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The Official Organ of  
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through ice 14 ins. thick, some idea of the  
wonderful staunchness of the vessel may be  
gained.

It will doubtless surprise many readers to  
learn that officers of the Flint & Pere Mar-  
quette R.R. Co., which operates the vessel  
just described, are unanimous in the declara-  
tion that she does more satisfactory work in  
the intensely cold weather than when a milder  
temperature prevails. Very frequently in the  
dead of winter, when the thermometer ranges  
from 18 to 35 degrees below zero, the ice in  
the path of the Pere Marquette varies from  
hard blue ice of 1 ft. thickness to 15 ft. of  
snow ice where it has windrowed; & yet the  
vessel has never consumed more than 48  
hours in making any one trip.

All of these car ferries are provided with  
the necessary jack-screws, chain, clamps,  
&c., for firmly securing the railway cars; &  
the loading & unloading docks are equipped  
with a novel device corresponding to a giant  
gang-plank, which adjusts itself to the move-  
ment of the waves & thus enables cars to be  
transferred even though a heavy sea be run-  
ning. There have been occasions in rough  
weather when cars have been loosened from  
their fastenings while in transit, and have col-  
lided with other cars, inflicting considerable  
damage; but, of course, these instances are  
rare.

Occasionally, too, the smaller & less power-  
ful car ferries, such as those in service across  
Lake Erie from the U. S. to the Canadian  
shore, become imprisoned in floating fields of  
ice, & a year or two ago the ferry steamer  
Shenango was thus imprisoned for nearly a  
month.

At almost every port on the Atlantic coast  
from Boston to the Chesapeake car-ferry  
steamers, of a distinctive American type,  
are in service transporting cars for compar-  
atively short distances. Few of these boats,  
however, are capable of carrying more than  
a dozen cars, & in many cases the capacity  
does not reach that figure. Some of these  
vessels have cost as much as \$200,000, so that  
it will be seen that a fleet of a dozen or more  
boats, such as some of the more important

railroads operate, represents quite an invest-  
ment. Car ferries are also in service at some  
points on the Ohio, Mississippi & other inland  
rivers; but they conform to the general type,  
except so far as they are of light draught,  
drawing in some instances only 2 or 3 ft. of  
water.

Some illustrations of the Lake Erie & De-  
troit River Ry. car ferry, Shenango, no. 1,  
are given on page 3. The centre view shows  
her dock at Rondeau, Ont.

### Richmond Locomotives for the Wabash.

The Richmond Locomotive & Machine  
Works has received an order from the Wa-  
bash R.R. for 50 locomotives as follows:

34 19 in. x 28 in. two-cylinder compound  
moguls.

6 19 in. x 28 in. ten-wheeled passenger lo-  
comotives.

6 19 in. x 28 in. Atlantic type passenger lo-  
comotives.

4 18 in. x 24 in. switching locomotives.  
The general dimensions are as follows:

#### COMPOUND MOGUL LOCOMOTIVES.

Cylinders 19 ins. x 28 ins.  
Diameter of driving wheel centres 56 ins.  
Wheel base of engine 22 ft. 4 ins.  
Rigid wheel base 14 ft.  
Weight on drivers about 110,000 lbs.  
Weight on truck about 20,000 lbs.  
Total weight of engine in working order about 130,000  
lbs.  
Radial stay boiler 60 ins. diameter.  
Length of fire box 108 ins.  
Width of fire box 42½ ins.  
Tubes 2 in. diameter 11 ft. 4½ in. in length.  
Capacity of tank 5,000 gallons.

#### TEN-WHEELED PASSENGER LOCOMOTIVES.

Cylinders 19 ins. x 28 ins.  
Diameter of driving wheel centres 66 ins.  
Driving wheel base 14 ft.  
Weight on drivers about 112,000 lbs.  
Weight on truck about 35,000 lbs.  
Total weight of engine in working order about 147,000  
lbs.  
Radial stay boiler 62 ins. diameter.  
Length of fire box 120 ins.  
Width of fire box 42½ ins.  
Tank capacity 5,000 gallons.

#### SWITCHING LOCOMOTIVES.

Cylinders 18 ins. x 24 ins.  
Diameter of driving wheel centres 44 ins.  
Wheel base of engine 10 ft. 6 ins.  
Weight on drivers about 102,000 lbs.  
Radial stay boiler 60 ins. diameter.  
Length of fire box 84 ins.  
Width of fire box 33½ ins.  
Tubes 2 ins. diameter, 10 ft. 4½ in. in length,  
Tank capacity 3,000 gallons.

The 19 in. x 28 in. Atlantic type passenger  
locomotives are to be exact duplicates of the  
10-wheeled passenger locomotives, with the  
exception of the trailing wheels.

### Electric Switch & Signal Lamps.

The N. L. Piper Railway Supply Co., Ltd.,  
Toronto, successor to the well-known firm of  
Noah L. Piper & Son, has invented an elec-  
tric attachment for its standard switch lamps.  
These patent switch lamps have been adopt-  
ed as standards by all the principal railways  
in Canada, & by using the new attachments  
the same lamps can be converted so as to use  
incandescent lights, & should anything go  
wrong with the current or plant, can be in-  
stantly changed back to coal oil. This is a  
distinct advantage over a lamp fitted for elec-  
tric light only, & will appeal to all practical  
railway men as being the only reliable way to  
have them fitted. Incandescent lighting of  
railway yards has proved very satisfactory,  
& no doubt in the near future will come into  
general use. Having switch lamps construct-  
ed so that it is not necessary to depend en-  
tirely on the electric light should remove all  
objections to its adoption.

The Piper semaphore & order board signals  
are very easily changed to use electric lights,  
& owing to their construction are perfectly  
weather proof.