

C. P. R. Pacific Type Locomotives.

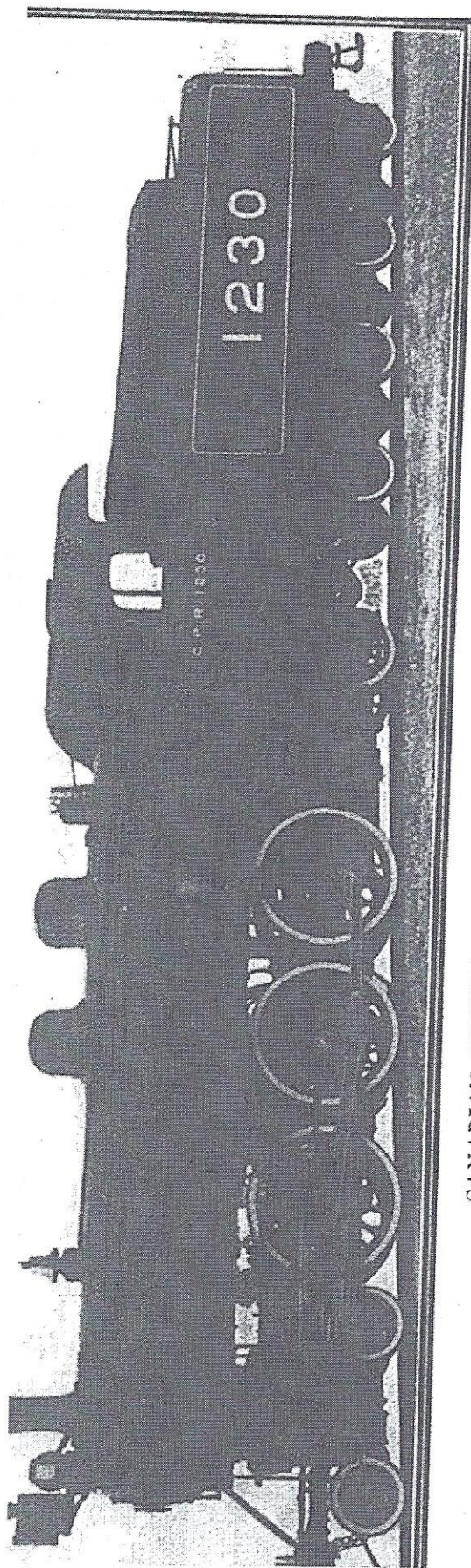
The C.P.R. has received recently from the Montreal Locomotive Works 30 Pacific type (462 class) locomotives of the railway company's G-2d class. They are equipped with the Vaughan-Horsey superheater and Walschaert valve gear. The boiler is of the extended wagon top type, 67 $\frac{3}{8}$ " outside diameter at the front end. The barrel is built with three rings, the second of which is tapered, with the dome on the third ring. The horizontal seams are butt jointed, sextuple riveted with welt strips inside and outside. The circumferential seams are double riveted. The fire box has a sloping throat and back head and is radially stayed. Flexible staybolts are located in the breaking zone of throat, sides and back head. Flexible staybolts are also used for the four rows at the front of fire box crown sheet. The fire box ring slopes from front to back and is supported at each end by an expansion sheet and brackets. The fire box ring is 5" wide at the front, 4 $\frac{1}{2}$ " at the sides, and 3 $\frac{1}{2}$ " at the back. The injector check valve is located on the top of the first ring of the boiler under the bell stand. The water is discharged from the valve direct without any internal pipes. A deflector plate is located

cast steel crosstie just back of the rear pedestals. The frames are braced in a very substantial manner by cast steel crossties. The trailing truck, which has outside boxes, requires but a single lap section frame 2" thick. The boxes are of cast steel fitted in cast steel pedestals. The load is transferred to the truck by semi-elliptic spring connected at one end to an equalizing beam from the rear driving spring, and at the other end to a steel casting bolted to the frame. The spring rests in a cast steel spring seat, which has projecting ends fitting into the top of the front and back pedestal. The load is transferred from the spring seat to the box by means of three point bearing swing links, which are also used to bring the truck back to the normal centre after passing a curve. The front truck has a swing centre casting with three point hangers. Two cabarets are used and each one has a separate dry pipe extending to the dome. The driving boxes are cast steel with bronze gibs in the shoe and wedge fit. They are equipped with hard grease lubricator. The driving wheels are the railway company's standard cast steel centre and have cast iron hub liners. The front truck is equipped with steel faced wheels having cast steel spoke centres and the tender with steel tired wheels having wrought iron disc centres. A 5,000 Imperial gallon semi-water bottom tank is applied to the tender and is provided for 10 tons of coal. The frame is built of 13" channels for centre

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Vaughan-Horsey type with two cast iron headers in the smoke box, one being for saturated steam and the other for superheated steam. The five inch boiler tubes contain four seamless steel superheating pipes $1\frac{1}{4}$ " diameter, arranged in pairs, the two pipes in each being connected at the rear end by cast steel return bend. The pipes on emerging from the tubes are carried to the connections at the headers. The superheater pipes reach within 30" of the fire box tube sheet. Cast iron steam pipes connect the superheated header with the cylinder. The passage of the gases through the five inch tubes is controlled by a damper, which is automatically operated by steam cylinder located on the outside of the smoke box. This cylinder is directly connected to the steam passage of the cylinder and is operated by the pressure in the cylinder. When the throttle is open the pressure in the cylinder opens the damper, but when the steam is shut off a counterweight closes it. The cylinder is the railway company's standard pattern and has a bushing $\frac{3}{4}$ " thick. The piston valves are 11" diameter, inside admission. For the Walschaert valve gear an auxiliary reverse shaft is used. A cast steel crosstie supports the link bearers.

The main frames are cast steel, $4\frac{1}{2}$ " wide, with double front rails and single rear sections of wrought iron. The main frames and rear sections are bolted to



CANADIAN PACIFIC RY. PACIFIC TYPE LOCOMOTIVE.