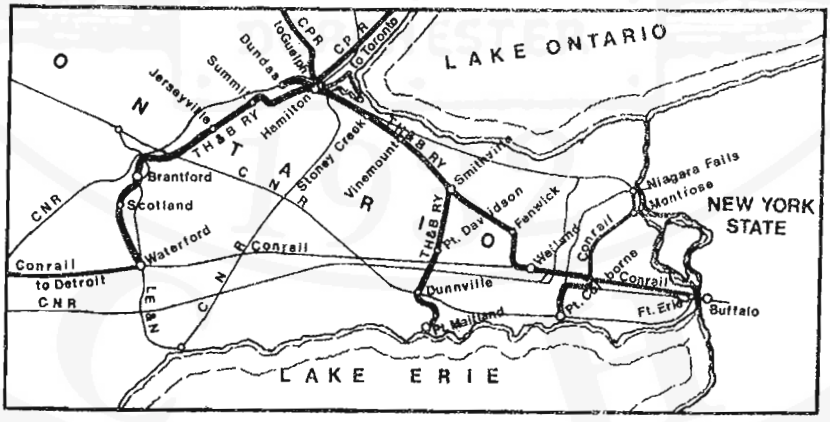
The Washingtonian				Le Montréalais
0300 Mon.	dep.	Montreal Yard	arr.	1830 Wed.
1030 Mon.	dep.	St. Albans	dep.	1400 Wed.
2100 Mon.	dep.	White River Jct.	dep.	0430 Wed.
0630 Tues.	dep.	Springfield	dep.	1930 Tues.
1815 Wed.	arr.	Potomac Yard	dep.	0230 Mon.

(CN "movin", Jan.-Feb./77)



MALCOLM S. PEACOCK, CRHA MEMBER IN RIVERVIEW, N.B., SENDS THE above photo of his rail car collection. He rescued both cars (less trucks) from the scrap yard. CN caboose 78509 was purchased in September 1974 and the cook-diner-bunk car, CN 72499, in June 1976. The M and N seen on the cars are the first initials of the proud owner and his wife. Exteriors and interiors of both cars are close to the original, except for some extra railroad artifacts which have been added, Mr. Peacock reports. The cars are used as a year round cottage and are located on route 955, N.B. approximately 10 miles from Cape Tormentine, terminal for CN ferries to and from Prince Edward Island. CRHA-ers have a standing invitation to drop by and say hello.

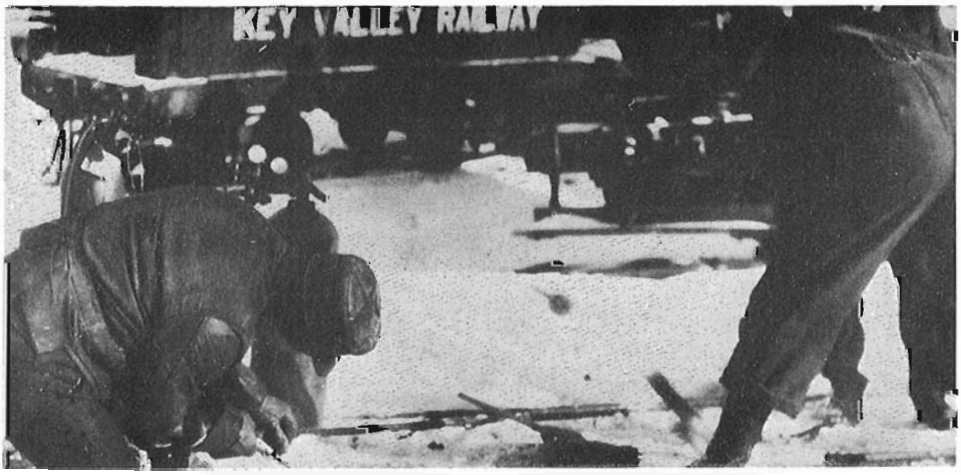
CP LIMITED HAS COMPLETED PURCHASE OF THE TORONTO, HAMILTON AND Buffalo Railway. CP previously held a 27 percent interest and bought the remaining 73 percent from Penn Central, Michigan Central and Canada Southern for $6.5 million.



In the lead article of our February issue titled 'THE MYSTERIOUS EIGHT WHEELERS' Sandy Worthen reported that 'former Canadian Northern No. 50 went to the KEY VALLEY RAILWAY'. Alas Dale Wilson of Sudbury, Ontario has come across two rare photos belonging to Mr. John Tolonen, owner of the LOST CHANNEL LODGE. While the origin of the photos is unknown they 'came with the property' when the lodge was acquired by Mr. Tolonen, and are the only KEY VALLEY photos known to exist.

The railway operated between a junction with the CPR at Pakesley (some 50 miles south of Sudbury) to Lost Channel along a route that generally followed the Key River Valley. One source says that only one regular steam engine worked to KEY VALLEY there being one other vehicle a 'jitney' of sorts to take men from the mill to Pakesley - presumeably so they could catch the CPR to some nearby point having a hotel!

For anyone interested in a little summer railway archeology expedition access to the area is from Highway 69 at the road going to Grundy Lake Provincial Park. From Pakesley the old right of way is covered with a road as far as Lost Channel. This route has been undergoing several up-grading operations over the past few years and by now perhaps it has become a provincial second class highway into the Lake Nipissing area. Our thanks to Dale Wilson for the information and to John Tolonen for the photos.



6060 after her recent winter shopping at Montreal's Pointe Saint Charles Shops is once again off and running on the excursion trail. Pictured here in her new coat of green and black, 6060 was caught at Dorval Station as she was heading west to Toronto on May 7, 1977 with an excursion sponsored by the St. Lawrence Valley Railway Society. Peter Murphy photo.