



TRUCKS AND TRAILERS IN THE SOUTH

Trucks/Trucking: efficiency/productivity

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INTRODUCTION: Researchers at Auburn University, under contract with the Wood Supply Research Institute (WSRI), explored ways to improve the productivity, safety, and cost of the trucking portion of the wood fiber supply system. The study began with a sampling of the truck and trailer population.

METHODS: Fifteen different mills were visited in five Southern states during 2004 to collect the following data: truck model and make; engine make and horsepower; number and capacity of fuel tanks; trailer make, model and type; species and length of product hauled; empty and loaded weights; and use of light-weight components. Age of truck and trailer was also collected. Based on a truck sample size of 527, Mack and Kenworth were the most popular makes in Alabama, Mississippi, Texas, and North and South Carolina.

FINDINGS: The South Carolina region has the greatest percentage of old trucks (15 years or older) with 29%; followed by North Carolina, 22%; Mississippi, 20%; Alabama, 15%; and Texas, 11%. Based on the sample, the minimum acceptable horsepower seems to be 300. There is a significant trend toward larger engines for later model trucks; that is, the minimum engine size available after 2000 is 427 horsepower.

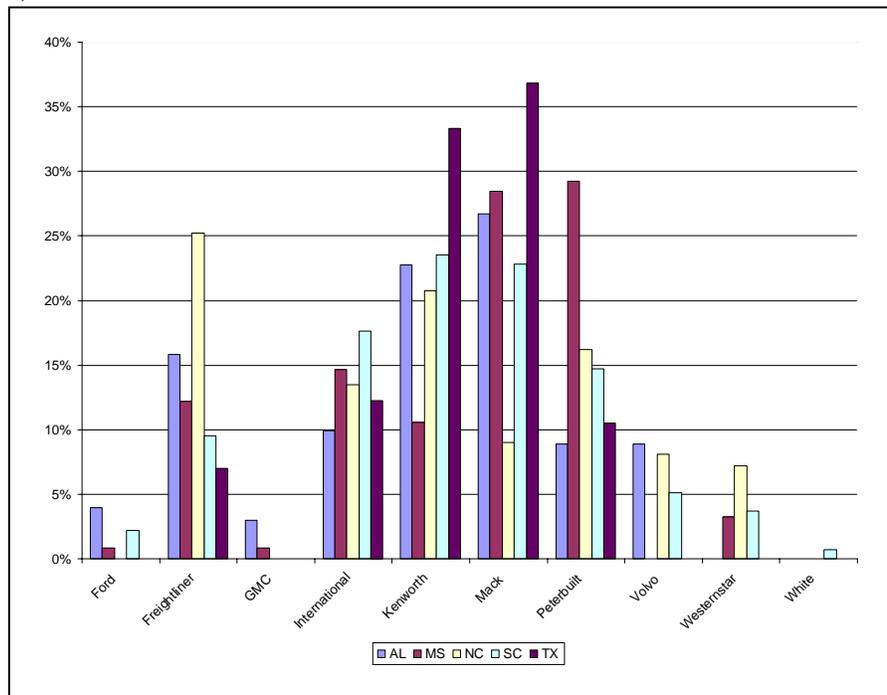


Fig. 1: Truck make by region.

Weights

Tare weights for the truck and trailer combinations sampled ranged from 24,040 to 33,760 pounds. The lightest combination weight was a 1989 International truck with a 290 horsepower Cummins engine and a 1980 double-bunk JCL trailer. The truck cab and bumper were made of aluminum, and the cab was also equipped with a “sleeper.” There were ten other rigs weighing less than 26,000 pounds, and nine of ten were pulling a pole trailer. There were six rigs weighing more than 33,000 pounds, and each had engines of 400 hp or larger and pulled double-bunk trailers. Overall, the Mississippi region had the heaviest trucks, while Alabama had the lightest tare weights.

Loaded gross vehicle weights for more than half the loads in each region exceeded 80,000 pounds. The majority of load weights ranged from 77,000 to 85,000 pounds: Mississippi, 69%; North Carolina, 68%; South Carolina, 60%; Texas, 58%; and Alabama, 51% (where the legal weight is 80,000 pounds plus a 10% tolerance).

Ages and Other Features

Nearly half of the trailers were built by Pitts (30%) or Evans (18%). Fifty-five percent of the trailers were 10 years old or newer, with only 5% more than 25 years old. The majority of the trailers were double-bunk, while only 6% were pole trailers. Seventy-eight percent of all loads were hauled treelength, while 18% were log length.

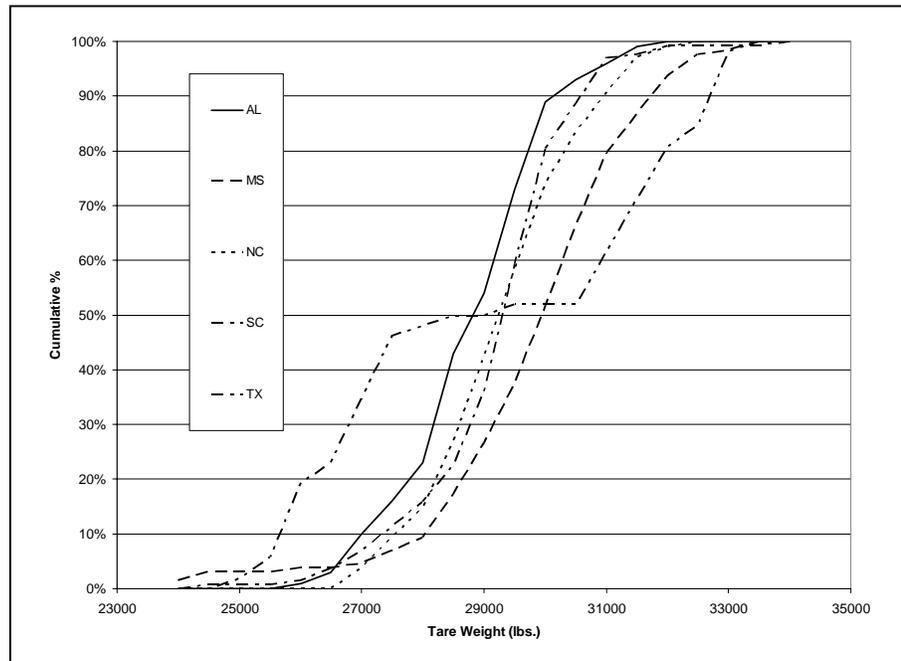


Fig. 2: Tare weights observed in five Southern states.

Use of Lightweight Components

Aluminum or fiberglass cabs were prevalent (73% of trucks) with the widest use in North Carolina (97%). Fifty-nine percent of trucks in the study had aluminum wheels with the most in Texas (93%) and the least in Alabama (36%). Aluminum headache racks were also popular (71%) with the most observed in North Carolina (90%) and the least in Texas (53%). Thirty-five percent of trucks in the study had aluminum bumpers and 26% were equipped with “sleeper” cabs. Only 3% of the trucks had only one fuel tank.

SUMMARY: Detailed cost analysis is available in the full report, entitled *Let’s Talk Trucking: Trucks and Trailers in Use in the South* (available free to FRA members as a Technical Paper at www.forestresources.org/MEMBERS/tech-papers/techpapers.htm). Based on the study results, **the best way to reduce hauling cost is to increase payload by reducing truck tare weight.** By equipping a truck with lighter weight components, but with the same 400 hp engine and 10-speed transmission, one truck manufacturer reduced the weight of one model typically used by the logging industry by 3,206 pounds. Increasing the payload weight by 3,200 pounds reduced the cost per ton by 5.9%. Tare weight could be reduced further by switching from a double-bunk to a folding pole trailer, which increases the payload while reducing fuel consumption, maintenance, and repair costs.

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