

Lombard Log Hauler

hauler only required 3 men — fireman, engineer, and pilot, to operate. The log hauler did not have to be rested at night and could work with gas lights. It was possible to travel 50 miles in a 10 hour day with the steam log hauler.

The 1907-1908 production of the Phoenix Manufacturing Company were all sold when the article on the steam log hauler appeared in the *Mississippi Valley Lumberman*. The article listed owners of the Phoenix that prospective buyers could contact.

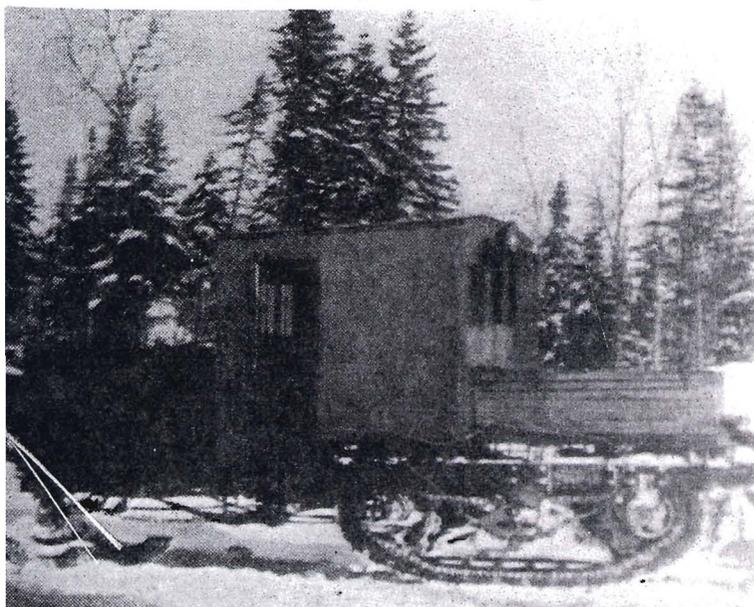
The following is a list of lumber companies that were using the Phoenix steam log hauler by 1907.

St. Croix Lumber Company, Winton, Minnesota.
 Beltrami Cedar and Land Company, Black Duck, Minnesota.
 Skibo Timber Company, Skibe, Minnesota.
 Ross and Ross, Duluth, Minnesota.
 Johnson and Wentworth Company, Cloquet, Minnesota.
 Northland Pine Company, Cross Lake, Minnesota.
 Calvin and Robb, Biwabik, Minnesota.
 Park Rapids Lumber Company, Park Rapids, Minnesota
 United States Lumber Company, Wisconsin
 Medford Lumber Company, Medford, Wisconsin.
 Arpin Hardwood Company, Atlanta, Wisconsin.
 North Western Lumber Company, Stanley, Wisconsin.
 Newport Mining Company, Ironwood, Michigan.
 Western Lumber Company, Huson, Montana.
 Sturgeon Lake Lumber Company, Prince Albert, Saskatchewan.

Comparison of Phoenix and Lombard Steam Log Haulers

| | Phoenix Steam Hauler | Lombard Steam Hauler |
|---------------------------|---|----------------------|
| Rated Drawbar H.P. | 100 H.P. with working boiler pressure of 200 lbs. per sq. in. | |
| Boiler | Horizontal multi-tubular locomotive type; fire box equipped for wood or coal fuel; length 15 feet; diameter 3 feet. | |
| Engines; No. of cylinders | 4 vertical | 2 horizontal |
| Size of cylinder | 6¼" x 8" | 9" x 10" |
| Revolutions per minute | 336 | 250 |

The Lombard gasoline-powered tractor, introduced in 1916 or 1917 bore no resemblance to the locomotive design. Although still huge vehicles, the front end resembled contemporary trucks, while the rear carried the tracks in a manner very similar to the U.S. military half-tracks of World War II. In fact, 104 of these Lombard units were ordered by the Russian army in the early 1920s. This vehicle, pictured about 1922, has been fitted with a homemade cab of almost cabin proportions, and a small cargo box.



| | | |
|--|----------------|-------------------------|
| Gear ratio | 7.6:1 | 5.92:1 |
| Transmission | Gear | Gear and sprocket chain |
| Speed, miles per hour | 0-5 | 0-5 |
| Normal working speed, miles per hour | 4½ | 4½ |
| Width of "chain-track" | 12" | 16" |
| Length of "chain-track" in contact with ground | 60" | 53" |
| Bearing surface of both "chain-tracks" | 1440 sq. in. | 1896 sq. in. |
| Approximate ground pressure | 21 lbs/sq. in. | 18 lbs/sq. in. |
| Length of the machine | 27'6" | 30' |
| Width | 5'4" | 6'4" |
| Weight | 18 tons | 18 tons |

From Alexander Michael Koroleff and Ralph C. Bryant, "The Transportation of Logs on Sleds," Bulletin 13. Yale University School of Forestry, 19

Internal Combustion Engines

As previously mentioned, the Lombard Company started designing log haulers powered with internal combustion engines in 1907. After 1917, the log haulers were exclusively powered with internal combustion engines. During the 1920's, Lombard supplied 110 and 140 horsepower gasoline engine units.

During the 1930s, Lombard introduced a diesel-powered model with a Fairbanks Morse engine. The basic diesel log hauler could handle 250 tons in sleds on iced roads. The log hauler could be equipped with several options including a 1,500 gallon tank, dump bodies, passenger bodies, and an especially strong flatbed for handling 20 ton quarry slabs. The diesel log hauler could run for the 90-day winter logging season without being shut down.

Alvin O. Lombard died February 21, 1937. The company continued to manufacture log haulers, quarry and construction vehicles until at least 1954.

Lombard gasoline tractors were useful for powering snowplows, as the tracks provided excellent traction even in the worst conditions. A caption accompanying this old photo describes the Lombards as being the most powerful and speediest tractors made for snow removal. At this point, Lombards were powered by 75 horsepower four cylinder Model gasoline engines. Later versions had engines of 110 and 140 horsepower.

