

**The Knowledge Bank at The Ohio State University**  
**Ohio State Engineer**

**Title:** Tractors in Manitoba

**Creators:** Weaver, J. L.

**Issue Date:** Jan-1930

**Publisher:** Ohio State University, College of Engineering

**Citation:** Ohio State Engineer, vol. 13, no. 3 (January, 1930), 15, 28.

**URI:** <http://hdl.handle.net/1811/34651>

**Appears in Collections:** [Ohio State Engineer: Volume 13, no. 3 \(January, 1930\)](#)

## TRACTORS IN MANITOBA

By J. L. WEAVER, E.M. 3

Although tractor haulage has become increasingly important in late years, it probably was never before put to as stringent a test as at Flin Flon, Manitoba, last year. Here the local geographical features and weather conditions are ideal as a testing ground for tractor operations.

Away from the railroads, in northern Manitoba, transportation is almost entirely dependent upon the watercourses. No roads penetrate into the bush except at portages. In summer scows and barges ply back and forth on the lakes and larger rivers, while freight canoes with outboard motors are used on the smaller streams where portaging is necessary. In winter, dog teams and horse-drawn sleighs have been the chief means of transportation until recently, when tractors made their successful appearance. Airplanes, equipped with skids for landing on the ice in winter, and pontoons for landing on the lakes in summer, have become increasingly important.

The type of tractor most used for long, heavy hauls is the Linn tractor, built at Morris, N. Y. Smaller tractors such as the Holt and Fordson are used for shunting material in the yard. The Linn tractor is a cargo carrier as well as a tractor, its freight box, directly over the caterpillars, carrying twelve to fifteen tons of freight. In pulling heavy loads the additional weight directly over the caterpillars is a decided advantage. Power is supplied by a six-cylinder 100-hp. motor.

Island Falls, on the Churchill river, is the site of a new 75,000-hp. power plant that is being built for the Flin Flon mine. Between the plant and the mine are 75 roadless miles, over which 29,000 tons of freight were hauled in 35 days at cost of about 16 cents per ton-mile.

## TRACTORS ARE EFFICIENT

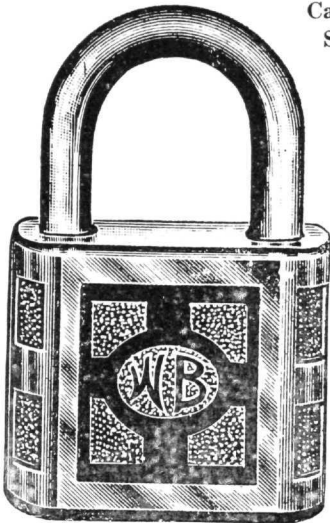
All the Engineers who saw the Flin Flon work being done agree that it probably holds the world record for economy and efficiency. The contractor who planned the work, Charles Morgan of The Pas, is accustomed to holding records. During the World War he established a Canadian record, which remains unbroken, for horse-team transportation, in hauling ore from the Mandy mine. In addition he won the 200-mile dog derby of The Pas three years in succession.

The work itself was organized as a specific transportation job, not as an auxiliary part of the construction work. The tractors were continuously busy except when in the shops for overhauling or repairs. Extra sleighs were always on hand. At Island Falls a string of empties was always ready and coupled so that a tractor arriving with a load could immediately begin the return journey. In Flin Flon, at the end of every trip, each machine went to the shop for inspection, refueling, greasing, etc. This usually took from three to six hours, depending upon the amount of mechanical repair necessary. Each train of sleighs carried a caboose, equipped with bunks, food, and a cookstove.

The crew consisted of four men; one engineer and one brakeman on duty, and one engineer and one brakeman off duty traveling in the caboose. Small Holt tractors were used for shunting the

(Continued on page 28)

**You Will Get Years of Service and Protection from this Solid Bronze Padlock**



Cannot Rust or Corrode  
Springs of Phosphor  
Bronze

The "other fellow's" key won't open this padlock, for it has a real pin tumbler mechanism and no two locks are keyed the same.

Can be master keyed and grand master keyed.

Made in 3 sizes—  
1½", 1¾", and 2".

See your dealer or write us for catalog.

The case hardened rust proofed steel shackle locks at both ends cannot be jarred open.

Made by

**The Wilson Bohannon Co.**

MARION, OHIO

Makers of Well Built Locks  
Since 1860



LOCKS

**TRACTORS AT FLIN FLON**

(Continued from page 15)

material in the yards; cranes and derricks were used in loading the heavier pieces, and skids for loading the lighter material.

The average round trip was 36 hours. The average load per trip was between 75 and 80 tons, the maximum load being 115 tons. The average sleigh load was between 15 and 20 tons. The largest sleigh load was a single piece of machinery weighing 38 tons.

Altogether 150 sleighs were in use on the job. Their construction was such that the strain in pulling was taken up through chains and eye-bolts, and in stopping by punting poles, so that no strain was transmitted through the sleighs. Logs were kept of each tractor, and a card showing the nature of the load on each sleigh was made out for every trip.

**ONE GALLON OF GASOLINE PER MILE IS USED**

Average gasoline consumption for the loaded tractors was about one gallon to the mile. Aided by an auxiliary gas tank the storage capacity per tractor was 200 gallons. Although each tractor left Flin Flon with enough gas to make the round trip, emergency stations were erected at the half-way point and at Island Falls.

When necessary the tractor pushed a snow plow that cleared 12 feet of roadway. Few extra precautions were necessary to meet the extreme cold which dropped to 50 degrees below zero. No extra lagging was needed on the oil lines, but a hinged iron plate, adjustable to different conditions, was fastened in front of the radiator. Kerosene instead of water was used in the radiator. The use of kerosene was the cause of the only large loss sustained in the freighting operation; one of the tractors, valued at \$10,000, was destroyed by fire.

The 75 miles of road was principally over lakes, but a total of 18 miles ran over portages, 12 miles in one stretch and 6 miles in the other. Before operations were begun, about \$50,000 was spent in widening canoe portages into roadways wide enough for tractor trains, and in grading in order to keep the maximum grade down to 4 per cent. During the operations these land stretches were constantly iced by means of large wooden water tanks built onto sleigh runners. A 2-foot thickness of ice was found to be ample support for the tractors.

During the entire work only two loaded sleighs were overturned, and as they carried meat no serious damage was done. With this exception the entire 29,000 tons of machinery, tools, lumber, concrete, food, and other supplies needed in the construction work were delivered without damage.

The Fokker Aircraft Corporation, a division of General Motors, will erect a \$300,000 factory at Los Angeles for the construction of the new Fokker "F-32," four-motored, passenger transport. When the factory is completed it will go into production at the rate of one ship a week until demand calls for an increase.

The highest point in Ohio is just outside the city of Bellefontaine, on the Campbell Farm, and has an elevation of 1,550 feet.

**For any  
Electrical  
Repair**

THROUGHOUT the whole range of our service, from industrial installations to minor repairs in residences, we provide one grade of workmanship—the finest.

"Anything from a Floor Plug to a Power Plant"

CALL  
AD. 5215

**The ELECTRIC POWER  
EQUIPMENT CO.**

51 EAST CHESTNUT ST.

*Lightning--  
Like  
Service*