

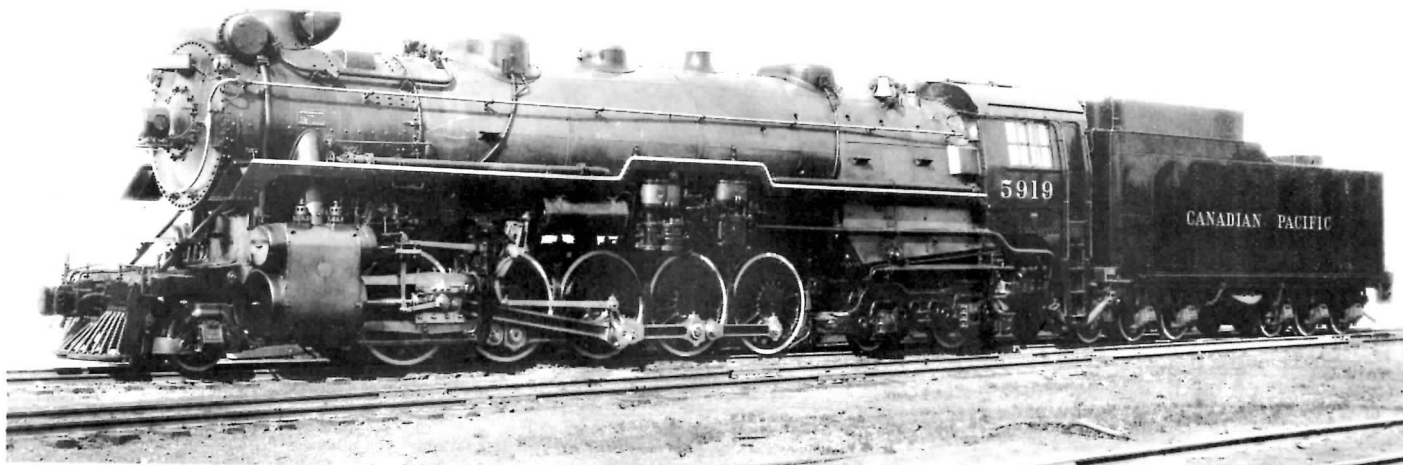


5900-5919



T-1-a

10¢



Canadian Pacific's most rugged mainline operation has always been the movement of tonnage over the mountainous stretch of trackage between Calgary, Alta., and Revelstoke, B.C. Characterized by heavy grades -- the worst being 22 miles of 2.2% compensated -- and tortuous curves as sharp as 12 degrees, this 262-mile section has traditionally placed severe demands on motive power in order to keep pace with the relatively easier traffic flows on adjacent subdivisions.

In the late 1920's, seeking to improve on the 2-10-0's and 2-10-2's that were then in charge of the mountain traffic, CPR designers set to work on a new 2-10-4 type locomotive which would produce a tractive effort without booster of 78,000 pounds -- 12,000 pounds more than the 2-10-2's. The 63" drivers of the new engines would enable them to handle passenger trains with considerably greater dispatch than was possible with the 58"-driven 2-10-2's.

The first locomotives of class T-1-a, Nos. 5900 and 5901 were delivered in July, 1929 from Montreal Locomotive Works, and the 5900 was promptly placed on public exhibition in Montreal's Windsor Station. By the end of that year, all twenty of the T-1-a's were at work in the mountain service for which they had been constructed.

The T-1-a's were the largest locomotives in point of size and weight ever constructed in Canada; total weight of engine and tender in working order was just 375 tons. Their tractive effort was second only to Canadian National's 1924-built 4100-series 2-10-2's, which had a rating of 80,000 pounds.

Many of the mechanical features of the 2-10-4's were not new to Canadian Pacific, having been introduced on the K-1-a 4-8-4's a year earlier. All twenty engines were equipped with nickel steel boilers and Commonwealth cast steel locomotive beds. B.C. forest fire regulations dictated oil firing. Elesco feedwater heaters and pumps were applied, while valve events were timed with Walschaerts valve gear. Remotely-controlled moveable exhaust deflectors were employed, to protect tunnel roofs from the explosive exhaust blast. The short, vestibuled cabs were given sloping sides as a concession to close clearances (although one locomotive, the 5911, emerged from a wreck repair with straight cab sides). All twenty locomotives were ultimately equipped with trailing truck boosters.

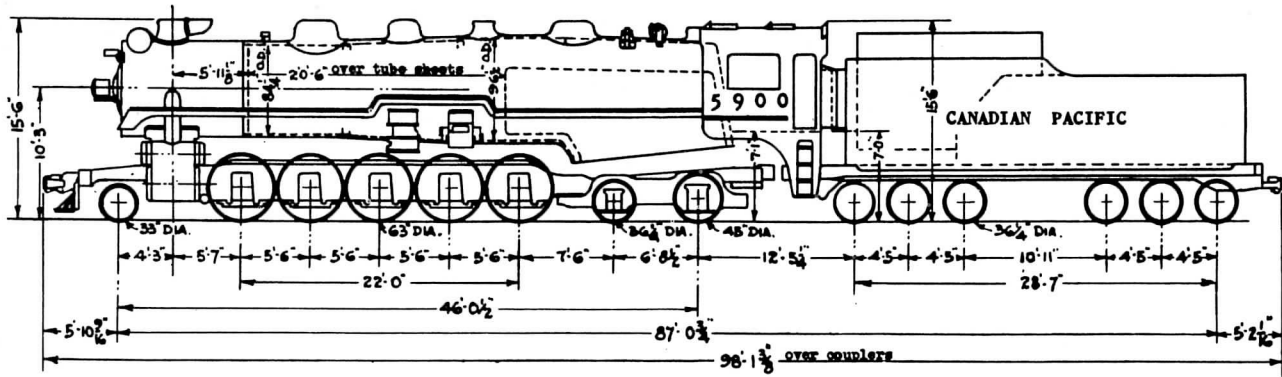
Few modifications altered the T-1-a's during their lifetimes. The rear sand domes were removed at an early date, undoubtedly as an aid to maintenance. Some locomotives were fitted with running board skirts and passenger striping and painting, and the familiar plow pilots were applied and removed with a frequency that defies recording. Several 5900's were fitted with headlights which could be swiveled from the cab, for improved visibility on sharp curves.

From their inception, the T-1-a's were masters of the Calgary-Revelstoke section. Equally at home on passenger or freight trains, it was not an uncommon sight to see two or three of them to a train, attacking the 2.2% east from Field. The T-1-a's were joined in later years by 16 semi-streamlined sisters. However, dieselization came early to the Rockies, relegating the 2-10-4's to side tracks in 1952. The T-1's were re-assigned to freight service on the Prairies east of Calgary, a far cry from their mountain battling role. Finally, between March and November, 1956, the entire T-1-a fleet was scrapped; sadly, not one of these fine locomotives was preserved.



2-10-4 - SELKIRK TYPE

CLASS T 1
SUB CLASS T 1 A
CAPACITY 78%



AXLE SIZES 6"x11" 11 1/2"x14" 11 1/2"x14" 18 1/2"x14" 11 1/2"x14" 7"x14" 8"x14" 6"x11" 6"x11"

SUB CLASS		T-1-a
BOILER PRESSURE	LBS./SQ. IN.	275
CYLINDERS		25-1/2"x 32"
DRIVING WHEELS		63"
TRACTION EFFORT	LBS.	77,200
TRACTION EFFORT OF BOOSTER	LBS.	12,000
FIREBOX WIDTH, INSIDE		96"
FIREBOX LENGTH, INSIDE		140-3/16"
GRATE AREA	SQ. FT.	93.5
ARCH TUBES, NUMBER & OUTSIDE DIAM.		4 3-1/2"
TUBES, NUMBER & OUTSIDE DIAM.		59 2-1/4"
		7 3-1/2"
FLUES, NUMBER & OUTSIDE DIAM.		196 3-1/2"
DISTANCE BETWEEN TUBE SHEETS		20' 4-7/8"

TUBE & FLUE HEATING SURFACE	SQ. FT.	4,509
FIREBOX HEATING SURFACE	SQ. FT.	377
ARCH TUBE HEATING SURFACE	SQ. FT.	45
FIRE HEATING SURFACE	SQ. FT.	4,931
SUPERHEATING SURFACE	SQ. FT.	2,112
COMBINED HEATING SURFACE	SQ. FT.	7,043
WEIGHT ON DRIVERS	LBS.	312,800
LOADED WEIGHT OF ENGINE	LBS.	452,500
LIGHT WEIGHT OF ENGINE	LBS.	412,500
LOADED WEIGHT OF TENDER	LBS.	297,500
LIGHT WEIGHT OF TENDER	LBS.	137,000
FUEL CAPACITY - OIL	IMP. GALS.	4,100
WATER CAPACITY	IMP. GALS.	12,000
BUILDER & DATE		MONTREAL LOCOMOTIVE WORKS, 1929



Upper Canada Railway Society
BOX 122 TERMINAL "A" TORONTO
LOCOMOTIVE DATA SHEET

No.
6702

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REVERSE SIDE, TOP: Builder's photo of 5919 shows the second sand dome with which the entire class was originally equipped. Note the moveable exhaust deflector.

/Canadian Pacific

REVERSE SIDE, BOTTOM: T-1-a 5911 shows off its straight-sided cab at Field, B.C., in June, 1950.

/R. Kain

LEFT: Eastbound perishables are hustled over the Laggan Subdivision by snowplow-pilot-equipped 5902.

/W.H.N. Rossiter

BELOW: Eastbound varnish in charge of T-1-a 5914 and streamlined sister 5922 pauses briefly at Field, B.C., before assaulting the 2.2% climb to the Continental Divide.

/R.S. George

