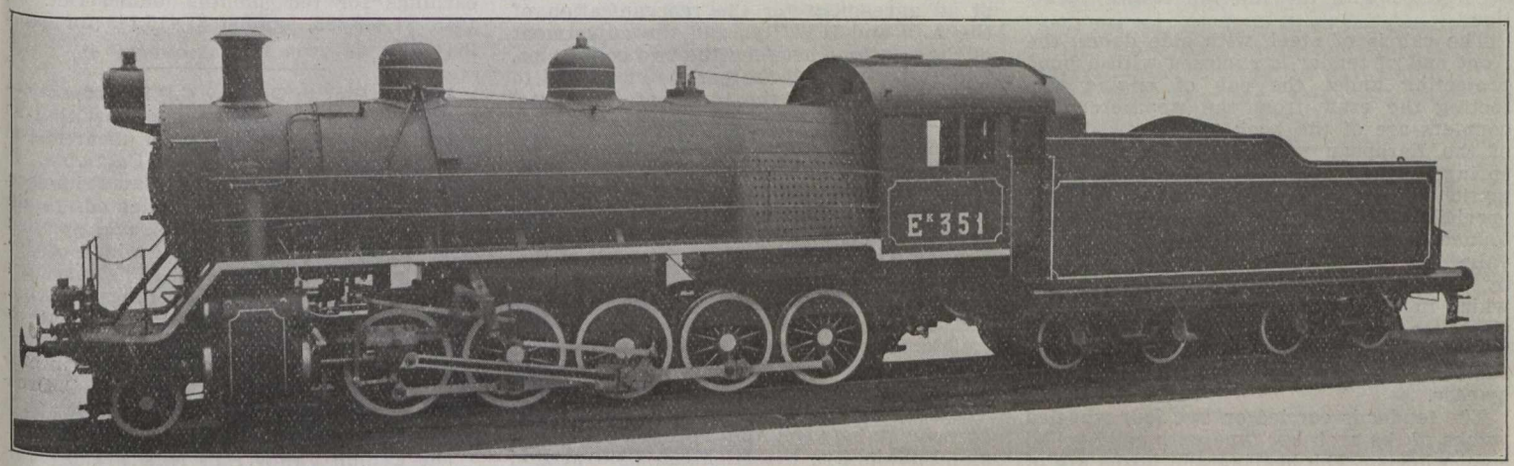
Canadian Built Locomotives for Russian Imperial Railways.

The Russian Imperial Railways are having 50 decapod type locomotives built by the Canadian Locomotive Co. at Kingston, Ont., the first lot of which have already been shipped. These locomotives are of interest, not only because of their design, which is a combination of Russian and American practice, but because of their being the first locomotives exported from Canada. The principal dimensions of the locomotives and tenders are as follows:

Gauge	5 ft.
Service	Freight
Fuel	Soft coal
Tractive effort	51,500 lbs.
Weight in working order	192,000 lbs.
Weight on drivers	172,000 lbs.
Weight on leading trucks	20,000 lbs.
Weight on locomotive and tender in working order	132,000 lbs.
Wheel base, driving	18 ft. 8 ins.
Wheel base, total	27 ft. 10 ins.
Wheel base, locomotive and tender.	60 ft. 1 in.
Boiler	Straight
Working pressure	180 lbs. per sq. in.
Outside diameter of first ring	70 in.
Firebox, length and wirth	108⅛ in. by 86 in.
Tubes, number and outside diameter	195-2 in.
Flues, number and outside diameter	28-5⅜ in.
Tube and flues, length	17 ft.
Heating surface, tubes and flues	2,393 sq. ft.
Heating surface, firebox (including arch tubes)	208 sq. ft.
Heating surface, total	2,601 sq. ft.
Superheater heating surface	563 sq. ft.
Equivalent heating surface*	3,446 sq. ft.
Grate area	64.5 sq. ft.
Tender tank	Water bottom
Tender frame	Channel
Tender wheels, diameter	36 in.
Tender journals, diameter and length	5½ in. by 10 in.
Tender water capacity	7,400 gal.
Tender coal capacity	8 metric tons

*Equivalent heating surface equals total evaporative heating surface plus 1.5 times the superheating surface.

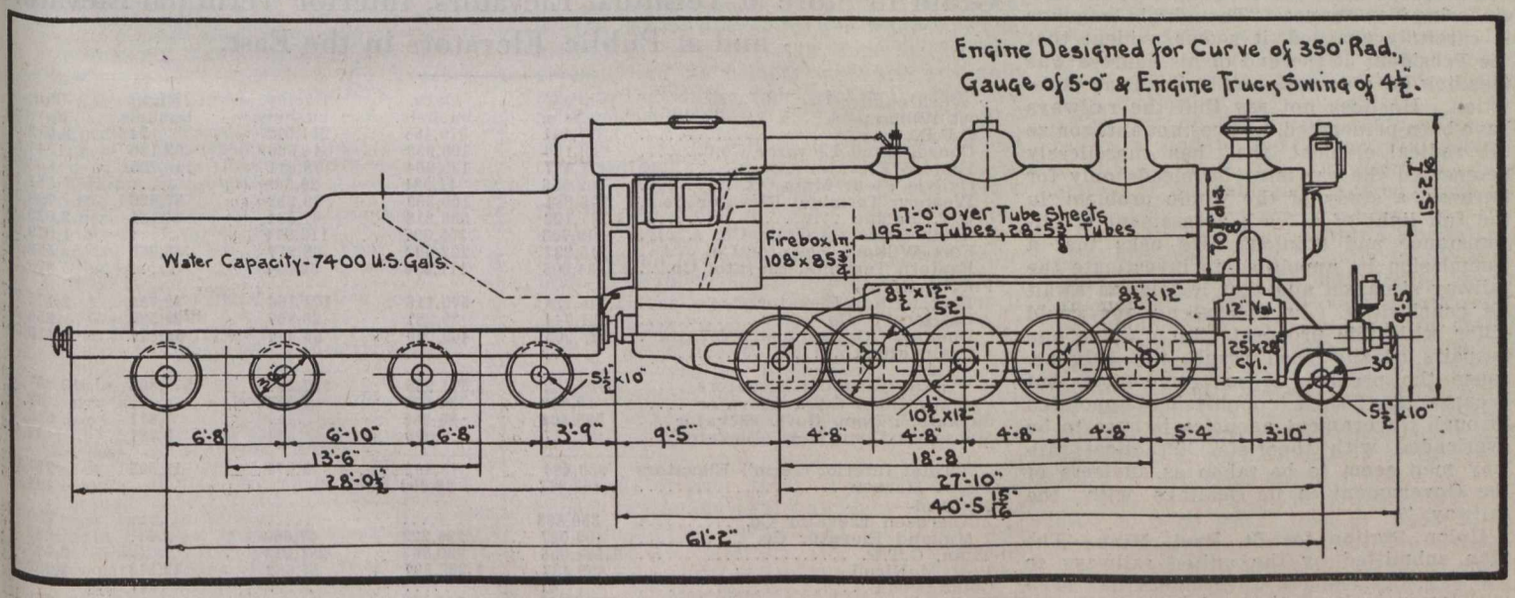


Decapod Locomotive for Russian Imperial Railways.

The locomotives are designed for operation on a 5 ft. track, and which is largely used as the standard gauge by the Russian railways. The axle loads are limited to 35,000 lbs. per axle, but engines are of considerable capacity, having a tractive effort of 51,500 lbs. (at 85% boiler pressure), they are designed to haul 1,000 metric tons up a grade 0.8% at a speed of about 10 miles an hour. Special material and equipment have been used to a great extent in these locomotives, and the construction is in accordance with the best American practice, many of the details are interchangeable with the locomotives of the same type and size already built by American locomotive builders.

The fuel used is a low grade of soft coal and is burned on a rocking four sections grate with two dump bars. The firebox is of the wide type extending out and over the driving wheels, and is also equipped with a security brick arch supported on water tubes. The boiler is of the straight type, with a mud ring made up with cast steel ends, and forged steel sides welded together. An auxiliary safety valve dome is provided, which carries 2 safety valves and the whistle. This dome is also used as an inspection dome. A third safety valve is applied to the cover of the main steam dome.

The firebox is of copper, as also are the staybolts used in the water legs. The front end of the firebox is supported by 3 rows of expansion stays, the nut on the upper end of the radial stay is seated in a die forged stirrup, which is screwed into the roof-sheet.



Details of Decapod Locomotive for Russian Imperial Railways.

Ratio, weight on drivers, divided by tractive effort	3.34
Ratio, total weight, divided by tractive effort	3.73
Ratio, tractive effort x diam. drivers, divided by equivalent heating surface	7.80
Ratio, equivalent heating surface, divided by grate area	53.4
Cylinders	Simple
Diameter and stroke	25 in. by 28 in.
Valves	Piston
Diameter	12 in.
Wheels, driving, diameter over tires	52 in.
Wheels, driving journals, main, diameter and length	10½ in. by 12 in.
Wheels, driving journals, others, diameter and length	8½ in. by 12 in.

The locomotives are equipped with Schmidt superheater and outside steam pipes; superheaters have 28 elements with a superheater surface of 563 sq. ft. Forty nine are equipped with the Rushton power screw reverse gear, and the Casey-Cavin screw reverse gear is to be applied to the remaining one, both gears being operated by air.

The machinery, frames and cylinders are designed after American practice. The pistons are solid rolled steel with three cast iron packing rings sprung in, and are sup-