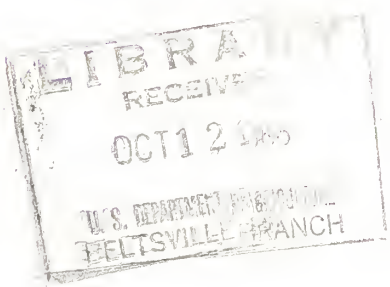
Comparison of For-hire Motor Carriers Operating Under the Agricultural Exemption with Regulated Motor Carriers



MARKETING RESEARCH REPORT NO. 769
U.S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE

PREFACE

This report is the fourth of a series on the operations of for-hire motor carriers which are exempt from economic regulation by the Interstate Commerce Commission.

The first report, The Role of Truck Brokers in the Movement of Exempt Agricultural Commodities, Marketing Research Report No. 525, 1962, by John H. Hunter, Jr., analyzed the operations of brokers of agricultural commodities in interstate commerce during 1959. Emphasis was given to the volume of commodities booked; characteristics of motor-carrier firms using broker services; broker services to shippers, receivers, and motor carriers; and motor-carrier charges and broker compensation.

The second report, For-Hire Motor Carriers Hauling Exempt Agricultural Commodities--Nature and Extent of Operations, Marketing Research Report No. 585, 1963, by Mildred R. DeWolfe, presented information based on a 1960 survey about the size of exempt for-hire motor carrier firms, length of time in business, type of equipment operated, amounts and types of commodities hauled, miles traveled, and origins and destinations of hauls. In this report, the survey is referred to as the 1960 USDA survey.

The third report, For-Hire Trucking of Exempt Farm Products--Operating Practices and Nature of Competition, Marketing Research Report No. 649, 1964, by Bruce H. Wright, provided information on sources of business, principal competition, methods of establishing rates, operating costs, trip-leasing, and equipment used.

The present report is based on data provided by the special tabulation of the 1963 Census of Transportation which was furnished by the Bureau of the Census, Transportation Division, Donald E. Church, Chief. The Bureau of the Census, however, assumes no responsibility for interpretation of data supplied by the special tabulation.

CONTENTS

August 1966

SUMMARY

According to an estimate based on the 1963 Census of Transportation, exempt motor carriers operated 30,483 motor vehicles in interstate hauls. Only 4.4 percent of for-hire trucks used in the United States were operated under the agricultural exemption.

As measured by fleet size, most exempt motor-carrier firms were smaller than regulated motor-carrier firms. The modal fleet size for exempt motor carriers was 2 to 3 truck-tractors, compared with 20 to 49 truck-tractors for the regulated motor carriers. Furthermore, no significant changes were found in distribution of truck-tractor fleet sizes since 1960.

No significant differences were found between exempt and regulated carriers with respect to most characteristics examined. There were no significant differences in model year and lifetime mileages of truck-tractors operated by exempt and regulated motor carriers. The exempt motor carriers appeared to operate their tractors more miles per year than regulated motor carriers, but the difference was slight and did not prove statistically significant. The exempt motor carriers also operated more vehicles on round trips with loads in one direction only; 62.9 percent of their trips had one-way loads, compared with 45.8 percent for the regulated motor carriers. Exempt carriers' use of their vehicles did not vary much by season; 95 percent of vehicles were operated all year.

Leasing seemed to be an important practice among exempt motor carriers. Thirty percent of truck-tractor operators reported leasing some vehicles with drivers during 1963. The median lease was 124 days. The leasing practices were found to be associated with fleet size; a larger percentage of vehicles from smaller fleet sizes were leased with drivers in 1963.

The previous estimates based on smaller samples compared very favorably with those based on the 1963 Census of Transportation, supporting the validity of conclusions based on such samples.

COMPARISON OF FOR-HIRE MOTOR CARRIERS OPERATING UNDER THE AGRICULTURAL EXEMPTION WITH REGULATED MOTOR CARRIERS

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BACKGROUND

The motor-carrier industry is unique among the regulated industries, because the for-hire interstate transportation of unmanufactured agricultural commodities by truck is exempt from economic regulation by section 203(b), subsection 6 of the Motor Carrier Act of 1935, as amended. This section is known as the agricultural exemption, and carriers engaged exclusively in hauling exempt agricultural commodities are known as exempt carriers.

The available statistical data on transportation are primarily a byproduct of Government regulatory activities. Since the truck transportation of certain agricultural commodities is exempt from economic regulation, information pertaining to operation of exempt motor carriers is not available from agencies which collect such data from regulated motor carriers. The information, however, is essential for economic analysis and discussion of public policy.

As a partial remedy for this lack of information, the Transportation Economics Group of the Marketing Economics Division has been collecting data through various surveys on the nature and extent of operations by the exempt motor carriers. 1/ The 1963 Census of Transportation provides an additional source of data not available elsewhere, making it possible to compare operating characteristics of exempt and regulated motor carriers and to test the validity of some previous conclusions based on much smaller samples. 2/

This report analyzes the data supplied by special tabulation of the 1963 Census of Transportation. The purpose is finding answers to the following questions: (1) What are the operating characteristics of motor carriers engaged in hauling exempt agricultural commodities? (2) Do these characteristics differ from those of carriers subject to economic regulation? (3) How do the estimates based on smaller samples compare with those based on the Census data?

Nature of the Data

The special tabulation of data from the 1963 Census of Transportation, Truck Inventory and Use Survey, was required to isolate vehicles operated by the exempt motor carriers and was furnished by the Transportation Division, Bureau of the Census. The procedure was as follows:

1/ Publications are described in the preface.
2/ Facsimiles of the 1963 Census of Transportation form are in Appendix A.

(1) Answer 6 to question 9, Form TC-200-5 (reproduced in appendix A), isolated vehicles used in for-hire transportation.
(2) Answer 2 to question 10(a) isolated vehicles used in interstate commerce.
(3) The vehicles used in interstate for-hire transportation were further subdivided into two groups according to the answer to question 10(b):
    (a) Those operated in service without an Interstate Commerce Commission (ICC) authorization (answer 3), and
    (b) those operated in service under an Interstate Commerce Commission (ICC) authorization (answer 4).

Since exempt motor carriers comprise the only major group of interstate for-hire carriers allowed to operate without an ICC authorization, the group of vehicles in (a) must be operated by the exempt motor carriers.

This report, therefore, is based on the assumption that the motor vehicles that were reported to the Census as in "for-hire" service, operating in more than one State, and not subject to ICC service authorization were vehicles actually operated by the exempt motor carriers. An unknown but probably small percentage of these vehicles were not in exempt agricultural for-hire service.3/ Furthermore, the Census data were derived from a probability sample and consequently are subject to sampling variability as well as usual response errors arising largely from possible misinterpretation of the terms used.

The motor carriers operating without an ICC authorization are referred to hereafter as exempt motor carriers (EMC), and those operating under an ICC authorization as regulated motor carriers (RMC).

It was expected that the ratio of straight trucks to truck-tractors would differ between EMC and RMC. If the characteristics of straight trucks differed from those of truck-tractors, a bias might be introduced into the analysis. In terms of both body types and weight, straight trucks are more heterogeneous than truck-tractors. For these two reasons, straight trucks were excluded from most of the analysis.

NUMBER OF VEHICLES OPERATED AND SIZE OF FLEETS

According to an estimate based on the 1963 Census of Transportation, a total of 30,483 motor vehicles were operated by EMC. Considering that an estimated 679,000 trucks were used in for-hire services in the United States, only 4.4 percent were affected by the agricultural exemption.

A similar estimate of 35,615 motor vehicles operated by EMC in interstate hauls was made on the basis of the 1960 USDA survey data (see Preface).

3/ It is possible that some vehicles of carriers operating wholly within or between contiguous municipalities lying in more than one State were included. This group of carriers, however, is probably small, and does not operate many truck-tractors. Furthermore, if bias due to this source were important, the estimate of the number of vehicles operated by exempt motor carriers based on Census would probably be larger than similar estimates based on the U.S. Department of Agriculture study. The opposite, however, was found.

Considering the difference in years and the number of steps which were necessary to obtain this estimate, the discrepancy between two estimates does not seem unreasonable and may be attributed in part to the sampling variation (for method of estimation see appendix B).

Of the estimated total of vehicles operated by EMC, approximately 39 percent were straight trucks and 61 percent were truck-tractors. EMC operated almost 19,000 truck-tractors in interstate hauls.

The distribution of vehicles by fleet size indicates a predominance of relatively small EMC firms, with 21 percent of the straight trucks and 19 percent of the truck-tractors showing no fleet association (table 1). Furthermore, a comparison of truck-tractor distributions by fleet sizes shows that the RMC firms (as measured by fleet sizes) are considerably larger than the EMC firms (fig. 1).

It is sometimes argued that the motor-carrier industry without Government regulation would be subjected to large-scale instability, which also allegedly plagues nonregulated trucking at present. 4/ A large-scale instability may result in changes over time in the distribution of firms by size. Comparison of the data, however, showed no significant changes in the distribution of truck-tractor fleets since 1960 (table 2). The size of most firms, as measured by their truck-tractor fleets, remained relatively small. The median size of the truck-tractor fleet increased from 4 truck-tractors in 1960 to 5 in 1965.

QUALITY OF EQUIPMENT

It is sometimes maintained that vehicles operated by EMC are inferior to those operated by RMC, the implication being that profits in the nonregulated sector of the motor-carrier industry are not high enough to attract new resources. Since one type of inferiority is indicated by the age of equipment, if the above assertion is true, one should observe a larger percentage of new vehicles operated by RMC than by EMC firms. The data, however, are inconsistent with this expectation. No significant differences in age were found for truck-tractors operated by EMC and those operated by RMC (table 3). This conclusion was verified by applying a chi-square test to the data. The calcuated value of X^2 was 3.88, well below the 14.07 value needed at the 5-percent significance level to accept the hypothesis of significant differences in age of truck-tractors operated by the two groups of carriers.

Similarly, distributions of truck-tractors by lifetime mileage (total miles the vehicle has been driven since new) indicate no significant differences between those operated by EMC and those of RMC firms (table 4). The chi-square test again was used to confirm this conclusion. The calculated value of X^2 was

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4/ For example, W. M. McCurdy, President of Perishable Commodity Carrier Association, stated in 1961 that about one-third of the small exempt truckers in his area go out of business each year (7). Also (5). (Underscored numbers in parentheses refer to items in the Literature Cited, p.12).

Table 1.--Interstate for-hire motor carriers: Number and percentage of vehicles, classified by type of carrier and size of fleet, 1963

Size of fleet 1/	EMC						RMC: Truck-tractors	
	Total		Straight trucks		Truck-tractors			
	Vehicles	Percentage of total	Vehicles	Percentage of total	Vehicles 2/	Percentage of total	Vehicles	Percentage of total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0	6,406	21.0	2,219	18.8	4,128	22.1	19,773	11.7
1	3,826	12.6	1,550	13.2	2,276	12.2	6,174	3.7
2 or 3	5,034	16.5	1,952	16.6	3,082	16.5	7,891	4.7
4 or 5	3,245	10.6	1,309	11.1	1,936	10.4	6,278	3.7
6 to 9	4,100	13.5	1,529	13.0	2,571	13.8	12,225	7.2
10 to 19	2,981	9.8	923	7.8	2,058	11.0	20,714	12.3
20 to 49	2,525	8.3	1,046	8.9	1,479	7.9	32,505	19.3
50 to 99	1,467	4.8	1,117	9.5	350	1.9	20,960	12.4
100 or more	899	2.9	136	1.1	763	4.1	42,088	25.0
Total	3/30,483	100.0	11,781	100.0	18,643	99.9	168,608	100.0

1/ Number of vehicles operated in addition to the ones selected in the sample.
2/ Includes truck-tractors and semitrailers registered as a unit.
3/ Includes 59 "others."

Source: U.S. Bureau of the Census, 1963 Census of Transportation.

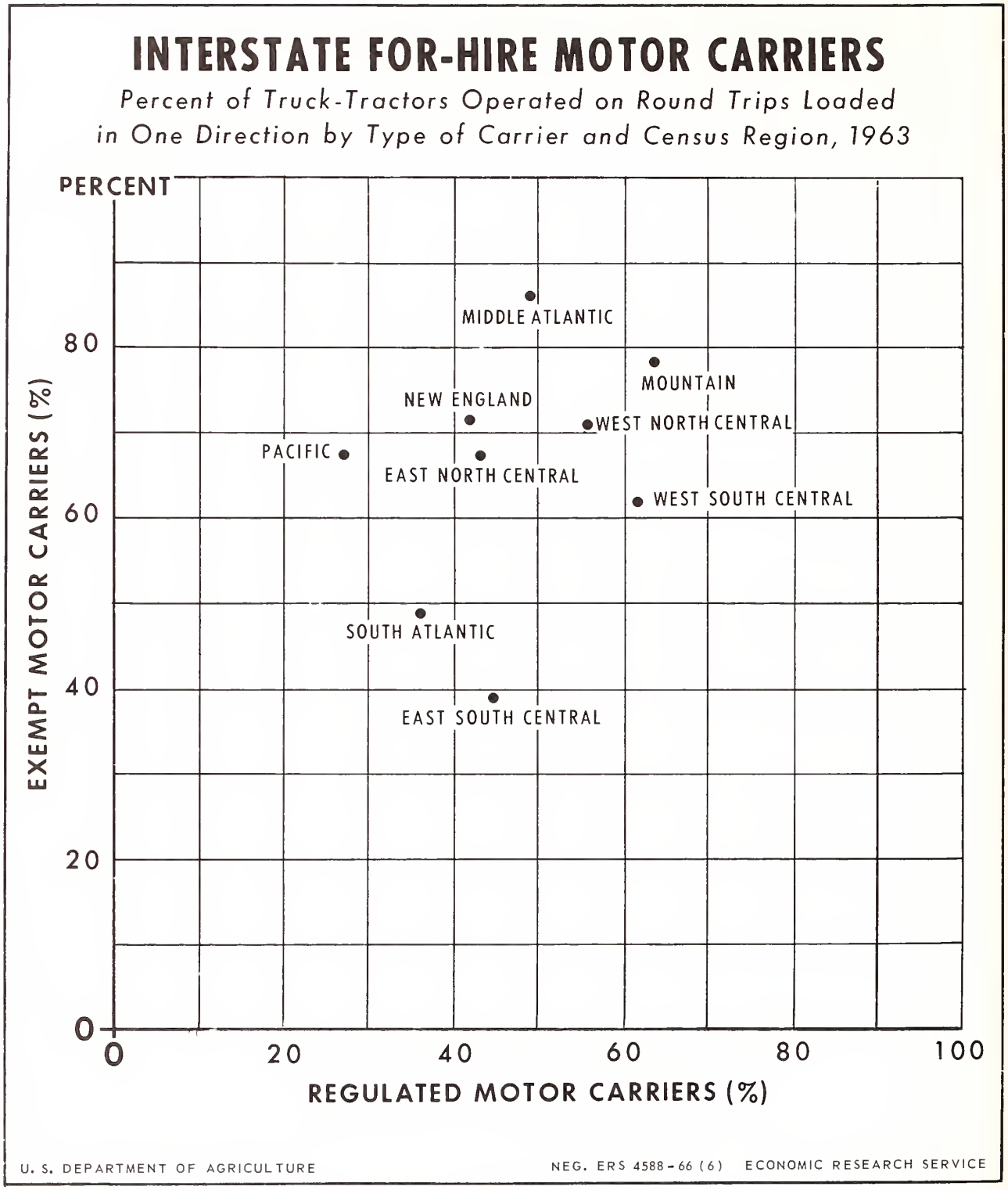
INTERSTATE FOR-HIRE MOTOR CARRIERS
Percent of Truck-Tractors Operated on Round Trips Loaded in One Direction by Type of Carrier and Census Region, 1963
PERCENT
EXEMPT MOTOR CARRIERS (%)
REGULATED MOTOR CARRIERS (%)
0
20
40
60
80
100
MIDDLE ATLANTIC
MOUNTAIN
NEW ENGLAND
WEST NORTH CENTRAL
PACIFIC
EAST NORTH CENTRAL
WEST SOUTH CENTRAL
SOUTH ATLANTIC
EAST SOUTH CENTRAL
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 4588-66 (6) ECONOMIC RESEARCH SERVICE

Figure 1

Table 2.--Exempt interstate for-hire motor carriers: Number and percentage of truck-tractors classified by size of fleet, 1960, 1963, and 1965

Size of truck-tractor fleet	1960		1963 1/		1965	
	Truck-tractors	Distribution	Truck-tractors	Distribution	Truck-tractors	Distribution
	Number	Percent	Number	Percent	Number	Percent
1	504	15.0	4,128	22.1	24	21.6
2 or 3	826	24.6	3,817	20.5	21	18.9
4 or 5	483	14.4	2,509	13.5	14	12.6
6 to 9	507	15.1	2,896	15.5	18	16.2
10 or more	1,039	30.9	5,293	28.4	34	30.6
Total	3,359	100.0	18,643	100.0	111	99.9

1/ Different fleet size classes used in 1963 Census of Transportation required the following adjustments to make comparisons with the available 1960 and 1965 data: Truck-tractors with no fleet association (table 1, column 6) were placed in one truck-tractor fleet size class; truck-tractors in Census one fleet size class and one-half of truck-tractors in "2 or 3" size class were placed in new "2 or 3" size class; the new 4 or 5 size class consisted of one-half Census "2 or 3" size class and one-half Census "4 or 5" size class; similarly, new "6 to 9" size class consisted of one-half of Census or "4 or 5" size class and three-fourths of Census "6 to 9" size class; one-fourth of Census "6 to 9" size class was added to "10 or more" size class to give new "10 or more" fleet size class.

Sources: DeWolfe, M. R., For-Hire Motor Carriers Hauling Exempt Agricultural Commodities--Nature and Extent of Operations. U.S. Dept. Agr. Mktg. Res. Rpt. No. 585, p. 8, 1963; U.S. Bureau of the Census, 1963 Census of Transportation; Miklius, W., "Some Characteristics of Nonregulated For-Hire Truck Transportation of Agricultural Commodities." Land Econ. 42: 226-230. May 1966.

Table 3.--Interstate for-hire motor carriers: Number and percentage of truck-tractors classified by type of carrier and year model, 1963

Year model	EMC		RMC	
	Truck-tractors	Distribution	Truck-tractors	Distribution
	Number	Percent	Number	Percent
1963	1,730	9.3	12,934	7.7
1962	2,069	11.1	22,312	13.2
1961	1,404	7.5	16,831	10.0
1960	2,877	15.4	22,370	13.3
1959	1,956	10.5	23,647	14.0
1955-58	6,016	32.3	47,489	28.2
1950-54	2,270	12.2	17,976	10.7
1949 and older	321	1.7	1/5,049	1.7
Total	18,643	100.0	168,608	100.1

1/ Includes a few "unknown."
Source: U.S. Bureau of the Census, 1963 Census of Transportation.

Table 4.--Interstate for-hire motor carriers: Number and percentage of truck-tractors classified by type of carrier and lifetime mileage, 1963

Lifetime mileage (1,000 miles)	EMC		RMC	
	Truck-tractors	Distribution	Truck-tractors	Distribution
	Number	Percent	Number	Percent
Less than 100	3,535	23.5	30,287	20.9
100 to 199	3,018	20.0	36,641	25.3
200 to 299	2,904	19.3	31,456	21.7
300 to 399	2,373	15.8	19,604	13.5
400 to 499	1,686	11.2	11,785	8.1
500 to 599	574	3.8	7,993	5.5
600 to 699	473	3.1	3,298	2.3
700 to 799	290	1.9	1,925	1.3
800 and more	213	1.4	1,831	1.3
Total	a/15,066	100.0	b/144,820	99.9

a/ Excluding 3,577 "unknowns" and "no replies."
b/ Excluding 23,788 "unknowns" and "no replies."

Source: U.S. Bureau of the Census, 1963 Census of Transportation.

4.31 below the 15.51 value needed to accept the hypothesis of significant differences. The findings here are consistent with previous findings based on a different data source (6).

Linnenberg suggests that the prevalence of inferior equipment is inversely correlated with the size of the carrier (4). The evidence consistent with this hypothesis would indicate the possibility of significant economies of scale in trucking.

To test the above hypothesis, data on EMC were cross-classified by size of truck-tractor fleet and model year of the truck-tractor (table 5). To be consistent with the hypothesis, smaller carriers (as measured by fleet size) should be observed operating older equipment. The average age of truck-tractors, however, did not vary systematically with fleet size.

UTILIZATION OF EQUIPMENT

As measured by annual mileage, the truck-tractors operated by EMC appear to be utilized slightly more intensively than those operated by RMC (table 6). The differences, however, were small and did not prove to be statistically significant. 5/ The average annual mileage of truck-tractors operated by EMC

5/ The calculated value of X^2 was 10.77.

Table 5.--Exempt interstate for-hire carriers: Truck-tractors classified by size of fleet, average age, average annual mileage, number and percentage leased, and average days on lease, 1963

Item	Unit	Number of truck-tractors in fleet								
		0	1	2 or 3	4 or 5	6-9	10-19	20-49	50 and more a/	Total
Truck-tractors	Number	4,128	2,276	3,082	1,936	2,571	2,058	1,479	1,113	18,643
Percentage	Percent	22.1	12.2	16.5	10.4	13.8	11.0	7.9	6.0	99.0
Average age b/	Years	5.7	6.0	4.9	5.0	4.6	5.4	6.2	5.9	5.4
Average annual mileage	1,000 miles	66.3	74.4	70.6	80.2	81.6	71.3	81.5	30.8	71.6
Vehicles leased with drivers	Number	1,740	1,105	723	229	216	200	201	339	4,753
Percentage leased	Percent	44.7	54.8	35.5	17.2	11.1	11.5	16.0	32.4	30.1
Average days leased	Number	199	124	126	97	122	22	50	290	157

a/ Some of the estimates for this size category were based on a small number of observations and may not be representative.

b/ In computing average age of truck-tractor, the following weights were used: 1962-63 model years 1; 1960-61 model years 3; 1955-59 model years 6.5; 1950-54 model years 11.5 and 1940-49 model years 19 years.

Source: U.S. Bureau of the Census, 1963 Census of Transportation.

was about 72,000 miles compared to about 62,000 miles for those operated by RMC. The estimated average annual mileage is very close to an earlier estimate based on the 1960 USDA survey of about 70,000 annual miles per vehicle operated by EMC and used exclusively in interstate hauls (2).

The data on average annual mileages of EMC truck-tractors were cross-classified by fleet size, to test a proposition that smaller carriers operate their vehicles more intensively to offset their alleged diseconomies of size. The average annual mileage, however, did not reveal any systematic relationship as fleet size increased (table 5).

Although EMC vehicles are driven more miles per year, fewer are operated on round trips loaded in both directions. Only 37.1 percent of EMC truck-tractors were operated on such round trips, compared with 54.2 percent of RMC truck-tractors. It is plausible to assume that the higher annual mileages of EMC truck-tractors reflect efforts to offset the larger number of empty backhauls.

Distribution of vehicles by single and round-trip loads shows considerable variation among the Census regions for both EMC and RMC (table 7). The percentages of EMC truck-tractors used on round trips with loads in one direction should be correlated with those of RMC, if the variation among regions is due to overall traffic characteristics of the regions. Lack of any significant relationship, however, indicates that EMC and RMC are affected by different regional traffic imbalances (fig. 2).

Three tentative explanations may be offered for the differences in one-way and round-trip loads between EMC and RMC. First, the use of specialized equipment (for hauling livestock and some other exempt agricultural commodities) limits the use of such equipment for transporting other exempt commodities on the backhaul (2). Second, the possibility of obtaining a load on the backhaul is further reduced by restriction of EMC to hauling "exempt" agricultural commodities only. Third, some one-way loads may be due to the faulty deployment of the equipment supply among the markets (e.g., because of the lack of knowledge of possible backhaul loads, etc.).

The relatively high percentage of vehicles operated on round trips with loads in one direction only, points up backhaul as one of the major problems of both EMC and RMC, and the area where added effort may offer high potential payoff in increased efficiency. On the other hand, in spite of the seasonal nature of agricultural production, the seasonal under-utilization of equipment does not appear to be a serious problem. Ninety-five percent of truck-tractors operated by EMC are utilized all year, compared with 98 percent of those operated by RMC.

The most plausible explanation attributes the relatively high seasonal utilization of equipment to shifting of EMC vehicles among markets in response to seasonal changes in supply-demand conditions. 6/ This explanation, if

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6/ Although exact data on shifting of EMC are not available, the available data suggest that some shifting does occur. For example, 6.7 percent of EMC drivers hauling California produce classified themselves as irregular in terms of markets served, and 20 percent of respondents who provide regular service shift to other areas during the winter (6).

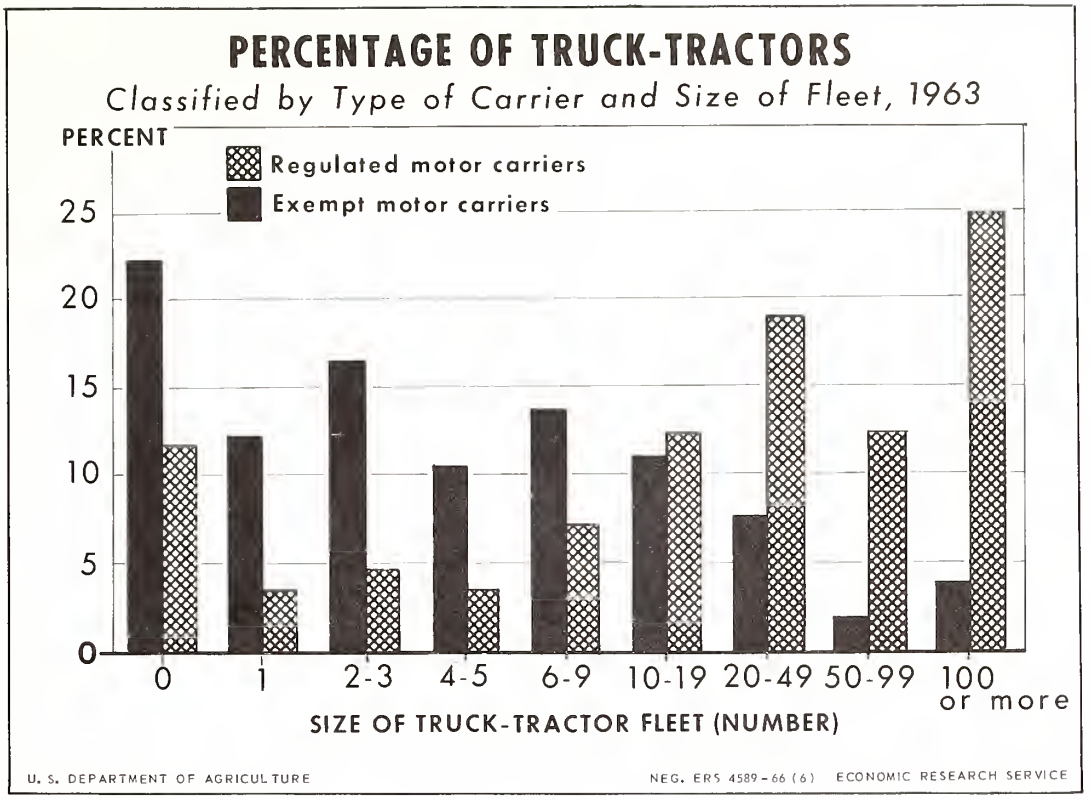

Figure 2

Table 6.--Interstate for-hire motor carriers: Number and percentage of truck-tractors classified by type of carriers and annual mileage, 1963

Annual mileage	EMC		RMC	
	Truck-tractors	Distribution	Truck-tractors	Distribution
	Number	Percent	Number	Percent
Less than 5,000	145	0.8	2,842	1.8
5 to 19,999	2,039	11.6	27,053	16.6
20 to 39,999	1,706	9.7	23,527	14.4
40 to 59,999	3,767	21.4	28,817	17.7
60 to 79,999	3,738	21.2	31,900	19.6
80 to 99,999	2,081	11.8	23,688	14.6
100 to 119,999	2,167	12.3	12,900	7.9
120 to 139,999	1,217	6.9	6,875	4.2
140 to 159,999	276	1.6	2,034	1.2
160 to 179,999	324	1.8	1,164	.7
180 to 199,999	122	.7	1,029	.6
200 to 250,000	57	.3	932	.6
Total	1/17,639	100.1	2/162,761	99.9

1/ Excluding 1,004 "no replies."
2/ Excluding 5,347 "no replies."

Source: U.S. Bureau of the Census, 1963 Census of Transportation.

Table 7.--Interstate for-hire motor carriers: Number of truck-tractors, by type of carrier and by typical loads, 1963

Census region	EMC load carried in--				Total	RMC load carried in--				Total
	One direction		Round-trip			One direction		Round-trip		
	Number	Percent	Number	Percent		Number	Percent	Number	Percent	
New England	248	71.1	101	28.9	349	3,561	41.6	5,001	58.4	8,562
Middle Atlantic	1,941	86.1	314	13.9	2,255	16,300	48.7	17,158	51.3	33,458
East North Central	1,706	66.9	843	33.1	2,549	15,428	42.9	20,547	57.1	35,975
West North Central	2,228	70.6	930	29.4	3,158	7,866	56.0	6,194	44.0	14,060
South Atlantic	1,875	49.4	1,919	50.6	3,794	11,469	36.2	20,252	63.8	31,721
East South Central	805	39.1	1,254	60.9	2,059	4,727	44.8	5,837	55.2	10,564
West South Central	1,014	61.6	633	38.4	1,647	9,296	61.2	5,900	38.8	15,196
Mountain	522	78.3	145	21.7	667	2,514	63.4	1,452	36.6	3,966
Pacific	456	67.8	217	32.2	673	1,382	27.3	3,683	72.7	5,065
Total	10,795	62.9	6,356	37.1	1/17,151	72,543	45.8	86,024	54.2	2/158,567

1/ Excludes 1,492 "other."
2/ Excludes 1,041 "other" and "unknown."

Source: U.S. Bureau of the Census, 1963 Census of Transportation.

correct, is consistent with one of the arguments advanced to support the agricultural exemption. That is, given the seasonal nature of agricultural production, flexibility of EMC allows a relatively efficient seasonal utilization of vehicle capacity.

LEASING PRACTICES

Although leasing was a subject of controversy (1) some time ago, no serious attempts were ever made to estimate the extent of this practice among EMC. The 1963 Census of Transportation data show a considerable incidence of leasing vehicles with drivers. Thirty percent of all EMC truck-tractors were leased with drivers during 1963. These vehicles were on lease an average of 157 days. The average, however, was affected by some extremes, so the median of 124 days may be a better measure of central tendency.

The extent of leasing practices appears to be associated with size of the fleet. More truck-tractors from smaller fleets were leased and were on the average leased for more days (table 5). The relationship between number of vehicles leased and the size of the fleet was confirmed by the chi-square test.

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Budget Bureau No. 41-6262.1; Approval Expires June 30, 1964

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FORM TC-200-2 (1-24-63)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

1963 CENSUS OF TRANSPORTATION

TRUCK INVENTORY AND USE SURVEY

In correspondence pertaining to this report, please include State and License number.

GENERAL INSTRUCTIONS

COMPLETE ALL SECTIONS of this report if the license plates were on or assigned to a vehicle on **July 1, 1963.**

VEHICLE IDENTIFICATION and the information in the address box were obtained from the State Motor Vehicle Registration records. Please correct any errors in the vehicle identification or changes in name or address. If on **July 1, 1963,** the license plates were on a vehicle other than the one described, give the correct vehicle description.

If the license plates were not on or assigned to a vehicle, make this notation across the front of the form, sign in Item 21, and return it without further completion.

Return the form to the Bureau of the Census, Washington 25, D. C., in the enclosed envelope which requires no postage.

Return to Washington, D. C. not later than
TWENTY DAYS AFTER RECEIPT

(Please correct if name or address has changed)

(PLEASE RETURN THIS COPY)

1. VEHICLE IDENTIFICATION

Make	Year model

Registered weight or capacity	State	License No.

If the make, year model, or weight of the vehicle is not shown above, please fill in the blank for the missing item.

2. TYPE OF VEHICLE *("X" ONE box)*

1 ☐ Truck
2 ☐ Truck-tractor
3 ☐ Truck-tractor and semi-trailer registered as a unit
4 ☐ Other *(Describe)* _____

3. TYPE OF FUEL *("X" ONE box)*

1 ☐ Gasoline
2 ☐ Diesel
3 ☐ Other *(Describe)* _____

4. NUMBER OF AXLES ON THE POWER UNIT (Truck or truck-tractor) *("X" ONE box in a, b, and c)*
(Do not include trailer. Report tandem axles as two axles.)

a. Total number of axles *("X" ONE box)*

1 ☐ Two axles
2 ☐ Three axles
3 ☐ Four axles

(Also complete b)

b. Number of driving axles (powered) on front *("X" ONE box)*

1 ☐ None
2 ☐ One axle
3 ☐ Two axles

(Also complete c)

c. Number of driving axles (powered) on rear *("X" ONE box)*

1 ☐ One axle
2 ☐ Two axles

5. UNLOADED WEIGHT OF THE TRUCK OR TRUCK-TRACTOR — Pounds

(Unloaded weight of truck or truck-tractor is the empty weight of the vehicle fully equipped for service, including fuel, water, accessories and equipment.) . . . . . .

6. NUMBER OF AXLES ON THE TRAILING UNIT(S) (Semi-trailer and full-trailer(s))
(If the vehicle is a truck-tractor (or a straight truck drawing a full trailer) mark a box for the number of axles on the trailing unit(s) most frequently used with the power unit.) *("X" ONE box only)*

a. Semi-trailer ONLY

1 ☐ One axle
2 ☐ Two axles
3 ☐ Three axles

b. Full-trailer ONLY

4 ☐ Two axles
5 ☐ Three axles
6 ☐ Four axles or more

c. Semi- and full-trailer, including converter dolly

7 ☐ Three axles
8 ☐ Four axles
9 ☐ Five axles or more

7. UNLOADED WEIGHT OF THE TRAILING UNIT(S) (Semi-trailer and full-trailer(s)) — Pounds

(Unloaded weight of the trailing unit, is the empty weight of the vehicle fully equipped for service, including accessories and equipment.) . . . . . .

8. TYPE AND SIZE OF BODY

Mark **one** box to describe the type of body of the truck or combination. If the power unit is a truck-tractor, report body type of the combination most frequently used with the power unit.

For all types **except winch or crane wreckers, pole or logging, or auto transport,** also mark a box to classify the size of the body. If the vehicle is a tank describe the kind of tank.

a. Body type
("X" ONE box in this column)

- 01 ☐ Standard panel, sedan delivery, compact van
- 02 ☐ Station wagon
- 03 ☐ Pick-up
- 04 ☐ Multi-stop or walk-in
- 10 ☐ Platform, stake, grain, or other platform type
- 11 ☐ Cattle rack (hogs, calves, and other livestock)
- 12 ☐ Open top van
- 20 ☐ Furniture van
- 21 ☐ Closed top non-refrigerated van, other than furniture van
- 22 ☐ Refrigerated van
- 30 ☐ Low-bed
- 31 ☐ Depressed center
- 40 ☐ Winch or crane, other than wrecker
- 41 ☐ Wrecker
- 42 ☐ Pole or logging
- 43 ☐ Auto transport
- 50 ☐ Dump . . . . . .
- 60 ☐ Tank . . . . . .

Kind of tank *(Describe, such as dry cargo, general purpose, insulated, refrigerated, stainless steel, glass lined, pressure vessel, etc.)*

_____

_____

- 70 ☐ Cement mixer . . . . . .
- 80 ☐ **Other** (If the above descriptions do not satisfactorily describe your vehicle, please enter identifying body type and size.)

_____

b. Body size
("X" ONE box in this column to describe size of body)

Length of load space *(Feet)*

- 1 ☐ Under 7
- 2 ☐ 7 to 9.9
- 3 ☐ 10 to 12.9
- 4 ☐ 13 to 15.9
- 5 ☐ 16 to 19.9
- 6 ☐ 20 to 24.9
- 7 ☐ 25 to 29.9
- 8 ☐ 30 to 34.9
- 9 ☐ 35 to 39.9
- 10 ☐ 40 and over

DO NOT SPECIFY BODY SIZE FOR THESE FOUR ITEMS

Capacity of dump (Water level without side boards) *(Cubic yds.)*

- 1 ☐ Under 5
- 2 ☐ 5 to 6.9
- 3 ☐ 7 to 9.9
- 4 ☐ 10 or over

Capacity of tank *(Gallons)*

- 1 ☐ Less than 1,000
- 2 ☐ 1,000 to 1,999
- 3 ☐ 2,000 to 2,999
- 4 ☐ 3,000 to 3,999
- 5 ☐ 4,000 to 5,999
- 6 ☐ 6,000 to 7,999
- 7 ☐ 8,000 and over

Capacity of mixer *(Cubic yds.)*

- 1 ☐ Less than 5
- 2 ☐ 5 to 5.9
- 3 ☐ 6 to 6.9
- 4 ☐ 7 or over

9. MAJOR USE OF THIS TRUCK OR COMBINATION *("X" the ONE box that best describes your main use of this vehicle during the past 12 months. If owned less than 12 months, check the major use during the time you owned the vehicle.)*

1 ☐ **For your farming, ranching or other agricultural activities** - This use includes hauling your livestock, crops or products to market; bringing back supplies and equipment; hauling around farm, and perhaps occasional hauling for neighbors or others. *(Answer Question 12 next.)*

2 ☐ **Personal transportation** - This is using the vehicle in place of an automobile to go from home to work; doing odd jobs around home or summer place; going fishing or hunting, etc. *(Answer Question 12 next.)*

3 ☐ **Leased or rented to others without driver--for periods of less than 30 days.** *(Answer Question 12 next.)*

4 ☐ **Leased or rented to others without driver--for periods of 30 days or more.** *(Answer Question 11 next.)*

5 ☐ **State, county, municipal or other governmental operation.** *(Answer Question 12 next.)*

6 ☐ **For-hire transportation** - This use includes trucking services known as drayage, local cartage, household goods movers, common or contract motor carriers, commercial motor carriers, "Owner-operators" under lease or contract. *(Answer Question 10)*

7 ☐ **Operated in connection with own business or occupation not specified above.** *(Answer Question 11 next.)*

8 ☐ **Other** - If none of the above applies to the use you make of the vehicle, describe the main use of the vehicle here. *(Answer Question 12 next.)*

_____

(Answer this question if the "For-hire transportation" box has been marked in Question 9.)

10. TYPE OF SERVICE

a. **Hauling in** - *("X" ONE box)* 1 ☐ One State only 2 ☐ More than one State

b. **Is this service under an Interstate Commerce Commission authorization (either granted or pending)?** *("X" ONE box)*

3 ☐ No 4 ☐ Yes *(If "Yes," enter the Interstate Commerce Commission Docket Number (this number must begin with the letters MC-))* MC-

Answer this question if either the 4 box or the 7 box has been marked in Question 9.

11. BUSINESS OR OCCUPATION - *(Mark the ONE box below that most nearly describes your business or the business of the person to whom you leased the vehicle.)*

1 ☐ **Mining or quarrying**

2 ☐ **Building or contract construction**

3 ☐ **Manufacturing** -
(Describe class of industry such as furniture, petroleum, textile, etc.) _____

4 ☐ **Wholesale** -
(Describe class, such as groceries, machinery, hardware, etc.) _____

5 ☐ **Retail** -
(Describe class, such as drugs, apparel, etc.) _____

6 ☐ **Service** -
(Describe class, such as hotels, automobile repairs, laundries, etc.) _____

7 ☐ **For-hire carrier** -
(Describe major type(s) of products carried) _____

8 ☐ **Other** *(Describe)* _____

12. VEHICLE LEASED TO OTHERS

Did you lease this vehicle WITH DRIVER to others any time during the past 12 months? *("X" ONE box)*

1 ☐ No 2 ☐ Yes *(If "Yes," estimate the total number of days leased)* . . . . . No. of days

13. VEHICLE MILES

	Miles
a. Total miles this vehicle was driven during the past 12 months. If book figures are not available, estimate the total miles driven or if you have owned the vehicle less than 12 months, estimate the probable miles for a full year	
b. Total miles this vehicle has been driven since new. If mileage shown on speedometer does not represent the life-time miles by this vehicle, estimate the total mileage	

14. TYPICAL LOADS

On a round trip basis, how does the truck or combination usually move? *("X" ONE box)*

1 ☐ Loaded in one direction, but returns empty (or almost empty) in the other direction

2 ☐ Loaded in both directions

3 ☐ Comments *(If any)* _____

15. EMPLOYMENT

About how many total DRIVER man-hours are usually spent per week by all persons in operation of this vehicle. Include both driving and riding time of relief and part-time drivers. If the driver helps load or unload the vehicle or is on duty include his time. Do not include time of non-driving employees. *("X" ONE box)*

1 ☐ Less than 15 hours
2 ☐ 15 to 30 hours
3 ☐ 31 to 40 hours
4 ☐ 41 to 60 hours
5 ☐ 61 hours or more

16. MAINTENANCE

When major repairs are needed on this vehicle, are they usually done by? - *("X" ONE box)*

1 ☐ Your own repair shop
2 ☐ Truck dealer or factory branch
3 ☐ Independent garage
4 ☐ Other *(Describe)* _____

17. BASE OF OPERATION

Where is the "home base" for this vehicle? (Principal place from which this vehicle operates)

City or town

County

State

18. AREA OF OPERATION

Where is the vehicle operated? *("X" only ONE box)*

1 ☐ Mostly in the local area (in or around the city and suburbs, or within a short distance of farm, factory, mine, or "home base" shown in Question 17.)
2 ☐ Mostly over-the-road (beyond the local area) but usually not more than 200 miles one way from the "home base" shown in Question 17.
3 ☐ Mostly over-the-road trips that usually are more than 200 miles one way from "home base" shown in Ques. 17.

19. PERIOD OF OPERATION

a. What part of the week is vehicle usually used? *("X" ONE box)*

1 ☐ Five-day week (Monday through Friday)
2 ☐ Six-day week, including Saturday, but not Sunday
3 ☐ Six-day week, including Sunday, but not Saturday
4 ☐ Week-ends only (Saturday or Sunday)
5 ☐ Seven-day week

b. "X" one or more boxes to indicate the quarter in which the vehicle is used. If the vehicle is used during each quarter, "X" only the "all year" box.

1 ☐ All year
2 ☐ January - February - March
3 ☐ April - May - June
4 ☐ July - August - September
5 ☐ October - November - December

20. NUMBER OF TRUCKS, TRUCK-TRACTORS, AND TRAILERS OPERATED FROM "HOME BASE" AS OF JULY 1, 1963

All previous questions have been about the vehicle described on the front page of this report. This question is about OTHER trucks and combinations you may be operating from the HOME BASE shown in Question 17.

Were you operating ANY OTHER trucks, truck-tractors, semi-trailers or full trailers from this home base as of July 1, 1963? *("X" ONE box)*

☐ No ☐ Yes *(If "Yes," please enter below the number of trucks by each body type, the total number of truck-tractors, and the number of semi-trailers and full trailers. DO NOT INCLUDE THE VEHICLE DESCRIBED ON PAGE 1.)*

TRUCKS

Type	Number Owned	Number Leased
Standard panel, sedan delivery, compact van, station wagon, pick-up, multi-stop, walk-in	11	21
Platform, stake, grain, open top van or cattle rack	12	22
Closed top non-refrigerated or furniture van	13	23
Refrigerated van	14	24
Tank	15	25
Dump	16	26
Other trucks	17	27

TRUCK-TRACTORS

Total number of truck-tractors owned	30
Total number of truck-tractors leased	40

SEMI-TRAILERS AND FULL TRAILERS

Type	Number Owned	Number Leased
Platform, stake, grain, or open top van	52	62
Closed top non-refrigerated van	53	63
Refrigerated van	54	64
Tank	55	65
Dump	56	66
Other semi-trailers or full trailers	57	67

21. Name and address of person who should be contacted regarding this report — Telephone No.

CERTIFICATION

This report is substantially accurate.

Date | Title | Signature of authorized person

U.S. DEPARTMENT OF AGRICULTURE
Washington, D.C. 20250

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APPENDIX B

METHODS OF ESTIMATING NUMBER OF EMC FIRMS AND NUMBER OF VEHICLES OPERATED

The Interstate Commerce Commission estimated that 37,515 exempt motor carriers were operating in 1960. However, only 21,996 exempt motor carriers were listed in the Commission's records. The difference between these figures represents the approximate number of carriers which the Commission believes to be operating in interstate service, but who have not been located and served with the Safety Regulations (3). Presumably, the estimate was made using as an expansion factor the ratio of number of carriers not on record with ICC to the number on record, found in the four-times-a-year nationwide road checks of vehicles operated on the highways. 7/

The Commission's list served as the basic list of exempt motor carriers for the USDA 1960 survey from which a random sample was drawn (2). The response to the sample mailing indicates that the Commission's list was not very accurate. 8/ The estimated number of exempt motor carriers, therefore, was obtained by adjusting Commission's estimate on the basis of responses to the random sample in the 1960 USDA survey. This procedure gives an estimated total of 20,258 exempt motor-carrier firms operating in 1960. 9/

In the 1960 USDA survey, it was found that an exempt motor-carrier firm operated, on the average, 2.28 straight trucks and 3.08 truck-tractors. All exempt motor carriers, therefore, operated an estimated total of 108,583 motor vehicles. However, only 32.8 percent of these vehicles were operated in interstate commerce. Since only vehicles hauling exempt agricultural commodities in interstate commerce are exempt from economic regulation by the Interstate Commerce Commission, only 35,615 vehicles were operated under the agricultural exemption.

7/ Letter from Herbert Qualls, Director, Bureau of Motor Carriers, Interstate Commerce Commission, dated May 7, 1963. The method used to derive estimates was not given.

8/ ICC list was supplemented by two additional lists which together, however, supplied 5,924 names.

9/ The 99-percent confidence interval is 19,508 to 21,008.

☆ U.S.GOVERNMENT PRINTING OFFICE: 1966-253-488/5