

CANADIAN RAILROAD HISTORICAL ASSOCIATION INCORPORATED.

MONTREAL, CANADA

NOVEMBER 1956

NEWS REPORT NO. 72

Association News

On SATURDAY, OCTOBER 27TH, 1956, some thirty members and friends of the Canadian Railroad Historical Association and the Upper Canada Railway Society, met at Kingston, to commemorate the centenary of the opening of the Grand Trunk Railway between Montreal and Toronto, and the centenary of the delivery of its first locomotive by the ancestor of the Canadian Locomotive Company.

It was the first time in the history of both societies that an undertaking of a cooperative nature has been held. It was most successful in every way, and in addition to the enjoyable time which was had by all participating, it went far to promote that mutual understanding between the principal railwayist groups in Canada, without which our common goals can never be achieved.

A complete description of this event, as well as the story behind the observance, can be found commencing on page 77.

THE ASSOCIATION has for sale, a limited number of copies of a publication of the Scottish Tramway Museum Society.

" The Tramways of Paisley and District " covering the period 1885-1954, is an illustrated, 24-page 6½ x 8" booklet, the joint effort of our popular member Mr. Robert R. Clark, and an associate of his, Mr. Ian M. Coonie. It includes an appendix of the rolling stock of the Paisley District Tramways Company.

While the supply lasts, they may be had by writing this Association, Box 22, Station B, Montreal 2 - Attention Sales Division, Museum Committee, at a price, postpaid, of 50¢ per copy.

L.C.L. SHIPMENTS

BOUNDARY MARKERS

by Robert R. Brown

When the Champlain & St. Lawrence right-of-way was surveyed and cleared in 1835, the company set out stone markers at many points to indicate the railway property boundary. These 12x12" limestone monoliths rose about 18" above the ground. The initial S L C R was deeply cut on one side, representing St. Lawrence & Champlain Railroad. Such errors in Company names were very common in the early days.

Twenty five years ago there were several of these stones still "in situ" but they gradually vanished and it was feared there were no more. However, during a recent visit to St. Johns, Que., I discovered one on the south side of the track, opposite the junction switch west of the railway station.

THE ORIGIN AND DEVELOPMENT OF
SLEEPING CARS

by O.S.A. Lavallee

" The Cumberland Valley Road has put on night cars, and out of curiosity, I took a trip in one of them. They are a novelty, that's sure; but unless I absolutely have to travel at night, hereafter I don't use them. 'Twas a cold night and the bedclothes were a minus quantity. There was a pillow that almost got lost in one ear, and a mattress that would have fitted the other if it hadn't been on top. They told me there were chilled wheels under the car, and I know the cars were. I had a cold for a month, but I also had the experience. "

This far-from-enthusiastic account is an extract of a diary entry made by one of the first patrons of a railway sleeping car, late in the year 1837. It refers to a railway coach fitted up by the Cumberland Valley Railroad of Pennsylvania, with four three-berth compartments, for night service between Chambersburg and Harrisburg, Pa., a distance of 52 miles. This service was inaugurated in November 1837 and is generally accepted as the first application of a sleeping car in railway history.

As our account indicates, the experience was a far from comfortable one. No bedclothing was provided, and of course, passengers were not expected to undress, other than to remove their footwear. So primitive, indeed, were the appointments that twenty years were to elapse before sleeping cars gained any important place in North American transportation.

About the same time as the Cumberland Valley experiment, the Grand Junction Railway in England came out with a small four-wheel composite carriage, one of whose compartments was capable of being converted into a bed; however, it is thought that this facility was offered more for the use of the sick or bedridden, rather than as a regular facility for ordinary passengers. Certainly, the Grand Junction Railway's trains and connections at this period didn't appear to warrant the use of a sleeping car, as such! Sleeping cars didn't come into regular use in England until 1873, as we shall see.

In the interim between the 1837 example in America and the inventions of Pullman and others two decades later, various improvisations were made to enable passengers to sleep at night in ordinary railway coaches. Two inventions in particular are of interest in our analysis. One of them provided for a coach in which the seat backs of each alternate seat lowered into a horizontal position, thus enabling the passenger (if no one occupied the seat ahead of him) to lower the back of the seat ahead and place his legs in a horizontal position. Doubtless the motion of the train caused him to slide forward after a time so that he would wake up periodically to readjust himself. The second invention was more unusual, and a contemporary illustration shows a top-hatted gentleman comfortably (?) asleep in a sort of half-hammock which, attached by hooks to the backs of two adjacent seats, permitted him to recline with his legs hanging in a vertical position. Thus ensconced, the traveller found himself in a sort of distorted "Z" position which could not have had any advantage over sitting up all night.

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Some years ago, the Baldwin Locomotive Works, we are told, possessed a model of a sleeping car which was built about 1840 by Messrs. Imbray & Nash of Philadelphia. The model shows that the car was equipped with longitudinal seats on one side, with three-tier sets of bunks on the other; it was also one of the earliest to possess a clerestory roof, for ventilation purposes. The model probably represents one of the sleeping cars introduced in 1838 on the Philadelphia Wilmington & Baltimore Ry. which were equipped with twenty-four bunks in three tiers.

Returning to the proper realm of the sleeping car, we find that two sleeping cars of more conventional style were built in the Hamilton, Ontario shops of the Great Western Railway in the year 1857, under the direction of Samuel Sharpe. These cars were operated regularly on night trains between Niagara Falls and Windsor, Ontario for some years. They were the first sleeping cars to be used on a Canadian railway.

Then, in the year 1858, a journeyman cabinetmaker, vexed by the lack of organized sleeping facilities on night trains, took it upon himself to approach the Chicago & Alton Railroad with a sleeping car idea. This man was George Mortimer Pullman. After an examination of the available passenger rolling stock on the Alton road, the management turned over two of its passenger cars, Nos. 9 and 19, on which he might exercise his talents. These 44-foot cars were converted at Bloomington, Ill., at a cost of something less than \$1,000 per car. Pullman installed ten sections in each car, as well as enclosed toilet facilities and open washing facilities, with roller towels, at each end of each car. The upper berths were raised and lowered by pulleys at all four corners, and curtains separated each section from the one adjacent, as well as from the aisle. No linen sheets were provided, and the bedding consisted of a mattress, pillow and blanket. The car was illuminated with candles, and heated by wood stoves at each end. These cars possessed no porter; it was up to the brakeman to handle the berths. The car rode upon four-wheel trucks, whose springs were supplemented by blocks of india rubber.

Service was inaugurated on the night of September 1st, 1859, running over the Chicago & Alton between Bloomington and Chicago, 127 miles. A berth cost .50¢. The interiors of Nos. 9 and 19 set the style for the standard open space Pullman car which is still a familiar feature of night railway travel in North America. Later, another Alton car was converted, as well as several cars for another railroad running out of Chicago, the Galena & Chicago Union Railroad.

In 1859, the Grand Trunk Railway built its first sleeping car. In the same year, the Buffalo & Lake Huron Railway built a special car at Brantford, Ontario for the use of the Prince of Wales. While it is a common claim among railway historians that this was a sleeping car, Mr. Robert R. Brown of this Association possesses a contemporary description of the car which shows that it possessed no sleeping facilities

Mr. Brown also notes that the Grand Trunk Railways built a car in 1859 for the Prince of Wales which was actually a parlour car, though it did possess several beds. Possibly this car has become confused with the Buffalo & Lake Huron unit, in claiming that the latter was a sleeping car.

In 1861, the Grand Trunk Railway built four sleeping cars at its Pointe St. Charles shops in Montreal.

Meanwhile, south of the border, the advent of the war between the States postponed further extensive efforts on the part of George M. Pullman, the intrepid builder of sleeping cars. In 1864, however, Pullman designed an improved sleeping car from the ground up. It was impossible, he found, to provide adequate and comfortable sleeping facilities in the small railway cars then in use. As a result when the new car -- called the "Pioneer" -- was built at a cost of something approaching \$18,000.00, it was longer, higher and wider than any other car seen up to that date. It was built in Chicago and first incorporated the principle of the upper berth hinged on its inside edge, rather than suspended by ropes at each corner as in the earlier sleeping cars. Because of its size, the car could not be placed in regular service, but when Abraham Lincoln, President of the United States, was assassinated in April 1865, Pullman offered the use of the "Pioneer" to convey the remains of the great President between Chicago and Springfield, Ill. Hurried changes were made to structures which might foul the "Pioneer"'s ample proportions, and shortly afterward, as a result of these alterations, Pullman persuaded the Chicago & Alton Railroad to use the "Pioneer" regularly.

The facilities provided by the car, and its enthusiastic public reception, justified the changes which were required in railway structural clearances and in a matter of years, the car set the standards of rolling stock size which are basic to this day on this continent. In 1866, a through Chicago - New York sleeping car service was established, by way of the Michigan Central, the Great Western Railway across southern Ontario, and the New York Central & Hudson River RR.

In 1867, Pullman and an associate named Field founded Pullman's Palace Car Company. The year of incorporation was marked by the introduction of the car "President" -- the first in which dining facilities were provided as a permanent feature, served from a kitchen at one end of the car. Tables were provided which could be set up in the sleeping car sections at meal time. Cars of this type -- called "hotel Cars" -- began running between Chicago and Buffalo via the Michigan Central and the Great Western, in the same year.

In 1868, the "President" was followed by the first car ever designed purely for dining service. Appropriately enough, it bore the name of the world-renowned New York restaurateur, "Delmonico".

On August 22nd, 1870, Pullman standard sleeping cars first began operation on the Grand Trunk Railway of Canada, between Montreal and Sarnia. The same year also witnessed the building of a compartment or roomette car by the G.T.R. at Montreal.

About this time, Webster Wagner entered the picture. Seeing sleeping cars pass through his home town of Palatine Bridge, N.Y., he conceived several improvements to the cars then in use.

CENTENARY OF THE MONTREAL-TORONTO RAILWAY LINK.

In company with members of the Upper Canada Railway Society, a group of Montreal and district members of the Canadian Railroad Historical Association met at Kingston, on Saturday, the twenty-seventh day of October, 1956, to observe and commemorate two important

centenaries. They were:- (1) One hundred years of operation of the former Grand Trunk Railway line between Montreal and Toronto, and (2) the hundredth anniversary of the outshopping of its first locomotive, by the Canadian Locomotive Company, Limited, of Kingston.

In the year 1841, the colonies of Upper and Lower Canada were united as one, into the Province of Canada, by the so-called Act of Union. The political fulfillment of this Act took place in the same year, when the first Parliament of the Province of Canada met at Kingston, in what is now Ontario.

The years following the War of 1812 had seen the gradual awakening of commercial enterprise in the two colonies and as a result, the establishment of transportation ties was not slow in coming. By the time that the railway appeared in Canada in 1836, the colonies were united by a complete and comprehensive system of inland navigation. The canals which were designed as a part of the transportation network were all built at this time, at a rather high public cost. While the initial railway in Canada met with complete success from the outset, and while its construction fired the imagination of other communities not so served, it was 1850 before railways attained sufficient importance in the country to be considered as an attainable factor in its development.

The period of development of railways in Canada really dates from this time. In 1853, the Grand Trunk Railway of Canada was formed, with its objective, the establishment of rail service between the eastern and western extremes of the Province of Canada. Two objectives in particular claimed priority in the plans of the GTR -- one was the building of a bridge across the Saint Lawrence at Montreal, the other the completion of a line of railway between Toronto and Montreal.

In an amazingly short time -- just over three years, in fact -- the Grand Trunk Railway was able to augment the Act of 1841 with a bond of steel. On November 19th, 1855, the railway was completed between Montreal and Brockville, and just short of nine months later, on August 11th, 1856, construction crews completed the portion between Toronto and Belleville. The gap between Belleville and Brockville shortened gradually, and the "fait accompli" -- a railway uniting the upper and lower half-provinces -- was signified by the operation of the initial train service on Monday, October 27th, 1856. On that day, at precisely 7:30 AM, a train, including, it is said, three first class and three second class passenger cars, left the GTR station in Montreal, then located at Pointe St. Charles. Half an hour before, at 7:00 AM, a similar train had left Toronto. The two trains passed at Kingston at about 2:00 PM, where a half-hour stop was had for lunch. It was well toward midnight when the westbound train arrived at the GTR Toronto station at the Don. Almost simultaneously did the eastbound train reach Montreal.

The union was accomplished. Eleven years were to elapse before Confederation was realized, but the important commercial ties which

railway signified to the Province of Canada, made it the example for its sister Maritime Provinces, which were to unite with it in 1867. 78

The completion of the Montreal-Toronto railway was an important event. It was indeed a milestone of equal importance to the establishment of the first railway twenty years before. The single-track, five-foot-six-inch gauge line which served the isolated hamlets and prosperous towns of the Saint Lawrence Valley blossomed into one of the most important railway lines in all of Canada. Where the trains of our forefathers consumed eighteen hours, by night or day, to carry travellers back and forth, the fastest trains in Canada today perform the journey in six and a quarter hours.

It was only appropriate, then, that Kingston should be the site of the meeting of representatives groups of the two societies. The delegates from Montreal and Toronto arrived within a few minutes of one another at the meeting place, almost one hundred years to the hour since the meeting of the first two trains one hundred years before. Members of the press and of the local radio station were on hand for the event, and after the westbound train, No.5, had been detained some ten minutes by Canadian National Railways so that a sign could be placed on the front of the locomotive for photographers, the two trains passed just west of the station, and another century of rail service had begun.

Following the station ceremony, adjournment to the LaSalle Hotel followed, to partake of a Centennial Luncheon of roast beef and all the trimmings. Twenty seven guests participated in the luncheon. Appropriately enough the group at the head table included officers of both organizations, each of which is also a member of the other group. They were: Messrs. Ray F. Corley, UCRS, John Mills, UCRS, Omer Lavallee, CRHA, R.Douglas Brown, CRHA, and Robert Sandusky, UCRS. An informal note prevailed at the luncheon. Grace was asked by Mr. Corley, and Mr. Lavallee welcomed the guests, and made a few comments appropriate to the occasion following the luncheon.

During the afternoon, the assembled group of more than thirty individuals were the guests of the Canadian Locomotive Company Limited, whose works comprise some thirteen acres in downtown Kingston. It was just one hundred years since the first locomotive built by the predecessor company, the Ontario Foundry, was outshopped. This engine was a 4-4-0, Grand Trunk Railway No.88, with 66" drivers, 15x20" cylinders, and weighed 24 tons, two hundredweight. The tender tipped the scale at an additional 14 tons, 10 hundredweight, making the total weight of engine and tender 38 tons, 12 hundredweight. There were six engines in this initial order, numbered consecutively from 88 to 93. In anticipation of the rails reaching Kingston, nos.88 to 91 had been completed in advance and were all turned over in October 1856. No.92 was completed in November 1856, while No.93 was outshopped in February 1857.

The firm had been established in 1850 under the style of Tutton & Duncan, as a general machinery and engine works, on the site of the former Drummond shipyard. Later it was sold to Morton & Hinds, whose Ontario Foundry, as it was now called, turned out the first railway locomotives. In 1865, the firm of Morton & Hinds was taken over by the Canadian Engine & Machinery Company, a firm whose capital originated largely in Montreal. In 1881, the company was reorganized as the Canadian Engine & Machinery Company, and in 1900, it was purchased by Hon. William Harty of Kingston, and other local people, as the Canadian Locomotive Company.

(continued on page 80)

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 & NOTES AND NEWS &
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 S by Forster A. Kemp N
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★ The City Council of London, Ontario has decided to hold a plebiscite on the question of whether the sum of \$400,000 should be spent to rehabilitate the passenger equipment of the London & Post Stanley Railway. The railway is faced with a five-month shutdown in its electric power supply, to begin January 1st, 1957, as a result of the conversion of the City of St. Thomas from 25-cycle to 60-cycle alternating current, thereby rendering the L&PS conversion equipment obsolete. It is also reported that an application has been made to the Board of Transport Commissioners to discontinue all passenger service on January 1st. The railway has one diesel-electric locomotive, with which it will continue to operate freight and switching services during the shutdown and perhaps indefinitely.

★ Canadian National Railways has several applications before the Board of Transport Commissioners to discontinue passenger and mixed train services on branch lines. The lines which would be affected are those between Pembroke and Golden Lake, Ont., Parkhead and Wiarton, Ont., and Palmerston and Durham, Ont. The first of these lines has one passenger and one mixed train in each direction, the second, two mixed services, and the third, one mixed train, daily except Sunday.

★ Canadian National Railways is considering the construction of two new railway lines in Northern Manitoba to provide rail service to projected mining developments. One of these lines would connect an expected development of the International Nickel Company at Moak Lake with the Hudson Bay Railway at Sipiwesk, a straight-line distance of 35 miles. The other line would be built from either the H.B.R. or the Lynn Lake line to Chisel Lake, where it is expected that the Hudson Bay Mining & Smelting Company will begin development of nickel-zinc ores.

★ Meanwhile, the Beattyville-Chibougamau line of the C.N.R. is nearing completion. Track-laying has passed mileage 103 and 31 more miles will bring it to Chapais, site of the Opemiska Copper Mines. A bridge must still be constructed over the Chibougamau River before the town of Chibougamau can be linked by rail with the outside world.

★ Closer to Montreal, the site of the new Cote de Liesse hump yard of the C.N.R. has been cleared and grading has begun for the yard itself and for a diversion in the C.P.R. main line between Dorval and Ballantyne. The diversion will allow construction of an underpass to permit C.N.R. trains access to the yard without crossing the C.P.R. at grade. The C.N.R. has concluded an agreement with the City of Lachine whereby it will relocate its Cornwall Subdivision main line between Dorval and Turcot West. The new route will follow the present C.P.R. line parallel to the Metropolitan Boulevard, from Dorval to Grovehill. The CPR tracks would be moved about a hundred feet northward. The new C.N.R. line will not ascend the present grade which begins at Dorval, but would pass gradually into a cutting which would allow freight trains to proceed through the underpass at about the same level. Passenger trains will continue on the route of the present l'Assomption Subdivision to Turcot West, where the present main line is rejoined. It is understood that a single track of the latter must be retained between Turcot West and Willows (24th Avenue) to serve industries in Lachine. With this development, Ballantyne will become one of Canada's most important rail junctions, with two main freight yards within a "stone's throw" of one another.

- ★ Canadian Pacific Railway inaugurated two more "Dayliner" services during October. One of these involves trains 702, 706 and 707 between Toronto and Owen Sound. The other is the "Alouette", trains 211 and 212 (B&M 307-332) between Montreal and Boston. The latter marks the first time that RDC units have operated in interchange service. The first runs were made by C.P.R. #9111 southbound, and Boston & Maine #6212 northbound. Both of these are of the RDC2 type. Both cars appeared to be very crowded when passing Montreal West. This marks the end of parlour car (and buffet) service between the two cities. Running time between Montreal and Boston has been shortened to 8 hours, 35 minutes, while that between Toronto and Owen Sound is now 3 hours and 15-20 minutes.

- ★ The Canadian Pacific Railway has remodelled two of the four standard sleeping cars of the "J" class. These cars have fourteen sections and are air-conditioned. The remodelled cars are named JELLYCOE and JACK FISH. The other two, JAFFRAY and JACKMAN are still "in varnish". Colour scheme of the remodelled interiors is: pastel-green walls with lower portion bleached-oak Artcrite; cream headlinings; rose plastic on section divisions; green upholstery.

- ★ Piggyback trailer services have become commonplace on Canadian railways but the Canadian National Railways recently ran a complete train of railway equipment carried on flatcars. This involved 17 diesel units and 24 refrigerator cars which were carried from Belleville to Montreal in this fashion. The equipment was enroute to the C.N.R. 3'6" gauge lines in Newfoundland.

- ★ Railway hotel projects in Montreal and Toronto have recently made news. Ground was broken in Toronto on October 15th by C.P.R. President N.R. Crump to begin construction on a 400-room extension to the Royal York Hotel. On October 10th, Donald Gordon, President of the C.N.R., announced plans for development of the area immediately north of the Queen Elizabeth Hotel, which is now under construction. The development will include a block-long plaza, to be called "Place Ville Marie" which will run from Dorchester to Cathcart streets, and will conceal a 450-car parking garage, on three levels. The hotel itself is assuming a more "clothed" appearance, as much of the concreting and stonework has been finished.

- ★ Engine 3522, Canadian Pacific Railway 2-8-0 class M4g, built by Baldwin in 1907, has been sold, it is reported, to the Manitoba & Saskatchewan Coal Company.

- ★ Experimental diesel-hydraulic engine #1000, built by Maschinenbau Kiel A.G., Kiel, Germany, has been turned over to a firm in Galt, Ontario for winterization preparatory to CNR tests in Northern Ontario during the coming winter.

During its inspection of the plant, the delegation inspected a number of 2400-HP "Trainmaster" diesel-electric units, being readied for delivery to the Canadian Pacific Railway. Engines 8918, 8919 and 8920 were noted. One of the unexpected items to be seen was a small 0-4-0 diesel-mechanical Whitcomb locomotive which was built for service in Arabia, but never delivered. This unit is equipped with buffers and screw coupling at one end, standard American couplers at the other end. It is painted black and still retains Arabic lettering. The cab is equipped with an air-conditioning unit. It is used as a plant switcher.

 MOTIVE POWER ANALYSIS

- THE SELKIRK TYPE -

 by Omer S.A. Lavallee

Our locomotive description this month has as its subject, the largest locomotives, in point of length and weight, ever to have been constructed and operated in Canada.

We speak, of course, of the T class 2-10-4 type locomotives of the Canadian Pacific Railway, which originated in the year 1929 when the first unit, No. 5900, was outshopped by the Montreal Locomotive Company. Thirty seven engines of this wheel arrangement were subsequently built for the Company, and they were the only engines of their wheel arrangement to be used in this country. There were twenty engines of class T1a, ten of class T1b and six of class T1c. There was one engine of class T4a. The latter, the experimental high-pressure locomotive 8000, will be treated at a later date in a separate article, and we will therefore confine our comments to the thirty-six T1's, which are now disappearing from the scene. In the United States, the 2-10-4 is called the "Texas" type; the C.P.R., however, adopted the more appropriate title "Selkirk" to designate this wheel arrangement as used in Canada.

The most difficult operating problem on the Canadian Pacific Railway is the movement of both freight and passenger traffic over the Mountain and Laggan Subdivisions in British Columbia and Alberta. The section in question extends from Revelstoke to Calgary, over the two principle summits on the CPR main line -- at the Connaught Tunnel at Glacier, 3,778 feet a.s.l., and at Kicking Horse Pass, Stephen BC, 5,332 feet in altitude. This line is characterized by heavy grades, the worst being 22½ miles of uniform 2.2% compensated grade, combined with curves as sharp as 12 degrees.

Operation over this, and over adjacent sections of the line, has always demanded special attention. In 1909, an 0-6-6-0 articulated engine was designed for pusher service on this section, and it was followed by five similar units in 1911. Rebuilt into 2-10-0's in 1916-17, they were followed by thirty five larger 2-10-0's, and finally by fifteen 2-10-2's of the 5800 class. All of these engines utilized low pressures by later standards, however. In the late Twenties, CPR put several new types of engines on the drawing boards, among them the 4-6-4 and 4-8-4 types. An even larger engine than the 2-10-2 was indicated for freight service in the Rocky Mountains, and the outcome was the designing of a new 2-10-4 type locomotive which would carry 275 pounds steam pressure. These new engines developed a tractive effort, without booster, of nearly 78,000 pounds, and were, by all odds, the most powerful engines on the Canadian Pacific Railway. To the writer's knowledge, they were second only in point of tractive effort to the slower and smaller-driven 4100 class 2-10-2's, which the Canadian National received in 1924, which had a nominal rating of 80%.

Nos. 5900 and 5901 came out in July 1929. Nos. 5902-5913 were received in August, and the last six, nos. 5914-5919 were acquired in September 1929. These twenty engines constituted the T1a class. In point of size and weight, they have never been equalled in Canada, as they tipped the scales, loaded, at 452,000 pounds. Total weight of engine and tender was just 375 tons.

The T1b class appeared in 1938. Bearing numbers 5920-5929, seven were delivered in November 1938, while the additional three came in December of that year.

The Tib's presented a different appearance from the first twenty engines as they carried the semi-streamlined sheathing which has become so characteristic of the later C.P.R. steam locomotives. Boiler pressure was raised to 285 pounds, but in spite of these modifications, a reduction of some ten tons in total loaded weight of engine and tender was accomplished.

These units weigh $365\frac{1}{2}$ tons. In other respects, they were practically identical to their predecessors. The T1b class is that illustrated by the diagram accompanying this drawing.

Last to be received were the six units of class T1c, the last steam locomotives built new for a Canadian railway, which were outshopped early in 1949 by the Montreal Locomotive Co. Practically identical to the T1b's, they weighed a trifle more.

From the time of their introduction, the Selkirks were undisputed masters of the mountain section of the C.P.R. main line. Versatile, they adapted equally well to passenger or freight. When necessary, their five pairs of 63" drivers could propel them at a pretty fair speed. It was not an uncommon sight to see a long freight train being piloted up the Spiral tunnels by three locomotives, often two 2-10-4's and a 2-10-2. The advent of dieselization ended the career of these magnificent engines; those that remain are used in freight service eastward out of Calgary.

At time of writing, we regret to report that the year 1956 has seen the scrapping of all units of the T1a class, at Calgary. The official scrapping dates are as follows:

5900 - March 9	5910 - Aug. 22
5901 - Feb. 16	5911 - Oct. 17
5902 - Aug. 22	5912 - Apl. 20
5903 - Mar. 9	5913 - Apl. 24
5904 - Sept. 13	5914 - July 24
5905 - Oct. 11	5915 - May 23
5906 - April 6	5916 - Sept. 28
5907 - July 24	5917 - Apl. 3
5908 - Nov. (in process)	5918 - May 22
5909 - June 12	5919 - June 21

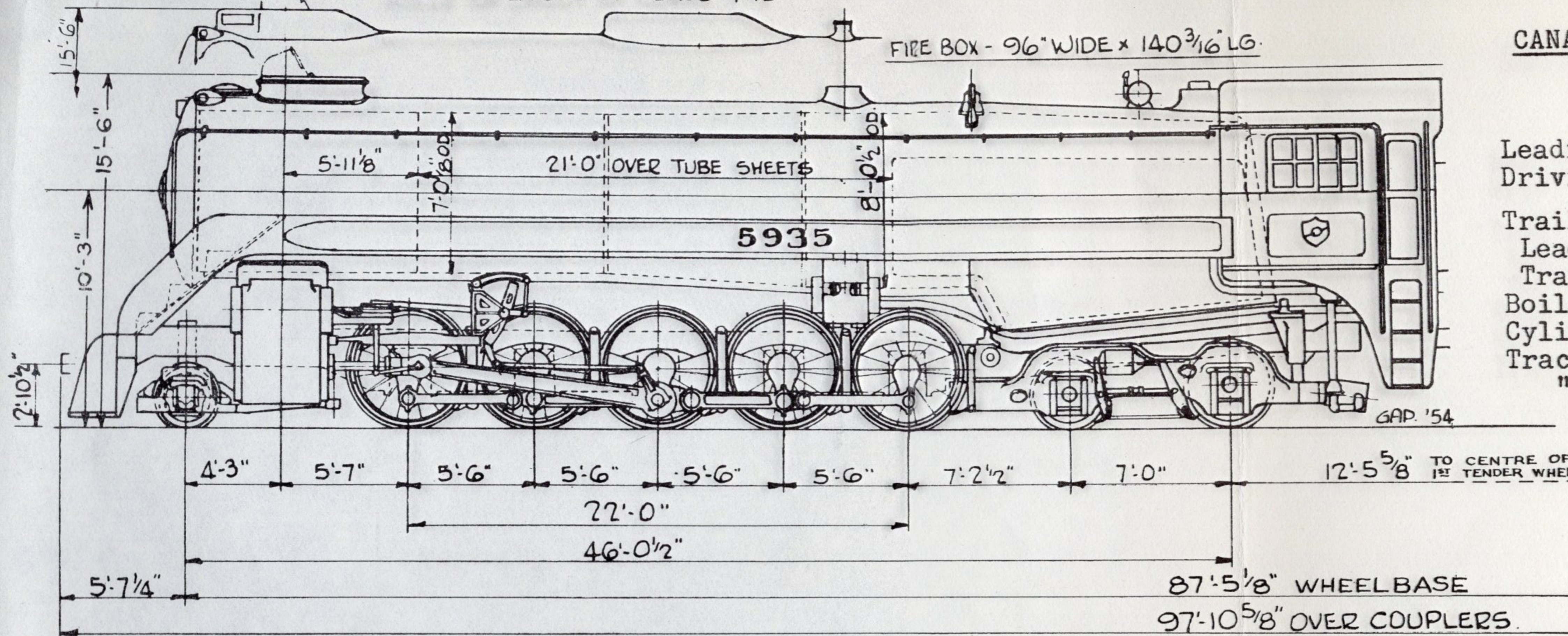
In conclusion, we give a few comparative specifications among the three classes of 2-10-4 type:

Builder	T1a	T1b	T1c
Class	5900-19	5920-29	5930-35
Nos.	67921-40	69110-19	76221-26
Serial Nos.	63"	63"	63"
Drivers	$25\frac{1}{2} \times 32"$	$25 \times 32"$	$25 \times 32"$
Cylinders	453,000# ²	447000#	449,000#
Total engine Weight	$275\frac{1}{2}$ in.	285#	285#
Boiler Pressure	78%	78%	78%
Capacity without booster	89%	89%	89%
" with "			

BOILER TOP LAYOUT OF CLASS T-1b

CANADIAN PACIFIC RAILWAY COMPANY

CLASS T-1-c 2-10-4 Type



Leading Wheels 33" dia.
 Driving Wheels 63" "
 15 spokes
 Trailing Truck:
 Leading Wheels 36" dia.
 Trailing Wheels 45" "
 Boiler Pressure 285# sq.in.
 Cylinders 25 x 32"
 Tractive Effort-Engine 76,900#
 " -Booster . 12,500#

Weight on
 Driving Wheels .. 311,200#
 Total Weight-
 Engine 449,000#
 Heating Surface-

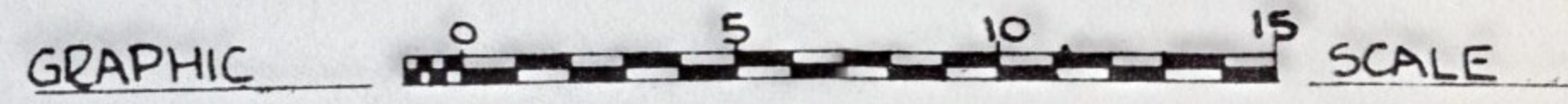
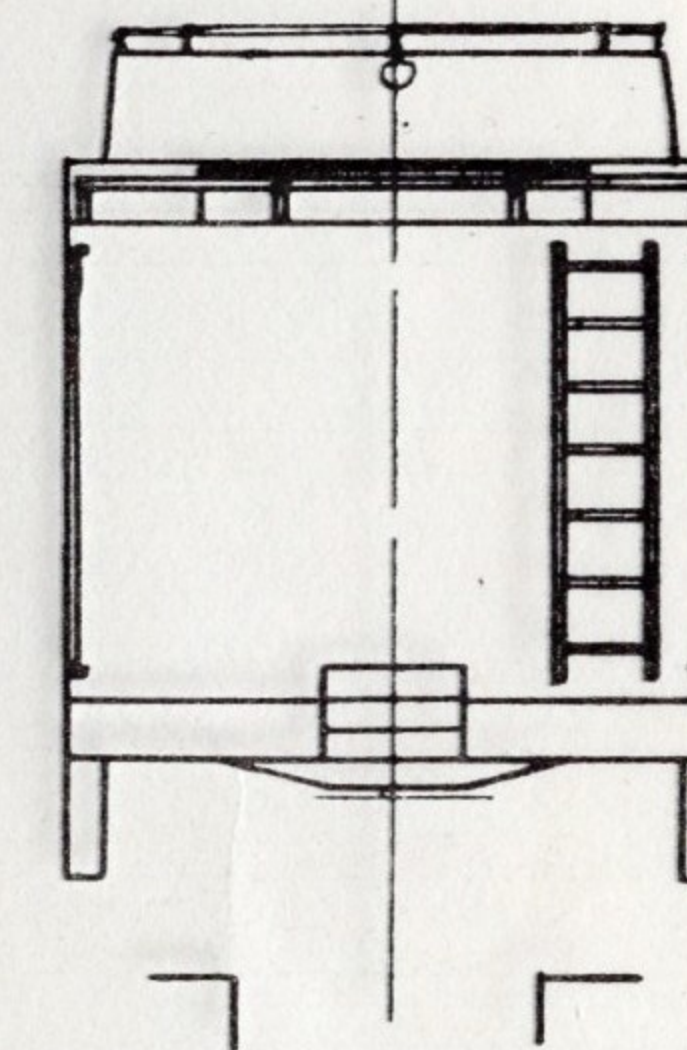
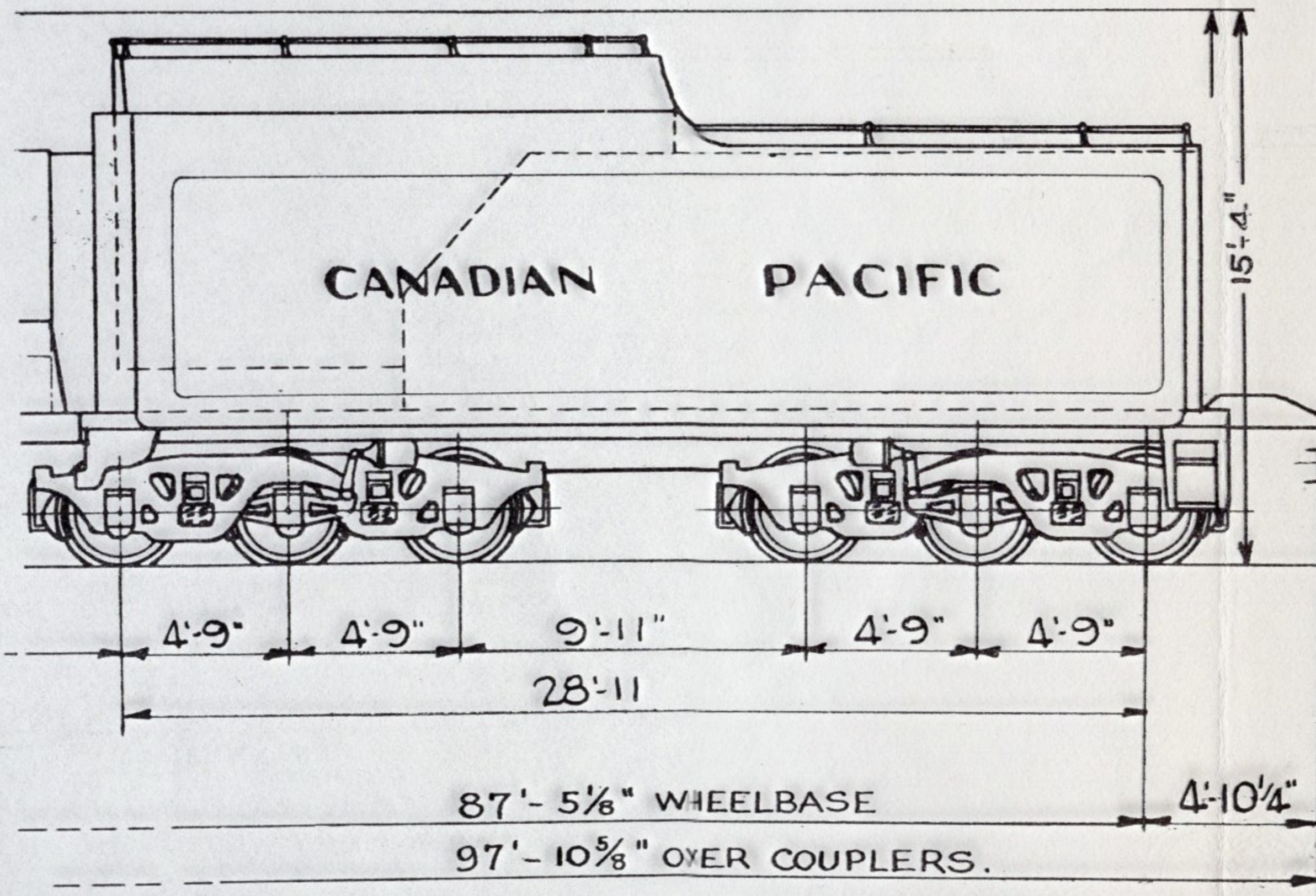
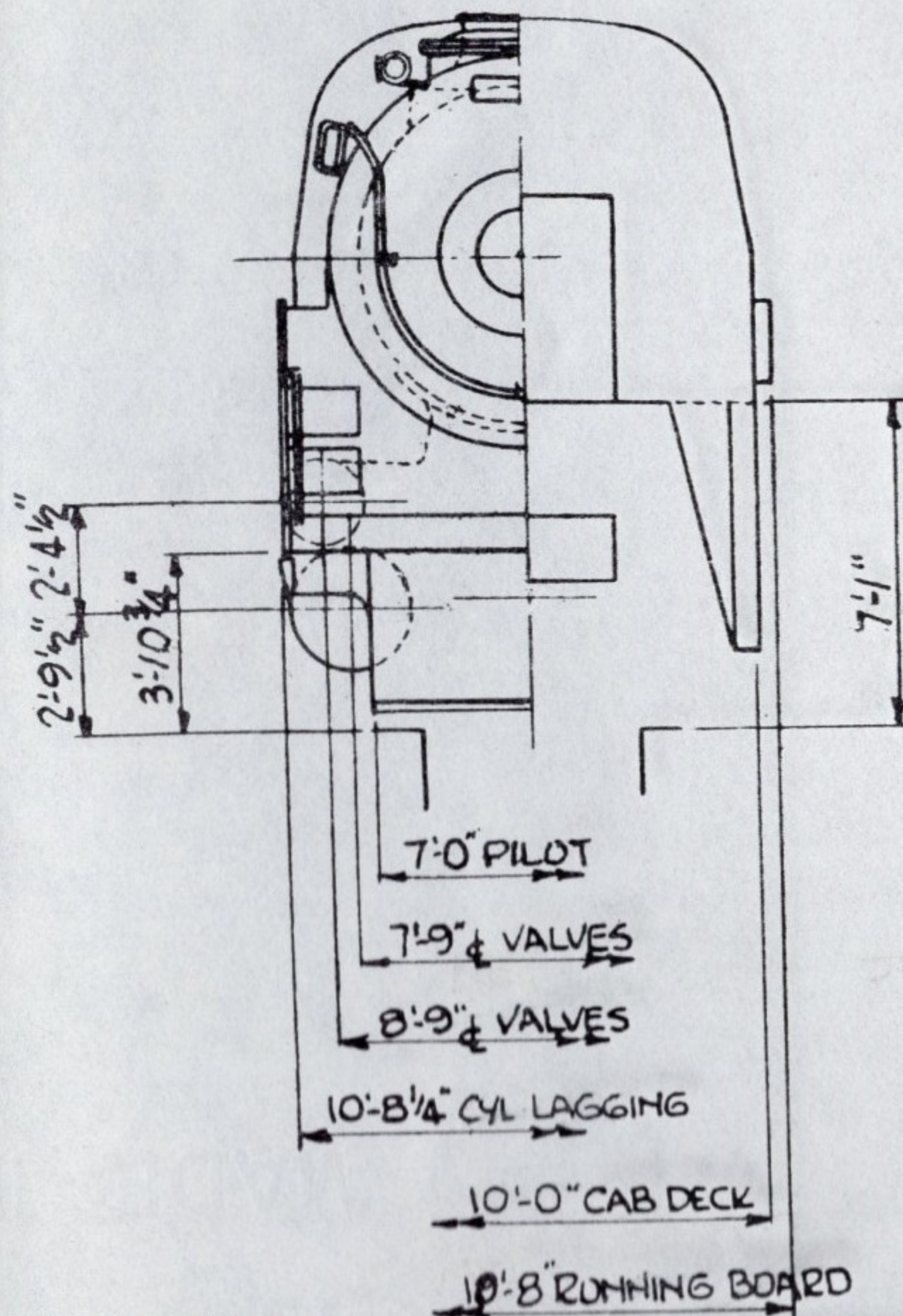
Tubes 887 sq.ft.
 Flues 3,755 "
 Arch Tubes . 45 "
 Firebox 367 "
 Total 5,054 "

Superheating
 Surface 2,032 "
 Grate Area .. 93.5 "

Tender Capy:
 Water 12,000 gals.
 Oil 4,500 "

Weight of
 Tender 283,500#

Tender
 Trucks Buckeye
 Wheels 36" dia.
 Valve Gear .. Walschaerts
 Crossheads .. Dean



BUILT BY THE MONTREAL
 LOCOMOTIVE COMPANY, 1949

Engines 5930-5935
 Serial Nos. 76221-76226

G.A. PARKER.