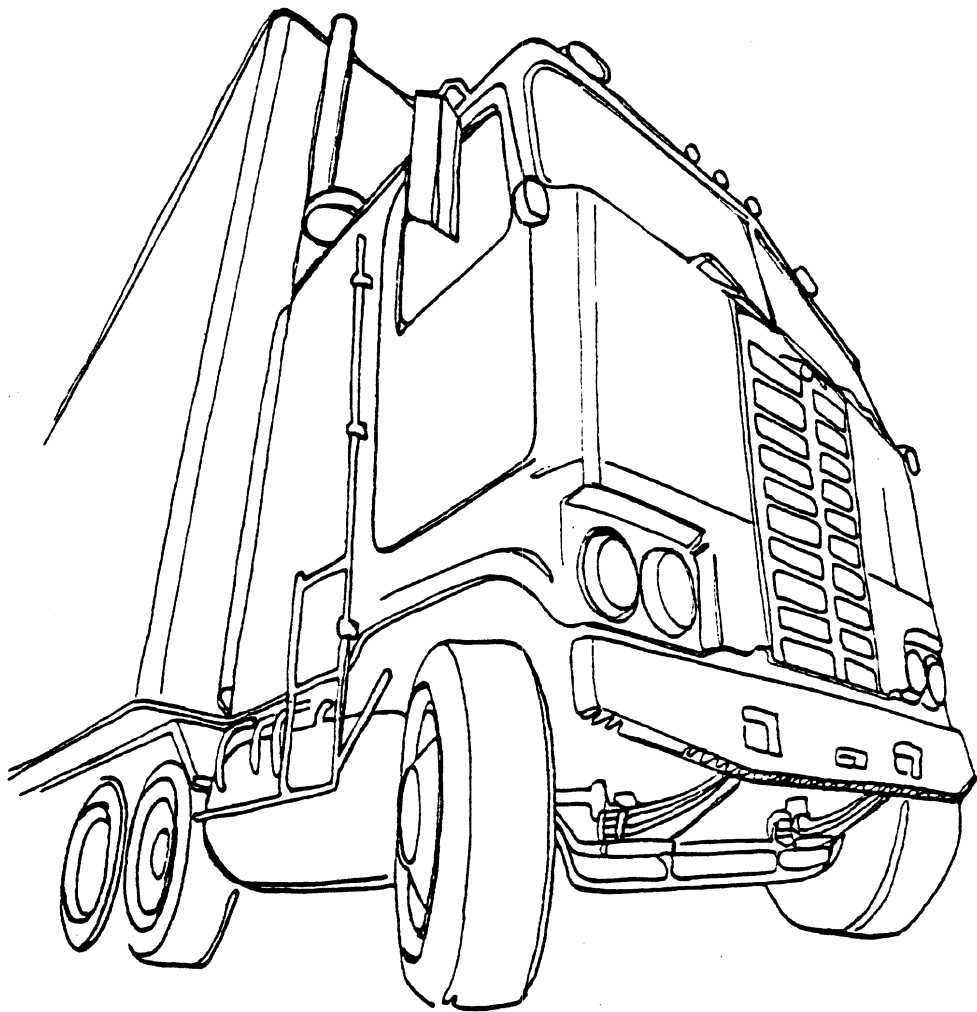


Article
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**TRACTOR-TRAILER COMBINATIONS:
National Estimates of Their Distribution and Use,
Based on the 1977 Truck Inventory and Use Survey**

APRIL 1983



UMTRI The University of Michigan
Transportation Research Institute

On September 16, 1982, the Regents of The University of Michigan changed the name of the Highway Safety Research Institute to the University of Michigan Transportation Research Institute (UMTRI).

TRACTOR-TRAILER COMBINATIONS:
NATIONAL ESTIMATES OF THEIR DISTRIBUTION AND USE,
BASED ON THE 1977 TRUCK INVENTORY AND USE SURVEY

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April 1983

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16. Abstract This report presents descriptive statistics on the national population of tractor-trailer combinations. Included are estimates of the distribution of vehicles in the national population and their average annual mileage. These estimates are repeated for various subgroups defined by selected descriptive characteristics such as cab style, area of operation and operator classification. The objective of this report is to provide information on the type and use of tractor-trailer combinations in the United States. The data source for the tabulations presented is the 1977 Truck Inventory and Use (TIU) Survey. This survey was conducted by the Bureau of the Census as part of the Census of Transportation. Trucks were randomly selected for this survey from each state's motor vehicle registration files as of July 1, 1977. Unlicensed and government-owned vehicles, as well as ambulances, motor homes, buses, farm tractors, and open utility vehicles were excluded from the sample. In addition, vehicles registered in Hawaii and Alaska were excluded from all tabulations in this report. Only vehicles identified as road tractors were used in the tabulations. This preliminary analysis is part of an ongoing heavy truck accident causation research program. The basic approach of the program is to identify the various types of heavy trucks and their differing uses.			
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EXECUTIVE SUMMARY

This preliminary analysis is part of an ongoing heavy truck accident causation research program. The basic approach of the program is to identify the various types of heavy trucks and their differing uses. Overall statistics on the tractors in use in 1977 show that: 39 percent are cabover style, nearly one-third have sleepers, 58 percent have dual power axles, 81 percent are diesel fueled, 93 percent are usually operated with a single trailer, and nearly half usually pull a van trailer.

Statistics on the use of these tractors indicate that approximately 28 percent of the tractors are in long-haul service, 34 percent short-haul, 35 percent local, and 3 percent off-road use. ICC-Authorized carriers (common and contract) operate about 32 percent of the tractors. However, these vehicles accumulate about 43 percent of the total tractor mileage. Private carriers operate 47 percent of the vehicles that accumulate 38 percent of the mileage. Nearly one-fourth of the tractors are operated in "fleets" that have only one tractor at that particular location or base. About 15 percent of the tractors are operated by fleets with 50 or more tractors at that location. However, these fleets accumulate 22 percent of the total tractor mileage because the average annual mileage per tractor in large fleets is nearly double that in small fleets. Other characteristics associated with high mileage use include late-model years, cabover style, sleepers, double trailers, and insulated trailers.

The tabulations presented generally show that the different types of tractor-based combination vehicles are used for different types of service. Older tractors are more frequently used in local service. This change in service is related to the lower annual mileage for older tractors.

Cabover style tractors comprise 39 percent of the tractors in use in 1977, and are used extensively throughout the United States, accumulating 52 percent of the total tractor mileage. The use of double trailers is primarily in the western states and accounts for about 5 percent of the mileage of all tractor combinations. Doubles are most frequently used in long-haul service with cabover tractors. When doubles are pulled by conventional-cab tractors, it is usually in local- or short-haul service.

The information in this report indicates that overall comparisons looking at only a single factor, such as double trailers or cabover tractors, can be misleading due to the varying use of the different types of tractor-based combinations. In analysis terms, these findings are described as "interactions" among the variables. Multivariate analysis techniques that are able to treat the effects of several variables simultaneously are appropriate in this situation. Aggregate statistics, or analyses that summarize over such interacting factors, may produce incomplete, or misleading, results.

PREFACE

The objective of this report is to provide descriptive information on the type and use of tractor-trailer combinations in the United States. This preliminary analysis is part of an ongoing heavy truck accident causation research program.¹ A major goal of this program is the comparison of the accident experience of various types of heavy trucks. In general, the tabulations presented here illustrate that different types of tractor-trailer combinations are used in different classes of service. The class of service, local versus over-the-road for example, may have a major influence on the accident experience. Consequently, information on the number of tractor-trailer combinations and their use is essential to this research program. Such information is commonly referred to as "exposure" data since it is a description of the group exposed to the risk of accident, as contrasted with the group actually involved in accidents.

The number and use of tractor-trailers in the United States is not well-established. The data source for the tabulations presented here is the 1977 Truck Inventory and Use (TIU) Survey. This survey was conducted by the Bureau of the Census as part of the Census of Transportation. Trucks were randomly selected for this survey from each state's motor vehicle registration files as of July 1, 1977. Vehicles which were not licensed could not have been selected. Vehicles owned by Federal, State, or local governments were excluded, as well as ambulances, motor homes, buses, farm tractors, and open utility vehicles. In addition, vehicles registered in Hawaii and Alaska were excluded from all tabulations in this report. Only vehicles identified as tractor-trailer combinations were used in the tabulations presented. These tractors typically pull a semitrailer and sometimes one or two additional trailers.

Estimates of the number of combination vehicles published by the Federal Highway Administration (FHWA) differ substantially from those derived from the TIU Survey.² FHWA estimates that a total of 1,264,091 combination vehicles accumulated 63,465 million miles in 1977, while the estimates derived from the TIU Survey are 833,100 tractor-trailer combinations and 40,568 million vehicle miles. A portion of this difference may be accounted for by straight trucks pulling trailers which FHWA has included in their figures. These vehicles are not included in this report, and their number cannot be accurately estimated from the TIU data. Various studies have been undertaken by the Federal

¹J. O'Day, L. Filkins, K. Campbell, A. Wolfe, R. Scott, Analysis of Truck Accident and Exposure Information--Phase I Report. Final Report, Rept. No. UM-HSRI-79-89 (Ann Arbor: The University of Michigan, Highway Safety Research Institute, March 1980).

²Federal Highway Administration, U.S. Department of Transportation, Highway Statistics 1979 (Washington, D.C.: U.S. Government Printing Office, 1980).

Highway Administration in order to gain some understanding of the sources of these differences. FHWA used a modified version of the TIU survey for the 1982 Federal Highway Cost Allocation Study Vehicle Fleet Population Data Base.³ Using this file, the estimated number of tractor-trailer combinations registered in the contiguous 48 states is about 15 percent higher than the estimate from the original Census Bureau version of the TIU Survey.

This report presents descriptive statistics on the national population of tractor-trailer combinations derived from the original Census Bureau version of the 1977 TIU Survey. Included are estimates of the number of vehicles in the national population and their average annual mileage. These estimates are repeated for various subgroups defined by selected descriptive characteristics such as cab style, area of operation, and operator classification. The objective of this report is to provide descriptive information on the type and use of tractor-trailer combinations in the United States.

The information in this report indicates that overall comparisons addressing only a single factor such as "doubles" or "cabovers" can be misleading due to the varying uses of tractor-trailer combinations. For example, combination vehicles with cabover-style tractors accumulate more mileage on long-haul trips as compared to combination vehicles with conventional-cab tractors which accumulate relatively more miles on local trips. In addition, the distributions of trailer type and cargo carried by each are quite different. Each of these factors may influence the accident experience of the vehicles. In analysis terms, these findings are described as "interactions" among the variables. Multivariate analysis techniques that are able to treat the effects of several variables simultaneously are appropriate in this situation. Aggregate statistics, or analyses which summarize over such interacting factors, may produce incomplete, or misleading, results.

While the TIU Survey has been conducted previously (1967, 1972), the 1977 Survey provides both more detail and more information comparable to available national accident data sets such as the NHTSA Fatal Accident Reporting System (FARS) and the Bureau of Motor Carrier Safety (BMCS) accident reports. Although the BMCS reports provide national coverage, only carriers engaged in interstate commerce are required to report. A major advantage of the 1977 TIU Survey lies in its ability to identify the classes of carriers who report accidents to BMCS.

The tabulations presented in this report are organized under three headings: vehicle type, vehicle use, and interactions between vehicle type and use. The first two sections present one-way distributions for variables such as model year, cab style, area of operation, and operator classification. The third section presents two-way tabulations to illustrate the interactions in the data. For example, the display of

³System Design Concepts, Inc., "Estimation of 1977 Truck Populations," Draft Report, May 1982. Sponsored by the Federal Highway Administration.

model year versus area of operation shows that older vehicles are used more frequently for shorter, local trips.

Tables on the left-hand page show, for each level of the variable presented, the sample size, TIU-estimated number of vehicles in the national population, percentage of the total, and the 95% confidence interval for this percentage. Tables on the right-hand page show the sample size, average annual mileage, the 95% confidence interval for the average annual mileage, and a percent distribution of total mileage for the estimated national population of combination vehicles. Total mileage is estimated by summing the reported annual mileages for all the tractor-trailer combinations. The sum of the annual miles for any subgroup ("cab forward" tractors, for example) can then be expressed as a percentage of the total for all tractor-trailer combinations.⁴

The confidence intervals are based on the sampling errors and indicate the precision of the estimates. For example, on page 3, the average annual mileage for 1977 model year tractor-trailer combinations is shown as 79,033 \pm 3,284. The 95% confidence interval for the estimated average annual mileage is then given by the interval, 75,749 - 82,317. The smaller the interval, the more precise the estimate.

Confidence intervals estimate the influence of random error and the sample design. These are called sampling errors. Surveys are also subject to nonsampling errors. These arise due to nonresponse, misinterpretation of survey questions, or improper coverage of the sampling frame (the list from which survey vehicles were selected). For example, survey documentation relates that an incomplete registration file provided by the State of Oklahoma resulted in an underestimation of the number of tractor-trailer combinations in this state by about 15,700, or two-thirds. In fact, the major source of error in these tabulations is probably the uncertainty over the total number of tractor-trailer combinations in the United States as indicated by the difference between FHWA and TIU estimates discussed in the opening of the Preface. Errors of this type are not included in the confidence intervals, which reflect only random errors observed in the data.

In summary, three types of statistics are presented in this report: (1) average annual mileages for various subgroups such as the average annual mileage of combination vehicles with cabover tractors operating in over-the-road service; (2) proportions, or the percentage of all tractor-trailer combinations with a particular characteristic or class of service; and (3) estimates of the total number of vehicles in the national population. Statistics of the first two types, averages and proportions (percentages), are likely to be much more reliable than the third type of statistic, that estimates the total number of vehicles in the national population.

⁴The "Percent Total Miles" can be reconstructed from the information in the tables by taking the product of "Estimated Vehicles" and the "Average Annual Mileage" for the category of interest, and dividing this by the total vehicle miles, 40.5 billion (821,113 times 49,310).

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CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Left:

Cab Style	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Cab Forward	432	30,703	3.7	±0.4
Cabover	4,519	319,994	39.0	±1.0
Short Conventional	2,191	144,488	17.6	±0.7
Medium Conventional	2,703	179,996	21.9	±0.8
Long Conventional	2,248	142,111	17.3	±0.7
Other & Unknown	45	3,638	0.5	±0.1
TOTAL	12,138	821,113	100.0	---

A 95% confidence interval on the percentage of "Cab Forward" tractors in the U.S. in 1977 is given by the interval $3.7\% \pm 0.4\%$, or 3.3% to 4.1%.

This is the number of "Cab Forward" tractors in the sampled data.

This is the TIU estimated total number of tractors of all configurations registered in the U.S. in 1977.

These 30,703 tractors represent 3.7% of all registered tractors in the U.S. in 1977.

This is the total number of tractors in the TIU sample.

Weighting of the sampled data by the inverse of the sampling fraction produces the estimate of the total number of "Cab Forward" tractors in the U.S. in 1977.

CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

Right:

Cab Style	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Cab Forward	432	29,070	±3,233	2.2
Cabover	4,519	65,861	±1,434	52.1
Short Conventional	2,191	35,632	±1,570	12.7
Medium Conventional	2,703	36,895	±1,409	16.4
Long Conventional	2,248	46,392	±3,205	16.3
Other & Unknown	45	--	---	0.3
TOTAL	12,138	49,310	±941	100.0

"Cab Forward" tractors account for an estimated 2.2% of all tractor mileage accumulated in the U.S. in 1977.

This is the estimated average annual mileage for a "Cab Forward" tractor operating in the U.S. in 1977.

Average mileage for all registered tractors in the U.S. in 1977 is estimated to be 49,310.

The 95% confidence interval for the average annual mileage of all tractors in the U.S. in 1977 is given by the interval 48,369 miles to 50,251 miles.

A 95% confidence interval for the average annual mileage of a "Cab Forward" tractor in the U.S. in 1977 is given by the interval, 29,070 miles \pm 3,233 miles, or 25,837 miles to 32,303 miles.

VEHICLE TYPE

The tables presented in this section provide information on the types of tractor-trailer combinations in the national population. The vehicle characteristics covered in this section are model year, cab style, sleeper cabs, number of powered axles, fuel, number of trailers, and trailer body style.

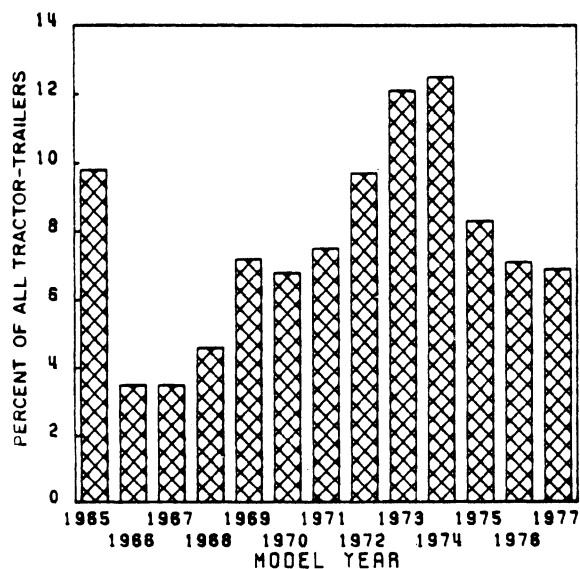
As of July 1, 1977, we find the number of tractor-trailer combinations in the U.S. dominated by 1973 and 1974 model year tractors. The reduced sales of heavy trucks in 1975-1976 is clearly reflected in the numbers of registered tractors by model year. The vast majority have dual power axles, use diesel fuel, and pull a single trailer. About 43% of tractors are cab-over-engine models, and nearly one-third are equipped with sleepers. Nearly 50% of the most frequently used trailers are vans of one type or another. Several vehicle characteristics appear associated with high-mileage use. These include cabover tractor body style, sleepers, late-model tractors, double trailers, and insulated trailers.

On the facing page is a reproduction of the type of tables found on the left and right pages in Sections 1 and 2 (pages 1 through 25). Please refer to the annotations for guidance in interpreting these tables.

MODEL YEAR:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Model Year	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
1978	28	2,387	0.3	±0.1
1977	823	56,933	6.9	±0.5
1976	837	57,946	7.1	±0.8
1975	992	68,058	8.3	±0.6
1974	1,482	102,398	12.5	±0.9
1973	1,474	99,071	12.1	±0.7
1972	1,189	79,349	9.7	±0.6
1971	902	61,508	7.5	±0.5
1970	809	55,421	6.7	±0.5
1969	816	58,951	7.2	±0.5
1968	576	37,829	4.6	±0.4
1967	434	28,556	3.5	±0.4
1966	428	28,620	3.5	±0.4
1965 & Older	1,331	82,609	10.1	±0.6
Unknown	17	1,367	0.2	---
TOTAL	12,138	821,113	100.0	---

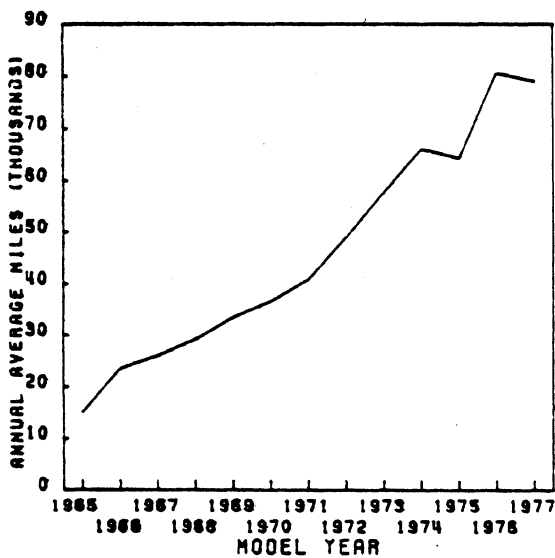


The distribution shown describes the number of registered tractor-trailer combinations in the U.S. as of July 1, 1977. The effect of the introduction of FMVSS 121 and generally unfavorable economic conditions in 1975 are reflected in the reduced number of late-model tractor-trailer combinations. As of July 1, 1977, registration of 1977 model year vehicles is not likely to be complete.

MODEL YEAR:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

Model Year	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
1978	28	62,452	±14,305	0.4
1977	823	79,033	±3,284	11.1
1976	837	80,656	±3,594	11.5
1975	992	64,263	±2,937	10.8
1974	1,482	66,105	±2,288	16.7
1973	1,474	57,706	±2,170	14.1
1972	1,189	49,024	±2,245	9.6
1971	902	40,826	±2,201	6.2
1970	809	36,631	±2,331	5.0
1969	816	33,524	±2,263	4.9
1968	576	29,164	±2,598	2.7
1967	434	26,119	±3,031	1.8
1966	428	23,595	±2,824	1.7
1965 & Older	1,331	15,827	±1,358	3.2
Unknown	17	---	---	---
TOTAL	12,138	49,310	±941	100.0

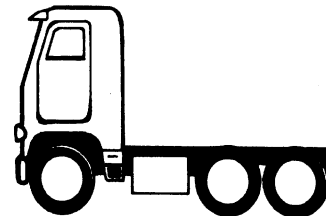
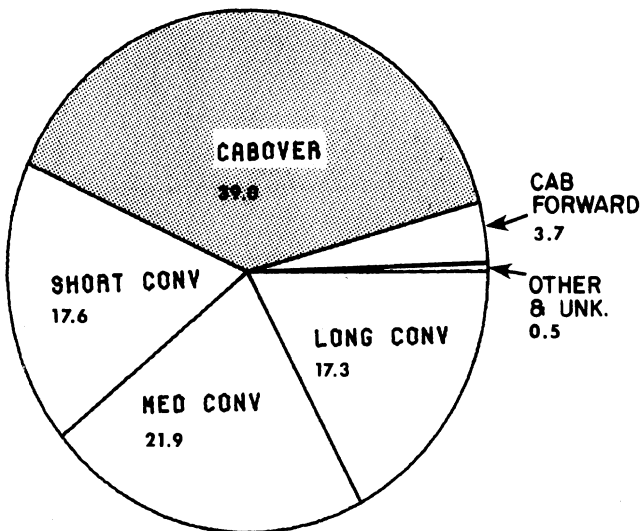


Newer model year vehicles generally have higher annual mileages. The "dip" in this curve for 1975 model year vehicles is believed to be related to short term changes in purchasing patterns caused by the introduction of FMVSS 121 and generally unfavorable economic conditions for the trucking industry that existed in 1975 when this model year class was purchased new. (See also page 28.)

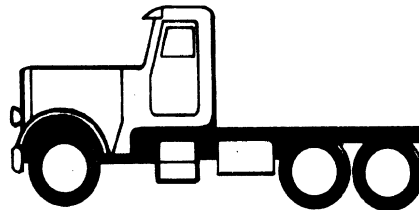
**CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES**

United States (1977)

Cab Style	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Cab Forward	432	30,703	3.7	±0.4
Cabover	4,519	319,994	39.0	±1.0
Short Conventional	2,191	144,488	17.6	±0.7
Medium Conventional	2,703	179,996	21.9	±0.8
Long Conventional	2,248	142,111	17.3	±0.7
Other & Unknown	45	3,638	0.5	±0.1
TOTAL	12,138	821,113	100.0	---



CABOVER



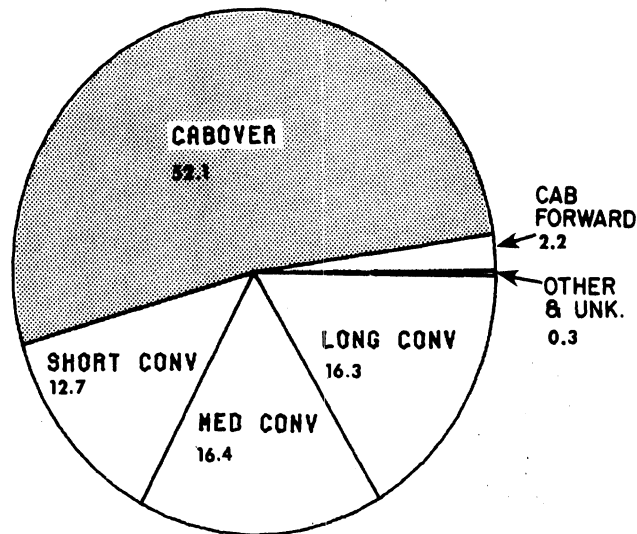
CONVENTIONAL

Cabover and cab forward style tractors generally are shorter than conventional cab tractors. Consequently, cabover tractors can pull longer trailers without exceeding vehicle length restrictions. The majority of tractors are of the conventional cab style.

**CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

Cab Style	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Cab Forward	432	29,070	±3,233	2.2
Cabover	4,519	65,861	±1,434	52.1
Short Conventional	2,191	35,632	±1,570	12.7
Medium Conventional	2,703	36,895	±1,409	16.4
Long Conventional	2,248	46,392	±3,205	16.3
Other & Unknown	45	--	---	0.3
TOTAL	12,138	49,310	±941	100.0

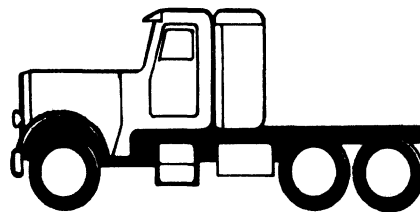
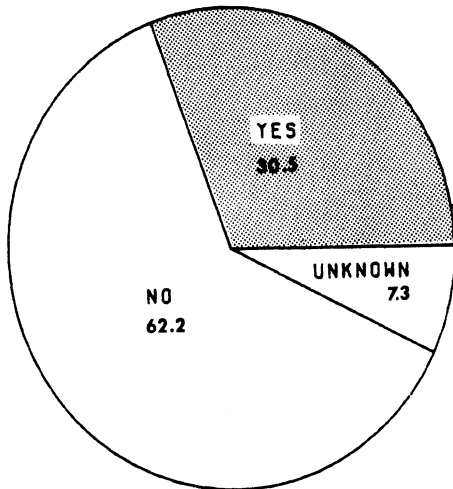


Cabover tractors are primarily used in long-haul service. Their average annual mileage is 67% higher than that of conventional cab tractors. Although cabovers are only 39% of all tractors, they accumulate for 52% of the total tractor-trailer mileage.

SLEEPER CAB:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Sleeper Cab	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Yes	3,620	250,435	30.5	±1.1
No	7,627	510,452	62.2	±1.1
Unknown	891	60,007	7.3	±0.5
TOTAL	12,138	821,113	100.0	---



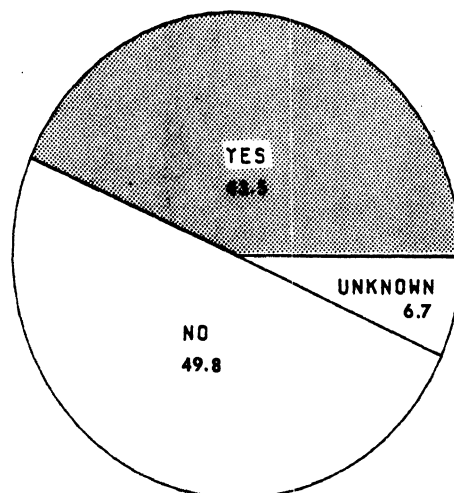
SLEEPER

Nearly 1/3 of all registered tractors are equipped with a "sleeper." These vehicles are primarily used in long-haul service.

**SLEEPER CAB:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

Sleeper Cab	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Yes	3,620	70,262	±1,517	43.5
No	7,627	39,475	±947	49.8
Unknown	891	45,528	±2,915	6.7
TOTAL	12,138	49,310	±941	100.0

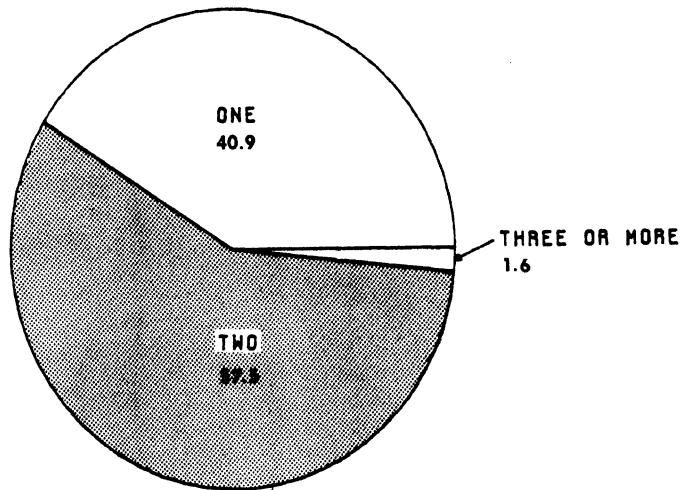


The average annual mileage of tractors with sleepers is 78% higher than that of tractors without sleepers. Tractors with sleepers accumulate 44% of the total tractor-trailer mileage.

NUMBER OF POWERED AXLES:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Number of Powered Axles	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
One	4,907	335,372	40.9	±1.1
Two	7,028	472,258	57.5	±1.1
Three or More	189	12,428	1.6	±0.2
Unknown	14	822	0.1	±0.1
TOTAL	12,138	821,113	100.0	---

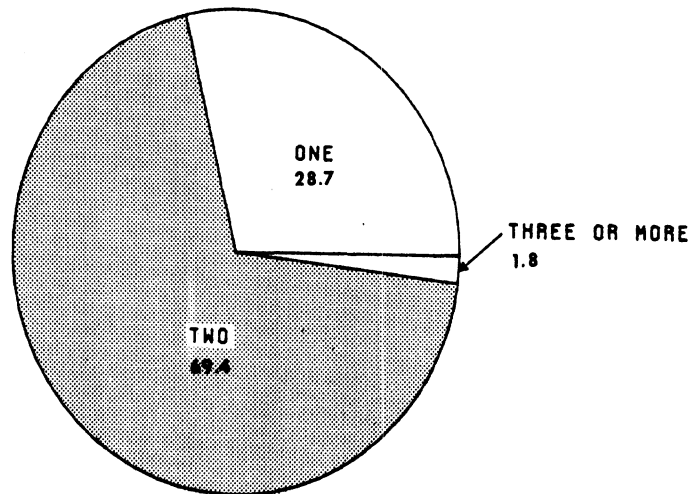


The majority of tractors have dual power axles.

NUMBER OF POWERED AXLES:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

Number of Powered Axles	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
One	4,907	34,672	±1,133	28.7
Two	7,028	59,447	±1,081	69.4
Three or More	189	44,145	±6,274	1.8
Unknown	14	64,323	±10,021	0.1
TOTAL	12,138	49,310	±941	100.0

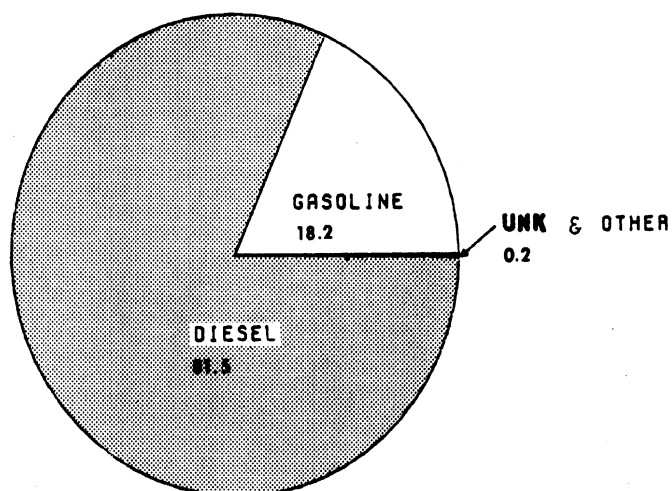


Tractors with dual power axles have higher average annual mileages and, consequently, accumulate almost 70% of the total tractor-trailer mileage.

**FUEL:
NUMBER AND DISTRIBUTION OF VEHICLES**

United States (1977)

Fuel	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Gasoline	2,121	149,739	18.2	±1.0
Diesel	9,986	669,010	81.5	±1.0
Other and Unknown	31	2,124	0.2	±0.1
TOTAL	12,138	821,113	100.0	---

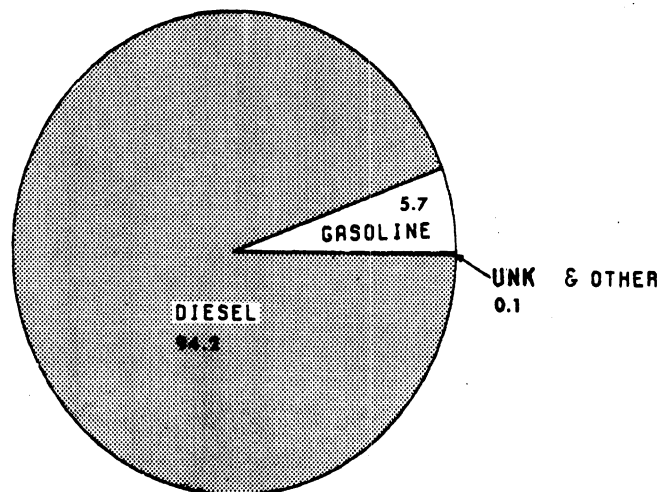


Nearly 82% of all tractor-trailer combinations use diesel fuel.

FUEL:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

Fuel	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Gasoline	2,121	15,331	±744	5.7
Diesel	9,986	57,000	±909	94.2
Other and Unknown	31	16,438	±2,898	0.1
TOTAL	12,138	49,310	±941	100.0

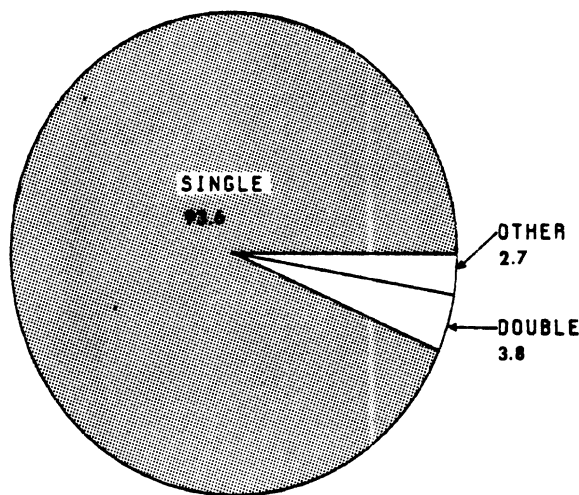


Diesel-fueled tractors have nearly four times the average annual mileage of gasoline-fueled tractors. Diesel-fueled tractors account for 94% of the total tractor-trailer mileage.

NUMBER OF TRAILERS:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Number of Trailers	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Single	11,480	768,449	93.6	±0.5
Double	318	30,589	3.8	±0.4
Other	340	21,876	2.7	±0.3
TOTAL	12,138	821,113	100.0	---

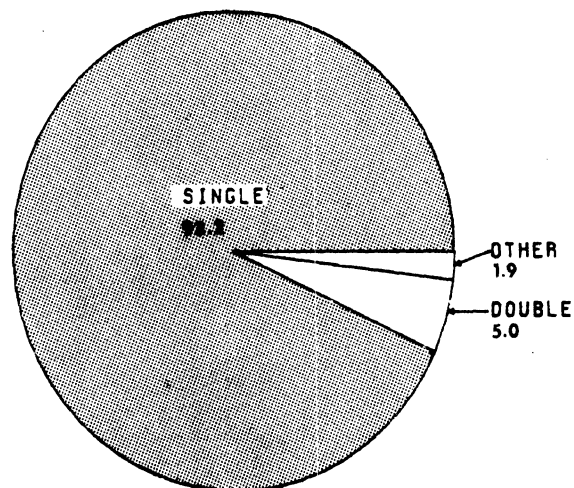


This table is derived from responses that describe the trailer unit "most frequently used" with the tractor. Many tractors pull single trailers some of the time and pull double, or even triple, trailers other times. Since information was only obtained for the "most frequently used" trailer unit, the use of less frequently used configurations, such as doubles, may be underestimated.

**NUMBER OF TRAILERS:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

Number of Trailers	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Single	11,480	49,046	±969	93.2
Double	318	66,175	±5,674	5.0
Other	340	37,446	±2,577	1.9
TOTAL	12,138	49,310	±941	100.0



The average annual mileage of tractors that most frequently pull double trailers is 35% higher than that of tractors that usually pull only a single trailer.

**TRAILER BODY STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES**

United States (1977)

Trailer Body Style	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Platform w/Devices	300	19,107	2.3	±0.3
Low Boy	738	49,538	6.0	±0.5
Other Platform	1,948	137,846	16.8	±0.8
Cattle Rack	253	16,086	2.0	±0.3
Insulated Nonrefrig. Van	386	26,465	3.2	±0.3
Insulated Refrig. Van	868	58,460	7.1	±0.5
Furniture Van	456	32,184	3.9	±0.4
Open Top Van	212	13,897	1.7	±0.3
Other Enclosed Vans	3,808	260,806	31.8	±1.1
Beverage	98	7,122	0.9	±0.2
Utility/Mobile Service	14	980	0.1	±0.1
Winch or Crane	109	9,967	1.2	±0.6
Wrecker	8	477	0.1	±0.0
Pole or Logging	538	29,159	3.6	±0.3
Auto Transport	191	11,814	1.4	±0.2
Boat Transport	12	946	0.1	±0.1
Mobile Home Pullers	117	6,495	0.8	±0.2
Garbage Hauler	25	1,847	0.2	±0.1
Dump	726	49,752	6.1	±0.5
Tank/Liquids	1,012	66,050	8.0	±0.5
Tank/Dry	235	16,601	2.0	±0.3
Concrete Mixer	33	1,783	0.2	±0.1
Other	50	3,548	0.4	±0.1
Unknown	1	87	0.0	±0.0
TOTAL	12,138	821,113	100.0	---

Again, this table describes the "most frequently used" trailer. Vans, as a group, are nearly 48% of the trailer units, followed by platform trailers at 25.1%, and tankers at 10%. This distribution does not necessarily represent the total population of registered trailers.

**TRAILER BODY STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

Trailer Body Style	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Platform w/Devices	300	32,978	±3,716	1.6
Low Boy	738	20,724	±2,067	2.5
Other Platform	1,948	42,190	±1,680	14.4
Cattle Rack	253	54,402	±6,450	2.2
Insulated Nonrefrig. Van	386	61,040	±4,674	4.0
Insulated Refrig. Van	868	73,947	±3,306	10.7
Furniture Van	456	46,251	±3,238	3.7
Open Top Van	212	51,187	±4,981	1.8
Other Enclosed Van	3,808	55,191	±1,625	35.6
Beverage	98	24,235	±4,239	0.4
Utility/Mobile Service	14	13,094	±943	---
Winch or Crane	109	20,001	±3,055	0.5
Wrecker	8	30,263	±21,690	---
Pole or Logging	538	36,774	±2,648	2.6
Auto Transport	191	63,207	±4,649	1.8
Boat Transport	12	36,214	±7,917	0.1
Mobile Home Pullers	117	26,358	±5,603	0.4
Garbage Hauler	25	33,424	±3,963	0.1
Dump	726	44,942	±2,720	5.5
Tank/Liquids	1,012	58,391	±2,909	9.5
Tank/Dry	235	59,851	±4,893	2.5
Concrete Mixer	33	10,761	±5,119	0.1
Other	50	2,820	±1,079	---
Unknown	1	0	±0	---
TOTAL	12,138	49,310	±941	100.0

Tractors most frequently used with insulated vans, auto transports, and tankers have appreciably higher average annual mileages than other types of trailer units. Tractors pulling concrete mixers and utility/mobile service trailers have the lowest average annual mileages.

VEHICLE USE

The tables presented in this section provide information on the use of tractor-trailer combinations in the United States as of July 1, 1977. The types of service described include usual area of operation, principal product carried, operator classification, and fleet size.

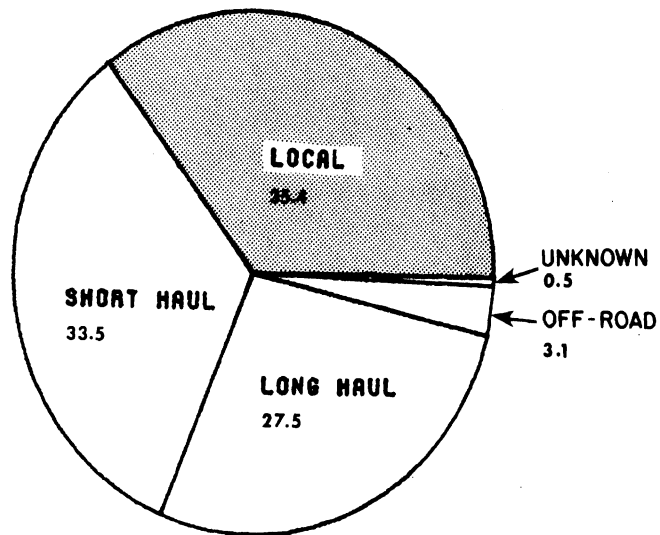
Area of operation distinguishes vehicles in local service from those in over-the-road service. As one would expect, this distinction is closely tied to the average annual mileage. Combination vehicles that usually carry processed foods have somewhat higher average annual mileages, while those that carry machinery have very low average annual mileages. ICC Authorized Carriers (Common and Contract) operate about 32% of the tractor-trailer combinations. However, these vehicles accumulate 43% of the total vehicle mileage. Nearly one quarter of the tractors are the only tractor operated from that base of operation. These carriers are typically characterized as owner-operators.

Please refer to the Introduction to the previous section for an explanation of the entries in the following tables.

USUAL AREA OF OPERATION:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Area of Operation	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Local	4,143	290,796	35.4	±1.0
Short Haul	4,133	274,933	33.5	±0.9
Long Haul	3,379	225,400	27.5	±1.1
Off-Road	422	25,724	3.1	±0.7
Unknown	61	4,055	0.5	±0.1
TOTAL	12,138	821,113	100.0	---

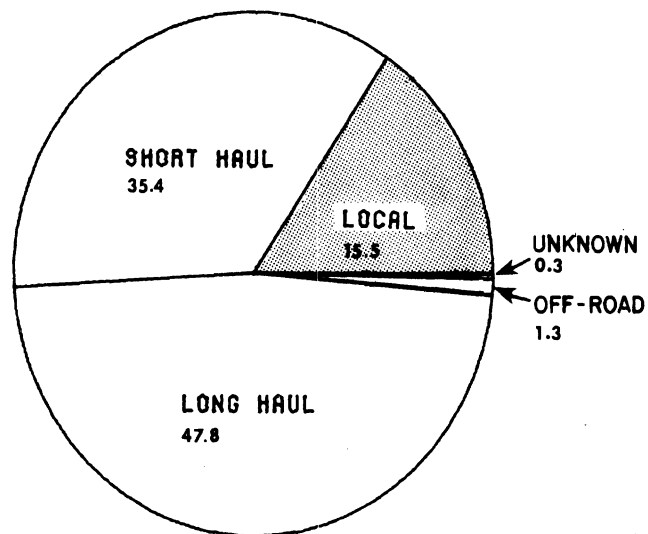


Area of operation refers to the typical one-way trip distance. Local is described as "mostly in the local area, in or around the place the vehicle is stationed." Short-haul is described as "mostly over-the-road, but not usually more than 200 miles one way to the most distant stop." Long-haul is "mostly over-the-road trips that are usually more than 200 miles one way to the most distant stop."

USUAL AREA OF OPERATION:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

Area of Operation	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Local	4,143	21,609	±774	15.5
Short Haul	4,133	52,107	±1,147	35.4
Long Haul	3,379	85,853	±1,551	47.8
Off-Road	422	16,128	±2,197	1.0
Unknown	61	25,237	±8,153	0.3
TOTAL	12,138	49,310	±941	100.0



As one would expect, average annual mileages are tied closely to the area of operation category. Approximately 28% of the vehicles are in the long-haul category and accumulate 48% of the total tractor-trailer mileage.

PRINCIPAL PRODUCT CARRIED:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Principal Product Carried	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Farm Products	1,128	78,074	9.5	±0.6
Live Animals	261	16,425	2.0	±0.3
Mining Products	204	13,247	1.6	±0.2
Logs, Forest Prod.	686	37,332	4.5	±0.4
Processed Foods	1,241	88,795	10.8	±0.8
Textile Mill Prod.	183	11,613	1.4	±0.2
Building Materials	1,360	91,741	11.2	±0.6
Household Goods	324	21,721	2.6	±0.3
Furniture, Hardware	153	11,169	1.4	±0.2
Paper Products	233	15,997	1.9	±0.3
Chemicals	394	26,970	3.3	±0.4
Petroleum	716	46,016	5.6	±0.5
Primary Metal Prod.	355	29,369	3.6	±0.4
Fabricated Metal	284	20,990	2.6	±0.3
Machinery	610	40,988	5.0	±0.4
Electrical Machinery	108	6,797	0.8	±0.2
Transportation Equip.	411	26,348	3.2	±0.3
Scrap, Garbage	174	12,580	1.5	±0.3
Mixed Cargo	2,716	182,546	22.2	±0.8
Craftsman's Vehicle	19	1,505	0.2	±0.1
Specific Equipment	321	23,514	2.9	±0.6
No Product	12	535	0.1	±0.0
Other	189	13,131	1.6	±0.3
Unknown	56	3,634	0.4	±0.1
TOTAL	12,138	821,113	100.0	---

Respondents were asked to select one category which describes the product usually carried during the past twelve months. Mixed cargo is most frequent, followed by building materials, and processed food.

PRINCIPAL PRODUCT CARRIED:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

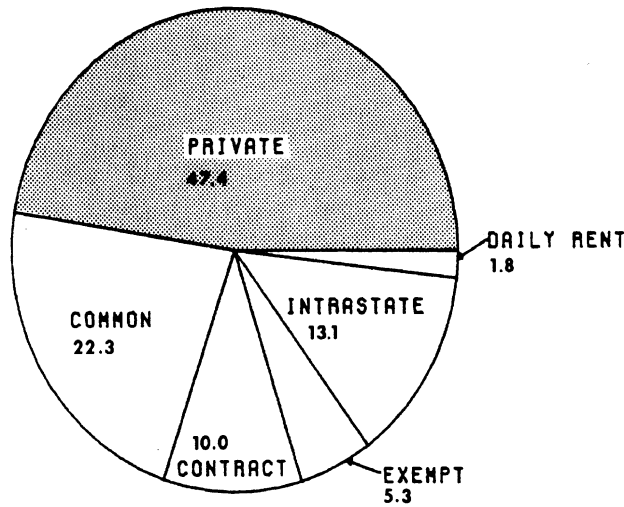
Principal Product Carried	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Farm Products	1,128	46,261	±2,591	8.9
Live Animals	261	55,298	±6,387	2.2
Mining Products	204	48,674	±4,835	1.6
Logs, Forest Prod.	686	40,965	±2,685	3.8
Processed Foods	1,241	62,398	±2,294	13.7
Textile Mill Prod.	183	67,022	±9,417	1.9
Building Materials	1,360	47,608	±2,008	10.8
Household Goods	324	39,150	±3,472	2.1
Furniture, Hardware	153	61,852	±5,132	1.7
Paper Products	233	57,179	±4,426	2.3
Chemicals	394	54,529	±4,372	3.6
Petroleum	716	59,825	±3,376	6.8
Primary Metal Prod.	355	50,356	±3,658	3.7
Fabricated Metal	284	48,249	±4,439	2.5
Machinery	610	22,069	±2,422	2.2
Electrical Machinery	108	47,715	±8,431	0.8
Transportation Equip.	411	46,361	±3,998	3.0
Scrap, Garbage	174	31,814	±5,469	1.0
Mixed Cargo	2,716	54,728	±2,008	24.7
Craftsman's Vehicle	19	23,095	±25,958	0.1
Specific Equipment	321	20,768	±2,653	1.2
No Product	12	6,737	±334	---
Other	189	41,867	±7,850	1.4
Unknown	56	2,313	±1,915	---
TOTAL	12,138	49,310	±941	100.0

Vehicles carrying processed foods, textile mill products, and furniture or hardware have somewhat higher average annual mileages. Vehicles carrying machinery have appreciably lower average annual mileages.

OPERATOR CLASSIFICATION:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Operator Classification	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
Private For Hire	5,854	389,189	47.4	±1.0
Common	2,804	183,296	22.3	±0.8
Contract	1,221	81,812	10.0	±0.6
Exempt	660	43,428	5.3	±0.4
Intrastate	1,387	107,380	13.1	±0.7
Daily Rent	202	14,522	1.8	±0.3
Unknown	19	1,303	0.2	±0.1
TOTAL	12,138	821,113	100.0	---

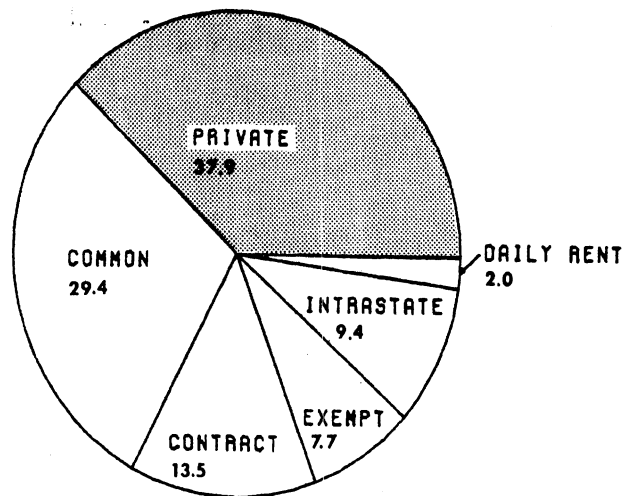


Private carriers are not for-hire and carry their own material or merchandise. Common and contract carriers are the primary interstate for-hire carriers regulated by the ICC. A small group of interstate carriers is exempt from regulation (they transport "exempt" commodities such as fresh agricultural products, fish, newspapers, and air-freight). Intra-state carriers are for-hire, but operate only in the state of registration, and are not subject to ICC regulation.

**OPERATOR CLASSIFICATION:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

Operator Classification	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
Private For Hire	5,854	39,433	±1,440	37.9
Common	2,804	64,836	±1,885	29.4
Contract	1,221	66,594	±2,332	13.5
Exempt	660	71,755	±3,893	7.7
Intrastate	1,378	35,371	±1,760	9.4
Daily Rent	202	56,392	±5,602	2.0
Unknown	19	50,393	±19,850	0.2
TOTAL	12,138	49,310	±941	100.0



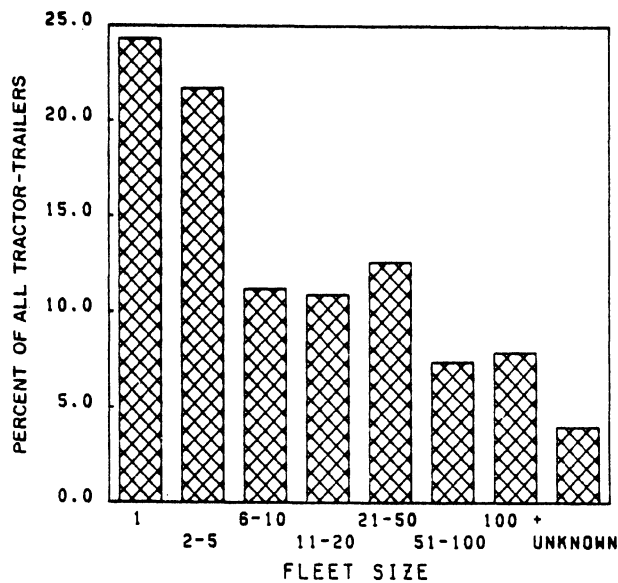
Common and contract carriers operate about 32% of the tractor-trailer combinations. However, these vehicles accumulate 43% of the total tractor-trailer mileage. Private carriers operate 47% of the vehicles, but accumulate 38% of the mileage.

FLEET SIZE: *
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Fleet Size	Sample Size	Estimated Vehicles	Percent	Confidence Interval (%)
1	3,111	199,269	24.3	±1.0
2-5	2,654	177,983	21.7	±0.8
6-10	1,350	92,228	11.2	±0.6
11-20	1,318	89,412	10.9	±0.6
21-50	1,543	103,851	12.6	±0.7
51-100	812	61,041	7.4	±0.5
100+	895	64,690	7.9	±0.5
Unknown	455	32,507	4.0	±0.7
TOTAL	12,138	821,113	100.0	---

*Number of tractors operated from the same "base of operation."



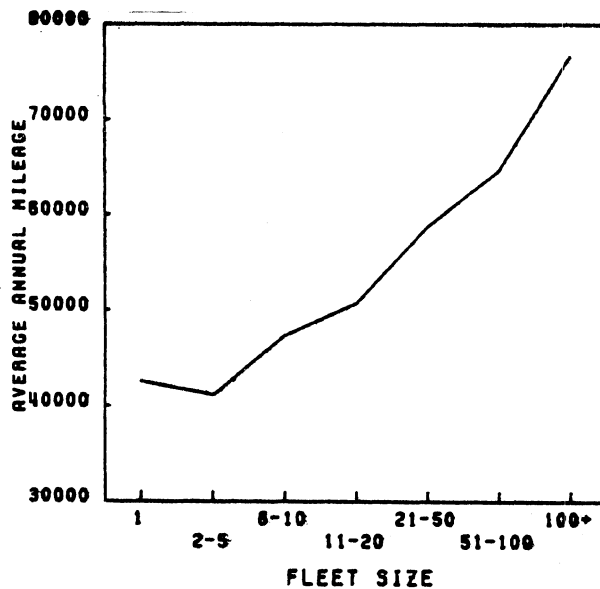
Fleet size here is the number of tractors operated from the same "base of operation." Base of operation is the city or place from which the vehicle is operated. Almost one-fourth of the tractors are in "fleets" that have only one tractor at that base of operation. These carriers are typically characterized as "owner-operators." This distribution under-represents large fleets, since they operate many terminals ("bases of operation").

FLEET SIZE:*
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

Fleet Size	Sample Size	Average Annual Mileage	Confidence Interval	Percent Total Miles
1	3,111	42,544	±1,637	20.9
2-5	2,654	41,141	±1,543	18.1
6-10	1,350	47,384	±2,194	10.8
11-20	1,318	50,780	±2,372	11.2
21-50	1,543	58,771	±2,183	15.1
51-100	812	64,624	±3,350	9.7
100+	895	76,649	±3,035	12.2
Unknown	455	23,408	±2,783	1.9
TOTAL	12,138	49,310	±941	100.0

*Number of tractors operated from the same "base of operation."



Average annual mileage increases steadily with fleet size. Vehicles in fleets of 50 or more tractors represent about 15% of all vehicles, but accumulate 22% of all miles.

USUAL AREA OF OPERATION BY CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

Left:

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Estimated Vehicles	Per-cent
	Sample Size	Estimated Vehicles	Per-cent	Sample Size	Estimated Vehicles	Per-cent			
Local	1,078	79,165	9.6	3,054	210,203	28.6	4,143	290,796	38.4
Short Haul	1,447	102,557	12.5	2,668	171,249	20.9	4,133	274,932	33.5
Long Haul	2,323	162,642	19.8	1,045	61,940	7.5	3,379	225,400	27.5
Off-Road	81	4,979	0.6	336	20,533	2.5	422	25,724	3.1
Unknown	22	1,383	0.2	39	2,672	0.3	61	4,055	0.5
TOTAL	4,951	350,726	42.7	7,142	466,587	56.8	12,138	821,113	100.0

This is the number of cabover tractors in local service in the sample.

Weighting of the sampled data by the inverse of the sampling fraction produces the estimated total number of cabover tractors in local service.

An estimated 9.6% of all tractor-trailer combinations are cabover tractors in local service.

This is the total number of cabover tractors in the sample (also shown on page 4 as the sum of the "cabover" and "cab forward" categories).

The columns corresponding to "unknown" cabstyle (0.5% of the vehicles as shown on page 4) are not shown in this table. Consequently, the sum of the "cabover" and "conventional" percentages is 99.5%.

USUAL AREA OF OPERATION BY CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

Right:

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Average Annual Mileage	% Total Miles
	Sample Size	Average Annual Mileage	% Total Miles	Sample Size	Average Annual Mileage	% Total Miles			
Local	1,078	22,079	4.3	3,054	21,413	11.1	4,143	21,609	15.5
Short Haul	1,447	56,558	14.3	2,668	49,508	20.9	4,133	52,107	35.4
Long Haul	2,323	87,923	35.3	1,045	80,902	12.4	3,379	85,853	47.8
Off-Road	81	14,851	0.2	336	16,312	0.8	422	16,128	1.0
Unknown	22	32,915	0.1	39	21,263	0.1	61	25,237	0.3
TOTAL	4,951	62,642	54.2	7,142	39,400	46.3	12,138	49,310	100.0

This is the estimated average annual mileage for cabover tractors in local service in the U.S. in 1977.

Cabover tractors in local service accumulated 4.3% of the total mileage for all combination vehicles.

Comparable information is shown for conventional cab tractors.

The estimated average annual mileage for cabover tractors in all classes of service is 62,462 miles.

INTERACTIONS BETWEEN VEHICLE TYPE AND USE

This section presents tables comparing the use of different types of tractor-trailer combinations. In general, different types of vehicles are used in different classes of service. For example, the first pair of tables shows the usual area of operation for each model year. This comparison shows that older vehicles are used more and more in local service. This change in service is primarily responsible for the reduced annual mileage of older tractor-trailer combinations.

The next three pairs of tables compare usual area of operation, cab style, and number of trailers. The first of these shows the area of operation separately for cabover and conventional cab tractors. The following two pairs of tables provide the same comparison, but restricted to only single trailer combinations in the first, and double trailer combinations in the second. The remaining tables in this section compare operator classification, principal product carried, and trailer body style with cab style. Finally, the geographic distribution of cabover tractors and double combinations is illustrated on two U.S. maps (pages 42 and 43).

Cabover tractors are used extensively throughout the United States, although somewhat less in the South Central states. The use of a double trailer is much more prevalent in the Western states. Doubles in long-haul service are usually pulled by cabover tractors. When doubles are pulled by conventional cab tractors, it is usually in local or short-haul service. Conventional cab tractors are primarily used in hauling heavy cargos and are used more frequently with platform and tank-style trailers. Cabover tractors are used more frequently with van-style trailers carrying light or mixed cargos.

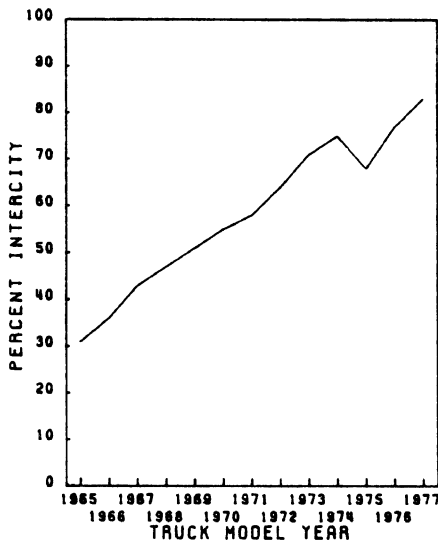
In each of these tables, the "Total" column repeats the distribution for the row variable for all vehicles. Columns are shown only for the major categories of the column variable. "Unknown" or "other" categories are not shown. Consequently, row figures do not always sum. The omitted columns may be identified by referring to the one-way tabulation in Section 1 or 2 for the column variable.

On the facing page is a reproduction of the type of tables found on the left and right pages in this section (pages 28 through 41). Please refer to the annotations for guidance in interpreting these tables.

MODEL YEAR BY USUAL AREA OF OPERATION:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

MODEL YEAR	AREA OF OPERATION						TOTAL		
	LOCAL			INTERCITY			Sample Size	Estimated Vehicles	Per-cent
	Sample Size	Estimated Vehicles	Per-cent	Sample Size	Estimated Vehicles	Per-cent			
1978	8	589	0.1	17	1,507	0.2	28	2,387	0.3
1977	120	9,148	1.1	692	47,285	5.8	823	56,993	6.9
1976	141	10,231	1.2	681	44,719	5.4	837	57,946	7.1
1975	258	20,008	2.4	704	46,352	5.6	992	68,058	8.3
1974	336	23,889	2.9	1,110	76,333	9.3	1,482	102,399	12.5
1973	376	26,737	3.3	1,066	70,670	8.6	1,474	99,071	12.1
1972	393	27,313	3.3	766	50,450	6.1	1,189	79,349	9.7
1971	339	23,907	2.9	529	35,568	4.3	902	61,508	7.5
1970	326	23,784	2.9	462	30,601	3.7	809	55,421	6.7
1969	362	26,969	3.3	419	29,810	3.6	816	58,951	7.2
1968	264	18,432	2.2	284	17,610	2.1	576	37,829	4.6
1967	218	14,764	1.8	190	12,164	1.5	434	28,555	3.5
1966	234	16,214	2.0	163	10,224	1.2	428	28,620	3.5
1965	764	48,650	5.9	417	26,003	3.2	1,331	82,609	10.1
& Older Unknown	4	235	0.0	12	1,117	0.1	17	1,367	0.2
TOTAL	4,143	290,796	35.4	7,512	500,312	60.9	12,138	821,113	100.0

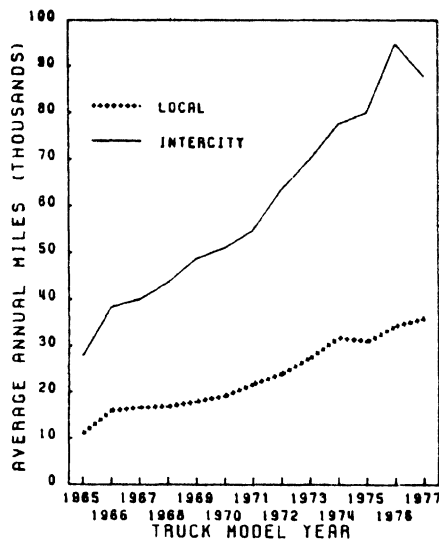


Shown in this figure is the percentage of tractor-trailer combinations in intercity service for each model year. The remaining vehicles are in local service. The proportion of vehicles in intercity service is highest for the new model year vehicles. As the vehicles age, more and more are shifted to the less demanding local service. A notable exception is the 1975 model year when a smaller proportion of vehicles were initially purchased for intercity service.

MODEL YEAR BY USUAL AREA OF OPERATION:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

MODEL YEAR	AREA OF OPERATION						TOTAL		
	LOCAL			INTERCITY			Sample Size	Average Annual Mileage	% Total Miles
	Sample Size	Average Annual Mileage	% Total Miles	Sample Size	Average Annual Mileage	% Total Miles			
1978	8	32,112	0.1	17	75,453	0.3	28	62,452	0.4
1977	120	35,934	0.8	692	87,758	10.3	823	79,033	11.1
1976	141	34,310	0.9	681	94,785	10.5	837	80,656	11.5
1975	258	30,877	1.5	704	79,964	9.2	992	64,263	10.8
1974	336	31,767	1.9	1,110	77,621	14.6	1,482	66,105	16.7
1973	376	27,360	1.8	1,066	69,953	12.2	1,474	57,706	14.1
1972	393	23,974	1.6	766	63,580	7.9	1,189	49,024	9.6
1971	339	21,832	1.3	529	54,924	4.8	902	40,826	6.2
1970	326	19,158	1.1	462	51,125	3.9	809	36,631	5.0
1969	362	17,997	1.2	419	48,759	3.6	816	33,524	4.9
1968	264	16,852	0.8	284	43,661	1.9	576	29,164	2.7
1967	218	16,686	0.6	190	40,122	1.2	434	26,119	1.8
1966	234	16,047	0.6	163	38,440	1.0	428	23,595	1.7
1965	764	10,999	1.3	417	27,860	1.8	1,331	15,827	3.2
& Older Unknown	4	---	---	12	---	---	17	---	0.1
TOTAL	4,143	21,609	15.5	7,512	67,312	83.2	12,138	49,310	100.0



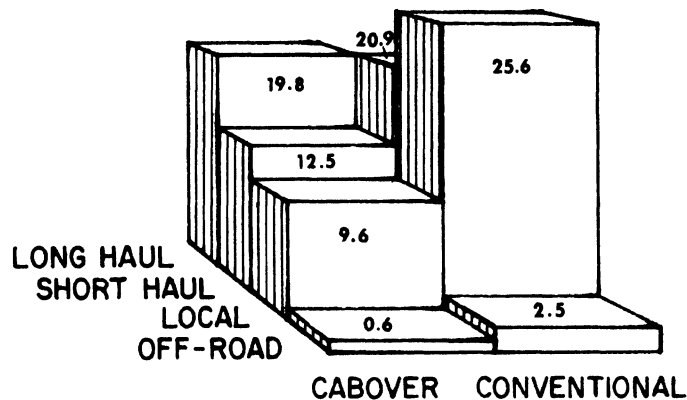
This figure illustrates the substantial difference in average annual mileage for vehicles of the same model year in local as compared to intercity service.

USUAL AREA OF OPERATION BY CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Estimated Vehicles	Per-cent
	Sample Size	Estimated Vehicles	Per-cent	Sample Size	Estimated Vehicles	Per-cent			
Local	1,078	79,165	9.6	3,054	210,203	25.6	4,143	290,796	35.4
Short Haul	1,447	102,557	12.5	2,668	171,249	20.9	4,133	274,932	33.5
Long Haul	2,323	162,642	19.8	1,045	61,940	7.5	3,379	225,400	27.5
Off-Road	81	4,979	0.6	336	20,533	2.5	422	25,724	3.1
Unknown	22	1,383	0.2	39	2,672	0.3	61	4,055	0.5
TOTAL	4,951	350,726	42.7	7,142	466,597	56.8	12,138	821,113	100.0

PERCENT OF ALL TRACTOR-TRAILERS



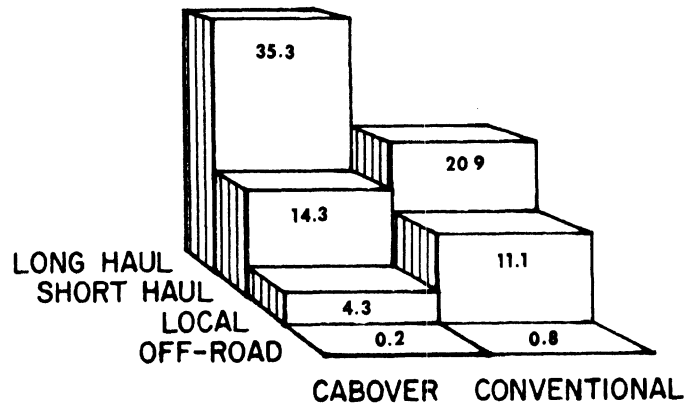
This diagram represents the distribution of all tractor-trailers across two dimensions--cab style and area of operation. For example, the left-rear column corresponds to cabover tractors that usually operate in long-haul service. The height of the column is in proportion to the percentage of all tractor-trailer combinations that fall into this category, or 19.8%. In general, conventional cab tractors are more frequently operated in local and short-haul service. The right-rear column (conventional cab, long-haul) at 7.5% is not visible in the diagram. Hidden columns on the following pages may be identified in the tabular data.

**USUAL AREA OF OPERATION BY CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Average Annual Mileage	% Total Miles
	Sample Size	Average Annual Mileage	% Total Miles	Sample Size	Average Annual Mileage	% Total Miles			
Local	1,078	22,079	4.3	3,054	21,413	11.1	4,143	21,609	15.5
Short Haul	1,447	56,558	14.3	2,668	49,508	20.9	4,133	52,107	35.4
Long Haul	2,323	87,923	35.3	1,045	80,902	12.4	3,379	85,853	47.8
Off-Road	81	14,851	0.2	336	16,312	0.8	422	16,128	1.0
Unknown	22	32,915	0.1	39	21,263	0.1	61	25,237	0.3
TOTAL	4,951	62,642	54.2	7,142	39,400	45.3	12,138	49,310	100.0

PERCENT OF ALL TRACTOR-TRAILER MILES



Differences in average annual mileage between conventional and cabover tractors are clearly related to the type of service in this table. Cabover tractors in long-haul service account for more mileage than any other subgroup in this table. The diagram shows the resulting distribution of total mileage. Cabover tractors dominate the long-haul service, while conventional cab tractors dominate the short-haul and local service.

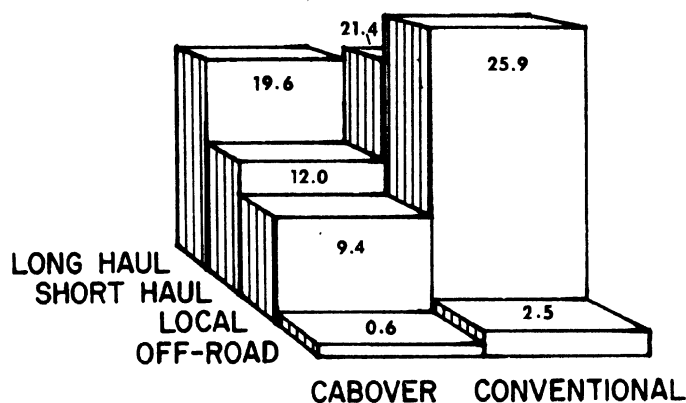
SINGLE TRAILER ONLY

USUAL AREA OF OPERATION BY CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Estimated Vehicles	Per-cent
	Sample Size	Estimated Vehicles	Per-cent	Sample Size	Estimated Vehicles	Per-cent			
Local	1,002	71,856	9.4	2,896	199,164	25.9	3,908	272,383	35.4
Short Haul	1,332	91,911	12.0	2,569	164,786	21.4	3,918	257,333	33.5
Long Haul	2,193	151,011	19.6	1,012	59,878	7.8	3,214	211,479	27.5
Off-Road	73	4,409	0.6	314	19,337	2.5	390	23,861	3.1
Unknown	18	1,198	0.2	32	2,202	0.3	50	3,402	0.4
TOTAL	4,618	320,385	41.7	6,823	444,925	57.9	11,480	768,458	100.0

PERCENT OF ALL TRACTOR SINGLE-TRAILERS



Only tractors that most frequently operate with single trailers are included in this table. Single trailers are usually operated in local and short-haul service with conventional cab tractors, and with cabover tractors in long-haul service.

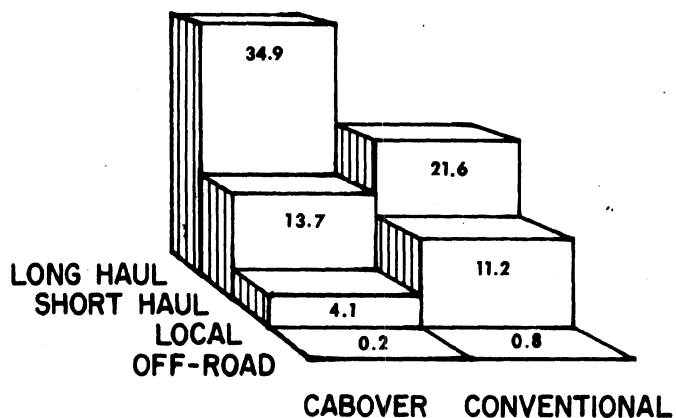
SINGLE TRAILER ONLY

USUAL AREA OF OPERATION BY CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Average Annual Mileage	% Total Miles
	Sample Size	Average Annual Mileage	% Total Miles	Sample Size	Average Annual Mileage	% Total Miles			
Local	1,002	21,319	4.1	2,896	21,134	11.2	3,908	21,204	15.3
Short Haul	1,332	56,216	13.7	2,569	49,624	21.6	3,918	51,956	35.5
Long Haul	2,193	87,046	34.9	1,012	81,784	13.0	3,214	85,430	47.9
Off-Road	73	13,742	0.2	314	16,212	0.8	390	15,724	1.0
Unknown	18	38,001	0.1	32	25,398	0.1	50	29,836	0.3
TOTAL	4,618	62,276	52.9	6,823	39,632	46.8	11,480	49,048	100.0

PERCENT OF ALL TRACTOR SINGLE-TRAILER MILES



Cabover tractors operating in long-haul service were only 19.6% of all tractor-trailer combinations with a single trailer. However, these vehicles accumulate nearly 35% of the tractor-single trailer mileage.

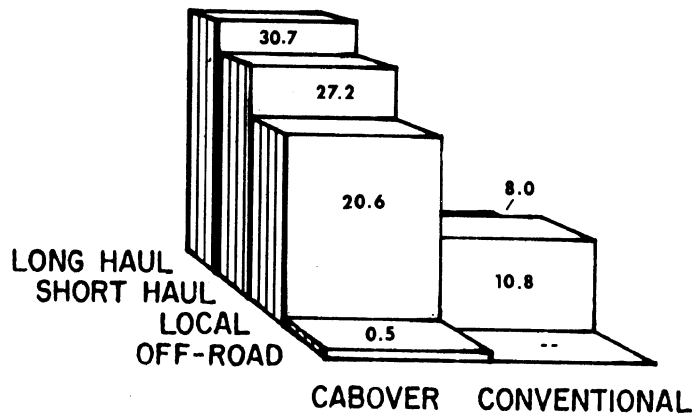
DOUBLE TRAILER ONLY

USUAL AREA OF OPERATION BY CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Estimated Vehicles	Per-cent
	Sample Size	Estimated Vehicles	Per-cent	Sample Size	Estimated Vehicles	Per-cent			
Local	60	6,247	20.6	34	3,266	10.8	94	9,513	31.2
Short Haul	83	8,248	27.2	28	2,427	8.0	111	10,675	35.0
Long Haul	100	9,317	30.7	7	485	1.6	109	10,027	32.9
Off-Road	2	153	0.5	1	134	--	3	288	0.9
Unknown	---	--	--	1	87	--	1	87	--
TOTAL	245	23,965	78.3	71	6,400	20.9	318	30,590	100.0

PERCENT OF ALL TRACTOR DOUBLE-TRAILERS



Nearly 80% of all tractor-trailer combinations most frequently operated with double trailers have cabover-style tractors. Conventional cab tractors operated with double trailers are typically used in local and short-haul service.

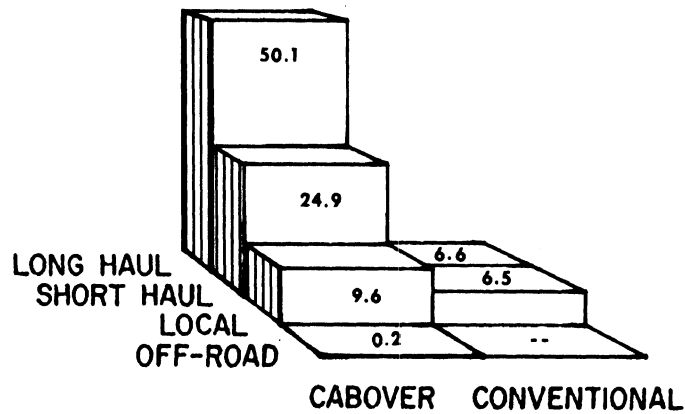
DOUBLE TRAILER ONLY

USUAL AREA OF OPERATION BY CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES

United States (1977)

USUAL AREA OF OPERATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Average Annual Mileage	% Total Miles
	Sample Size	Average Annual Mileage	% Total Miles	Sample Size	Average Annual Mileage	% Total Miles			
Local	60	31,080	9.6	34	40,028	6.5	94	34,152	16.1
Short Haul	83	60,841	24.9	28	54,884	6.6	111	59,487	31.4
Long Haul	100	108,544	50.1	7	57,783	1.4	109	105,185	52.1
Off-Road	2	27,751	0.2	1	40,000	---	3	33,469	0.5
Unknown	---	---	---	1	---	---	1	---	---
TOTAL	245	71,419	84.6	71	46,468	14.7	318	66,174	100.0

PERCENT OF ALL TRACTOR DOUBLE-TRAILER MILES



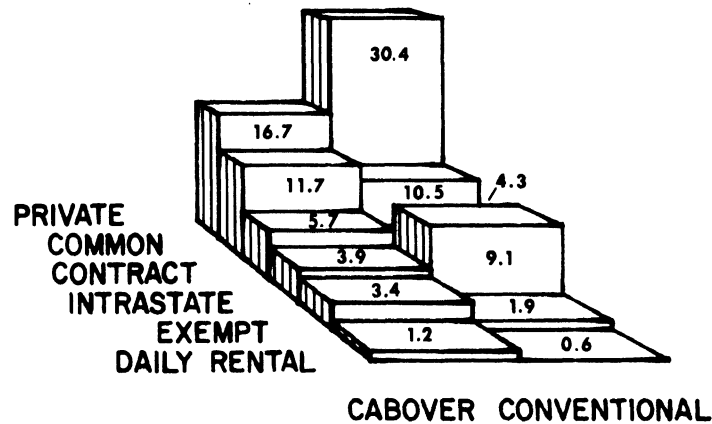
Cabover tractors in long-haul service accumulate 50% of the total mileage for tractor-double trailer combinations.

OPERATOR CLASSIFICATION BY CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

OPERATOR CLASSIFICATION	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Estimated Vehicles	Per-cent
	Sample Size	Estimated Vehicles	Per-cent	Sample Size	Estimated Vehicles	Per-cent			
Private For Hire	1,993	137,481	16.7	3,836	249,560	30.4	5,854	389,189	47.4
Common	1,344	96,407	11.7	1,451	86,187	10.5	2,804	183,296	22.3
Contract	668	46,631	5.7	547	34,908	4.3	1,221	81,812	10.0
Exempt	423	27,684	3.4	235	15,521	1.9	660	43,428	5.3
Intrastate	382	32,198	3.9	993	74,951	9.1	1,378	107,379	13.1
Daily Rent	130	9,446	1.2	72	5,076	0.6	202	14,522	1.8
Unknown	11	892	0.1	8	411	0.1	19	1,303	0.2
TOTAL	4,951	350,739	42.7	7,142	466,614	56.9	12,138	821,113	100.0

PERCENT OF ALL TRACTOR-TRAILERS



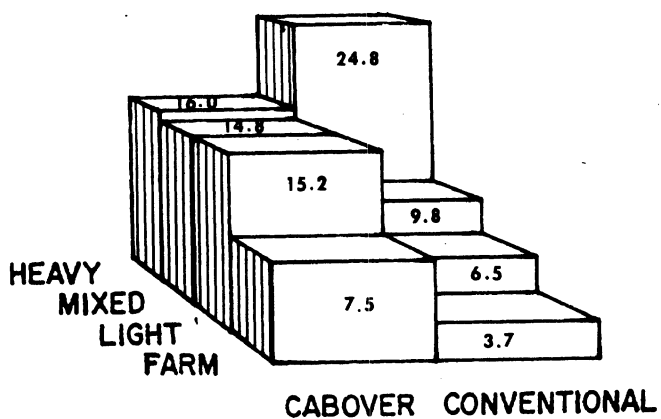
Private and intrastate carriers operate many of the conventional cab tractors, while cabover tractors are used more by the interstate for-hire carriers (Common and Contract).

**PRINCIPAL PRODUCT CARRIED BY CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

PRINCIPAL PRODUCT	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Average Annual Mileage	% Total Miles
	Sample Size	Average Annual Mileage	% Total Miles	Sample Size	Average Annual Mileage	% Total Miles			
Farm	755	58,218	7.5	632	35,538	3.7	1,389	47,835	11.2
Light	1,317	67,314	15.2	837	44,648	6.5	2,165	58,243	21.8
Heavy	1,587	57,415	16.0	4,010	38,441	24.8	5,623	44,162	41.0
Mixed	1,202	68,291	14.8	1,509	42,011	9.8	2,716	54,728	24.7
Unknown	90	46,039	0.7	154	25,093	0.6	245	33,293	1.4
TOTAL	4,951	62,642	54.2	7,142	39,400	45.4	12,138	49,310	100.0

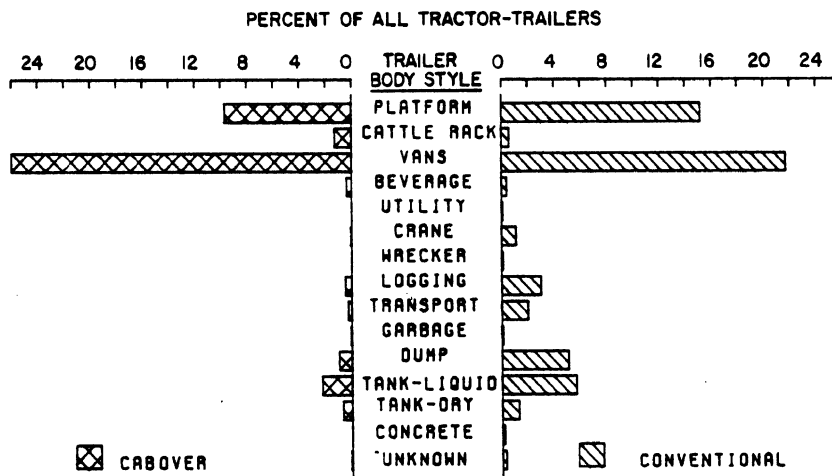
PERCENT OF ALL TRACTOR-TRAILER MILES



TRAILER BODY STYLE BY CAB STYLE:
NUMBER AND DISTRIBUTION OF VEHICLES

United States (1977)

TRAILER BODY STYLE	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Estimated Vehicles	Per-cent
	Sample Size	Estimated Vehicles	Per-cent	Sample Size	Estimated Vehicles	Per-cent			
Platform	1,115	80,017	9.7	1,860	125,150	15.2	2,986	206,468	25.2
Cattle Rack	175	10,724	1.3	77	5,228	0.6	253	16,086	2.0
Vans	3,004	213,067	26.0	2,711	177,711	21.7	5,730	391,770	47.7
Beverage	45	3,656	0.4	51	3,259	0.4	98	7,122	0.9
Utility	1	78	---	12	807	0.1	14	980	0.1
Crane	12	810	0.1	95	8,988	1.1	109	9,967	1.2
Wrecker	0	---	---	8	477	0.1	8	477	0.1
Logging	64	4,465	0.5	473	24,630	3.0	538	29,159	3.6
Transport	40	2,672	0.3	277	16,440	2.0	320	19,255	2.3
Garbage	8	835	0.1	17	1,012	0.1	25	1,847	0.2
Dump	106	8,012	1.0	616	41,623	5.1	726	49,752	6.1
Tank/Liquids	279	19,251	2.3	731	46,656	5.7	1,012	66,050	8.0
Tank/Dry	74	5,665	0.7	159	10,767	1.3	235	16,601	2.0
Concrete Mixer	12	304	---	20	1,417	0.2	33	1,783	0.2
Other & Unknown	16	1,169	0.1	35	2,466	0.3	51	3,634	0.4
TOTAL	4,951	350,724	42.5	7,142	466,631	56.8	12,138	821,113	100.0



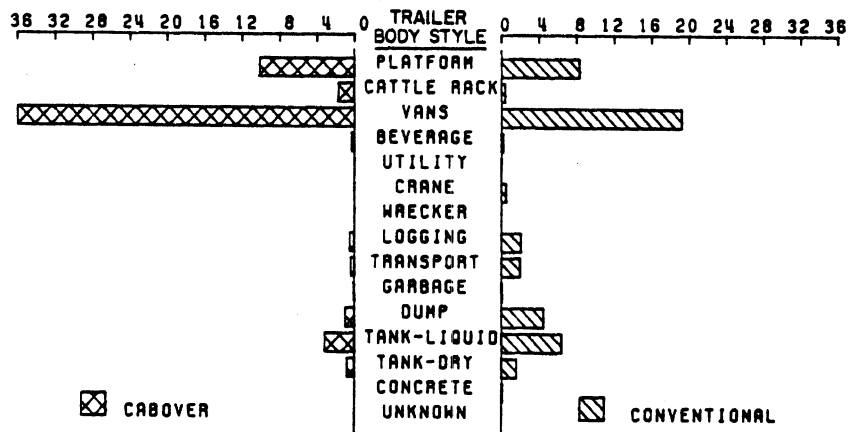
Van trailers are most frequently used with both conventional and cabover style tractors. However, the types of trailer used to haul heavy cargos such as platform, tank, and dump are more frequently used with conventional cab tractors.

**TRAILER BODY STYLE BY CAB STYLE:
AVERAGE ANNUAL MILEAGE AND DISTRIBUTION OF TOTAL MILES**

United States (1977)

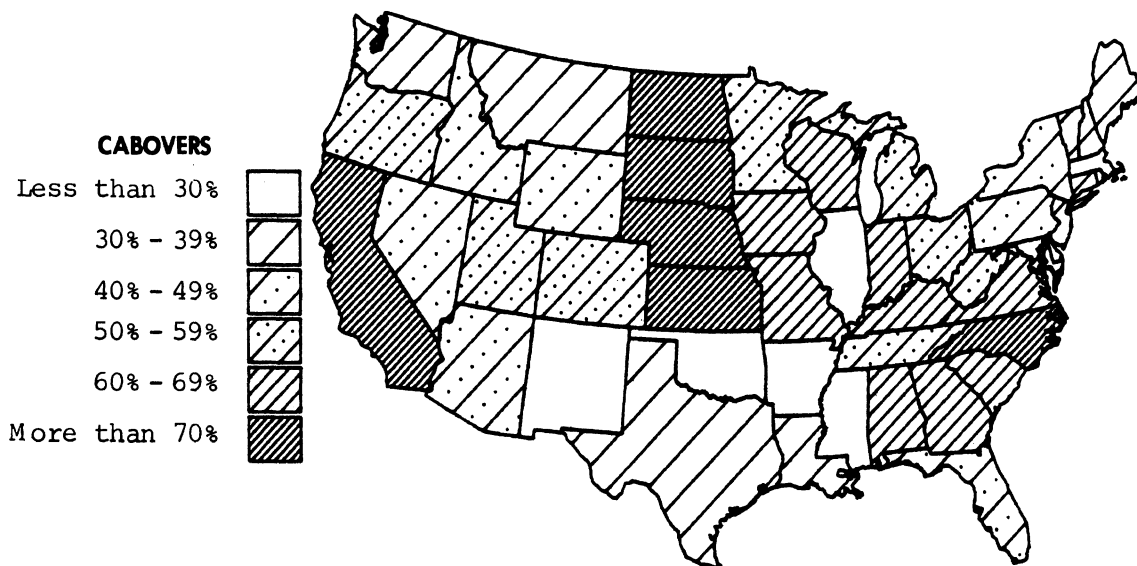
TRAILER BODY STYLE	CAB STYLE						TOTAL		
	CABOVER			CONVENTIONAL			Sample Size	Average Annual Mileage	% Total Miles
	Sample Size	Average Annual Mileage	% Total Miles	Sample Size	Average Annual Mileage	% Total Miles			
Platform	1,115	51,080	10.1	1,860	26,740	8.3	2,986	36,192	18.5
Cattle Rack	175	65,793	1.7	77	32,080	0.4	253	54,402	2.2
Vans	3,004	68,748	36.2	2,711	44,104	19.2	5,730	57,515	55.7
Beverage	45	28,703	0.3	51	19,968	0.2	98	24,235	0.4
Utility	1	102,080	---	12	5,312	0.01	14	13,094	---
Crane	12	18,494	---	95	20,270	0.5	109	20,001	0.5
Wrecker	0	---	---	8	30,263	---	8	30,263	---
Logging	64	44,869	0.5	473	35,272	2.1	538	36,774	2.6
Transport	40	57,912	0.4	277	48,165	2.0	320	49,451	2.4
Garbage	8	30,952	0.1	17	24,621	0.1	25	27,482	0.1
Dump	106	51,988	1.0	616	43,479	4.5	726	44,942	5.5
Tank/Liquids	279	66,257	3.2	731	55,190	6.4	1,012	58,391	9.5
Tank/Dry	74	56,247	0.8	159	61,839	1.6	235	59,851	2.5
Concrete Mixer	12	10,880	---	20	15,772	0.1	33	15,259	0.1
Other & Unknown	16	3,634	0.01	35	2,421	0.01	51	2,820	---
TOTAL	4,951	62,642	54.3	7,142	39,400	45.4	12,138	49,310	100.0

PERCENT OF ALL TRACTOR-TRAILER MILES



PERCENTAGE OF TRACTOR-TRAILER MILEAGE
ACCUMULATED BY CABOVERS BY STATE OF REGISTRATION

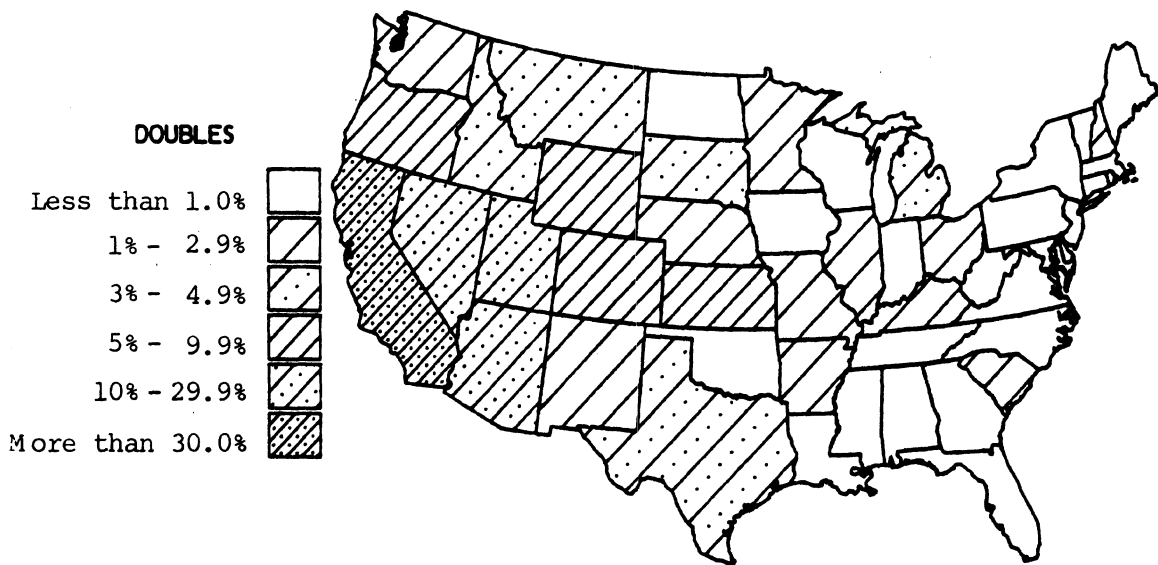
United States (1977)



Mileage has been assigned to the state of registration for this plot. For each state, the proportion of mileage for cabover tractors is computed as the total mileage accumulated by cabover tractors divided by the mileage accumulated by all tractors registered in the state. Cabover use is extensive throughout most of the country, but is heaviest on the coasts and through the "corridor" states. Cabover use is lightest in the south central states.

PERCENTAGE OF TRACTOR-TRAILER MILEAGE
ACCUMULATED BY DOUBLES BY STATE OF REGISTRATION

United States (1977)



Again, mileage has been assigned to the state of registration. For this figure, the proportion of mileage accumulated by tractors which usually pull double trailers is shown. Here, the use of doubles is strongly represented as a western phenomenon.

