MOTOR VEHICLES: Determination of weight carrying capacity of half-track motor vehicle.

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Col. David Harrison
Superintendent
Missouri State Highway Patrol
Jefferson City, Missouri

Dear Sir:

Reference is made to the inquiry submitted by your predecessor of your office to this department requesting an official opinion and reading as follows:

> "The question has arisen as to the weight carrying capacity of a vehicle designed as a shovel and crane mounted on a half track truck. Attached is a photograph which will give you a better idea of the type of vehicle and the construction from which you may determine the weight carrying capacity. The weight of these vehicles is 18,700 pounds on the half track, and the question arises as to whether this driving assembly is a single axle or group of axles.
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> "Obviously, this will determine the allowable weight that can be carried on the vehicle, and we ask that you give us an opinion as to whether or not the half track is classed as a single axle or group of axles. The distance from the center of the front wheel to the center of the rear wheel of this group is four and one-half feet, and the width of the tread on each track is twelve inches. If the axles are not considered as a group, the maximum weight would be 18,000 pounds on a single axle, and the equipment could not be used on the highways, as without any added load its empty weight is 18,700 pounds or 700 pounds overweight on the axle. If it is considered as a group of axles the allowable weight would be determined by the formula (L + 40) X 650."

The photograph of the vehicle submitted along with the opinion request discloses that the front wheels are conventional in type bearing pneumatic rubber tires. The rear assembly on each side of the vehicle is a half-track with the weight being borne upon such track as distributed by four small wheels, the center to center distance between the front and rear axles of such wheels being four and one-half feet as mentioned in the letter.

Section 8406, Mo. R.S.A., reads in part as follows:

> "No motor drawn or propelled vehicle, or combinations thereof, shall be moved or operated on the highways of this State when the gross weight thereof, in pounds shall exceed the weight computed by multiplying the distance in feet between the first and last axles of such vehicles or combinations of such vehicles plus forty (40) by seven hundred (700); nor shall the total gross weight, with load on any group of axles of a vehicle or combination of vehicles where the distance between the first and last axles of the group is eighteen (18) feet or less exceed the weight, in pounds computed by multiplying the distance in feet between the first and last axles of such group under consideration plus forty (40) by six hundred fifty (650). No vehicle or combination of vehicles shall be moved or operated on any highway in this State having a greater weight than sixteen thousand (16,000) pounds on one axle when the wheels attached to said axle are equipped with high pressure pneumatic, solid rubber or cushioned tires, and no vehicle or combination of vehicles shall be moved or operated on the highways of this state having a greater weight than eighteen thousand (18,000) pounds on one axle when the wheels attached to said axle are equipped with low pressure pneumatic tires, and no vehicle shall be moved or operated on the highways of this state having a load of over six hundred (600) pounds per inch width of tire upon any wheel concentrated on the surface of the

> highway (said width in the case of rubber tires, both solid and pneumatic, to be measured between the flanges of the rim).
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> "For the purpose of this Section an 'Axle load' shall be defined as the total load imposed upon the highway through all wheels whose centers are included within two parallel transverse vertical planes not more than forty (40) inches apart."

The definition of "Axle load" contained in the section quoted seems to be applicable here. We reach this view by reason of the information given that the axles of the front and rear wheels of the rear assembly are four and one-half feet distant from each other. Examination of the photograph of the vehicle accompanying the opinion request discloses that in fact the weight of the rear portion of the vehicle is distributed over a bearing surface in contact with the roadway of some four and one-half feet parallel with the direction of travel and 12 inches in width parallel to the direction of the axles. In other words, a greatly enlarged bearing surface is used to carry the load than would be found in even four or six wheels equipped with pneumatic rubber tires of the conventional type.

CONCLUSION

In the premises, we are of the opinion that the rear wheels of the motor vehicle described in your letter of inquiry are to be treated as a group of axles rather than as a single one for the purpose of determining the maximum allowable weight limit which may be carried.

Respectfully submitted,

WILL F. BERRY, JR.
Assistant Attorney General

APPROVED:

J. E. TAYLOR
Attorney General

WFB:VLM