

Analysis of the Truck Inventory and Use Survey
from the Truck Size and Weight Perspective
for Trucks with Five-Axles or More

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Report No. 2

Activity I: Task B
Identify Market Segments—Competitive and Noncompetitive
TIUS Data Component

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Prepared by



Alan Clayton
Phil Blow
Karen White
Mark Dielman
Carina Tornow
Mohammed Alam

Jessie Yeow
Christine Marksbury
Luis Escobar
Ansari Khan
Ben Ritchey
Harry Cohen

The primary objectives of the U.S. Department of Transportation's Comprehensive Truck Size and Weight (TS&W) Study are to:

- assess the potential economic, safety, and environmental impacts of changing existing TS&W limits; and
- identify opportunities to increase the efficiency of freight transportation while preserving safety and highway infrastructure.

Reports which have been completed for the TS&W Study, to date, include the following:

- (1) Synthesis of Truck Size and Weight Studies and Issues
- (2) Analysis of the Truck Inventory and Use Survey from the Truck Size and Weight Perspective for Trucks with Five-Axles or More

For more information, call Karen E. White, FHWA, 202-366-9474, 202-366-7696 (FAX), or e:mail: kewhite@intergate.dot.gov

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Executive Summary

This report, as part of the U.S. Department of Transportation (DOT) Comprehensive Truck Size and Weight (TS&W) Study, provides factual information about and analysis of the U.S. freight hauling truck fleet, and is based on the Truck Inventory and Use Survey (TIUS) data bases from 1992 and 1987. The Bureau of the Census collects truck data every five years with 1992 being the latest data available. The TIUS can be used to help understand the U.S. truck fleet make-up, size, uses, location, and type of commodities hauled at the national and regional levels. This information will be used to present a picture of the U.S. truck fleet and its uses as well as to evaluate the potential national/regional TS&W policy options.

The TIUS provides data on the physical and operational characteristics of the U.S. truck fleet. The survey contains a sample of privately- and commercially-owned trucks. The survey also covers trucks used for personal transportation and freight hauling. The survey sample is drawn from each state's registration records. For example, in 1992, the sample size was over 150,000 trucks which reflected a population of over 60 million commercially- and privately-owned trucks in the U.S.

Since this report supports the U.S. DOT TS&W Study, larger trucks hauling freight are the focus of the analysis. Specifically, trucks with 5-axles or more that contain three types of truck-trailer combinations were analyzed:

- straight truck with one trailer
- truck tractor with semitrailer
- truck tractor with two or more trailing units.

This Executive Summary provides highlights of these analyses of the TIUS data, however, it is not a summary of the entire report. First, some cautions are provided about the use of the TIUS data analyses. Second, information is provided about how the data are organized in the analyses with reference to the portions of the main report that are relevant to each topic area. Third, a brief set of highlights, based on the more detailed analyses and findings contained in the body of this report, provide a snapshot of the 1992 U.S. commercial truck fleet.

Cautionary Note

There are a number of cautionary notes in reviewing this analysis of the TIUS (see Section 1.4 for more detail), including:

- Data reported in the TIUS is based on State registration data and the potential for registration-bias exists.

- Survey and population estimates are by registration state and care needs to be taken in conducting analysis at the state level. For example, triples are reported in Minnesota where the use of such vehicles is not permitted. This may be due to ownership in one state and use in another state.

Vehicle Categorization

In this report, the trucks from the TIUS data base were categorized into vehicle configuration classes, vehicle groups, and state of registration. The vehicle configuration class identifies the way the truck is most often operated or used. Each truck was classified based on three factors:

- (1) Vehicle type: straight truck not pulling trailer, straight truck pulling trailer, tractor pulling trailer, tractor pulling two or more trailers
- (2) Number of axles on truck or tractor
- (3) Number of axles on each trailer.

Based on this categorization, the data were analyzed using five major vehicle configurations (truck, truck + trailer, tractor-semitrailer, tractor + doubles, and tractor + triples) and 31 subclasses (see Section 2.1 for detailed descriptions).

Vehicle Groups

In this report, the TIUS data for trucks with 5-axles or more were analyzed by dividing the data into eight vehicle groups, as follows (see Figure 2.2-1 in Section 2.2 for descriptions):

- Truck + trailer with 5-axles (2+3 and 3+2)
- Truck + trailer with 6-axles or more (3+3, 4+2, 4+3)
- 3-S2 tractor-semitrailer
- Tractor-semitrailer with tridem axles (2-S3, 3-S3, 4-S3)
- Other tractor-semitrailer (4-S1, 4-S2)
- STAA tractor + double trailers (2-S1-2)
- Tractor + double trailer combinations with 6-axles or more (all doubles except STAA as defined above).
- Tractor + triple trailers.

Traffic Regions And States

The report organizes the TIUS truck data into five regions (North Central, North East, South Atlantic, South Gulf, and West) and for each of the 50 states and Washington, D.C. as shown in Figure ES-1 (see Section 2.3 of the report).

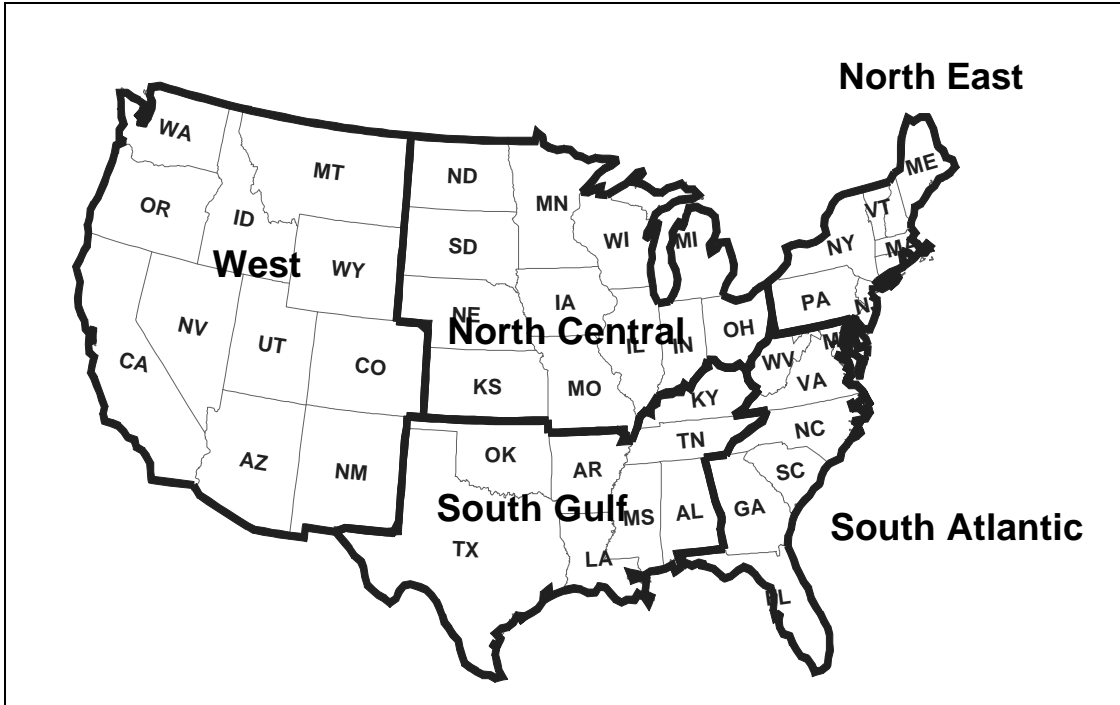


Figure ES-1. Five Regions For Analysis

Body Types

In this report, the TIUS data for trucks with 5-axles or more were analyzed by 11 major body types, as follows (see Section 4.0 for more details):

- Platform (which consists of low boys and basic platform types)
- Van (which includes multi-stop, basic enclosed, drop frame, insulated non-refrigerated, insulated refrigerated, and open top types)
- Auto transport
- Dump truck
- Grain bodies
- Garbage truck
- Livestock truck
- Pole, logging truck
- Tank truck, dry bulk

- Tank truck, liquids or gas
- Other (includes platforms with devices permanently mounted, beverage truck, utility truck, winch or crane truck, wrecker, service truck, yard tractor, oil field truck, concrete mixer, and other).

Commodities Hauled

For the above-mentioned vehicle groups and body types, the TIUS database was also analyzed by principal commodity types (see Section 6.0). There were 29 commodity types ranging from raw materials to manufactured goods.

Highlights of the U.S. Commercial Truck Fleet

The TIUS data provide a comprehensive factual base of U.S. commercial freight hauling trucks. The focus of this report is a selected subset of the U.S. truck fleet, trucks with 5-axles or more, that will most likely be influenced by Federal TS&W regulations and provides data/analysis of fleet size, location, vehicle configuration, body type, principal commodity products hauled, and vehicle operating statistics. Table ES-1 provides only a snapshot of the 5-axles or more truck fleet in 1992 and some changes since 1987.

TABLE ES-1 1992 U.S. COMMERCIAL FREIGHT TRUCK FLEET HIGHLIGHTS (Trucks with 5-axles or more, unless noted otherwise)
<p>Truck Population</p> <ul style="list-style-type: none"> ✓ 4.1 million total commercial trucks in 1992, a 4% increase from 1987.¹ ✓ Total U.S. commercial truck fleet distribution:¹ <ul style="list-style-type: none"> - 68% straight trucks - 4% straight trucks pulling trailer(s) - 26% tractor-semitrailer - 1% tractor with 2 or more trailers. ✓ 976,000 trucks with 5-axles or more (of most interest to truck size and weight analysis) in 1992, a 22% increase from 1987.

¹The data reflect the total commercial truck fleet including trucks with 5-axles or more, but excludes personal trucks.

TABLE ES-1
1992 U.S. COMMERCIAL FREIGHT
TRUCK FLEET HIGHLIGHTS
(Trucks with 5-axles or more, unless noted otherwise)

- ✓ 3-S2 (3-axle tractor with 2-axle semitrailer) trucks
 - Most common freight hauling truck
 - 19% of total truck fleet¹
 - 78% of trucks with 5-axles or more
 - 21% growth in number of trucks between 1987/1992.
- ✓ Truck + trailers [straight trucks pulling a trailer(s)]
 - 4% of total truck fleet¹
 - 7% of trucks with 5-axles or more, little change from 1987.
- ✓ Tractor-semitrailers with tridem axles (2-S3, 3-S3, 4-S3)
 - 2% of total truck fleet¹
 - 7% of trucks with 5-axles or more
 - 20% growth in the number of trucks between 1987/1992.
- ✓ STAA (2-axle tractor with 2-28' trailing units) trucks
 - Less than 1% of total truck fleet¹
 - Only 3% of trucks with 5-axles or more, little change from 1987.
- ✓ Double (2 or 3-axle tractor with 2 trailing units with 3+ axles) trucks
 - Less than 1% of total truck fleet¹
 - 2% of trucks with 5-axles or more.
- ✓ Triple (2 or 3-axle tractor with 3-28' trailing units) trucks
 - Less than 1% of total truck fleet¹
 - Less than 1% of trucks with 5-axles or more.

Regional Differences

- ✓ West Region had 53% increase in trucks with 5-axles or more versus the national average of a 22% increase between 1987/1992.
- ✓ North Central Region contains the largest number of trucks with 5-axles or more with 38%, while the other four regions have about 15% each.

¹The data reflect the total commercial truck fleet including trucks with 5-axles or more, but excludes personal trucks.

TABLE ES-1
1992 U.S. COMMERCIAL FREIGHT
TRUCK FLEET HIGHLIGHTS
(Trucks with 5-axles or more, unless noted otherwise)

- ✓ Illinois, California, Texas, Pennsylvania, and Ohio account for 36% of trucks with 5-axles or more.

Trailer Types

- ✓ 3-S2 Van is the preferred freight hauling truck configuration accounting for 40% of all trucks with 5-axles or more.
- ✓ Van is the preferred trailer body type, used for 45% of all trucks with 5-axles or more—a 31% growth in the number of trailers with this body type was experienced between 1987 and 1992.
- ✓ Platform is second preferred trailer type with 22% of all trailers, but no growth from 1987.
- ✓ Van and Platform trailers comprise about 67% of all body types used to haul freight.

Commodities Hauled

- ✓ Top 7 carried commodities are: Processed Foods, Mixed Cargo, Building Material, Farm Products, Paper Products, Primary Metal, and Chemicals, respectively [as measured by total fleet vehicle miles of travel (VMT)].
- ✓ STAA vehicles (2-S1-2) predominately carry Mixed Cargo products (as measured by VMT).
- ✓ Tridem axle semitrailers predominately carry Building products and Machinery products (as measured by VMT).

Trailer Width

- ✓ 102" trailer width gaining favor in all major trailer body types (e.g., 65% of 3-S2 Basic Enclosed Vans use 102").
- ✓ 96" trailer width still preferred with several trailer body types on 3-S2s (platform, grain, liquid tank, and dry tank).

TABLE ES-1
1992 U.S. COMMERCIAL FREIGHT
TRUCK FLEET HIGHLIGHTS
(Trucks with 5-axles or more, unless noted otherwise)

Trailer Lengths

- ✓ 3-S2 Basic Enclosed Van increased use of 53 foot trailer from about 17% in 1987 to 29% in 1992.²
- ✓ 3-S2 Reefer Van increased use of 53 foot trailer from about 27% in 1987 to 36% in 1992.²
- ✓ 3-S2 Liquid Tank, Dry Tank and Dump have little or no use of 53 foot trailers (less than 7%).²

Truck Weights

- ✓ Average tare weight increased about 1,000 to 2,000 lbs., for trucks with 5-axles or more between 1987/1992 (e.g., 3-S2 Basic Enclosed Vans increased from 29,300 to 30,500 lbs.).
- ✓ Average payload weight decreased, about 1,000 to 3,000 lbs., for trucks with 5-axles or more between 1987/1992 (e.g., 3-S2 Basic Enclosed Vans decreased from 37,500 to 36,200 lbs.).

Truck VMT

- ✓ Average annual VMT increased, 5 to 6 percent, for trucks with 5-axles or more between 1987/1992 (e.g., 3-S2 Basic Enclosed Vans VMT increased from 76,300 to 79,700).

²An overall vehicle (tractor-semitrailer) length of 65 feet or more was used as a measure of the use of 53 foot trailers for tractor-semitrailer combinations.

Source: 1992 and 1987 TIUS data base.

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1.0 Introduction

1.1 Purpose and Scope

The purpose of Task B, Identify Market Segments, of the United States Department of Transportation (U.S. DOT) Comprehensive Truck Size and Weight (TS&W) Study is to better understand the relative size and location of freight markets in the U.S. These freight markets are segmented by length of haul, freight density, value, commodities, corridors, service quality, volume of freight by highway system, and back-haul. Understanding the important market segments will provide insight into the extent of impact of Federal TS&W regulation on freight; will help in the analysis of case studies; and ultimately will simplify the analysis of the policy options. A topology of market segments is being developed which will indicate the relative likelihood of various commodities being shipped by different modes or different truck types based upon a review of previous studies, including results of the Commodity Flow Survey (CFS), the Truck Inventory and Use Survey, the Truck Size and Weight case studies, and other databases.

The focus of this report, as part of the U.S. DOT TS&W Study, is to provide factual information and analysis of the U.S. freight hauling trucking industry using the U.S. Bureau of the Census Truck Inventory and Use Survey (TIUS) databases for 1992 and 1987. The TIUS is collected every five years with 1992 being the latest data base collected. The TIUS can be used to provide a better understanding of the U.S. truck fleet make-up, size, uses, location, and type of commodities hauled. This report provides data and analysis utilizing this truck fleet database and provides a picture of the U.S. national and regional truck fleets (see Section 1.3 for more details). The truck fleet of interest in this report is the freight-hauling larger trucks, specifically trucks with 5-axles or more.

1.2 Truck Inventory and Use Survey (TIUS)

The Bureau of the Census conducts the Truck Inventory and Use Survey (TIUS) every 5 years. TIUS provides data on the physical and operational characteristics of the United State's truck population for that survey year. It is based on a sample of private and commercial trucks registered (or licensed) in each State. In 1992, a sample of over 150,000 trucks were surveyed to measure the universe of over 60 million trucks. The U.S. recipients of the survey were required by law to answer the questionnaire.

For a given year, there are two versions of the TIUS survey. Based on registration information, vehicles were given either the short form or the long form of the survey. In general, the long form was given to owners of large trucks (i.e., straight trucks and truck-tractors). The short form was given to owners of small trucks (i.e., pick-ups, vans, station wagons on truck chassis). The major difference between the two forms is that the long form has more questions relevant to commercial vehicles.

1.3 The Truck Fleet

The TIUS database contains information on trucks used for personal transportation and/or freight movement. This report focusses on the freight market and analyzes larger, freight-hauling trucks which would most likely be used in the movement of commodities. Specifically, data on the following types of trucks were excluded in this analysis: (1) any truck whose body type was pick-up, mini-van, sport utility, or station wagon on a truck chassis; (2) any 2-axle truck or tractor with a total of 4 tires; and (3) any truck which hauled a 1-axle trailer or 1-axle utility trailer. Removal of these vehicles creates a data set referred to in this analysis as the “1992/1987 Total Fleet.”

For most of this analysis, the 5-axles or more truck/tractor-trailer combinations were evaluated which are a subset of the “Total Fleet.” The “5-Axles or More Fleet” contains data for various types of truck/tractor-trailer combinations whose total number of axles is greater than or equal to 5 and are of primary interest from a truck size and weight perspective. In general, there are four types of truck/tractor-trailer combinations evaluated: (1) straight truck with trailer; (2) tractor truck with semitrailer; (3) tractor truck with two trailing units; and (4) tractor truck with three trailing units.

1.4 Cautionary Notes

The values presented in the tables throughout this report are the direct result of the analysis of the TIUS databases. There has been limited judgement as to their appropriateness; that task is the responsibility of the reader. It should be noted that the TIUS is based on survey data which assumes that the respondents will devote some time and effort to giving accurate estimates and responses about their vehicle. The Bureau of the Census did do some quality checking of the data.

State of Registration. The data presented in this report has been analyzed on the basis of the state of registration. In drawing inferences from the data, the potential for a registration-bias must be recognized. However, the correlation between state of registration and state of home base location is approximately 90% for the 1987 TIUS. Home base state is defined as the location where the vehicle is parked when not in use. If state level detail is of interest, the correlation should be examined for that state and the vehicles of interest.

Population Estimates. In the analysis of the TIUS database, each record does not reflect one vehicle, but instead it represents a number of vehicles in the population. To make interpretations about the total truck population from this small sample of the population, a weighting factor was applied to each record. This weighting factor differs for vehicles registered in different states and for vehicles belonging to different vehicle type groups. The reason that the weighting factor is not a constant number across all records is due to the method of sampling the truck population which was conducted at the state level, not the national level. In addition, the Bureau of the Census intentionally surveyed certain vehicle types which account for only a small portion of the truck

population (i.e., larger vehicles used for commercial purposes) at a higher rate than other vehicle types in the 1992 survey.

Readers must be cognizant of the fact that this weighting process can create odd results in selected situations—particularly when the sample size relating to a particular group in the population is small. This is particularly true when analyzing the TIUS at the state level where many states have small sample sizes. For example, our analysis of the 1992 TIUS database estimated that Minnesota has 71 vehicles operating as tractor + triple trailer combinations. Minnesota does not permit such combinations, and it is unlikely that any tractors registered in Minnesota are used to haul a triple trailer combination. This problem results from a number of possibilities. While it is unlikely that a tractor registered in Minnesota is used in this way, it is not impossible—in that the tractor may see its major use in an adjacent state where triples are permitted. Alternatively, the 71 vehicle population estimate could have arisen from an incorrect answer on as little as 1 or 2 survey records—which were subsequently factored-up to create the population estimate.

Small Sample Size. In general, readers must be very cognizant of the potential for “small size problems” in parts of the analysis presented in this report. As the data set is sub-categorized from national statistics, to regional statistics, to state statistics—by configuration, by body type—and subsequently into individual statistical measures such as “empty weight” or “width,” the sample used to estimate the population value for a particular cell may become very small. In a number of sections throughout this report, the sample sizes and population estimates associated with particular parameters are presented. Readers must use judgement and caution in assessing the appropriateness of the results presented from small samples.

Differences between 1987 and 1992. The majority of the analysis in this report was conducted on the 1992 TIUS database. However, comparisons were conducted against the 1987 TIUS database. Overall, it should be noted that the quality of the 1992 TIUS database is better than the 1987 TIUS based on a few of the key differences listed below:

- Sampling - For the 1992 TIUS database, the Bureau of the Census intentionally collected more sample data from truck-tractor vehicle owners than in the previous years. Truck-tractor vehicles only represent a small portion of the population; however, they are of interest to a number of groups, organizations, and policies. By collecting a bigger sample, it is more likely that the statistics and generalizations based on this larger data set will more accurately reflect the population than statements made from a smaller sample set. It is vital to have a large sample set when you want to discuss the characteristics of some small portion of the population, such as triples.
- Survey - Differences exist in the format of the survey and in the wording of the survey questions between the 1987 and 1992 TIUS surveys. In general, it has been noticed that the clarity of the 1992 survey questions is better than the 1987 survey questions. This may have an effect on how persons interpret and respond to the questions. An example of a question

that differs in format between 1987 and 1992 is the question on vehicle's trailer width. On the 1987 survey, respondents were to give an estimate of their trailer's width in inches, while on the 1992 survey, respondents were given four categories from which to choose. It was noticed in the 1987 width data that a number of people responded with zero as their trailer width and that a number of respondents gave widths that are not typically found on trailers. Other instances of these differences are noted as appropriate throughout the report. A copy of each year's survey Form #9502 is attached in Appendix I.

- Error Checking and Correction - A more thorough examination of the quality of the data was conducted by the Bureau of the Census on the 1992 TIUS database than on the 1987 TIUS database. All data variables in the 1992 database were examined for such problems as variable values lying outside of the defined range. Only a limited number of variables in the 1987 database were checked and corrected by the Bureau. As a result, some corrections to the 1987 variables were necessary in order to conduct this analysis. Such corrections are noted in the text.
- Other Category - The 1992 survey gave the respondent "another option" under which respondents could write in an answer. The 1987 survey did not have this "other option."

2.0 Categorization of Vehicles

For analysis and for interpretation of data in terms of TS&W issues, trucks were placed into different categories based on their vehicle configuration class, vehicle group, and state of registration. These categories are used throughout this report to illustrate the TIUS data.

2.1 Vehicle Configuration Classes

Based on vehicle information provided in the survey, the Bureau of the Census placed each registered truck into a configuration class. The configuration class identifies the way in which the truck is most often operated. 'Most often' is a subjective term used on the TIUS survey which has no quantitative number associated with it, such as percent of VMT. Because of this, any interpretation of the TIUS data should use discretion. In addition, some of the analyses may be misleading if interpreted incorrectly. For example, our analysis of commodities is based on the percent of VMT that a particular vehicle configuration hauls various commodities. Some of the commodities hauled by a particular truck may not be hauled in the vehicle configuration/body type that the truck usually travels in (e.g., an auto transporter hauling farm products). However, to conduct the analysis it must be assumed that a particular truck hauls all its commodities in the configuration identified with it.

From responses on the survey, each truck was classified by the Bureau of the Census into a vehicle configuration class based on 3 factors. The first factor was vehicle type, which classified a truck as a straight truck not pulling trailer, a straight truck pulling trailer, a truck tractor (power unit) pulling trailer, or other. The second factor was the total number of axles on the truck/tractor. The third factor was the number and kind of trailers most often hauled, including the number of axles. The questions used for this categorization were 5, 6, and 9 in the 1987 survey, and 5, 6, and 10 in the 1992 survey as shown in Appendix I.

Upon examination of the data, vehicles were placed in one of the five major vehicle configuration classes, which was a general categorization into truck or truck+trailer combination groups. The five vehicle configuration classes were partitioned into 31 subclasses based on the number of axles on the truck unit and the number of axles on the trailer(s). The labels of the subclasses are interpreted as follows: the first number represents the number of axles on the power unit, the second number defines the number of axles on the first trailer, a third and fourth number represent the number of axles on the second trailer and the third trailer, respectively. Subclass names with an * by a number, N, indicate that this subclass includes vehicles with N-axles or greater (e.g., 2+*3 subclass contains all 2-axle straight trucks hauling 3-axles or more trailers).

Table 2.1-1 The 5 Major Vehicle Configurations and the 31 Subclasses

Truck	Truck & Trailer	Tractor-Semitrailer	Tractor + Doubles	Tractor + Triples
2	2 + 2	2-S1	2-S1-2	2-S1-2-2
3	2 + *3	2-S2	3-S1-2	3-S1-2-2
4	3 + 2	2-*S3	2-S2-2	other
	3 + *3	3-S1	3-S2-2	
	*4 + 2	3-S2	other @ *7-axle	
	*4 + *3	3-*S3	3-S2-3	
		4-S1	other @ *8-axle	
		4-S2	3-S2-4	
		4-*S3	other @ *9-axle	
			other @ *10-axle	

Notes:

- A semitrailer is classified by S and its number of axles (e.g., S2 means a semitrailer with 2 axles).
- The * means "equal to or more" (e.g., *4 + 2 means a straight truck with "4 or more" axles pulling a trailer with 2 axles).
- Even though the survey only asks the total number of axles on the attached trailers, the configuration type can be more clearly defined based on operational practice.

2.2 Vehicle Groups

In the analysis of the 5-axles or more fleet, trucks were categorized into 8 vehicle groups (see Figure 2.2-1 for pictures of various configurations in each group):

- Truck + Trailer with 5-axles (which contains vehicle configurations 2+*3 and 3+2)
- Truck + Trailer with 6 or more axles (which contains 2+*4, 3+*3, *4+2, *4+*3)
- 3-S2 Tractor-Semitrailers
- Tractor-Semitrailers with tridem axles (which contains 2-*S3, 3-*S3, 4-*S3)
- Other Tractor-Semitrailers (which are 4-S1 and 4-S2)
- STAA Tractor+Double Trailers (which is 2-S1-2)
- Tractor+Double Trailer combinations with 6 or more axles
- Tractor+Triple Trailers.

It should be noted that a small number of trucks may be misclassified into the wrong vehicle groups. For instance, the tridem axle tractor-semitrailers may contain a few records for vehicles hauling a trailer with more than 3-axles. The reason for this is that the survey question on the number of axles on the semitrailer was limited to 3 responses with the last category being "3 or more axles."

2.3 Traffic Regions and States

Besides evaluating the truck fleet at the national level, our analysis also focused on the regional truck fleets. Given the small sample of trucks surveyed, analyzing the truck fleet at the state level requires careful analysis and an understanding of the sample size used to generate truck populations.

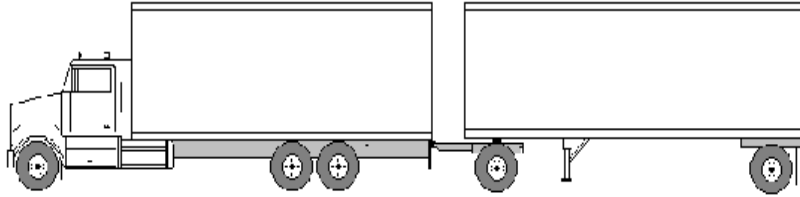
- 5 traffic regions (see Figure 2.3-1)
 - North Central
 - North East
 - South Atlantic
 - South Gulf
 - West

- 50 States and Washington, D.C.

Figure 2.2-1

Vehicle Group Descriptions for the 5-Axles or More Truck Fleet

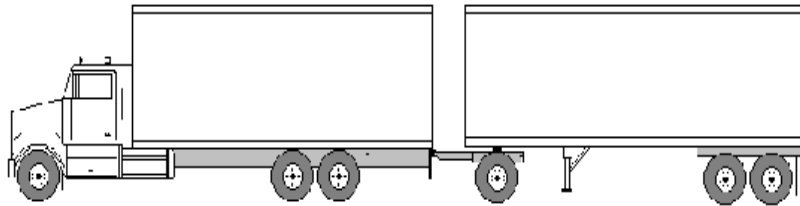
1) Truck Trailer @ 5 Axles



(3+2)

Other Examples:
2+3*

2) Truck Trailer @ 6+ Axles



(3+3)

Other Examples:
3+3*, 4*+2, 4*+3*

3) 3-S2

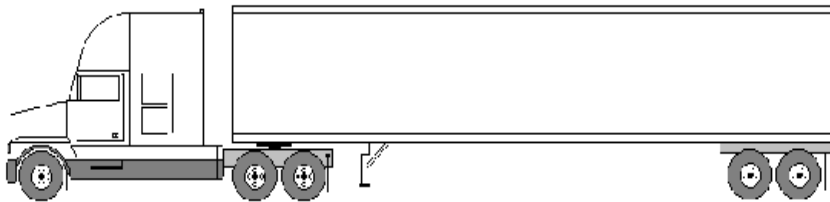
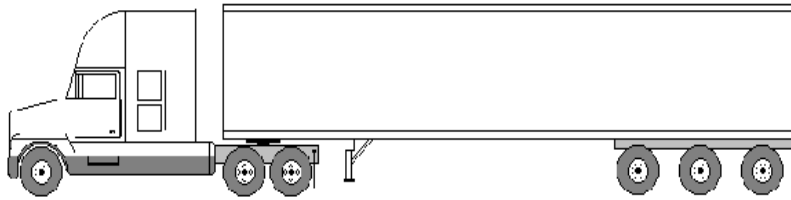


Figure 2.2-1

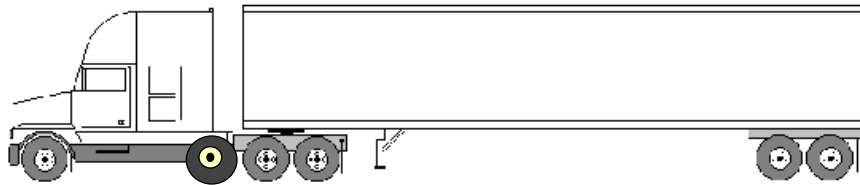
4) Tridem Axle Semitrailer



(3-S3)

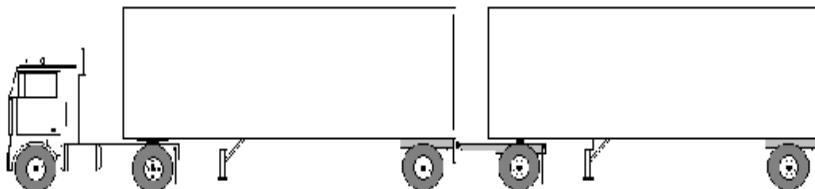
Other Examples:
2-S3*, 4-S3*

5) 4S1/S2



(4-S2)

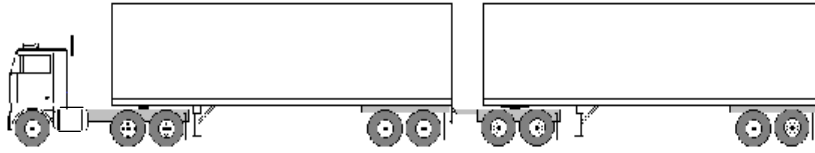
6) STAA



(2-S1-2)

Figure 2.2-1

7) Doubles @ 6 + Axles

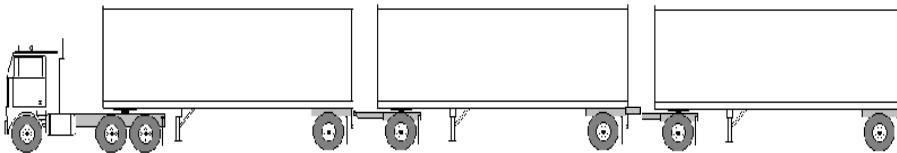


(3-S2-4)

Other Examples:

2-S2-2, 3-S1-2, 3-S2-2, 3-S2-3, 3-S2*-4*,
others @ 7-10 axles

8) Triples

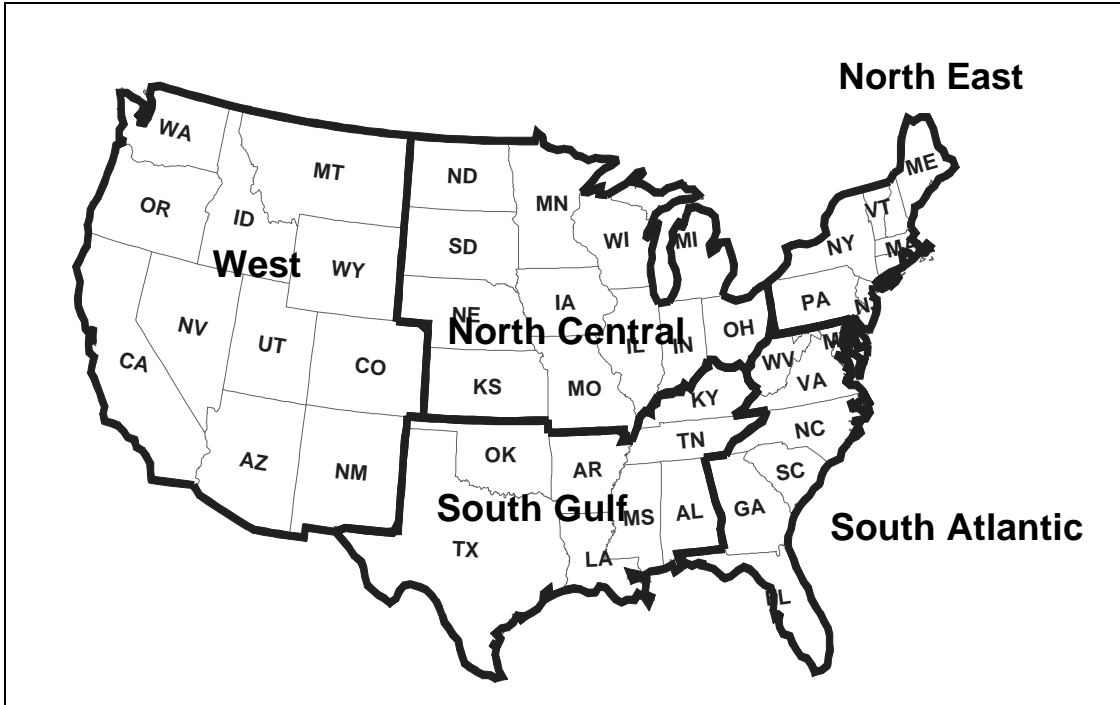


(3-S1-2-2)

Other Examples:

2-S1-2-2, Other triples

Figure 2.3-1 Traffic Data Regions



3.0 Analysis of the Distribution of the Truck Fleet

This section focuses on the distribution of the truck fleet by vehicle configuration, region, and state. The first part of this section analyzes the entire truck fleet with a brief discussion of the 4-axles or less truck fleet. The second part evaluates the 5-axles or more truck fleet. The vehicle configuration is derived by the Bureau of the Census from questions 5, 6, and 9 on the 1987 survey, and from questions 5, 6, and 10 on the 1992 survey as shown in Appendix I. Appendix H gives details on the vehicle configuration variable and its use.

3.1 Analysis Structure

This section evaluates the TIUS database by the following variables:

- 5 Vehicle Configuration Classes and 31 Subclasses (as defined in Table 2.1)
- 8 Vehicle Groups (as defined in Section 2.2)
- 5 Regions (as defined in Section 2.3 and Figure 2.3-1)
- 50 States

3.2 Observations on the Size of the Total Truck Fleet

The following observations focus primarily on the 1992 total truck fleet (note exclusions in Section 1.3) with some selected comparisons made with the 1987 total truck fleet. Table 3.2-1 describes the number of vehicles in a configuration class, by region for 1992. Table 3.2-2 rank orders the 1992 state populations. For detailed tables of the composition of the 1987 and 1992 truck fleet, Appendix A contains population numbers for the total truck fleet broken down by configuration class, by state, by region—for 1992 and 1987.

NATIONWIDE - 1992

- The 1992 total truck fleet contained 4.07 million trucks.

REGIONAL VARIATIONS - 1992

- One-third of the total fleet was registered in the North Central region.
- The other four regions, each contained about one-sixth of the total truck population.

STATE VARIATIONS - 1992

- California had the largest state truck population (392,572 trucks) which accounted for about one-tenth (9.6%) of the national truck fleet.

- The next five largest state truck populations were Illinois (6.7%), Texas (5.3%), Pennsylvania (5.1%), Ohio (4.5%), and New York (4.0%). These states account for one-quarter of the total fleet.

CHANGES BETWEEN 1987 AND 1992

- Nationwide, the total truck fleet increased in size by 4.2% between 1987 and 1992.
- Regionally, the West region experienced the most growth in their truck population (+19.3%). The North Central region (+5.3%), and North East region (+1.3%) experienced an increase, while the South Atlantic region (-1.1%) and the Gulf region (-4.9%) experienced a decrease.
- For the States,
 - California's share of the total truck fleet has increased from 7.8% in 1987 to 9.6% in 1992.
 - The combination of Illinois, Texas, Pennsylvania, Ohio and New York's share of the total fleet did not change from 1987 to 1992. However, Texas's share of the total fleet was greater in 1987 (6.3%) than in 1992 (5.3%), while Pennsylvania's share was less in 1987 (4.4%) than in 1992 (5.1%). The 1987 shares for Illinois (6.5%), Ohio (4.4%), and New York (4.1%) did not differ from 1992.

3.3 Size and Make-up of the 4-Axles or Less Fleet

The 1992 "4-axles or less" truck fleet, which is a subsection of the total truck fleet, is briefly discussed in this section of the report as supported in Table 3.2-1 and in Appendix A. Note that this part of the fleet is not the emphasis of this report.

NATIONWIDE - 1992

- Over two-thirds of the total national truck fleet (68.2%) were single-unit straight trucks. This included 2-axle 6-tire straight trucks and 3-axle straight trucks. This component of the fleet is subject to a future detailed analysis.
- The remainder of the total truck fleet which has 4 axles or less is:
 - 4-axle straight truck, single unit (1.9% of total truck fleet)
 - 2+2, the 2-axle straight truck with 2-axle trailer combinations (2.8% of total truck fleet)
 - 2-S1, the 2-axle tractor with 1-axle semitrailer combinations (1.6% of total truck fleet)
 - 2-S2, the 2-axle tractor with 2-axle semitrailer combinations (3.3% of total truck fleet)
 - 3-S1, the 3-axle tractor with 1-axle semitrailer combinations (0.2% of total truck fleet)

Table 3.2-1

1992 Total Truck Fleet

Number of Vehicles by Truck Configuration, by Region

Configuration Class	Regions					
	North Central	North East	South Atlantic	South Gulf	West	Total
Straight Truck						
2-axle	690,046	397,595	390,340	337,257	453,782	2,269,021
3-axle	167,723	63,637	60,103	59,890	78,636	429,989
4-axle	29,693	21,093	7,474	8,492	10,242	76,994
Subtotal	887,462	482,325	457,918	405,640	542,659	2,776,004
Truck + Trailer						
2+2	35,261	13,776	23,284	20,636	19,130	112,086
2+*3	4,488	2,753	3,711	2,744	1,565	15,261
3+2	9,600	3,487	2,586	8,008	19,640	43,321
3+*3	1,173	693	145	522	1,612	4,146
*4+2	2,027	586	194	535	1,780	5,122
*4+*3	1,307	36	36	116	451	1,946
Subtotal	53,856	21,330	29,956	32,561	44,179	181,881
Tractor + Semitrailer						
2-S1	17,672	5,804	9,749	10,903	21,863	65,990
2-S2	40,640	23,030	22,170	25,764	21,455	133,059
2-*S3	2,290	691	1,288	2,299	1,995	8,563
3-S1	1,765	815	1,089	2,083	2,683	8,434
3-S2	305,414	90,239	109,979	142,300	117,711	765,643
3-*S3	20,314	6,888	4,576	9,776	7,502	49,056
4-S1	121	0	8	67	22	217
4-S2	8,195	4,357	3,318	4,012	3,612	23,494
4-*S3	2,653	678	511	871	2,086	6,799
Subtotal	399,064	132,501	152,689	198,074	178,927	1,061,255
Tractor + Double						
2-S1-2	8,052	1,417	1,586	2,732	19,680	33,467
3-S1-2	1,225	144	450	230	1,910	3,958
2-S2-2	506	87	52	20	1,084	1,748
3-S2-2	536	602	96	29	3,716	4,979
Other @ 7-axle	58	0	0	0	758	815
3-S2-3	128	29	0	98	1,739	1,994
Other @ 8-axle	104	29	0	105	777	1,014
3-*S2-*4	1,959	58	0	162	1,054	3,233
Other @ 9-axle	30	0	13	0	107	149
Other @ 10-axle	481	0	0	0	191	673
Subtotal	13,079	2,365	2,196	3,375	31,015	52,031
Tractor + Triples						
2-S1-2-2	8	0	0	0	279	288
3-S1-2-2	71	0	0	0	262	333
Other	0	33	0	0	93	126
Subtotal	79	33	0	0	635	747
Total	1,353,541	638,554	642,759	639,650	797,415	4,071,918

* Note: Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer, as defined in Section 1.3.

Table 3.2-2

**1992 Total Truck Fleet
Ranking of States from Highest Truck Population to Lowest**

State	Region	Straight Truck	%	Truck + Trailer	%	Tractor + Semitrailer	%	Tractor+ Doubles	%	Tractor +Triple s	%	Total Number	Total %
California	WE	266,700	9.61	18,906	10.39	86,414	8.14	20,436	39.28	115	15.45	392,572	9.64
Illinois	NC	139,077	5.01	11,167	6.14	114,611	10.80	6,957	13.37	0	0.00	271,813	6.68
Texas	SG	125,896	4.54	14,157	7.78	73,390	6.92	965	1.86	0	0.00	214,409	5.27
Pennsylvania	NE	150,493	5.42	5,158	2.84	51,520	4.85	684	1.32	0	0.00	207,856	5.10
Ohio	NC	126,501	4.56	6,456	3.55	49,018	4.62	557	1.07	0	0.00	182,531	4.48
New York	NE	130,319	4.69	6,815	3.75	26,498	2.50	800	1.54	0	0.00	164,431	4.04
Florida	SA	104,632	3.77	9,074	4.99	41,335	3.89	816	1.57	0	0.00	155,857	3.83
North Carolina	SA	80,903	2.91	5,098	2.80	37,935	3.57	826	1.59	0	0.00	124,763	3.06
Indiana	NC	75,412	2.72	3,775	2.08	42,415	4.00	471	0.90	0	0.00	122,072	3.00
Michigan	NC	74,281	2.68	7,539	4.14	34,884	3.29	3,027	5.82	0	0.00	119,732	2.94
Kansas	NC	89,105	3.21	3,029	1.67	21,503	2.03	556	1.07	0	0.00	114,193	2.80
Georgia	SA	72,548	2.61	3,004	1.65	32,506	3.06	173	0.33	0	0.00	108,231	2.66
Missouri	NC	70,568	2.54	5,263	2.89	28,107	2.65	291	0.56	0	0.00	104,229	2.56
Minnesota	NC	73,792	2.66	5,080	2.79	22,475	2.12	237	0.46	71	9.53	101,655	2.50
New Jersey	NE	68,088	2.45	3,199	1.76	27,435	2.59	375	0.72	0	0.00	99,097	2.43
Iowa	NC	63,825	2.30	2,875	1.58	29,149	2.75	296	0.57	0	0.00	96,145	2.36
Wisconsin	NC	62,313	2.24	4,442	2.44	26,729	2.52	94	0.18	0	0.00	93,578	2.30
Oklahoma	SG	61,902	2.23	2,699	1.48	26,148	2.46	233	0.45	0	0.00	90,982	2.23
Alabama	SG	49,672	1.79	4,646	2.55	32,381	3.05	331	0.64	0	0.00	87,030	2.14
Tennessee	SG	53,063	1.91	3,865	2.12	21,830	2.06	1,258	2.42	0	0.00	80,015	1.97
Virginia	SA	64,031	2.31	4,804	2.64	8,535	0.80	64	0.12	0	0.00	77,433	1.90
Kentucky	SG	57,212	2.06	2,109	1.16	15,009	1.41	141	0.27	0	0.00	74,471	1.83
Maryland	SA	60,290	2.17	3,039	1.67	10,263	0.97	0	0.00	0	0.00	73,592	1.81
Colorado	WE	46,124	1.66	3,605	1.98	12,581	1.19	309	0.59	81	10.87	62,700	1.54
Washington	WE	40,732	1.47	6,265	3.44	13,161	1.24	2,018	3.88	22	2.88	62,197	1.53
Nebraska	NC	40,749	1.47	1,840	1.01	17,075	1.61	94	0.18	0	0.00	59,759	1.47
Oregon	WE	35,512	1.28	3,926	2.16	17,086	1.61	2,658	5.11	301	40.28	59,483	1.46
South Carolina	SA	40,117	1.45	3,311	1.82	14,067	1.33	235	0.45	0	0.00	57,731	1.42
Louisiana	SG	38,440	1.38	2,640	1.45	15,934	1.50	240	0.46	0	0.00	57,254	1.41
North Dakota	NC	45,347	1.63	1,181	0.65	6,689	0.63	273	0.53	0	0.00	53,491	1.31
Massachusetts	NE	39,909	1.44	1,936	1.06	10,414	0.98	128	0.25	0	0.00	52,387	1.29
Connecticut	NE	35,070	1.26	1,042	0.57	4,158	0.39	290	0.56	7	0.92	40,567	1.00
Arizona	WE	29,164	1.05	2,957	1.63	7,599	0.72	691	1.33	0	0.00	40,411	0.99
Idaho	WE	29,205	1.05	2,329	1.28	7,015	0.66	1,203	2.31	20	2.63	39,771	0.98
South Dakota	NC	26,491	0.95	1,210	0.66	6,410	0.60	225	0.43	8	1.11	34,344	0.84
Utah	WE	17,667	0.64	1,069	0.59	10,872	1.02	1,418	2.73	20	2.66	31,046	0.76
Montana	WE	20,252	0.73	1,602	0.88	7,894	0.74	1,008	1.94	18	2.47	30,775	0.76
Maine	NE	22,799	0.82	1,007	0.55	5,487	0.52	18	0.04	0	0.00	29,311	0.72
West Virginia	SA	23,295	0.84	1,093	0.60	4,400	0.41	77	0.15	0	0.00	28,865	0.71
Mississippi	SG	14,736	0.53	1,811	1.00	8,478	0.80	186	0.36	0	0.00	25,211	0.62
New Hampshire	NE	19,058	0.69	1,124	0.62	3,547	0.33	52	0.10	26	3.51	23,808	0.58
Nevada	WE	16,052	0.58	814	0.45	5,215	0.49	605	1.16	33	4.36	22,720	0.56
New Mexico	WE	17,953	0.65	1,301	0.72	2,545	0.24	36	0.07	0	0.00	21,836	0.54
Delaware	SA	10,410	0.37	521	0.29	3,553	0.33	4	0.01	0	0.00	14,488	0.36
Hawaii	WE	8,986	0.32	443	0.24	2,460	0.23	27	0.05	0	0.00	11,916	0.29
Wyoming	WE	6,255	0.23	401	0.22	4,109	0.39	371	0.71	14	1.83	11,150	0.27
Alaska	WE	8,057	0.29	560	0.31	1,976	0.19	234	0.45	11	1.49	10,838	0.27
Vermont	NE	8,485	0.31	602	0.33	1,701	0.16	17	0.03	0	0.00	10,806	0.27
Rhode Island	NE	8,104	0.29	446	0.25	1,740	0.16	0	0.00	0	0.00	10,291	0.25
Arkansas	SG	4,718	0.17	635	0.35	4,905	0.46	20	0.04	0	0.00	10,278	0.25
District of Columbia	SA	1,692	0.06	11	0.01	96	0.01	0	0.00	0	0.00	1,799	0.04

* Note: Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer, as defined in Section 1.3.

REGIONAL VARIATIONS - 1992

- The proportion of 2- and 3-axle trucks in the total regional fleets was close to the national average in the South Atlantic region (68.2%) and West region (66.8%); however, greater in the North East region (72.2%), and less in the North Central region (63.3%) and South Gulf region (60.6%).

3.4 Size of the 5-Axles or More Fleet

The 5-axles or more truck fleet, which was the focus of the rest of this analysis, was obtained by removing trucks in the total fleet with 4-axles or less from the total truck fleet. The 5-axles or more truck fleet is of more interest to a truck size and weight analysis. A general map of the state distribution of the 5-axles or more fleet in 1992 is presented in Figure 3.4-1. A regional look is provided in Figure 3.4-2. More detail on the distribution of the fleet is discussed below and highlighted in Tables 3.4-1 and 3.4-2. Appendix B gives the detailed results for the number of 5-axles or more trucks in the fleet, by configuration class, by state, by region—for 1992 and 1987.

NATIONWIDE - 1992

- The 1992 5-axles or more truck fleet was 976,346, about 24% of the total truck fleet.

REGIONAL VARIATIONS - 1992

- The North Central region accounts for more than one-third (38.0%) of the 5-axles or more truck fleet which is the largest population for any region.
- The West region (19.4%) and the South Gulf region (17.9%) together account for one-third of the 5-axles or more truck fleet.
- The North East region (11.6%) and South Atlantic region (13.2%) together account for one-quarter of the 5-axles or more truck fleet.

STATE VARIATIONS - 1992

- Combined, Illinois and California account for one-fifth of the 5-axles or more truck fleet (20.5%).
- Illinois, California, Texas, Pennsylvania, and Ohio account for over one-third of the 5-axles or more truck fleet (36%).
- 22 States and District of Columbia have less than 10,000 5-axles or more trucks and between them account for less than 11.5%. (See Table 3.4-2)

Figure 3.4-1 State Distribution of the 5-Axles or More Fleet in 1992

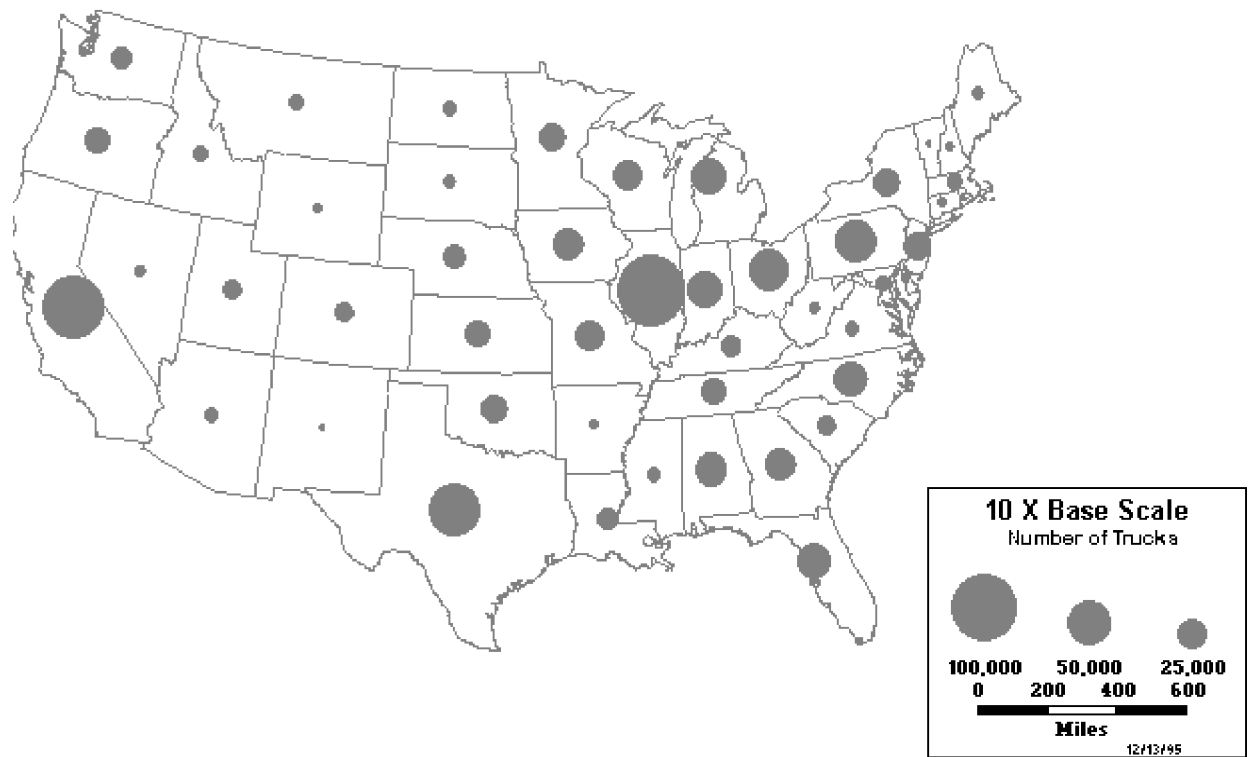


Figure 3.4-2

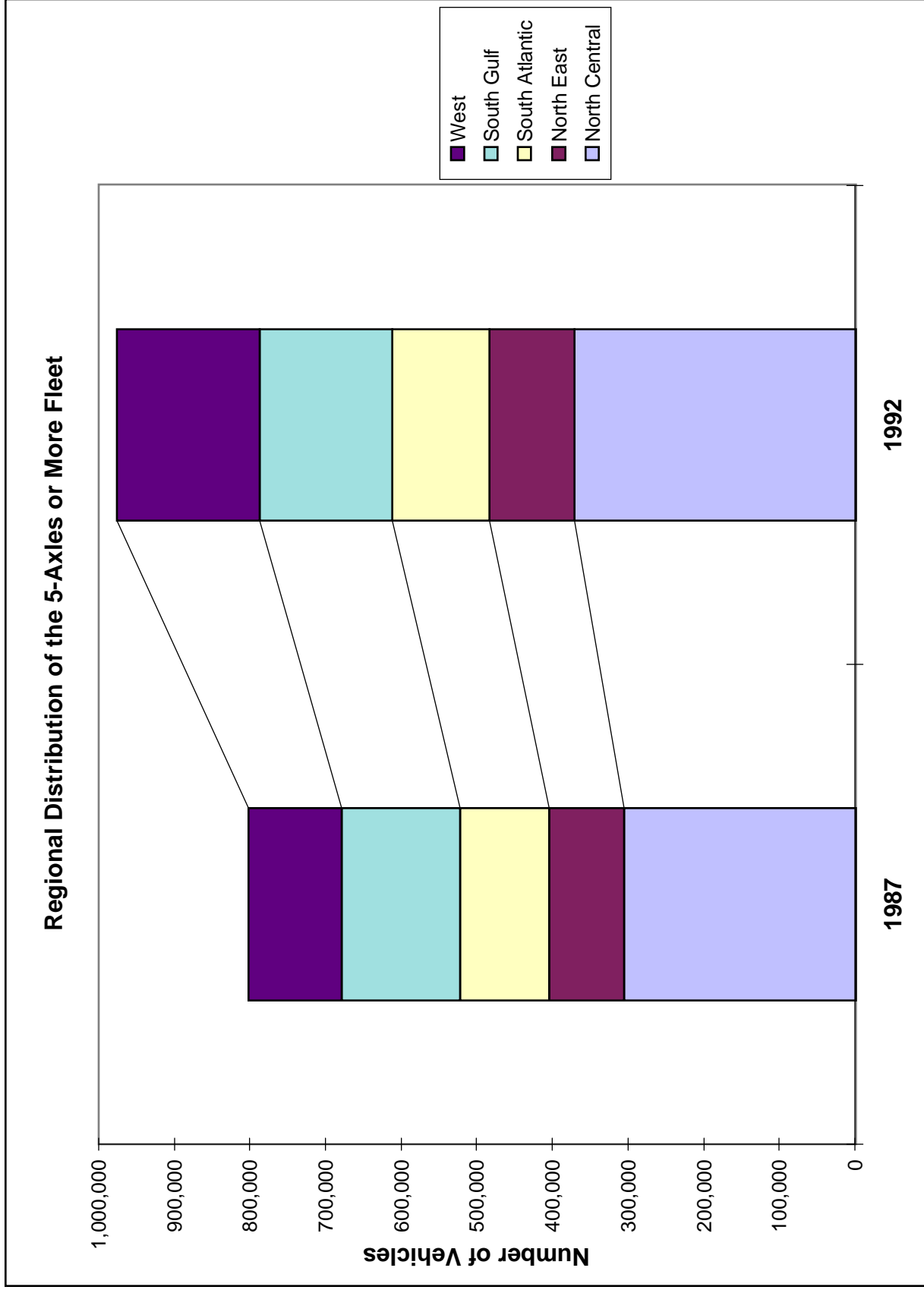


Table 3.4-1

**1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Truck Configuration, by Region**

Configuration Class	Regions					Total
	North Central	North East	South Atlantic	South Gulf	West	
Truck + Trailer						
2+*3	4,488	2,753	3,711	2,744	1,565	15,261
3+2	9,600	3,487	2,586	8,008	19,640	43,321
3+*3	1,173	693	145	522	1,612	4,146
*4+2	2,027	586	194	535	1,780	5,122
*4+*3	1,307	36	36	116	451	1,946
Subtotal	18,595	7,554	6,672	11,925	25,049	69,795
Tractor + Semitrailer						
2-*S3	2,290	691	1,288	2,299	1,995	8,563
3-S2	305,414	90,239	109,979	142,300	117,711	765,643
3-*S3	20,314	6,888	4,576	9,776	7,502	49,056
4-S1	121	0	8	67	22	217
4-S2	8,195	4,357	3,318	4,012	3,612	23,494
4-*S3	2,653	678	511	871	2,086	6,799
Subtotal	338,988	102,853	119,681	159,324	132,927	853,773
Tractor + Double						
2-S1-2	8,052	1,417	1,586	2,732	19,680	33,467
3-S1-2	1,225	144	450	230	1,910	3,958
2-S2-2	506	87	52	20	1,084	1,748
3-S2-2	536	602	96	29	3,716	4,979
Other @ 7-axle	58	0	0	0	758	815
3-S2-3	128	29	0	98	1,739	1,994
Other @ 8-axle	104	29	0	105	777	1,014
3-*S2-*4	1,959	58	0	162	1,054	3,233
Other @ 9-axle	30	0	13	0	107	149
Other @10-axle	481	0	0	0	191	673
Subtotal	13,079	2,365	2,196	3,375	31,015	52,031
Tractor + Triples						
2-S1-2-2	8	0	0	0	279	288
3-S1-2-2	71	0	0	0	262	333
Other	0	33	0	0	93	126
Subtotal	79	33	0	0	635	747
Total	370,741	112,805	128,549	174,624	189,626	976,346

* Note: Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer, as defined in Section 1.3.

Table 3.4-2

1992 Truck Fleet (@ 5-axes or more)

Ranking of States from Highest Truck Population to Lowest

State	Region	Truck + Trailer	%	Tractor + Semitrailer	%	Tractor+ Doubles	%	Tractor +Triples	%	Total Number	Total %
Illinois	NC	2,574	3.69	99,987	11.71	6,957	13.37	0	0.00	109,519	11.22
California	WE	12,249	17.55	57,472	6.73	20,436	39.28	115	15.45	90,272	9.25
Texas	SG	5,720	8.20	58,660	6.87	965	1.86	0	0.00	65,345	6.69
Pennsylvania	NE	2,138	3.06	41,314	4.84	684	1.32	0	0.00	44,136	4.52
Ohio	NC	1,065	1.53	40,186	4.71	557	1.07	0	0.00	41,808	4.28
Michigan	NC	4,213	6.04	28,083	3.29	3,027	5.82	0	0.00	35,323	3.62
Indiana	NC	845	1.21	33,928	3.97	471	0.90	0	0.00	35,244	3.61
North Carolina	SA	1,549	2.22	31,051	3.64	826	1.59	0	0.00	33,426	3.42
Florida	SA	1,493	2.14	29,812	3.49	816	1.57	0	0.00	32,121	3.29
Alabama	SG	1,625	2.33	26,296	3.08	331	0.64	0	0.00	28,252	2.89
Iowa	NC	1,264	1.81	25,810	3.02	296	0.57	0	0.00	27,369	2.80
Georgia	SA	349	0.50	26,538	3.11	173	0.33	0	0.00	27,060	2.77
Missouri	NC	1,889	2.71	23,730	2.78	291	0.56	0	0.00	25,909	2.65
Wisconsin	NC	1,494	2.14	23,995	2.81	94	0.18	0	0.00	25,583	2.62
New Jersey	NE	1,140	1.63	21,453	2.51	375	0.72	0	0.00	22,968	2.35
Oklahoma	SG	587	0.84	21,415	2.51	233	0.45	0	0.00	22,235	2.28
New York	NE	1,900	2.72	19,534	2.29	800	1.54	0	0.00	22,234	2.28
Minnesota	NC	2,145	3.07	18,673	2.19	237	0.46	71	9.53	21,127	2.16
Tennessee	SG	887	1.27	18,284	2.14	1,258	2.42	0	0.00	20,429	2.09
Oregon	WE	2,814	4.03	14,205	1.66	2,658	5.11	301	40.28	19,978	2.05
Kansas	NC	1,285	1.84	17,749	2.08	556	1.07	0	0.00	19,590	2.01
Nebraska	NC	889	1.27	15,077	1.77	94	0.18	0	0.00	16,060	1.64
Washington	WE	2,617	3.75	10,087	1.18	2,018	3.88	22	2.88	14,743	1.51
Louisiana	SG	1,562	2.24	12,636	1.48	240	0.46	0	0.00	14,438	1.48
South Carolina	SA	1,200	1.72	11,101	1.30	235	0.45	0	0.00	12,536	1.28
Kentucky	SG	569	0.82	11,694	1.37	141	0.27	0	0.00	12,405	1.27
Colorado	WE	1,698	2.43	9,914	1.16	309	0.59	81	10.87	12,002	1.23
Utah	WE	567	0.81	9,584	1.12	1,418	2.73	20	2.66	11,589	1.19
Maryland	SA	834	1.20	8,495	1.00	0	0.00	0	0.00	9,329	0.96
Montana	WE	997	1.43	7,252	0.85	1,008	1.94	18	2.47	9,276	0.95
Idaho	WE	1,604	2.30	6,225	0.73	1,203	2.31	20	2.63	9,053	0.93
Massachusetts	NE	586	0.84	7,289	0.85	128	0.25	0	0.00	8,003	0.82
Mississippi	SG	871	1.25	6,310	0.74	186	0.36	0	0.00	7,367	0.75
Arizona	WE	1,179	1.69	5,486	0.64	691	1.33	0	0.00	7,357	0.75
North Dakota	NC	553	0.79	6,072	0.71	273	0.53	0	0.00	6,899	0.71
Virginia	SA	551	0.79	5,862	0.69	64	0.12	0	0.00	6,477	0.66
South Dakota	NC	379	0.54	5,698	0.67	225	0.43	8	1.11	6,310	0.65
Maine	NE	602	0.86	4,833	0.57	18	0.04	0	0.00	5,453	0.56
Nevada	WE	216	0.31	3,945	0.46	605	1.16	33	4.36	4,798	0.49
West Virginia	SA	504	0.72	3,912	0.46	77	0.15	0	0.00	4,493	0.46
Arkansas	SG	105	0.15	4,030	0.47	20	0.04	0	0.00	4,154	0.43
Wyoming	WE	85	0.12	3,576	0.42	371	0.71	14	1.83	4,045	0.41
Connecticut	NE	471	0.68	2,913	0.34	290	0.56	7	0.92	3,681	0.38
New Hampshire	NE	352	0.50	2,682	0.31	52	0.10	26	3.51	3,113	0.32
Delaware	SA	192	0.27	2,828	0.33	4	0.01	0	0.00	3,025	0.31
Hawaii	WE	301	0.43	1,994	0.23	27	0.05	0	0.00	2,323	0.24
Alaska	WE	392	0.56	1,624	0.19	234	0.45	11	1.49	2,261	0.23
New Mexico	WE	330	0.47	1,563	0.18	36	0.07	0	0.00	1,929	0.20
Vermont	NE	239	0.34	1,507	0.18	17	0.03	0	0.00	1,763	0.18
Rhode Island	NE	126	0.18	1,327	0.16	0	0.00	0	0.00	1,453	0.15
District of Columbia	SA	0	0.00	81	0.01	0	0.00	0	0.00	81	0.01

* Note: Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and straight trucks pulling 1-axle trailer or 1-axle utility trailer, as defined in Section 1.3.

CHANGES BETWEEN 1987 AND 1992

- Nationwide, the 5-axles or more truck fleet increased in size by 21.7%.
- Regionally, the truck population in the West region increased at a rate (+53.3%) double that of the national growth rate. The North Central region truck population increased at the same rate as the nation (+21.7%). The North East region (+13.6%), the South Gulf region (+11.9%), and the South Atlantic region (+8.5%) truck populations grew at a slower rate compared to the nation. (See Figure 3.4-2)
- The states with the highest growth rates in their 5-axles or more truck fleet were Colorado (459.7%), Idaho (119%), Nevada (108.4%), Vermont (94%), and Montana (85.6%). The states experiencing a major decline in the growth of their 5-axles or more fleet were Virginia (-56.4%), Massachusetts (-22%), Delaware (-19.7%), and Mississippi (-19.2%). (Care needs to be taken when using state data because of the sample sizes used to generate state truck fleet totals.)

3.5 Make-up of the 5-Axles or More Fleet

This section evaluates the make-up of the 5-axles or more fleet in terms of the 8 vehicle groups (as defined in Section 2.2). Table 3.5-1 summarizes both years, while Figures 3.5-1 and 3.5-2 provide a pictorial comparison. More detailed information is available in Appendix B.

NATIONWIDE - 1992

- 87.4% of the 5-axles or more fleet was comprised of tractor-semitrailer combinations. More specifically, the 3-S2s accounted for 78% of the 5-axle fleet.
- 7.1% of the 5-axles or more fleet were straight truck + trailer combinations.
- 5.3% of the fleet were tractor + double trailer combinations (two-thirds of the doubles were STAA).
- 0.08% of the fleet were tractor + triple trailer combinations.

REGIONAL VARIATIONS - 1992

- The composition of the regional truck fleets in the North Central, North East, South Atlantic, and South Gulf parts of the U.S. is very similar. Over 90% of these regional fleets consist of tractor-semitrailer combinations. About 5 to 6% of these fleets contain truck+trailer combinations. Tractor + double trailers account for 5%, and triples, if any in a particular region, are sparse.

- The composition of West region fleet differs dramatically from the other regions. Tractor-semitrailer combinations only comprise 70% of the western fleet—note the U.S. average is 90%. There are more truck + trailer combinations (13%), tractor + double trailer combinations (16%), and tractor + triple trailer combinations (0.3%).

STATE VARIATIONS - 1992

The maps in Appendix B illustrate the state distribution of each of the 8 vehicle groups.

- California has the largest state population of truck+trailer combinations (17.6% of all truck+trailers) and of tractor + double trailer (39.3% of all tractor + double trailer). It has the second largest population of tractor + triple trailer (15.5% of all tractor triple trailer).
- Illinois has the largest state population of tractor-semitrailer combinations (11.7% of all tractor-semitrailers), and the second largest tractor-double population (13.4% of all tractor-doubles).
- Oregon has the largest population of tractor-triples (40.3% of all triples).

(Care needs to be taken when using state data because of the sample sizes used to generate state truck fleet totals.)

CHANGES BETWEEN 1987 AND 1992

- Nationwide, the mix of the 5-axles or more fleet has remained relatively constant. There was a decrease in the proportion of truck + trailer combinations (from 8.5% to 7.2% of the national 5-axles or more fleet) and an increase in the proportion of tractor + double trailer combinations (from 4.0% to 5.3% of the 5-axles or more fleet). The 3-S2 population remained steady at 9 out of every 10 tractor-semitrailers. The proportion of tractor-semitrailers with tridems has remained constant. The proportion of tractor-semitrailers with quad-axles on the tractor has increased slightly from 1.8% to 2.4%.
- Regionally, the proportion of tractor-semitrailers in each regional fleet has remained relatively constant. The distribution of the various vehicle types has remained constant for the North Central fleet. The fleets in the other four regions have experienced a decline in the proportion of truck + trailer combinations (for the most part) coupled to a corresponding increase in the proportion of tractor + double trailer combinations (see Table 3.5-1).

3.6 Comments on the STAA Double Fleet

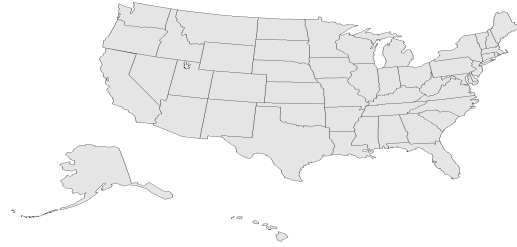
The 1982 Surface Transportation Assistance Act provided for the use of standard STAA (2-S1-2) tractor +double trailer (2-28') combinations on the National Network. The take-up of these units has been relatively small. In 1992, they accounted for 3.4% of the 5-axles or more fleet—a slight increase from 3.1% of the fleet in 1987 as shown in Figure 3.5-1. California and Illinois account for nearly three-quarters of all of the STAA doubles. This is an area where registration bias must be examined more closely.

3.7 Comments on Tridem Axle Fleet

In 1992, the tractor-semitrailers with tridem or more axle semitrailers accounted for 6.6% of the 5-axles or more fleet as shown in Table 3.5-1. They are more common than tractor-double trailer combinations. Every state has them. Three-quarters of the tridem axle fleet are 6-axle (3-S3) tractor-semitrailers combinations. On average, there is about one 3-S3 for every sixteen 3-S2s. The 3-S3 tractor-semitrailer combinations are most common in the North East region (one 3-S3 for every thirteen 3-S2s) and least frequent in the South Atlantic region (one 3-S3 for every twenty-four 3-S2s).

Table 3.5-1

**Truck Fleet (@ 5-axes or more)
Number of Vehicles in Each Vehicle Group,
by Region**



1992 Truck Fleet

Vehicle Group	Regions						% of Total
	North Central	North East	South Atlantic	South Gulf	West	Total	
Truck + Trailer @ 5-axle	14,087	6,218	6,044	10,752	21,184	58,285	6.0
Truck + Trailer @ 6-axle + 3-S2	4,507	1,336	628	1,173	3,865	11,509	1.2
Tridem Axle Semitrailer	305,413	90,239	109,978	142,300	117,710	765,640	78.4
4S1/S2	25,258	8,256	6,375	12,946	11,583	64,419	6.6
STAA	8,316	4,357	3,327	4,079	3,633	23,712	2.4
Doubles @ 6-axle or more	8,052	1,417	1,586	2,732	19,681	33,468	3.4
Triples	5,027	948	611	644	11,335	18,564	1.9
Triples	79	33	0	0	635	747	0.1
Total	370,740	112,805	128,548	174,625	189,626	976,343	100

1987 Truck Fleet

Vehicle Group	Regions						% of Total
	North Central	North East	South Atlantic	South Gulf	West	Total	
Truck + Trailer @ 5-axle	12,147	6,832	8,221	11,812	17,656	56,668	7.1
Truck + Trailer @ 6-axle + 3-S2	3,668	1,672	1,601	1,128	3,004	11,073	1.4
Tridem Axle Semitrailer	249,344	81,228	97,249	128,336	77,314	633,471	79.0
4S1/S2	22,191	6,622	7,505	10,160	7,359	53,837	6.7
STAA	5,115	2,328	2,534	2,628	1,788	14,393	1.8
Doubles @ 6-axle or more	7,734	519	1,310	1,643	13,713	24,919	3.1
Triples	4,499	86	38	289	2,421	7,333	0.9
Triples	9	10	0	5	408	432	0.1
Total	304,707	99,297	118,457	156,001	123,663	802,125	100

* Note: Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and straight trucks pulling 1-axle trailer or 1-axle utility trailer, as defined in Section 1.3.

Figure 3.5-1

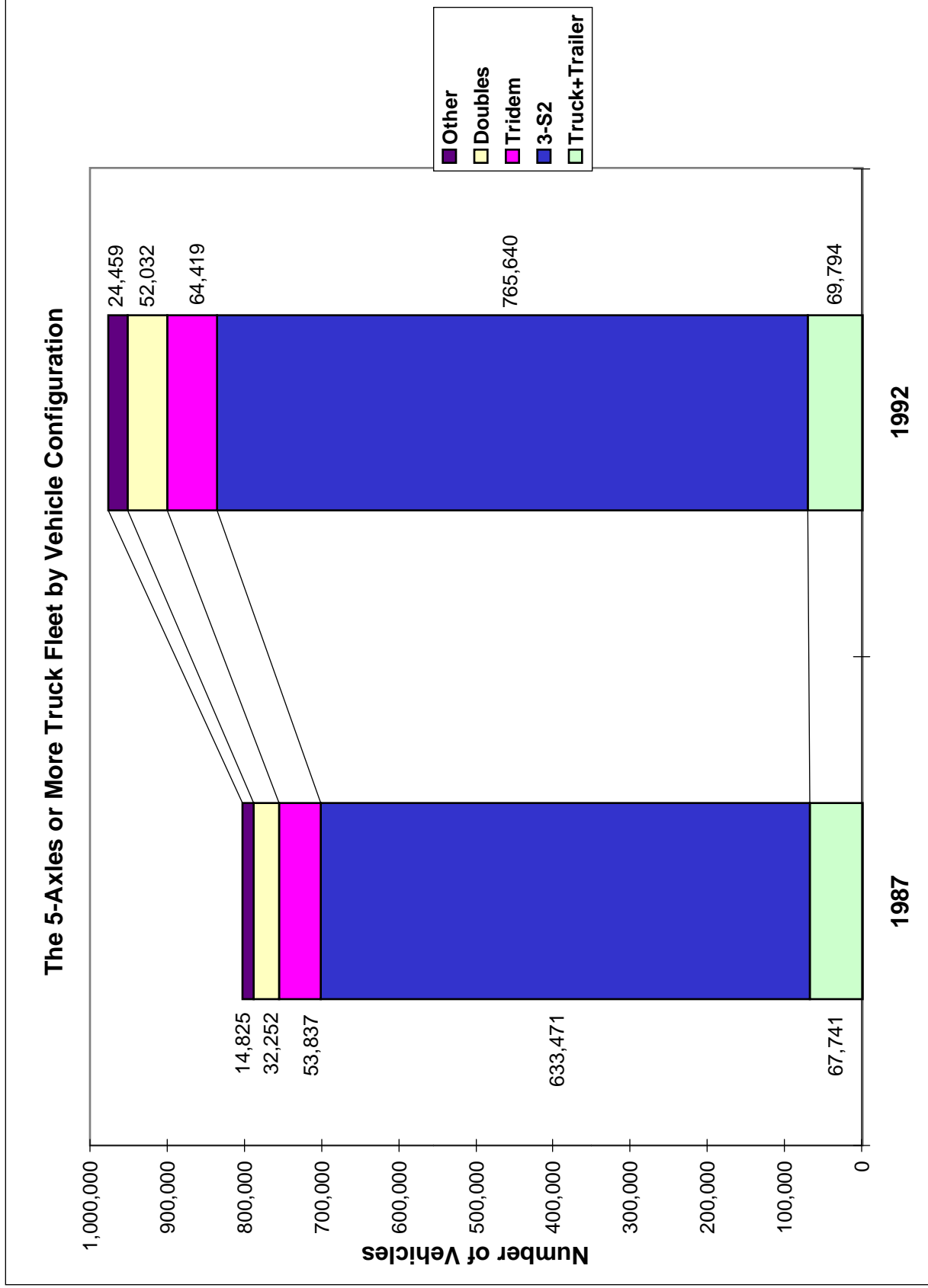
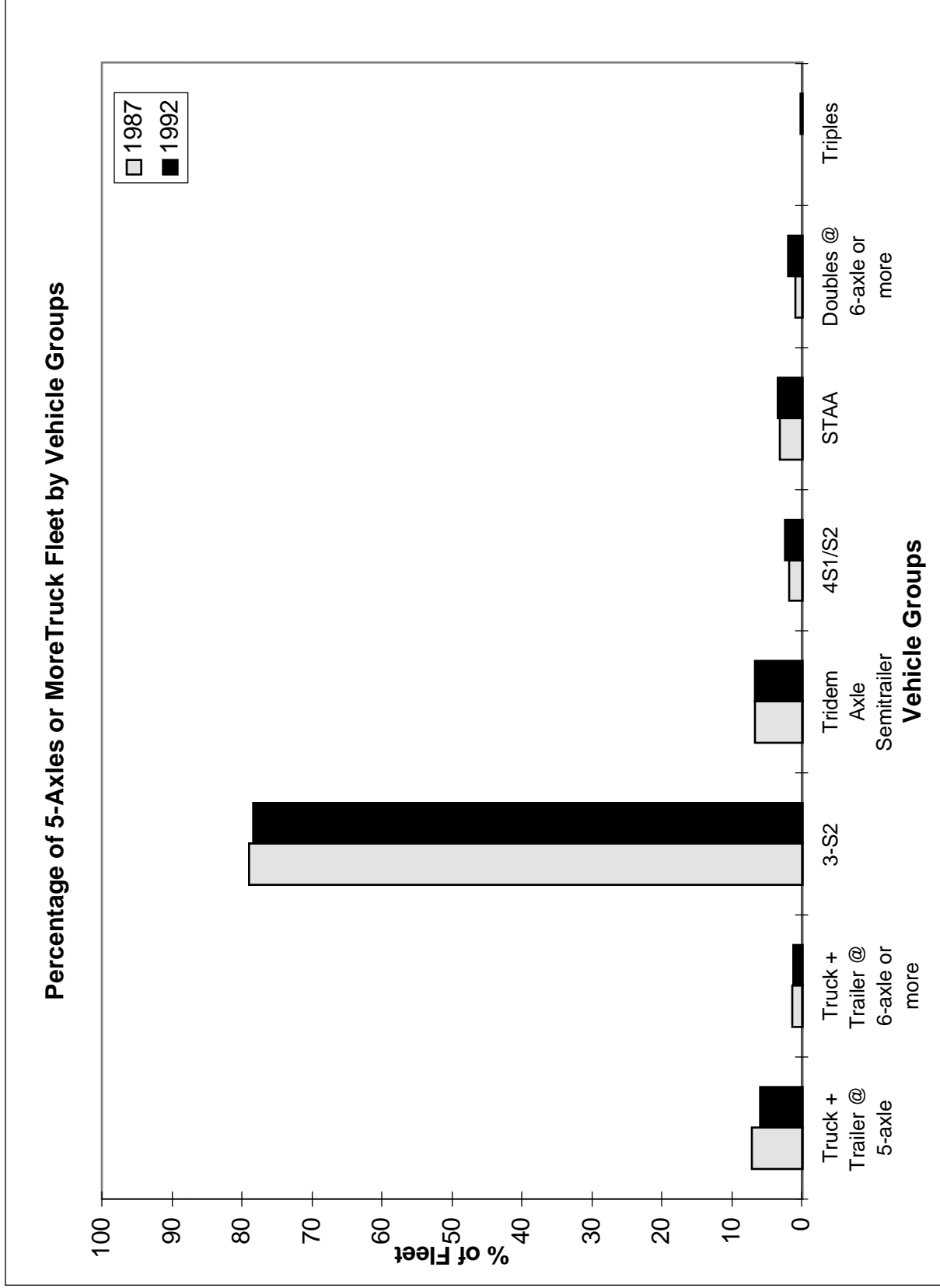


Figure 3.5-2



4.0 Analysis of the 5-Axles or More Fleet by Body Type

For each truck in the 5-axles or more fleet, there is a body type identified with this vehicle. This body type classification is an indicator of the body of the vehicle or the trailer MOST OFTEN attached to it. This analysis uses Question 8 on the 1987 survey and Question 9 on the 1992 survey, as shown in Appendix I.

4.1 Analysis Structure

This analysis focused on the composition of the 5-axles or more fleet in terms of the number of vehicles in the different body type categories. The distribution of body types was evaluated across the regions and across vehicle groups.

- 26 body types (as defined in the TIUS Survey Question 9 on Form 2)
 - multi-stop or step van (including hi-cube or cutaway)
 - platform with devices permanently mounted on bed of truck
 - low boy (gooseneck)—platform with depressed center
 - basic platform—including flatbed, stake, etc.
 - livestock truck (including livestock drop frame)
 - insulated, non-refrigerated van
 - insulated, refrigerated van
 - drop frame van (including furniture van, etc.)
 - open top van (including fruit)
 - basic enclosed van (dry cargo)
 - beverage truck
 - utility truck—used in public utility operations
 - winch or crane truck—lifting equipment (including roll-on, roll-off)
 - wrecker—for motor vehicle towing or lifting
 - pole, logging, pulpwood or pipe truck
 - automobile transport
 - service truck or craftsman's vehicle
 - yard tractor—cab and chassis only used to spot trailers
 - oil field truck—service equipment permanently mounted on vehicle
 - grain bodies (including low-side grain and hoppers, etc.)
 - garbage truck
 - dump truck (including belly or bottom dump)
 - tank truck for liquids or gases
 - tank truck for dry bulk
 - concrete mixer
 - other (trucks whose body type was not one of the previous types)

- 8 vehicle groups (see Section 2.2)
- 5 traffic regions (see Section 2.3)

Appendix C gives the detailed results of the distribution of the 5-axles or more fleet, by body type, by vehicle group, by region for 1992 and 1987. This chapter will focus on the major body type categories which were obtained by grouping the 26 body types into 11 major body types.

- 11 major body type groups (collapsed from the 26 body types) :
 - **platform** (which consists of low boys and basic platform types)
 - **van** (which includes multi-stop, basic enclosed, drop frame, insulated non-refrigerated, insulated refrigerated, and open top types)
 - **auto transport**
 - **dump truck**
 - **grain bodies**
 - **garbage truck**
 - **livestock truck**
 - **pole, logging truck**
 - **tank truck, dry bulk**
 - **tank truck, liquids or gas**
 - **other** (includes platforms with devices permanently mounted, beverage truck, utility truck, winch or crane truck, wrecker, service truck, yard tractor, oil field truck, concrete mixer, and other)

Appendix D gives the regional detailed results for the distribution of the 5-axles or more fleet by major body type group and by vehicle group for 1992 and 1987.

4.2 Observations on Major Body Types in the 5-Axles or More Fleet

Table 4.2-1 summarizes the distribution of the fleet by the 11 major body type groups and by 5 regions for both 1992 and 1987. Table 4.2-2 describes the distribution of the fleet by the 11 major body type groups and by the 8 major vehicle groups for both 1992 and 1987.

The following observations on body type were made about the 1992 fleet. Selected comparisons with 1987 were made and noted in their section.

NATIONWIDE - 1992 (as shown in Figure 4.2-2)

- Close to half of the trucks in the fleet were vans (44.6%).
- Platforms accounted for the next largest portion of the population (22.2%)

- 10.1% of the fleet were dump trucks.
- 9.4% of the fleet were tanker trucks—with approximately 4 out of every 5 tankers being used for transporting liquids or gases and 1 out of every 5 being used for transporting dry bulk materials.
- The remaining major body types accounted for a very small proportion of the truck fleet: grain body trucks (4.2%), pole or logging trucks (3.2%), auto transporters (1.5%), livestock trucks (1.3%), and other body types (3.1%).

REGIONAL VARIATIONS - 1992

- Industry-specific body types tend to concentrate in certain geographical regions:
 - 75% of the auto transporters are concentrated in the North Central region.
 - Two-thirds (64%) of the grain bodies are concentrated in the North Central region. The remaining third is mostly located in the South Gulf region (18%) and West region (13%).
 - One-third (35%) of the pole and logging trucks are concentrated in the West region. One-half of these trucks are located in South Gulf region (25%) and South Atlantic region (24%).
 - Half of the livestock trucks are concentrated in the North Central region (47%). The remaining population tends to be in the West region (22%) and in the South Gulf region (19%).

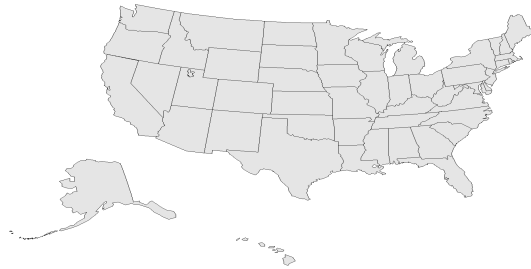
CHANGES BETWEEN 1987 AND 1992 (as shown in Figures 4.2-2 and 4.3-3)

- Nationwide for both years, vans and platforms together account for two-thirds of all body types. However, the proportion of vans in the fleet grew from 41.4% to 44.6%, while the proportion of platforms in the fleet decreased from 26.9% to 22.2%. There has been a small increase in the proportion of specialized body types (i.e., "non van or platform" body types)—from 31.7% of the fleet in 1987 to 33.2% in 1992. Certain specialized body types have grown faster than the national growth rate of the 5-axles or more fleet (21.9%)—auto transporters increased 37.9%, grain bodies increased 61.9%, and pole and logging trucks 38.3%. The body types that experienced almost no growth were livestock trucks (0.6%) and platforms (0.6%).
- Regionally, a major shift away from platforms to vans and/or specialized body types occurred in all regions except the West region.

- North Central region—platforms decreased from 25.8% to 19.9% of the North Central fleet with noticeable increases in the proportion of vans, grain bodies and autotransporters.
- North East region—platforms decreased from 29.1% to 21.2% of the fleet, and vans have increased a corresponding amount from 39.2% to 47.5%, with the proportion of other body types remaining relatively constant.
- South Atlantic region—platforms decreased from 26.4% to 22.7% of the fleet, and vans increased a corresponding amount from 44.3% to 48.7%, with noticeable increases in the proportion of pole and logging trucks.
- South Gulf region—platforms decreased from 28.3% to 23.2% of the fleet, and vans increased from 36.5% to 39.5% of the fleet.
- West region—the proportion of vans increased from 33.7% to 37.7%, while the proportion of most of the remaining body types remained constant or changed insignificantly.

Table 4.2-1

**Truck Fleet (@ 5-axes or more)
Number of Vehicles by Major Body Type,
by Region**



1992 Truck Fleet

Major Body Type	Regions					Total	% of Total
	North Central	North East	South Atlantic	South Gulf	West		
Platform	73,850	23,955	29,218	40,915	48,826	216,763	22.2
Van	178,832	53,547	62,535	69,009	71,554	435,477	44.6
Auto Transport	10,889	541	729	1,441	1,027	14,626	1.5
Dump Truck	31,361	15,759	9,750	14,956	27,040	98,865	10.1
Grain Bodies	26,484	547	1,535	7,449	5,202	41,217	4.2
Garbage Truck	949	1,202	286	303	745	3,483	0.4
Livestock Truck	5,825	326	1,194	2,360	2,792	12,496	1.3
Logging	3,391	1,501	7,427	7,862	11,072	31,253	3.2
Tank Truck, Dry Bulk	7,253	2,091	2,758	3,818	3,497	19,417	2.0
Tank Truck, Liquid or Gas	24,943	10,302	8,893	16,859	11,546	72,543	7.4
Other	6,965	3,033	4,225	9,654	6,328	30,205	3.1
Total	370,741	112,804	128,549	174,625	189,627	976,345	100

1987 Truck Fleet

Major Body Type	Regions					Total	% of Total
	North Central	North East	South Atlantic	South Gulf	West		
Platform	78,740	28,927	31,291	44,103	32,392	215,453	26.9
Van	142,269	38,964	52,430	57,003	41,629	332,294	41.4
Auto Transport	4,778	1,411	1,468	1,391	1,557	10,606	1.3
Dump Truck	25,681	14,020	9,825	15,683	17,007	82,216	10.2
Grain Bodies	15,695	313	1,091	4,247	4,113	25,459	3.2
Garbage Truck	380	361	31	144	251	1,167	0.1
Livestock Truck	5,746	250	881	3,869	1,663	12,410	1.5
Logging	892	1,268	4,587	6,522	9,338	22,606	2.8
Tank Truck, Dry Bulk	5,502	2,089	3,204	3,100	2,125	16,020	2.0
Tank Truck, Liquid or Gas	19,000	9,164	9,194	12,993	8,173	58,524	7.3
Other	6,025	2,530	4,456	6,948	5,416	25,374	3.2
Total	304,707	99,298	118,458	156,003	123,663	802,129	100

Table 4.2-2

Truck Fleet (@ 5-axles or more)

Number of Vehicles by Major Body Type, by Vehicle Group

1992 Truck Fleet

Major Body Type	Truck + Trailer @ 5-axle	Truck + Trailer @ 6-axle +	3-S2	Tridem Axle Semitrailer	4S1/S2	STAA	Doubles @ 6 axles +	Triples	Total
Platform	16,115	2,166	158,733	23,645	6,839	5,122	4,059	84	216,763
Van	3,057	279	382,155	11,577	7,595	23,637	6,557	619	435,477
Auto Transport	717	0	13,164	515	230	0	0	0	14,626
Dump Truck	20,666	5,430	51,301	12,891	3,084	1,780	3,680	34	98,865
Grain Bodies	3,342	579	32,697	1,224	1,461	946	968	0	41,217
Garbage Truck	578	176	2,195	281	254	0	0	0	3,483
Livestock Truck	885	78	10,012	389	575	440	116	0	12,496
Pole, Logging Truck	4,147	815	22,313	2,476	1,084	0	418	0	31,253
Tank Truck, Dry Bulk	224	29	15,809	606	503	1,240	1,006	0	19,417
Tank Truck, Liquid or Gas	2,759	1,327	61,043	4,261	1,546	127	1,470	9	72,543
Other	5,796	629	16,221	6,553	542	175	289	0	30,205
Total	58,286	11,509	765,642	64,418	23,712	33,468	18,564	747	976,345

1987 Truck Fleet

Major Body Type	Truck + Trailer @ 5-axle	Truck + Trailer @ 6-axle +	3-S2	Tridem Axle Semitrailer	4S1/S2	STAA	Doubles @ 6 axles +	Triples	Total
Platform	20,220	2,174	160,929	23,553	4,613	2,675	1,179	109	215,452
Van	3,350	961	291,101	10,378	4,432	17,945	3,818	307	332,292
Auto Transport	262	5	9,898	136	305	0	0	0	10,606
Dump Truck	17,792	4,054	45,947	10,048	1,967	1,352	1,039	17	82,216
Grain Bodies	1,251	482	20,042	1,226	496	1,298	664	0	25,460
Garbage Truck	51	0	945	140	0	0	31	0	1,167
Livestock Truck	1,165	197	10,377	510	144	0	17	0	12,410
Pole, Logging Truck	4,048	668	16,045	1,250	587	0	9	0	22,607
Tank Truck, Dry Bulk	178	110	13,536	737	270	744	445	0	16,020
Tank Truck, Liquid or Gas	2,439	386	51,018	2,829	1,068	679	105	0	58,524
Other	5,913	2,035	13,634	3,030	511	225	26	0	25,374
Total	56,669	11,073	633,473	53,837	14,393	24,918	7,333	432	802,127

Figure 4.2-1

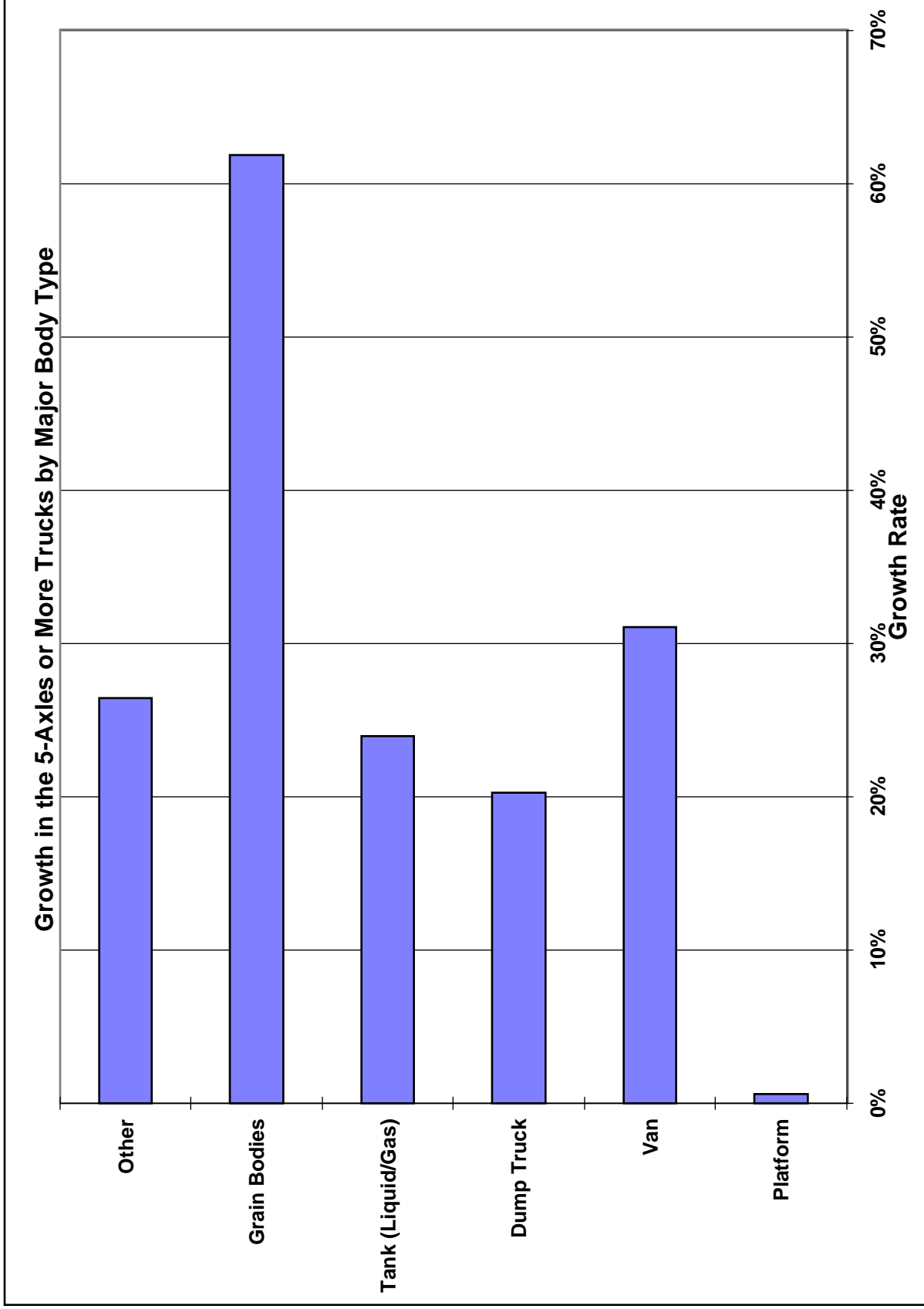


Figure 4.2-2

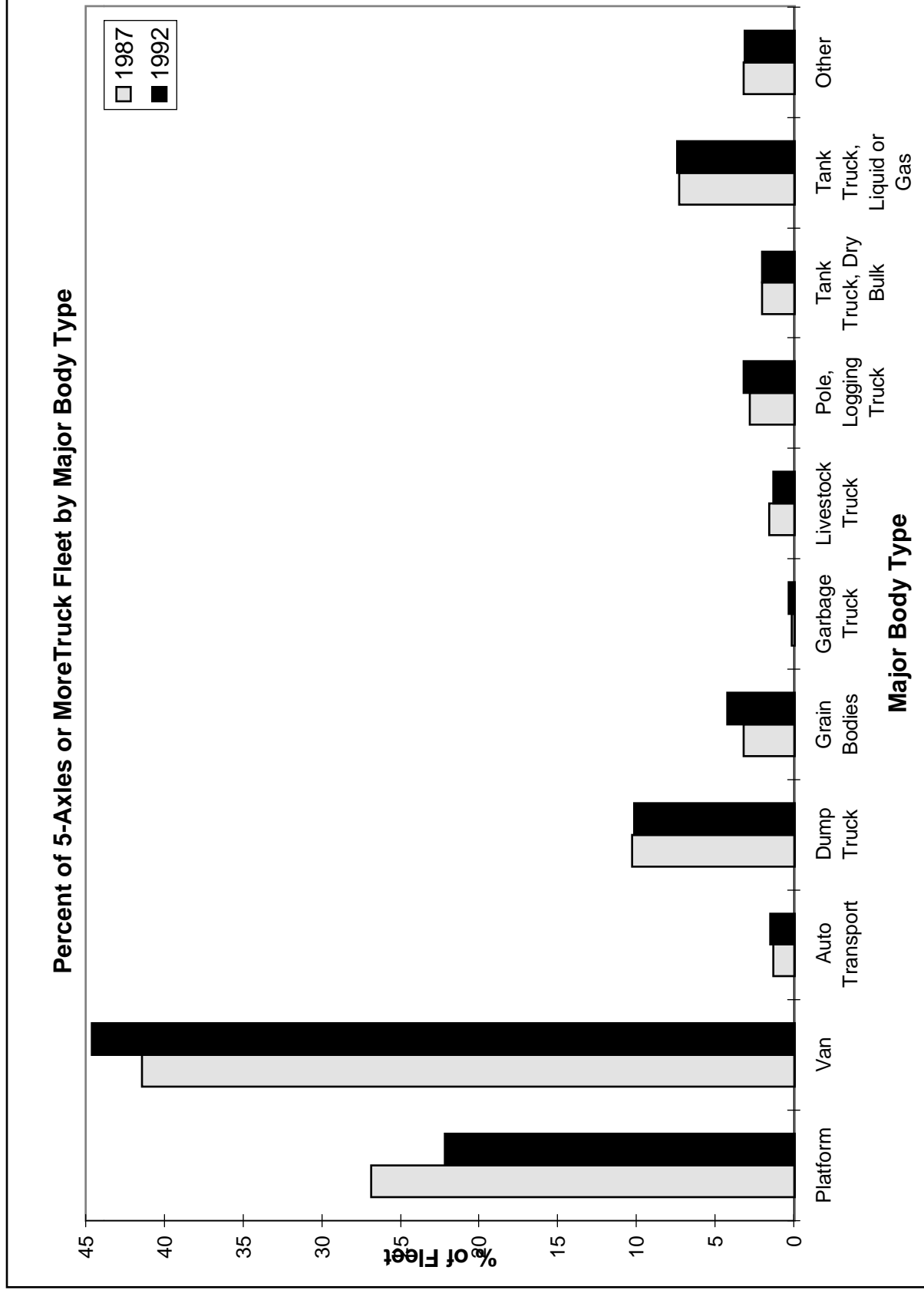
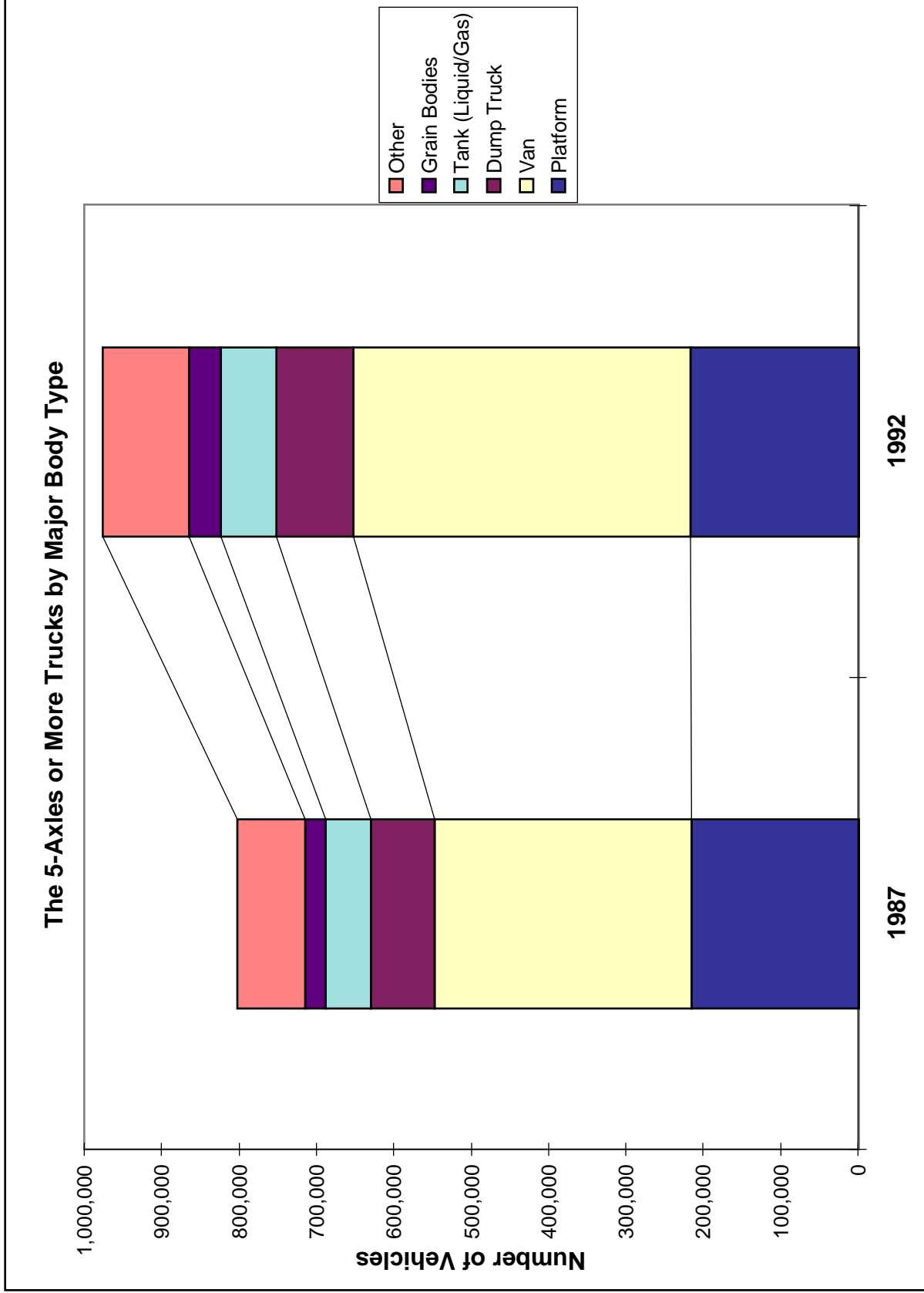


Figure 4.2-3



5.0 Analysis of the 5-Axles or More Truck Fleet by Principal Product Carried

On the survey, all trucks defined the percent of their annual mileage that they hauled each of the 29 listed commodities or no load (1992 TIUS Survey, Question 28). The percent of vehicles miles of travel (VMT) hauling the various 29 commodities and the percent of VMT hauling no load totaled to 100% for 1992. Based on the respondent's reply to this question, the Bureau of the Census created a new variable which would indicate the principal product hauled MOST OFTEN by a given truck. Analyzing principal product ignores the remaining products by a respondent. Additionally, the only analysis available is determining the number of trucks in each vehicle group or region that have a given product as their "principal products."

5.1 Analysis Structure

This analysis focuses on the principal product hauled by various vehicles in the national fleet. In section 6.0, the distribution of VMT across commodities is discussed and this data was used to make general conclusions about the commodities/products that are hauled most frequently. Principal product was evaluated across the various vehicle groups and across the different traffic regions.

- 30 principal products (Derived variable created by the Bureau of the Census)
 - **no load** — vehicle empty
 - **live animals**
 - **fresh farm products**
 - **processed foods** and tobacco products
 - **animal feed**
 - **mining products**
 - **building materials** (gravel, sand, concrete, flat glass, etc.—except cut lumber)
 - **logs and other forest products**
 - **lumber and fabricated wood products**—except furniture
 - **paper and paper products**
 - **chemicals** and/or drugs (including fertilizers, pesticides, cosmetics, paints, etc.)
 - **petroleum and petroleum products** (including paving and roofing materials)
 - **plastics** and/or and **rubber** products
 - **primary metal** products—pipes, ingots, billets, sheets, etc.
 - **fabricated metal** products—except machinery or transportation equipment
 - **machinery**—electrical or non-electrical and electronic
 - **transportation equipment** (including complete vehicles) and parts
 - **furniture** (wood and non-wood) and/or hardware—not involved in household moving
 - **glass products**
 - **textiles and apparels**—fibers, leather goods, carpets, clothing, etc.

- **miscellaneous products** of manufacturing
 - moving of **household** and office furniture
 - **craftsman's equipment** - miscellaneous tools and/or parts for specialized use
 - **mixed cargo** (including the delivery of small packages)
 - **scrap** (not for recycling), garbage, trash, septic tank waste
 - **industrial "waste" water**
 - **hazardous waste (EPA manifest)**
 - **hazardous waste (non-EPA manifest)**
 - **recyclable products**
 - **other**
- 8 vehicle groups (see Section 2.2)
 - 5 traffic regions (see Section 2.3)

5.2 Observations on the Principal Products Carried by 5-Axles or More Trucks

Tables 5.2-1 and 5.2-2 give the distribution of the 5-axles or more truck fleet by principal product carried by vehicle group, and by region for 1992.

NATIONWIDE - 1992

- Three-quarters of the 5-axles or more fleet vehicles reported hauling primarily only 12 products
 - processed foods (13.7% of total 5-axles or more fleet)
 - building materials (11.2% of total 5-axles or more fleet)
 - farm products (9.9% of total 5-axles or more fleet)
 - mixed cargo (7.2% of total 5-axles or more fleet)
 - machinery (5.5% of total 5-axles or more fleet)
 - transportation equipment (5.0% of total 5-axles or more fleet)
 - logs and forest products (4.6% of total 5-axles or more fleet)
 - paper and paper products (4.5% of total 5-axles or more fleet)
 - primary metals (4.4% of total 5-axles or more fleet of total 5-axles or more fleet)
 - petroleum and petroleum products (4.0% of total 5-axles or more fleet)
 - chemicals (3.7% of total 5-axles or more fleet)
 - lumber and fabricated wood (3.6% of total 5-axles or more fleet).
- For the 3-S2 vehicle group,
 - 1 out of 6 (16.2%) primarily hauled processed foods.
 - 1 out of 10 (10.1%) primarily hauled fresh farm products.
 - 1 out of 11 (8.5%) primarily hauled building materials.

Table 5.2-1

**1992 Truck Fleet (@ 5-axles or more)
Principal Product Hauled, by Vehicle Group**

Commodity	Truck +	Truck +	Axle			Doubles			National Total
	Trailer @ 5-axle	Trailer @ 6-axle	3-S2	Semi-trailer	4S1/S2	STAA	@ 6- axles+	Triples	
Farm Products	6,791	792	77,197	3,341	2,795	3,691	2,271	0	96,878
Live Animals	1,648	305	19,917	966	1,023	679	372	0	24,911
Animal Feed	958	85	15,513	580	523	577	575	0	18,812
Processed Foods	996	194	123,698	3,045	2,610	1,929	1,751	113	134,336
Mining	1,001	243	10,494	2,181	704	231	478	18	15,350
Building	19,076	5,144	65,246	9,608	3,767	2,577	4,079	26	109,523
Logs	4,909	937	32,445	4,226	1,688	0	541	19	44,764
Lumber	2,083	394	25,458	4,258	1,197	604	755	14	34,764
Paper	23	12	41,906	734	391	598	678	47	44,390
Chemicals	1,111	37	30,001	1,070	301	2,568	656	109	35,854
Petroleum	2,112	1,422	30,536	3,123	799	127	952	9	39,080
Plastics	528	0	11,751	467	254	383	22	19	13,424
Primary Metal	643	74	38,262	2,372	1,452	34	491	5	43,333
Fabricated	594	315	19,078	2,055	751	578	88	0	23,460
Machinery	4,432	729	35,528	11,476	937	53	301	4	53,459
Transportation Equipment	3,653	149	37,361	6,467	1,037	12	63	40	48,781
Furniture	358	7	11,981	211	265	0	440	0	13,262
Textile	57	0	12,293	204	49	371	80	0	13,054
Household Goods	154	11	14,664	421	456	10	50	0	15,766
Craftsman's Equipment	1,563	35	2,883	184	82	28	29	0	4,804
Mixed Cargo	134	157	47,671	1,303	657	17,067	2,920	209	70,118
Refuse	745	210	5,700	1,355	653	0	105	0	8,769
Glass Products	132	0	2,883	353	111	242	145	0	3,866
Miscellaneous	315	145	20,758	628	348	196	133	0	22,522
Industrial Water	165	29	1,990	248	128	0	0	0	2,560
Hazardous Waste(EPA)	540	0	3,667	587	139	0	37	0	4,970
Hazardous (Non-EPA)	36	0	906	39	0	0	4	0	985
Recyclables	319	0	8,566	1,031	115	144	208	0	10,383
Other*	2,484	83	14,759	1,643	459	769	341	0	20,539
No Load	727	0	2,527	239	19	0	0	115	3,627
Total	58,286	11,509	765,640	64,418	23,712	33,468	18,564	747	976,343

* Other category contains 'other', 'personal transportation', and 'not in use'.

Table 5.2-2

**1992 Truck Fleet (@ 5-axles or more)
Principal Product Hauled, by Region**

Commodity	North Central	North East	South Atlantic	South Gulf	West	National Total	% of Total
Farm Products	41,730	8,612	11,448	14,589	20,499	96,878	9.9
Live Animals	10,197	1,385	3,816	4,079	5,434	24,911	2.6
Animal Feed	8,404	1,210	1,968	3,829	3,403	18,812	1.9
Processed Foods	53,289	17,557	17,752	16,503	29,235	134,336	13.8
Mining	4,832	2,119	1,811	4,279	2,310	15,351	1.6
Building	34,057	14,357	13,723	17,745	29,640	109,522	11.2
Logs	6,634	3,591	10,161	10,183	14,195	44,764	4.6
Lumber	7,685	3,923	6,609	7,700	8,847	34,764	3.6
Paper	24,503	5,636	3,593	7,142	3,516	44,390	4.5
Chemicals	13,271	4,549	4,426	6,235	7,373	35,854	3.7
Petroleum	12,440	5,557	4,734	9,356	6,993	39,080	4.0
Plastics	5,211	1,634	2,462	3,174	943	13,424	1.4
Primary Metal	23,474	5,003	2,535	7,924	4,396	43,332	4.4
Fabricated Metal	9,523	2,657	2,952	4,749	3,579	23,461	2.4
Machinery	20,345	6,224	7,864	10,953	8,073	53,459	5.5
Transportation Equipment	25,229	4,081	3,849	9,693	5,929	48,781	5.0
Furniture	5,331	768	3,064	1,603	2,497	13,262	1.4
Textile	1,652	1,579	5,800	2,966	1,057	13,055	1.3
Household Goods	8,034	1,871	1,082	2,148	2,630	15,765	1.6
Craftsman's Equipment	1,221	1,054	1,095	1,030	404	4,804	0.5
Mixed Cargo	29,162	6,940	8,023	12,150	13,843	70,118	7.2
Refuse	2,540	2,824	722	967	1,715	8,769	0.9
Glass Products	751	634	770	674	1,037	3,866	0.4
Miscellaneous	9,443	3,101	3,223	3,850	2,905	22,522	2.3
Industrial Water	501	146	111	1,437	365	2,560	0.3
Hazardous Waste (EPA)	1,317	1,044	460	1,142	1,007	4,970	0.5
Hazardous Waste (Non-EPA)	88	179	97	474	147	985	0.1
Recyclables	3,928	1,747	1,184	1,599	1,925	10,383	1.1
Other*	5,744	2,615	3,093	3,739	5,349	20,539	2.1
No Load	204	211	121	2,712	379	3,627	0.4
Total	370,738	112,804	128,549	174,624	189,626	976,340	100

* Other category contains 'other', 'personal transportation', and 'not in use'.

- For all truck + trailer combinations which includes the truck+tractor @ 5-axles and the truck+tractor @ 6-axles or more vehicle groups,
 - 1 out of 3 (34.7%) primarily hauled building materials.
 - 1 out of 10 (10.9%) primarily hauled fresh farm products.
 - An additional one-quarter of the truck+trailer combinations primarily hauled either logs and forest products (8.4%), machinery (7.4%), transportation equipment (5.5%), or petroleum products (5.1%).

- For the tridem axle semitrailer group, more than one-quarter primarily hauled either machinery (17.8%) or transportation equipment (10.0%). An additional one-quarter primarily hauled either building materials (14.9%), logs and forest products (6.6%), or lumber and fabricated woods (6.6%).

- For the STAA Doubles trucks, more than one-half (51.0%) hauled mixed cargo. Other principal products hauled often by STAA doubles were farm products (11.0%), building materials (7.7%), and chemicals (7.7%).

- For the doubles at 6-axles or more, one-half of the group primarily hauled either building materials (22.0% of total), mixed cargo (15.7%), or farm products (12.2%).

REGIONAL VARIATIONS - 1992

- One-third of the fleet vehicles (34.9%) primarily hauled one of these three principal products: processed foods (13.8%), building materials (11.2%), or farm products (9.9%). Significant proportions of the regional fleets (North Central region—34.9%, North East region—35.9%, South Atlantic region—33.4%, South Gulf region—27.8%, West region—41.8%) also claim these as their top three products.

Table 5.2-3 Ranking of Principal Products by Regions in 1992

Products	National	North Central	North East	South Atlantic	South Gulf	West
Processed Foods	1	1	1	1	2	2
Building Materials	2	3	2	2	1	1
Farm Products	3	2	3	3	3	3
Mixed Cargo	4	4	4	5	4	5
Machinery	5	✓	5	6	5	7
Transportation Equipment	6	5	✓	✓	7	✓
Logs and Forest Products	7	✓	✓	4	6	4

Note: ✓ indicates 8th or lower ranking.

6.0 Analysis of the 5-Axles or More Truck Fleet by Percent of VMT Hauling a Commodity

On the survey, all trucks defined the percent of their annual mileage that they hauled each of the 29 listed commodities or no load (TIUS Survey, Question 28 for 1992 and Question 30 for 1987, Appendix I). The percent of vehicle miles of travel (VMT) hauling the various 29 commodities and the percent of VMT hauling no load totaled to 100% for 1992.

6.1 Analysis Structure

This analysis estimates the percent of VMT that a particular commodity is hauled. Commodities are evaluated across the different vehicle groups and the different regions. No comparison was done with the 1987 data because of differences in the formatting and wording of the question, particularly because no load was not included with the list of commodities in the 1987 survey.

- 30 commodities
 - **no load** — vehicle empty
 - **live animals**
 - **fresh farm products**
 - **processed foods** and tobacco products
 - **animal feed**
 - **mining products**
 - **building materials** (gravel, sand, concrete, flat glass, etc.—except cut lumber)
 - **logs and other forest products**
 - **lumber and fabricated wood products**—except furniture
 - **paper and paper products**
 - **chemicals** and/or drugs (including fertilizers, pesticides, cosmetics, paints, etc.)
 - **petroleum and petroleum products** (including paving and roofing materials)
 - **plastics** and/or **rubber** products
 - **primary metal** products—pipes, ingots, billets, sheets, etc.
 - **fabricated metal** products—except machinery or transportation equipment
 - **machinery**—electrical or non-electrical and electronic
 - **transportation equipment** (including complete vehicles) and parts
 - **furniture** (wood and non-wood) and/or hardware—not involved in household moving
 - **glass products**
 - **textiles and apparels**—fibers, leather goods, carpets, clothing, etc.
 - **miscellaneous products** of manufacturing
 - moving of **household** and office furniture
 - **craftsman's equipment** - miscellaneous tools and/or parts for specialized use
 - **mixed cargo** (including the delivery of small packages)
 - **scrap** (not for recycling), garbage, trash, septic tank waste

- **industrial "waste" water**
 - **hazardous waste (EPA manifest)**
 - **hazardous waste (non-EPA manifest)**
 - **recyclable products**
 - **other**
- 8 vehicle groups (see Section 2.2)
 - 5 traffic regions (see Section 2.3).

6.2 Observations on the Percent of VMT Hauling a Commodity

NATIONWIDE - 1992 (Table 6.2-1)

- Two-thirds of the 5-axles or more truck fleet's VMT was used to haul 12 commodities.
 - processed foods (14.8%)
 - building materials (7.0%)
 - farm products (6.7%)
 - mixed cargo (8.7%)
 - machinery (2.7%)
 - transportation equipment (3.5%)
 - logs and forest products (3.0%)
 - paper and paper products (5.1%)
 - primary metals (4.4%)
 - petroleum and petroleum products (3.6%)
 - chemicals (4.2%)
 - lumber and fabricated wood (3.3%)
- Vehicles carried no loads for about 11.0% of their VMT.

VEHICLE GROUPS - 1992 (Table 6.2-2)

- Half of the truck + trailer @ 5-axles group's VMT was used to haul 5 commodities: building materials (24.1% of VMT), logs or forest products (11.5%), petroleum (6.2%), farm products (5.1%), and lumber (5.1%). No loads were carried for about one-sixth of their VMT (16.4%).
- Half of the truck + trailer @ 6-axles group's VMT was used to haul 2 commodities: building materials (34.5% of VMT) and petroleum (23.7%). No loads were carried for about one-eighth of their VMT (12.9%).



Table 6.2-1
1992 Truck Fleet (@ 5-axles or more)
Distribution of Percent of VMT Hauling a Commodity, by Vehicle Group
Based on Total Fleet VMT

Commodity	Truck+Trailer @ 5-axle		Truck+Trailer @ 6-axle		3-S2		Tridem axle		4S1/S2		STAA		Doubles @ 6-axles+		Triples		National Total
No Load	0.39	0.08	9.06	0.60	0.25	0.28	0.25	0.01	0.25	0.01	0.01	0.01	0.01	0.01	0.01	0.01	10.93
Live Animal	0.03	0.01	1.61	0.06	0.07	0.05	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87
Farm Products	0.12	0.02	5.75	0.21	0.17	0.26	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.66
Processed Food	0.09	0.01	13.75	0.32	0.31	0.18	0.18	0.01	0.18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	14.84
Animal Feed	0.05	0.01	1.56	0.07	0.05	0.09	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87
Mining	0.08	0.01	0.84	0.19	0.05	0.03	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26
Building	0.58	0.21	4.83	0.63	0.24	0.18	0.28	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.96
Logging	0.27	0.05	2.19	0.32	0.12	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02
Lumber	0.12	0.01	2.63	0.28	0.13	0.05	0.08	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
Paper	0.01	0.00	4.80	0.09	0.05	0.08	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.10
Chemicals	0.04	0.00	3.63	0.12	0.03	0.28	0.07	0.01	0.28	0.01	0.01	0.01	0.01	0.01	0.01	0.01	4.18
Petroleum	0.15	0.15	2.86	0.27	0.06	0.03	0.09	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61
Plastic	0.04	0.00	1.93	0.04	0.03	0.03	0.03	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	2.09
Primary Metal	0.05	0.00	3.93	0.17	0.18	0.02	0.05	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.40
Fabricated Metal	0.01	0.01	2.03	0.17	0.07	0.07	0.02	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.38
Machinery	0.07	0.02	2.06	0.45	0.05	0.02	0.02	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.67
Transport Equipment	0.10	0.00	2.88	0.34	0.12	0.01	0.01	0.00	0.12	0.01	0.01	0.01	0.01	0.01	0.01	0.01	3.47
Furniture	0.03	0.00	1.82	0.02	0.02	0.01	0.05	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.96
Glass	0.00	0.00	0.69	0.05	0.02	0.02	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
Textile	0.01	0.00	1.81	0.04	0.01	0.05	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.95
Miscellaneous	0.02	0.00	2.64	0.07	0.04	0.04	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.87
Household Goods	0.00	0.00	1.48	0.04	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Craftsman's Tools	0.03	0.00	0.19	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Mixed Cargo	0.02	0.02	5.56	0.12	0.09	2.47	0.42	0.04	0.09	0.04	0.04	0.42	0.04	0.04	0.04	0.04	8.73
Refuse	0.02	0.01	0.37	0.09	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54
Industrial Water	0.02	0.00	0.14	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Hazardous EPA	0.01	0.00	0.39	0.05	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
Hazardous Non-EPA	0.01	0.00	0.14	0.02	0.01	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Recyclables	0.02	0.00	0.75	0.07	0.01	0.02	0.01	0.00	0.01	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.90
Other	0.01	0.00	0.86	0.03	0.04	0.01	0.01	0.00	0.04	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.96
Total	2.38	0.62	83.19	4.96	2.33	4.32	2.11	0.10	4.32	2.11	0.10	4.32	2.11	0.10	0.10	0.10	100.00



Table 6.2-2

**1992 Truck Fleet (@ 5-axles or more)
Distribution of Percent of VMT Across Commodities
For a Given Vehicle Group**

Commodity	Truck+Trailer @ 5-axle	Truck+Trailer @ 6-axle	3-S2	Tridem axle Semitrailer	4S1/S2	STAA	Doubles @ 6-axles+	Triples	National Total
No Load	16.41	12.88	10.90	12.11	10.66	6.59	11.74	12.41	10.93
Live Animal	1.17	1.63	1.94	1.13	3.22	1.10	1.89	0.00	1.87
Farm Products	5.14	3.22	6.91	4.14	7.42	5.94	6.43	0.14	6.66
Processed Food	3.80	1.50	16.53	6.42	13.37	4.16	8.36	5.66	14.84
Animal Feed	2.03	0.83	1.87	1.37	2.03	2.16	2.32	0.12	1.87
Mining	3.20	1.71	1.00	3.86	2.27	0.64	3.09	2.54	1.26
Building	24.14	34.48	5.81	12.79	10.20	4.25	13.13	2.60	6.96
Logging	11.45	7.57	2.63	6.52	5.00	0.03	3.51	4.19	3.02
Lumber	5.13	1.53	3.16	5.73	5.42	1.26	3.59	0.27	3.30
Paper	0.27	0.13	5.77	1.72	2.24	1.85	3.63	3.08	5.10
Chemicals	1.49	0.25	4.36	2.42	1.34	6.50	3.56	6.59	4.18
Petroleum	6.21	23.72	3.44	5.42	2.74	0.67	4.22	1.23	3.61
Plastic	1.51	0.00	2.31	0.75	1.31	0.62	1.30	9.33	2.09
Primary Metal	2.03	0.61	4.72	3.52	7.86	0.41	2.18	0.59	4.40
Fabricated Metal	0.62	1.01	2.44	3.38	3.16	1.57	0.78	0.31	2.38
Machinery	2.78	2.55	2.47	9.04	2.02	0.36	1.04	0.45	2.67
Equipment	3.99	0.64	3.46	6.84	5.16	0.24	0.52	2.86	3.47
Furniture	1.39	0.03	2.19	0.50	0.88	0.18	2.36	0.44	1.96
Glass	0.15	0.00	0.83	1.10	0.80	0.57	1.17	0.08	0.82
Textile	0.24	0.00	2.18	0.85	0.50	1.24	1.08	0.36	1.95
Miscellaneous	0.86	0.68	3.18	1.50	1.82	0.91	2.04	2.42	2.87
Household Goods	0.14	0.27	1.78	0.72	1.94	0.09	0.13	0.00	1.57
Craftsman's Tools	1.09	0.33	0.23	0.34	0.11	0.11	0.17	0.35	0.25
Mixed Cargo	0.80	2.65	6.68	2.40	3.87	57.16	19.76	42.26	8.73
Refuse	1.04	1.23	0.45	1.77	1.73	0.00	0.17	0.00	0.54
Industrial Water	0.75	0.02	0.17	0.17	0.13	0.00	0.00	0.00	0.17
Hazardous EPA	0.54	0.00	0.47	0.96	0.44	0.11	0.19	0.14	0.47
Hazardous Non-EPA	0.37	0.05	0.17	0.43	0.30	0.71	0.04	0.14	0.21
Recyclables	0.85	0.20	0.91	1.43	0.53	0.41	1.15	0.44	0.90
Other	0.43	0.28	1.03	0.68	1.54	0.14	0.46	0.99	0.96
Total	100	100	100	100	100	100	100	100	100

- For the 3-S2 group,
 - One-fifth of the VMT was used to haul either processed foods (16.5% of VMT) or farm products (6.9%).
 - No loads were carried for one-tenth of their VMT (10.9%).
- Half of the tridem axle semitrailer group's VMT was used to haul 6 commodities: building materials (12.8% of VMT), machinery (9.0%), transportation equipment (6.8%), logs and forest products (6.5%), lumber (5.7%), and processed foods (6.4%). No loads were carried for about one-eighth of their VMT (12.1%).
- Over half of the STAA doubles group's VMT was used to haul mixed cargos (57.2% of VMT).
- Close to half of the triple trailers group's VMT was used to haul mixed cargos (42.5%).
- For all commodities, the 3-S2 vehicle group accounted for the large proportion of the VMT hauling a particular product (at minimum 63% of a commodity's VMT was hauled in a 3-S2). (See Table 6.2-3.)

REGIONAL VARIATIONS - 1992 (Tables 6.2-4)

- 42% of the 5-axles or more fleet's VMT is driven by vehicles registered in the North Central region. For all but 5 commodities, the North Central trucks accounted for a large proportion of the VMT hauling a particular product. The exceptions were logs and forest products which were hauled mostly by West region vehicles (31.1% of logs VMT), textiles which were hauled mostly by South Atlantic region vehicles (40.4% of textiles VMT), refuse which was hauled mostly by North East region vehicles (36.1%), industrial waste water and hazardous non-EPA waste which were hauled by South Gulf region vehicles (68.8% of industrial water and 25.6% of non-EPA waste).

COMPARISON OF COMMODITY DATA AND PRINCIPAL PRODUCT

- A comparison of Tables 5.2-3 and 6.2-4 shows a difference in the ranking of commodities. Table 6.2-5 is a ranking based on the VMT that each of the commodities accounted for in 1992. Table 5.2-3 is a ranking based on the number of trucks that haul a given principal product.

Table 6.2-5 Ranking of the Major Commodities (based on VMT) by Regions in 1992

Products	National	North Central	North East	South Atlantic	South Gulf	West
Processed Foods	1	1	1	1	1	1
Mixed Cargo	2	2	3	4	3	4
Building Materials	3	5	2	3	2	2
Farm Products	4	4	4	2	4	3
Paper Products	5	3	5	✓	7	✓
Primary Metal	6	6	6	✓	6	✓
Chemicals	7	✓	7	✓	✓	7

Note: ✓ indicates 8th or lower ranking.



Table 6.2-3

**1992 Truck Fleet (@ 5-axles or more)
Distribution of Percent of VMT Across Vehicle Groups
Hauling a Given Commodity**

Commodity	Truck+Trailer @ 5-axle		Truck+Trailer @ 6-axle		Tridem axle			Doubles @		National Total
					Semitrailer	4S1/S2	STAA	6-axles+	Triples	
No Load	3.58	0.73	82.94	5.50	5.50	2.27	2.60	2.26	0.11	100.00
Live Animal	1.49	0.54	86.30	3.00	3.00	4.00	2.54	2.13	0.00	100.00
Farm Products	1.84	0.30	86.30	3.09	3.09	2.60	3.85	2.03	0.00	100.00
Processed Food	0.61	0.06	92.65	2.15	2.15	2.10	1.21	1.19	0.04	100.00
Animal Feed	2.59	0.27	83.35	3.64	3.64	2.53	4.99	2.61	0.01	100.00
Mining	6.04	0.84	66.19	15.20	15.20	4.18	2.19	5.16	0.20	100.00
Building	8.27	3.07	69.48	9.12	9.12	3.41	2.64	3.97	0.04	100.00
Logging	9.02	1.55	72.26	10.70	10.70	3.85	0.05	2.44	0.14	100.00
Lumber	3.70	0.29	79.63	8.62	8.62	3.82	1.65	2.29	0.01	100.00
Paper	0.12	0.02	94.04	1.67	1.67	1.02	1.57	1.50	0.06	100.00
Chemicals	0.85	0.04	86.83	2.87	2.87	0.74	6.72	1.79	0.16	100.00
Petroleum	4.10	4.07	79.30	7.46	7.46	1.77	0.80	2.46	0.03	100.00
Plastic	1.72	0.00	92.02	1.77	1.77	1.46	1.28	1.31	0.44	100.00
Primary Metal	1.10	0.09	89.22	3.97	3.97	4.16	0.40	1.04	0.01	100.00
Fabricated Metal	0.62	0.26	85.41	7.06	7.06	3.10	2.85	0.69	0.01	100.00
Machinery	2.47	0.59	76.96	16.80	16.80	1.76	0.58	0.82	0.02	100.00
Transport Equipment	2.75	0.11	83.18	9.79	9.79	3.47	0.30	0.32	0.08	100.00
Furniture	1.69	0.01	93.03	1.26	1.26	1.05	0.40	2.54	0.02	100.00
Glass	0.45	0.00	84.60	6.63	6.63	2.28	3.02	3.01	0.01	100.00
Textile	0.29	0.00	93.03	2.16	2.16	0.59	2.74	1.17	0.02	100.00
Miscellaneous	0.72	0.15	92.11	2.59	2.59	1.48	1.37	1.50	0.08	100.00
Household Goods	0.22	0.11	94.11	2.28	2.28	2.87	0.24	0.18	0.00	100.00
Craftsman's Tools	10.42	0.82	77.58	6.76	6.76	0.99	1.88	1.41	0.14	100.00
Mixed Cargo	0.22	0.19	63.69	1.37	1.37	1.03	28.26	4.76	0.48	100.00
Refuse	4.61	1.42	69.48	16.33	16.33	7.50	0.00	0.66	0.00	100.00
Industrial Water	10.49	0.07	82.66	5.04	5.04	1.75	0.00	0.00	0.00	100.00
Hazardous EPA	2.71	0.00	83.25	10.04	10.04	2.15	0.96	0.85	0.03	100.00
Hazardous Non-EPA	4.17	0.16	67.23	10.02	10.02	3.35	14.62	0.39	0.07	100.00
Recyclables	2.25	0.14	83.61	7.91	7.91	1.38	1.99	2.68	0.05	100.00
Other	1.06	0.18	89.79	3.52	3.52	3.73	0.62	1.00	0.10	100.00
Total	2.38	0.62	83.19	4.96	4.96	2.33	4.32	2.11	0.10	100.00

Table 6.2-4

**1992 Truck Fleet (@ 5-axles or more)
Distribution of Percent of VMT
Hauling a Commodity, by Region
Based on Total Fleet VMT**



Commodity	North	North	South	South	National	Total
	Central	East	Atlantic	Gulf			West
No Load	4.10	1.12	1.58	2.21	1.92	10.93
Live Animal	0.80	0.12	0.24	0.31	0.39	1.87
Farm Products	2.61	0.68	0.98	1.05	1.35	6.66
Processed Food	6.61	1.55	1.89	2.01	2.79	14.84
Animal Feed	0.90	0.13	0.19	0.35	0.30	1.87
Mining	0.41	0.17	0.16	0.34	0.18	1.26
Building	2.40	0.77	0.93	1.38	1.48	6.96
Logging	0.44	0.25	0.70	0.69	0.94	3.02
Lumber	0.88	0.31	0.56	0.73	0.82	3.30
Paper	2.71	0.62	0.46	0.81	0.51	5.10
Chemicals	1.69	0.45	0.54	0.73	0.77	4.18
Petroleum	1.15	0.42	0.45	0.92	0.67	3.61
Plastic	0.95	0.19	0.28	0.46	0.20	2.09
Primary Metal	2.32	0.49	0.32	0.84	0.44	4.40
Fabricated Metal	1.14	0.26	0.28	0.47	0.23	2.38
Machinery	1.22	0.25	0.35	0.52	0.33	2.67
Transport Equipment	2.15	0.19	0.26	0.54	0.32	3.47
Furniture	0.86	0.10	0.44	0.29	0.27	1.96
Glass	0.30	0.12	0.12	0.16	0.12	0.82
Textile	0.39	0.17	0.79	0.43	0.17	1.95
Miscellaneous Mfg.	1.33	0.34	0.35	0.49	0.36	2.87
Household Goods	0.84	0.16	0.11	0.20	0.25	1.57
Craftsman's Tools	0.08	0.04	0.05	0.06	0.02	0.25
Mixed Cargo	4.58	0.71	0.85	1.35	1.23	8.73
Refuse	0.14	0.19	0.05	0.07	0.09	0.54
Industrial Water	0.02	0.01	0.01	0.12	0.01	0.17
Hazardous EPA	0.14	0.11	0.04	0.12	0.06	0.47
Hazardous Non-EPA	0.04	0.04	0.03	0.05	0.05	0.21
Recyclables	0.37	0.15	0.11	0.14	0.13	0.90
Other	0.44	0.07	0.13	0.23	0.09	0.96
Total	42.01	10.16	13.24	18.09	16.50	100.00

7.0 Analysis of Weights, Dimensions, and Operating Characteristics for the 5-Axles or More Fleet

7.1 Analysis Structure

More than 85% of the 1992 5-axles or more fleet is accounted for by the combination of the 4 specific truck configurations and the 13 specific body types listed below:

FOUR SPECIFIC CONFIGURATIONS

- the 3 + 2 truck + trailer (3.7% of total)
- the 3-S2 tractor-semitrailer (78.4%)
- the 3-S3 tractor-semitrailer (4.6%)
- the 2-S1-2 STAA tractor + double trailer combination (2.9%).

THIRTEEN SPECIFIC BODY TYPES

- low boy
- basic platform
- livestock truck
- insulated non-refrigerated van
- insulated refrigerated van
- drop frame van
- basic enclosed van
- pole and logging truck
- automobile transporter
- grain body
- dump truck
- tank truck for liquids or gases
- tank truck for dry bulk.

Various combinations of configuration and body type (e.g., the 3-S2 refrigerated van) were chosen for analysis based on their occurrence in the truck fleet. The most prevalent configuration/body types in the truck fleet were analyzed in terms of their national operational characteristics for both 1992 and 1987. Eight vehicle characteristics were of interest:

- empty (tare) weight
- average gross weight
- maximum gross weight
- external width of trailer
- overall length
- annual vehicle miles of travel (VMT)
- base of operation
- range of operation—% of VMT used for different lengths of haul

Based on our knowledge of the general operational characteristics of the truck fleet, some data were excluded in the various analyses based on the following criteria:

- if the empty weight, average weight, or maximum weight was reported as less than or equal to 20,000 lbs
- if the empty weight was reported as more than 50,000 lbs
- if the average weight or maximum weight was reported as greater than 140,000 lbs
- where no value of a given attribute was reported
- if the average weight or maximum weight exceeded the empty weight.

Appendix E gives the detailed results for each year. Each page in the appendix represents one cell in the matrix of 4 configuration types versus 13 body types. The population size of each configuration/body type and the sample size, which indicates the number of survey records analyzed, are shown at the top of the page. In addition, on the plots of empty weight, average weight and maximum weight, the following statistics are given—sample size, population size, population mean and population standard deviation. The annual VMT includes the population size, population mean, and population standard deviation.

In Appendix E, all the graphs, except for the range of operation graph, were plotted in reference to the percent of trucks in that particular configuration/body type. In other words, the Y-axis represents percent of trucks or the cumulative percent of trucks. Range of operation differs because the Y-axis is in terms of percent of total VMT for that configuration/body type.

In addition to the previously mentioned 8 characteristics that were analyzed, further analysis was conducted on the distribution of average and maximum payload weights for each configuration/body type. The results are presented in Appendix F. Payload weights were not addressed on the survey. For this analysis, they were derived by subtracting the reported empty (tare) weight from the reported average or maximum gross weights. The weight exclusions mentioned before also applied to the payload analysis; however, one more exclusion was added which did not allow the empty weight to be greater than the average/maximum weight.

Note: all weights and payloads are described in Kips (thousands of pounds) in both Appendices E and F.

7.2 Observations on Specific Truck Configurations and Body Types

In order to verbally summarize each of the 1992 configuration/body types shown in Appendix E, the following rating scales were used in the review that follows in Section 7.3. The scales defined below were used to make generalizations about the operational characteristics of the various configuration/body type groups and to provide a means of comparison between configuration/body types.

- Key words and their percentage indication
 - most (mostly) means more than 80%
 - many (mainly) means 61 to 80%
 - half means 41 to 60%
 - some means 20 to 40%
 - few (infrequently) means less than 20%

- Sample size
 - very small— less than 100
 - small—100 to 250
 - good—251 to 500
 - large—501 to 1000
 - very large—greater than 1000

- Weigh-out means operation at a gross weight of 80,000 lbs. or more as shown on the cumulative percentage chart for average weight.

- Base of Operation - uses the percentage definitions above and applies them to the percent of the vehicles that have the following travel characteristics:
 - mostly intra-state travel; means less than or equal to 20% of annual VMT out-of-state
 - mainly out-of-state travel; means 60% or more of annual VMT out of state
 - mostly out-of-state travel; means 80% or more of annual VMT out of state.

- Range of Operation - Percent of VMT used in different lengths of haul
 - short haul lengths mean less than 100 miles
 - very long haul lengths mean greater than 500 miles

- Width of Trailer
 - narrow means 96 inches
 - wide means 102 inches

- Overall Length of Vehicle
 - short means less than 65 feet (bumper to tailgate)
 - long means more than 65 feet (bumper to tailgate)

- Annual VMT
 - small—1 to 40,000 miles
 - medium—40,001 to 80,000 miles
 - large—80,001 to 120,000 miles
 - very large—greater than 120,000 miles

7.3 Review of Selected Truck Configurations/Body Types

The following section provides a summary of the operational demands and typical equipment use for selected truck configuration/body type combinations as described in Section 7.1 in the 1992 5-axles or more fleet. As highlighted above, the summary for each combination is organized as follows:

- Sample size
- Weigh-Out
- Never Weigh-Out
- Base of Operation: intra-state or inter-state
- Range of operation: defined by VMT use in specific haul lengths
- Trailer width
- Overall vehicle length
- Annual VMT

7.3.1 Review of 3 + 2 Truck + Trailer Combinations - 1992

- (3 + 2) Low Boy Platform [pop = 1,526 or 0.2% of the 5-axles or more fleet]
 - very small (<100) sample
 - few (<20%) weigh-out on average
 - many (60-80%) never weigh-out
 - many (60-80%) operate mostly (80-100%) intra-state
 - some (20-40%) VMT is used for short haul lengths (< 100 miles), no VMT is used in very long haul lengths (> 500 miles)
 - many (60-80%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—most (80-100%) have a small annual VMT (<40,000 miles)

- (3 + 2) Basic Platform [pop = 7,370 or 0.8% of the 5-axles or more fleet]
 - small (100-250) sample
 - some (20-40%) weigh-out on average
 - many (60-80%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—many (60-80%) have a small annual VMT (<40,000 miles)

- (3 + 2) Basic Enclosed Van [pop = 1,344 or 0.1% of the 5-axles or more fleet]
 - very small (<100) sample
 - few (<20%) weigh-out on average
 - many (60-80%) never weigh-out
 - half (40-60%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of-state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), some (20-40%) VMT is used for very long haul lengths (> 500 miles)
 - half (40-60%) are narrow (96 inches)
 - many (60-80%) are short (< 65 feet)
 - Annual VMT—half (40-60%) have a medium annual VMT (40,000-80,000 miles)

- (3 + 2) Pole and Logging Truck [pop = 4,147 or 0.4% of the 5-axles or more fleet]
 - small (100-250) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - most (80-100%) VMT is used for short haul lengths (< 100 miles)
 - many (60-80%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT— many (60-80%) have a medium annual VMT (40,000-80,000 miles)

- (3 + 2) Grain Bodies [pop = 3,313 or 0.3% of the 5-axles or more fleet]
 - very small (<100) sample
 - some (20-40%) weigh-out on average
 - half (40-60%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - VMT is used mainly (60-80%) for short haul lengths (< 100 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—most (80-100%) have a small annual VMT (<40,000 miles)

- (3 + 2) Dump Truck [pop = 15,426 or 1.6% of the 5-axles or more fleet]
 - good (250-500) sample
 - some (20-40%) weigh-out on average
 - half (40-60%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - most (80-100%) VMT is used for short haul lengths (< 100 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—many (60-80%) have a small annual VMT (<40,000 miles)

- (3 + 2) Tank Trucks for Liquids or Gases [pop = 2,664 or 0.3% of the 5-axles or more fleet]
 - small (100-250) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles)
 - most (80-100%) are narrow (96 inches)
 - many (60-80%) are short (< 65 feet)
 - Annual VMT—mixed.

7.3.2 Review of 3-S2 Tractor-Semitrailer Combinations - 1992

- (3-S2) Low Boy Platform [pop = 36,709 or 3.8% of the 5-axles or more fleet]
 - very large (>1,000) sample
 - many (60-80%) weigh-out on average
 - half (40-60%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), some (20-40%) VMT is used for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—many (60-80%) have a small annual VMT (<40,000 miles)

- (3-S2) Basic Platform [pop = 122,022 or 12.5% of the 5-axles or more fleet]
 - very large (>1,000) sample
 - half (40-60%) weigh-out on average
 - some (20-40%) never weigh-out
 - some (20-40%) operate mainly (60-80%) intra-state, some (20-40%) operate mainly (60-80%) out-of state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), half (40-60%) of VMT is used for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—mixed

- (3-S2) Livestock Truck [pop = 10,012 or 1.0% of the 5-axles or more fleet]
 - good (250-500) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - some (20-40%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of state
 - some (20-40%) VMT is used for short haul lengths (< 100 miles), some (20-40%) VMT is used for very long haul lengths (> 500 miles)
 - many (60-80%) are narrow (96 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—mixed

- (3-S2) Insulated Non-Refrigerated Van [pop = 9,391 or 1.0% of the 5-axles or more fleet]
 - good (250-500) sample
 - some (20-40%) weigh-out on average
 - some (20-40%) never weigh-out
 - few (<20%) operate mostly (80-100%) intra-state, half (40-60%) operate mostly (80-100%) out-of state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), half (40-60%) of VMT is used for very long haul lengths (> 500 miles)
 - half (40-60%) are narrow (96 inches)
 - half (40-60%) are short (< 65 feet), half (40-60%) are long (> 65 feet)
 - Annual VMT—mixed.

- (3-S2) Insulated Refrigerated Van [pop = 95,224 or 9.8% of the 5-axles or more fleet]
 - very large (>1,000) sample
 - half (40-60%) weigh-out on average
 - few (<20%) never weigh-out
 - few (<20%) operate mostly (80-100%) intra-state, half (40-60%) operate mostly (80-100%) out-of state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), VMT is used mainly (60-80%) for very long haul lengths (> 500 miles)
 - half (40-60%) are narrow (96 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—mixed

- (3-S2) Drop Frame Van [pop = 15,514 or 1.6% of the 5-axles or more fleet]
 - large (500-1,000) sample
 - few (<20%) weigh-out on average
 - many (60-80%) never weigh-out
 - few (<20%) operate mostly (80-100%) intra-state, half (40-60%) operate mostly (80-100%) out-of state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), VMT is used mainly (60-80%) for very long haul lengths (> 500 miles)
 - some (20-40%) are narrow (96 inches), many (60-80%) are wide (102 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—mixed

- (3-S2) Basic Enclosed Van [pop = 253,776 or 26.0% of the 5-axles or more fleet]
 - very large (>1,000) sample
 - few (<20%) weigh-out on average
 - some (20-40%) never weigh-out
 - some (20-40%) operate mostly (80-100%) intra-state, some (20-40%) operate mostly (80-100%) out-of-state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), half (40-60%) of VMT is used for very long haul lengths (> 500 miles)
 - some (20-40%) are narrow (96 inches), many (60-80%) are wide (102 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—mixed

- (3-S2) Pole and Logging Truck [pop = 22,313 or 2.3% of the 5-axles or more fleet]
 - large (500-1,000) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - most (80-100%) VMT is used for short haul lengths (< 100 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—mixed

- (3-S2) Automobile Transport [pop = 13,164 or 1.3% of the 5-axles or more fleet]
 - good (250-500) sample
 - some (20-40%) weigh-out on average
 - few (<20%) never weigh-out
 - few (<20%) operate mostly (80-100%) intr-state, many (60-80%) operate mainly (60-80%) out-of-state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), some (20-40%) VMT is used for very long haul lengths (> 500 miles)
 - some (20-40%) are narrow (96 inches), many (60-80%) are wide (102 inches)
 - most (80-100%) are long (> 65 feet)
 - Annual VMT—half (40-60%) have a medium annual VMT (40,000-80,000 miles)

- (3-S2) Grain Bodies [pop = 32,696 or 3.3% of the 5-axles or more fleet]
 - very large (>1,000) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - many (60-80%) operate mostly (80-100%) intra-state, few (<20%) operate mainly (60-80%) out-of-state
 - VMT is used mainly (60-80%) for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—half (40-60%) have a small annual VMT (< 40,000 miles)

- (3-S2) Dump Truck [pop = 51,300 or 5.3% of the 5-axles or more fleet]
 - very large (>1,000) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state
 - VMT is used mainly (60-80%) for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—half (40-60%) have a small annual VMT (< 40,000 miles)

- (3-S2) Tank Trucks for Liquids or Gases [pop = 61,043 or 6.3% of the 5-axles or more fleet]
 - very large (>1,000) sample
 - most (80-100%) weigh-out on average
 - few (<20%) never weigh-out
 - half (40-60%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—mixed

- (3-S2) Tank Trucks for Dry Bulk [pop = 15,809 or 1.6% of the 5-axes or more fleet]
 - large (500-1,000) sample
 - most (80-100%) weigh-out on average
 - few (<20%) never weigh-out
 - half (40-60%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), VMT is infrequently (<20%) used for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - few (<20%) are long (more than 65 feet)
 - Annual VMT—mixed

7.3.3 Review of 3-S3 Tractor-Semitrailer Combinations - 1992

- (3-S3) Low Boy Platform [pop = 13,430 or 1.4% of the 5-axes or more fleet]
 - large (500-1,000) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - many (60-80%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles)
 - half (40-60%) are narrow (96 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—many (60-80%) have a small annual VMT (< 40,000 miles)

- (3-S3) Basic Platform [pop = 5,788 or 0.6% of the 5-axes or more fleet]
 - small (100-250) sample
 - half (40-60%) weigh-out on average
 - few (<20%) never weigh-out
 - half (40-60%) operate mostly (80-100%) intra-state, few (<20%) operate mainly (60-80%) out-of state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles)
 - many (60-80%) are narrow (96 inches), some (20-40%) are wide (102 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—half (40-60%) have a small annual VMT (< 40,000 miles)

- (3-S3) Insulated Refrigerated Van [pop = 1,772 or 0.2% of the 5-axes or more fleet]
 - very small (<100) sample
 - half (40-60%) weigh-out on average
 - few (<20%) never weigh-out
 - some (20-40%) operate mostly (80-100%) intra-state, half (40-60%) operate mostly (80-100%) out-of state
 - most (80-100%) VMT is used for very long haul lengths (> 500 miles)
 - half (40-60%) are narrow (96 inch)
 - half (40-60%) are short (< 65 feet), half (40-60%) are long (> 65 feet)
 - Annual VMT—half (40-60%) have a large annual VMT (80,000-120,000 miles)

- (3-S3) Basic Enclosed Van [pop = 5,932 or 0.6% of the 5-axles or more fleet]
 - small (100-250) sample
 - few (<20%) weigh-out on average
 - some (20-40%) never weigh-out
 - half (40-60%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of-state
 - some (20-40%) VMT is used for short haul lengths (< 100 miles), half (40-60%) of VMT is used for very long haul lengths (> 500 miles)
 - half (40-60%) are narrow (96 inches), half (40-60%) are wide (102 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—mixed

- (3-S3) Pole and Logging Truck [pop = 2,087 or 0.2% of the 5-axles or more fleet]
 - small (100-250) sample
 - most (80-100%) weigh-out on average
 - few (<20%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of-state
 - VMT is used mainly (60-80%) for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for long haul lengths (> 200 miles)
 - half (40-60%) are narrow (96 inches), half (40-60%) are wide (102 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—half (40-60%) have a medium annual VMT (40,000-80,000 miles)

- (3-S3) Grain Bodies [pop = 1,014 or 0.1% of the 5-axles or more fleet]
 - very small (<100) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - half (40-60%) operate mostly (80-100%) intra-state, few (<20%) operate mainly (60-80%) out-of-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for long haul lengths (> 200 miles)
 - most (80-100%) are narrow (96 inches)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—half (40-60%) have a small annual VMT (< 40,000 miles)

- (3-S3) Dump Truck [pop = 10,542 or 1.1% of the 5-axles or more fleet]
 - good (250-500) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - many (60-80%) operate mostly (80-100%) intra-state, few (<20%) operate mainly (60-80%) out-of-state
 - VMT is used mainly (60-80%) for short haul lengths (< 100 miles)
 - most (80-100%) are narrow (96 inch)
 - most (80-100%) are short (< 65 feet)
 - Annual VMT—half (40-60%) have a small annual VMT (< 40,000 miles)

- (3-S3) Tank Trucks for Liquids or Gases [pop = 3,447 or 0.4% of the 5-axles or more fleet]
 - small (100-250) sample
 - most (80-100%) weigh-out on average
 - few (<20%) never weigh-out
 - many (60-80%) operate mostly (80-100%) intra-state, few (<20%) operate mainly (60-80%) out-of-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inch)
 - many (60-80%) are short (< 65 feet)
 - Annual VMT—half (40-60%) have a medium annual VMT (40,000-80,000 miles)

7.3.4 Review of 2-S1-2 Tractor + Double Trailer Combinations - 1992

- (2-S1-2) Basic Platform [pop = 4,640 or 0.5% of the 5-axles or more fleet]
 - very small (<100) sample
 - many (60-80%) weigh-out on average
 - few (<20%) never weigh-out
 - most (80-100%) operate mostly (80-100%) intra-state, few (<20%) operate out-of state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - most (80-100%) are narrow (96 inches)
 - half (40-60%) are short (< 65 feet), half (40-60%) are long (> 65 feet)
 - Annual VMT—half (40-60%) have a small annual VMT (< 40,000 miles)

- (2-S1-2) Drop Frame Van [pop = 1,611 or 0.2% of the 5-axles or more fleet]
 - very small (<100) sample
 - few (<20%) weigh-out on average
 - most (80-100%) never weigh-out
 - half (40-60%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of state
 - VMT is used infrequently (<20%) for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - few (<20%) are narrow (96 inches), most (80-100%) are wide (102 inches)
 - few (<20%) are short (< 65 feet), most (80-100%) are long (> 65 feet)
 - Annual VMT—half (40-60%) have a medium annual VMT (40,000-80,000 miles)

- (2-S1-2) Basic Enclosed Van [pop = 20,812 or 2.1% of the 5-axles or more fleet]
 - good (250-500) sample
 - few (<20%) weigh-out on average
 - some (20-40%) never weigh-out
 - some (20-40%) operate mostly (80-100%) intra-state, few (<20%) operate mostly (80-100%) out-of-state
 - some (20-40%) VMT is used for short haul lengths (< 100 miles), half (40-60%) of VMT is used for very long haul lengths (> 500 miles)
 - few (<20%) are narrow (96 inches), most (80-100%) are wide (102 inches)
 - few (<20%) are short (< 65 feet), most (80-100%) are long (> 65 feet)
 - Annual VMT—mixed

- (2-S1-2) Grain Bodies [pop = 946 or 0.1% of the 5-axles or more fleet]
 - very small (<100) sample
 - most (80-100%) weigh-out on average
 - few (<20%) never weigh-out
 - some (20-40%) operate mostly (80-100%) intra-state, some (20-40%) operate mainly (60-80%) out-of-state
 - half (40-60%) of VMT is used for short haul lengths (< 100 miles), VMT is used infrequently (<20%) for very long haul lengths (> 500 miles)
 - most (80-100%) (80-100%) are narrow (96 inches)
 - many (60-80%) are short (< 65 feet), some (20-40%) are long (> 65 feet)
 - Annual VMT—mixed

7.4 Summary of the Weight, Dimension and Operating Characteristics by Truck Configuration/Body Type

For the 1992 5-axles or more fleet, configuration/body type combinations described above, Tables 7.4-1 and 7.4-2 illustrate the degree of weigh-out operations—at maximum loaded weight and average loaded weight, respectively.

- 3-S2 trucks typically weigh-out except for the Basic Enclosed Van and Drop Frame Van
- 3-S3 trucks typically weigh-out at average loaded weight
- 3-S2 trucks reflect the entire range of weights
- Basic Enclosed Van, the most favored trailer type, rarely weighs-out.

Table 7.4-3 illustrates the degree of intra-state travel in 1992 by the configuration/body type combinations described in Section 7.3.

Table 7.4-1

Theme Matrix for Percent of Fleet That Weighs-Out - "Maximum" Loaded Weight (Empty Weight + "Maximum" Payload) by Vehicle Class/Body Type Combination

Body Type	Vehicle Configuration			
	3+2	3-S2	3-S3	2-S1-2
Low Boy Platform				*
Basic Platform				
Livestock Truck	*		*	*
Insulated Non-Refrigerated	*		*	*
Insulated Refrigerated	*			*
Drop Frame Van	*		*	
Basic Enclosed Van				
Pole, Logging etc. Truck				*
Automobile Transporter	*		*	*
Grain Body				
Dump Truck				*
Tank Truck, Liquids or Gas				*
Tank Truck, Dry Bulk	*		*	*

* Indicates very small sample size for the cell.

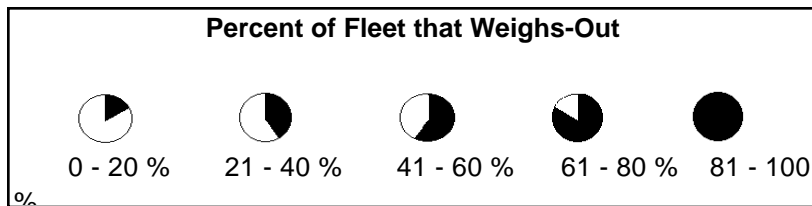


Table 7.4-2

**Theme Matrix for Percent of Fleet
That Weighs-Out - "Average" Loaded Weight
(Empty Weight + "Average" Payload)
by Vehicle Class/Body Type Combination**

Body Type	Vehicle Configuration			
	3+2	3-S2	3-S3	2-S1-2
Low Boy Platform				*
Basic Platform				
Livestock Truck	*		*	*
Insulated Non-Refrigerated	*		*	*
Insulated Refrigerated	*			*
Drop Frame Van	*		*	
Basic Enclosed Van				
Pole, Logging etc. Truck				*
Automobile Transporter	*		*	*
Grain Body				
Dump Truck				*
Tank Truck, Liquids or Gas				*
Tank Truck, Dry Bulk	*		*	*

* Indicates very small sample size for the cell.

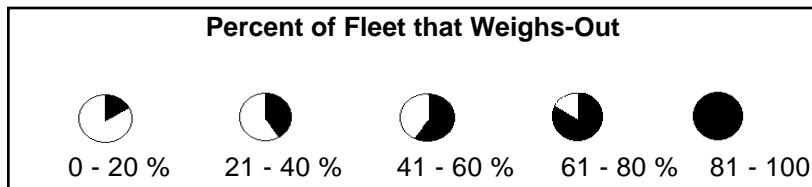
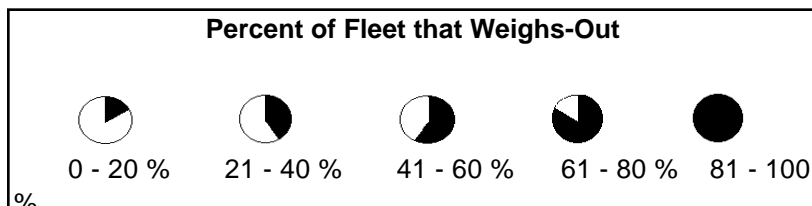


Table 7.4-3

Theme Matrix for Percent of Fleet That "Mostly" Travel Intra-State by Vehicle Class/Body Type Combination

Body Type	Vehicle Configuration			
	3+2	3-S2	3-S3	2-S1-2
Low Boy Platform	●	◐	◑	*
Basic Platform	●	◐	◑	●
Livestock Truck	*	◐	*	*
Insulated Non-Refrigerated	*	◐	*	*
Insulated Refrigerated	*	◐	◑	*
Drop Frame Van	*	◐	*	◑
Basic Enclosed Van	◑	◑	◑	◑
Pole, Logging etc. Truck	●	●	●	*
Automobile Transporter	*	◐	*	*
Grain Body	●	◑	◑	◑
Dump Truck	●	●	◑	*
Tank Truck, Liquids or Gas	●	◐	◑	*
Tank Truck, Dry Bulk	*	◐	*	*

* Indicates very small sample size for the cell.



7.5 Observations on Changes between 1987 and 1992 for Particular Truck Configurations and Body Types

7.5.1 Changes in Trailer Widths by 1992

As of 1992, the take-up of the 102 inch width trailer possibility afforded by the 1982 STAA by different body types/truck configurations is summarized below and in Table 7.5.1-1. Figure 7.5.1-1 compares, for 1987 and 1992, the percentage of specific truck configuration/body type combinations that have trailer widths equal to or greater than 102 inches. Figure 7.5.1-2 compares the regional percent of 3S2s with trailer widths of 102 inches or more for certain body types for 1992.

■ VERY LOW TAKE-UP OF 102 INCH TRAILER WIDTH (less than 10%) - 1992

- pole and logging trucks—for 3-S2
- grain bodies—all configurations
- dump trucks—3+2, 3-S2, 3-S3
- tank trucks for liquids or gas—3+2, 3-S2, 3-S3
- tank trucks for dry bulk—3-S2.

These truck categories are dominated by 96 inch width trailers (more than 90%). While their take-up of the 102-inch width has been low, most of them have experienced some increase in the take-up since 1987.

■ SOME TAKE-UP OF 102 INCH WIDTH (between 10 and 50%) - 1992

- low boy platforms—all configurations
- basic platform—all configurations
- livestock truck—3-S2
- pole and logging trucks—3+2, 3-S2, 3-S3

■ HIGH TAKE-UP OF 102 INCH WIDTH (more than 50%) - 1992

- insulated non-refrigerated van—3-S2
- insulated refrigerated van—3-S2
- drop frame vans—3-S2 and 2-S1-2
- basic enclosed vans—all configurations
- automobile transporter—3-S2

There has been a substantial increase in the take-up of 102 inch trailer widths for most of these truck categories between 1987 and 1992.

Table 7.5.1-1
Comparison of Percentage of Truck Fleet With Trailer Widths of 96" and 102"
by Vehicle Class/Body Type Combination (Rounded to nearest 5%)

Body Type	Vehicle Configuration									
	3+2		3-S2		3-S3		2-S1-2			
	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987
Low Boy Platform	80% 96" 15% 102"	85% 96" 5% 102"	80% 96" 15% 102"	80% 96" 10% 102"	60% 96" 30% 102"	85% 96" 10% 102"	*	*	*	*
Basic Platform	90% 96" 5% 102"	70% 96" 5% 102"	80% 96" 20% 102"	85% 96" 10% 102"	75% 96" 20% 102"	90% 96" 5% 102"	85% 96" 15% 102"	90% 96" 5% 102"	85% 96" 15% 102"	80% 96" 15% 102"
Livestock Truck	*	*	65% 96" 35% 102"	70% 96" 20% 102"	*	*	*	*	*	*
Insulated Non-Refrigerated	*	*	40% 96" 55% 102"	55% 96" 45% 102"						
Insulated Refrigerated	*	*	45% 96" 55% 102"	60% 96" 35% 102"	50% 96" 50% 102"	55% 96" 45% 102"				
Drop Frame Van	*	*	35% 96" 65% 102"	50% 96" 50% 102"	*	*	20% 96" 80% 102"	30% 96" 70% 102"	20% 96" 80% 102"	30% 96" 70% 102"
Basic Enclosed Van	50% 96" 50% 102"	70% 96" 30% 102"	35% 96" 65% 102"	55% 96" 40% 102"	45% 96" 55% 102"	60% 96" 35% 102"	10% 96" 90% 102"	20% 96" 80% 102"	10% 96" 90% 102"	20% 96" 80% 102"
Pole, Logging etc. Truck	70% 96" 30% 102"	80% 96"	90% 96" 10% 102"	85% 96" 5% 102"	60% 96" 40% 102"	70% 96" 25% 102"	*	*	*	*
Automobile Transporter	*	*	25% 96" 75% 102"	80% 96" 10% 102"	*	*	*	*	*	*
Grain Body	80% 96" 10% 102"	90% 96"	90% 96" 10% 102"	80% 96" 5% 102"	95% 96" 5% 102"	90% 96" 5% 102"	90% 96" 10% 102"	90% 96" 10% 102"	90% 96" 10% 102"	85% 96"
Dump Truck	90% 96" 5% 102"	85% 96"	90% 96" 10% 102"	80% 96" 5% 102"	90% 96" 10% 102"	80% 96" 5% 102"	*	*	*	*
Tank Truck, Liquids or Gas	95% 96"	90% 96"	90% 96" 10% 102"	80% 96" 5% 102"	90% 96" 10% 102"	85% 96" 5% 102"	*	*	*	*
Tank Truck, Dry Bulk	*	*	90% 96" 5% 102"	80% 96" 10% 102"	*	*	*	*	*	*

* Indicates very small sample size for the cell.

Note: Total percentage for a year may not add to 100% because there were two additional categories in the survey question, > 102" or Other

Figure 7.5.1-1

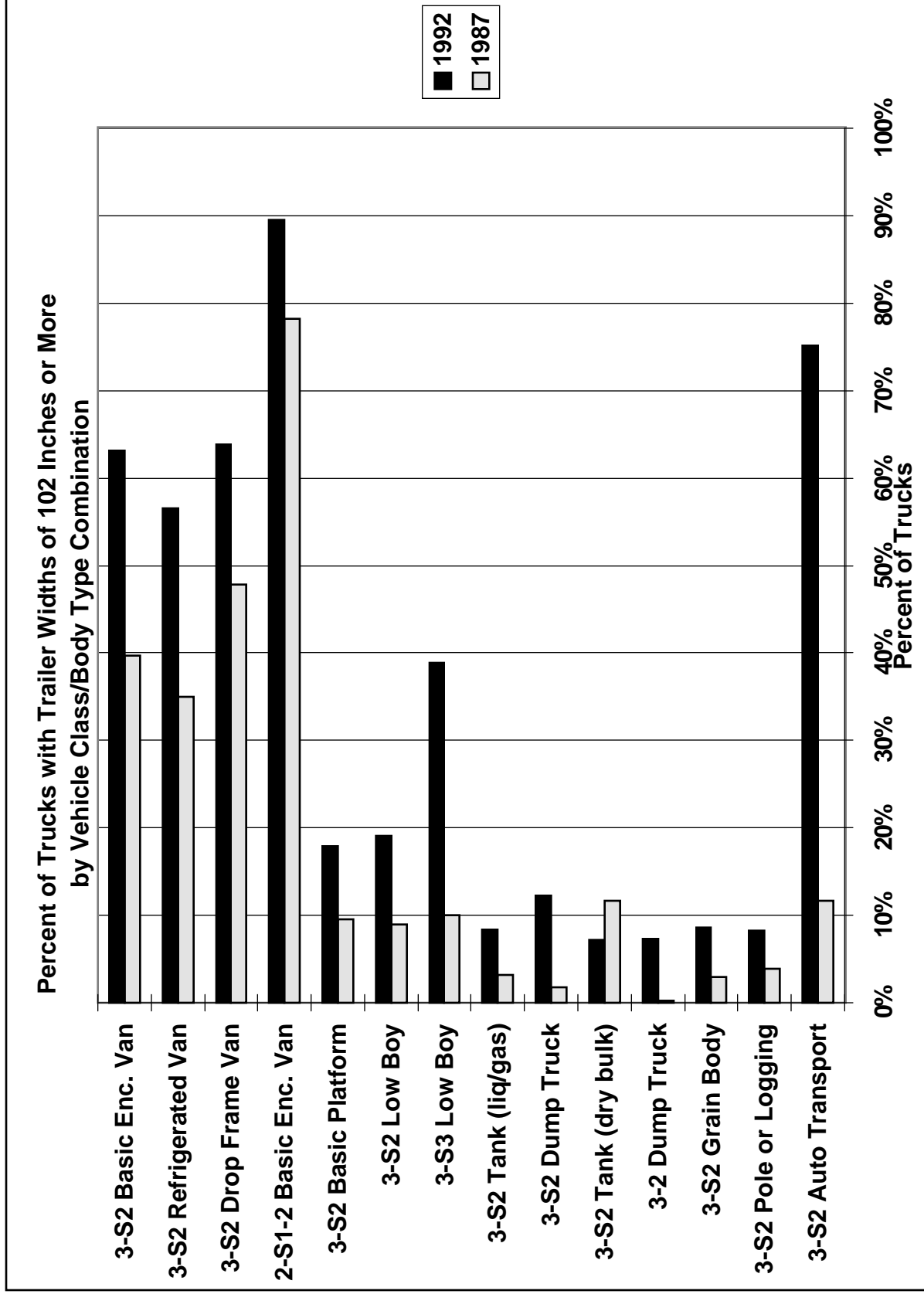
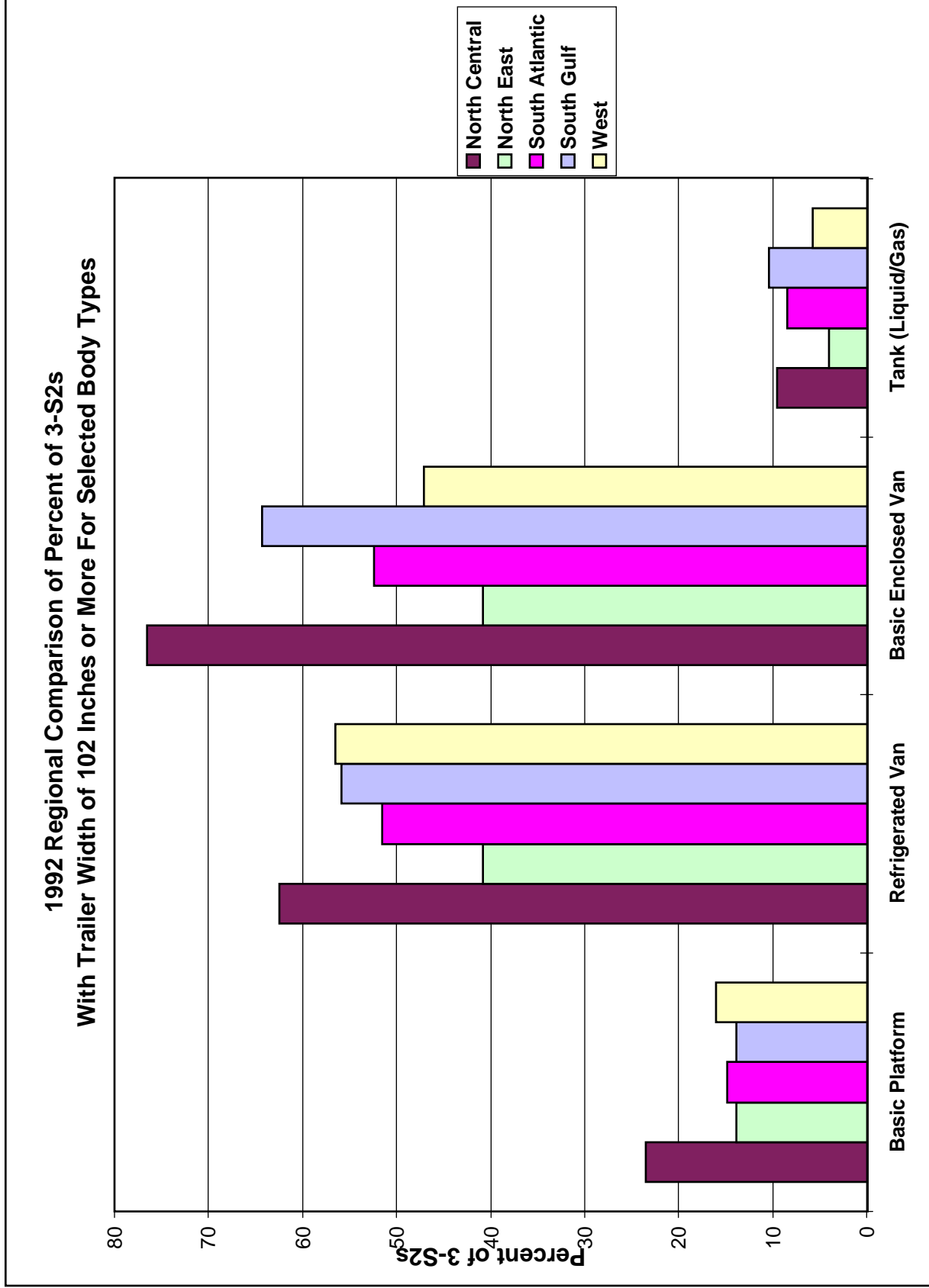


Figure 7.5.1-2



7.5.2 Changes in Truck Lengths by 1992

As of 1992, the take-up of longer trucks (greater than 65 feet in total length—being taken as a surrogate for the use of a 53+ foot trailer in a 3-S2 or 3-S3 tractor-semitrailer combination, 2-28+ foot trailers in a 2-S1-2 double combination, or the equivalent trailer capacity in a 3 + 2 truck + trailer combination) is summarized below and in Table 7.5.2-1. Figure 7.5.2-1 compares, for 1987 and 1992, the percentage of specific truck configuration/body type combinations that have overall vehicle lengths of 65 feet or more. Figure 7.5.2-2 compares the regional percent of 3-S2s with overall lengths of 65 feet or more for certain body types.

■ VERY LOW TAKE-UP OF LONGER TRUCKS (less than 10%) - 1992

- grain bodies—3 + 2, 3-S2
- dump trucks—3+2, 3-S2, 3-S3
- tank trucks for liquids or gas—3-S2
- tank trucks for dry bulk—3-S2
- pole and logging trucks—3-S2

These truck categories are dominated by short combinations. There has been very little (5%), if any, change in their lengths since 1987.

■ SOME TAKE-UP OF LONGER TRUCKS (between 10 and 50%) - 1992

- low boy platforms—3+2, 3-S2, 3-S3
- basic platform—3 + 2, 3-S2, 3-S3
- livestock truck—3-S2
- insulated non-refrigerated van—3-S2
- insulated refrigerated van—3-S2, 3-S3
- drop frame van—3-S2
- basic enclosed van—3 + 2, 3-S2, 3-S3
- pole and logging trucks—for 3 + 2 and 3-S3
- tank trucks for liquid and gas—3 + 2 and 3-S3

Most of these truck categories have experienced some or a substantial increase (5 - 15%) in the proportion of longer trucks since 1987, except livestock trucks (no change) and tank trucks for liquids and gas (slight decrease).

■ HIGH TAKE-UP OF LONGER TRUCKS (more than 50%) - 1992

- basic platform—2-S1-2
- drop frame vans—2-S1-2
- basic enclosed vans—2-S1-2
- automobile transporter—3-S2

Table 7.5.2-1
Comparison of Percentage of Truck Fleet 65 Feet or More in Length
 by Vehicle Class/Body Type Combination (Rounded to nearest 5%)

Body Type	Vehicle Configuration							
	3+2		3-S2		3-S3		2-S1-2	
	1992	1987	1992	1987	1992	1987	1992	1987
Low Boy Platform	15% > 65'	0% > 65'	15% > 65'	10% > 65'	35% > 65'	25% > 65'	*	*
Basic Platform	15% > 65'	15% > 65'	20% > 65'	15% > 65'	20% > 65'	15% > 65'	55% > 65'	80% > 65'
Livestock Truck	*	*	25% > 65'	25% > 65'	*	*	*	*
Insulated Non-Refrigerated	*	*	40% > 65'	30% > 65'	*	*	*	*
Insulated Refrigerated	*	*	35% > 65'	25% > 65'	45% > 65'	15% > 65'	*	*
Drop Frame Van	*	*	30% > 65'	20% > 65'	*	*	90% > 65'	90% > 65'
Basic Enclosed Van	25% > 65'	20% > 65'	30% > 65'	20% > 65'	35% > 65'	20% > 65'	85% > 65'	70% > 65'
Pole, Logging etc. Truck	15% > 65'	10% > 65'	10% > 65'	10% > 65'	20% > 65'	15% > 65'	*	*
Automobile Transporter	*	*	90% > 65'	65% > 65'	*	*	*	*
Grain Body	5% > 65'	5% > 65'	10% > 65'	5% > 65'	15% > 65'	15% > 65'	35% > 65'	60% > 65'
Dump Truck	5% > 65'	5% > 65'	5% > 65'	0% > 65'	5% > 65'	0% > 65'	*	*
Tank Truck, Liquids or Gas	20% > 65'	30% > 65'	5% > 65'	5% > 65'	25% > 65'	15% > 65'	*	*
Tank Truck, Dry Bulk	*	*	10% > 65'	5% > 65'	*	*	*	*

* Indicates very small sample size for the cell.

Figure 7.5.2-1

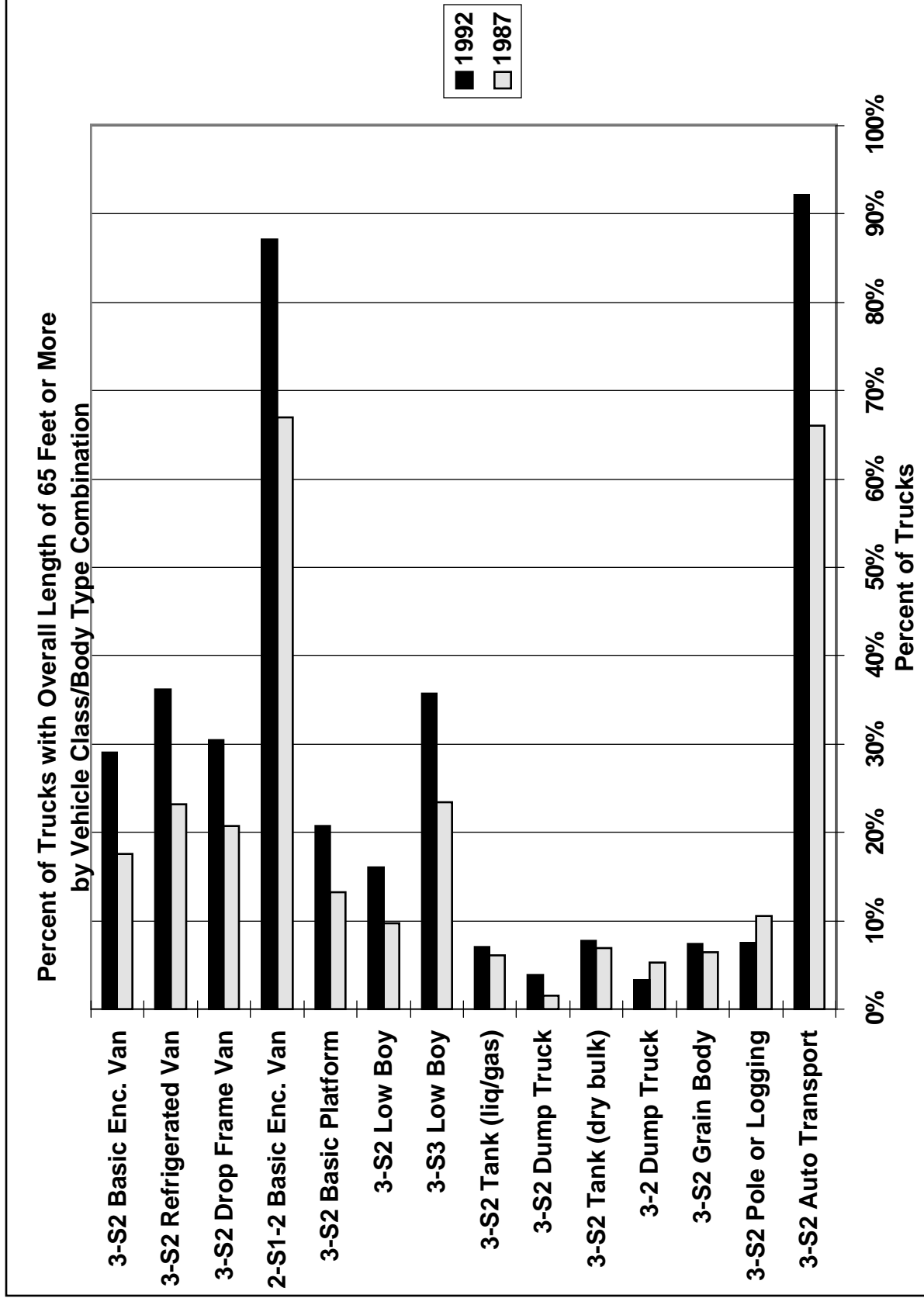
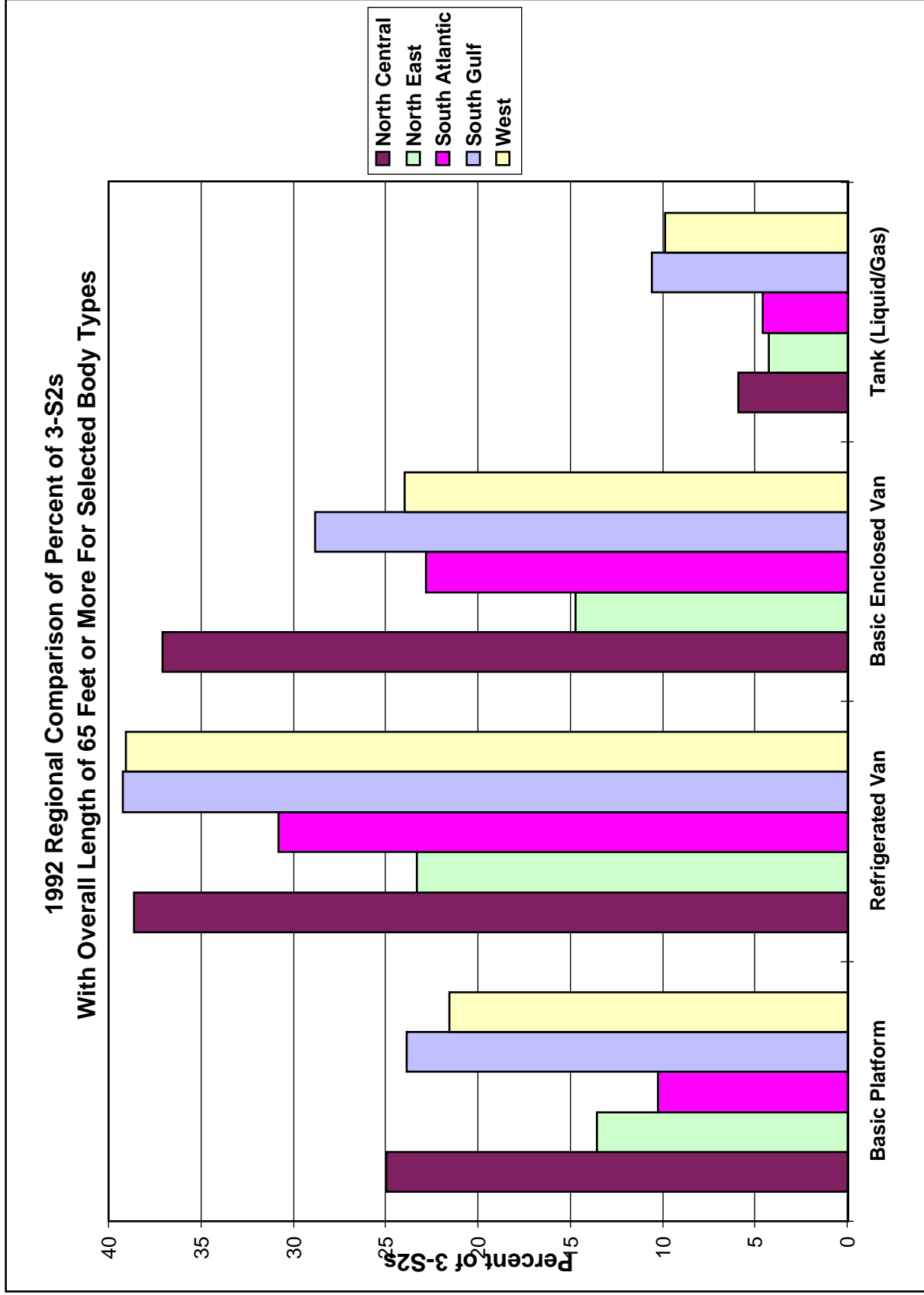


Figure 7.5.2-2



7.5.3 Changes in Truck Weights

■ MEAN TARE (EMPTY) WEIGHT

For all 3-S2s irrespective of body type, the mean tare weight, the weight of the vehicle without payload, has increased by anywhere from 600 lbs. to 1,600 lbs. (by 2 to 5 percent) between 1987 and 1992 as shown in Table 7.5.3-1. Figure 7.5.3-1 graphically compares, for 1987 and 1992, the mean tare weight of specific truck configuration/body type combinations. Figure 7.5.3-2 compares regionally the mean empty weights of 3-S2s for selected body types.

The tare weight of most of the other truck categories has also increased. For example, for all 3-S3s, except pole and logging trucks, the average tare weight has increased by anywhere from 1,000 lbs. to 3,800 lbs. (by 3 to 12 percent) between 1987 and 1992.

■ MEAN “AVERAGE” LOADED WEIGHT

Mean “average” loaded weight is the statistical mean of the weight reported on the surveys as “average.” Between 1987 and 1992 dump trucks and tank trucks have decreased in mean “average” loaded weight for each truck configuration. Also, all 3-S2 body types, except the auto transporter, have stayed about the same or decreased by up to 2,500 lbs. (nearly 4 percent) between 1987 and 1992, as shown in Table 7.5.3-2. Figure 7.5.3-3 compares, for 1987 and 1992, the mean average loaded weight of specific truck configuration/body type combinations. Figure 7.5.3-4 compares, regionally, the mean “average” loaded weights of 3-S2s for selected body types.

■ MEAN MAXIMUM LOADED WEIGHT (TARE + MAXIMUM PAYLOAD)

There are no obvious patterns of change in mean maximum loaded weight, the statistical mean of the weight reported on the survey as “maximum” for the particular truck, between 1987 and 1992 as shown in Table 7.5.3-3.

■ MEAN MAXIMUM PAYLOAD WEIGHT

For all 3-S2s irrespective of body type, the mean maximum payload weight, the statistical mean of the difference between the empty and maximum weights for a specific truck as reported in the TIUS, has decreased by as much as 3,300 lbs.—but more typically 400 lbs. to 1,600 lbs. (by 1 to 3 percent)—between 1987 and 1992 as shown in Table 7.5.3-4. Figure 7.5.3-5 compares, for 1987 and 1992, the mean maximum payload weight of specific truck configuration/body type combinations.

Most of the 3+2 body types of interest also decreased in mean maximum payload weight as did several of the 3-S3 body types.

■ MEAN “AVERAGE” PAYLOAD WEIGHT

For all 3-S2s except for the drop frame van body type, the mean “average” payload weight, the statistical mean of the difference between the empty and “average” weights for a specific truck as reported in the TIUS, has decreased by anywhere from 900 lbs. to 3,800 lbs. (by 1 to 10 percent) between 1987 and 1992 as shown in Table 7.5.3-5. Figure 7.5.3-6 compares, for 1987 and 1992, the mean “average” payload weight of specific truck configuration/body type combinations.

The mean “average” payload of most other truck categories has also decreased. For example, for all 3-S3s except pole and logging and low boy trucks, the mean “average” payload has decreased by as much as 5,000 lbs.

The mean “average” payload of all of the 3+2 body types of interest has experienced a decrease from 1,200 lbs. to 8,000 lbs. (by 2 to 18 percent) between 1987 and 1992.

Table 7.5.3-1

Comparison of Mean Tare (Empty) Weights
by Vehicle Class/Body Type Combination (in kips)

Body Type	Vehicle Configuration									
	3+2		3-S2		3-S3		2-S1-2			
	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987
Low Boy Platform	29.97 1.93	28.04	30.53 1.01	29.52	36.10 3.52	32.58	*	*	*	*
Basic Platform	28.28 0.90	27.38	29.90 0.89	29.01	34.55 3.78	30.77	*	*	27.46 0.09	27.37
Livestock Truck	*	*	30.46 0.88	29.58	*	*	*	*	*	*
Insulated Non-Refrigerated	*	*	31.65 1.67	29.98	*	*	*	*	*	*
Insulated Refrigerated	*	*	33.26 1.00	32.26	33.29 2.75	30.54	*	*	*	*
Drop Frame Van	*	*	34.60 1.40	33.20	*	*	*	*	35.21 0.94	34.27
Basic Enclosed Van	29.55 0.29	29.26	30.49 1.17	29.32	31.53 2.19	29.34	*	*	29.32 0.24	29.08
Pole, Logging etc. Truck	27.52 1.53	25.99	27.55 0.64	26.91	32.71 -0.55	33.26	*	*	*	*
Automobile Transporter	*	*	41.16 8.17	32.99	*	*	*	*	*	*
Grain Body	26.06 -1.05	27.11	27.44 0.79	26.65	30.72 2.50	28.22	*	*	23.89 -0.93	24.82
Dump Truck	28.35 0.16	28.19	30.29 0.92	29.37	32.62 1.23	31.39	*	*	*	*
Tank Truck, Liquids or Gas	28.22 0.56	27.66	30.09 1.21	28.88	33.36 1.01	32.35	*	*	*	*
Tank Truck, Dry Bulk	*	*	28.51 0.59	27.92	*	*	*	*	*	*

Note: The change in kips from 1987 to 1992 is listed below each 1992 entry.
* Indicates very small sample size for the cell.

Figure 7.5.3-1

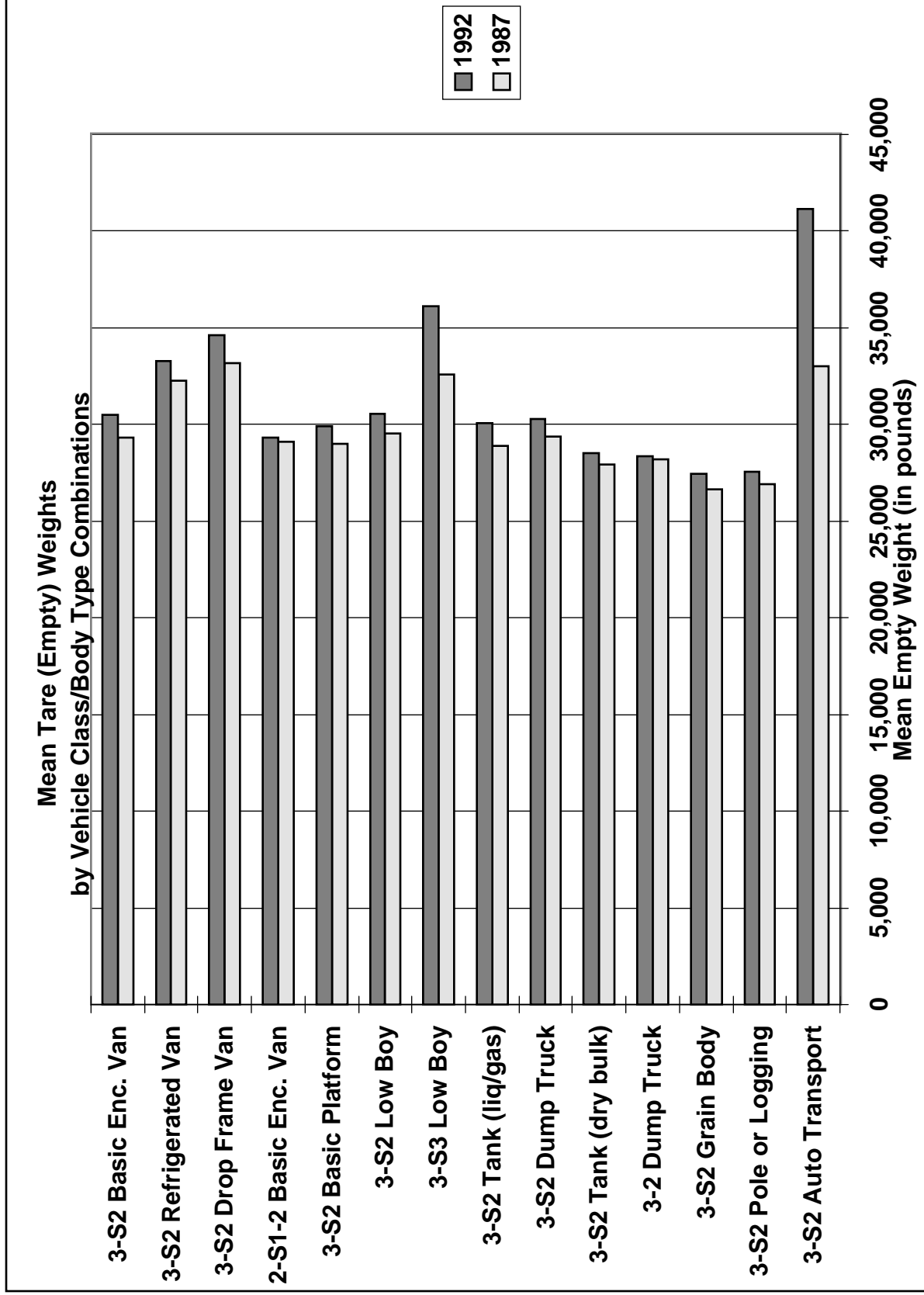


Figure 7.5.3-2

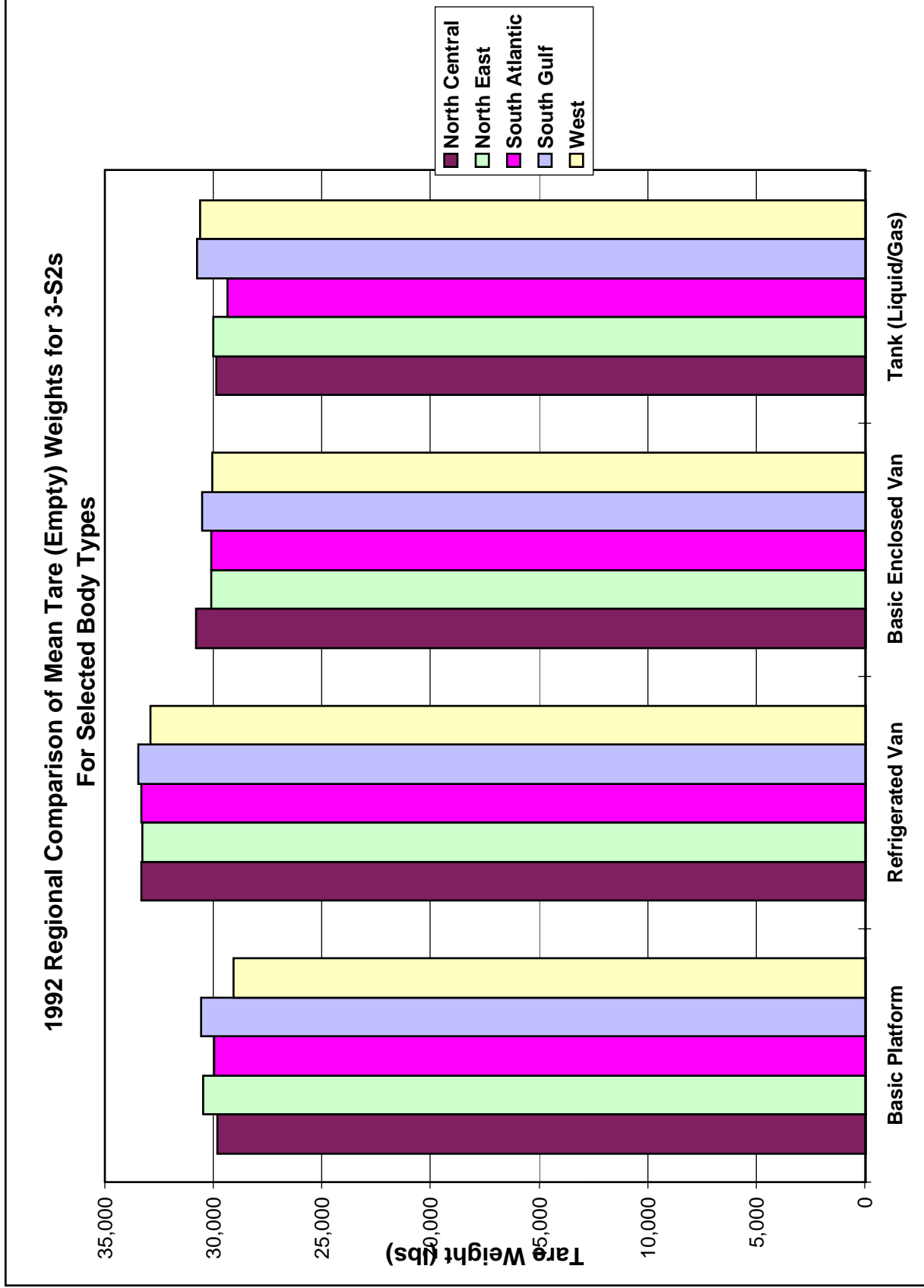


Table 7.5.3-2

Comparison of Mean "Average" Loaded Weights (tare weight + "average" payload weight) by Vehicle Class/Body Type Combination (in kips)

Body Type	Vehicle Configuration							
	3+2		3-S2		3-S3		2-S1-2	
	1992	1987	1992	1987	1992	1987	1992	1987
Low Boy Platform	55.58 -1.58	57.16	62.13 -2.55	64.68	78.14 1.79	76.35	*	*
Basic Platform	58.22 2.04	56.18	68.57 -1.55	70.12	74.57 1.47	73.10	64.47 -4.08	68.55
Livestock Truck	*	*	70.53 -2.47	73.00	*	*	*	*
Insulated Non-Refrigerated	*	*	69.24 0.10	69.14	*	*	*	*
Insulated Refrigerated	*	*	71.41 -1.10	72.51	72.34 2.93	69.41		
Drop Frame Van	*	*	57.55 -0.33	57.88	*	*	61.16 -5.58	66.74
Basic Enclosed Van	60.34 2.20	58.14	65.55 -0.05	65.60	64.32 -0.17	64.49	69.04 0.26	68.78
Pole, Logging etc. Truck	72.51 -3.10	75.61	75.17 -0.51	75.68	84.32 -1.28	85.60	*	*
Automobile Transporter	*	*	72.97 3.55	69.42	*	*	*	*
Grain Body	63.34 1.14	62.20	74.57 0.21	74.36	77.61 -2.78	80.39	80.14 3.36	76.78
Dump Truck	59.46 -4.56	64.02	72.16 -1.96	74.12	77.74 -2.27	80.01	*	*
Tank Truck, Liquids or Gas	72.39 -2.11	74.50	74.15 -1.29	75.44	84.39 -3.90	88.29	*	*
Tank Truck, Dry Bulk	*	*	74.83 -1.69	76.52	*	*	*	*

Note: The change in kips from 1987 to 1992 is listed below each 1992 entry.

* Indicates very small sample size for the cell.

Figure 7.5.3-3

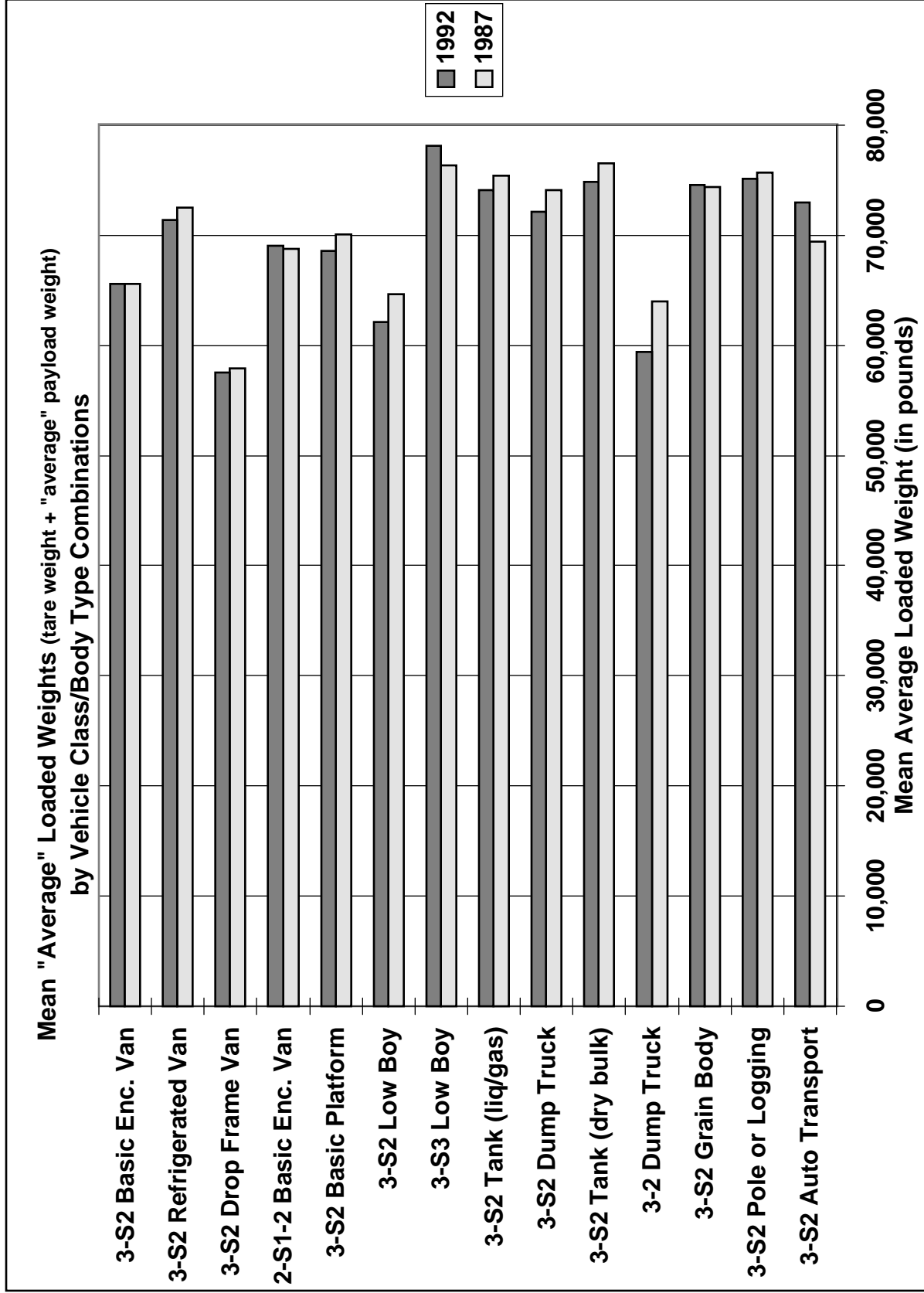


Figure 7.5.3-4

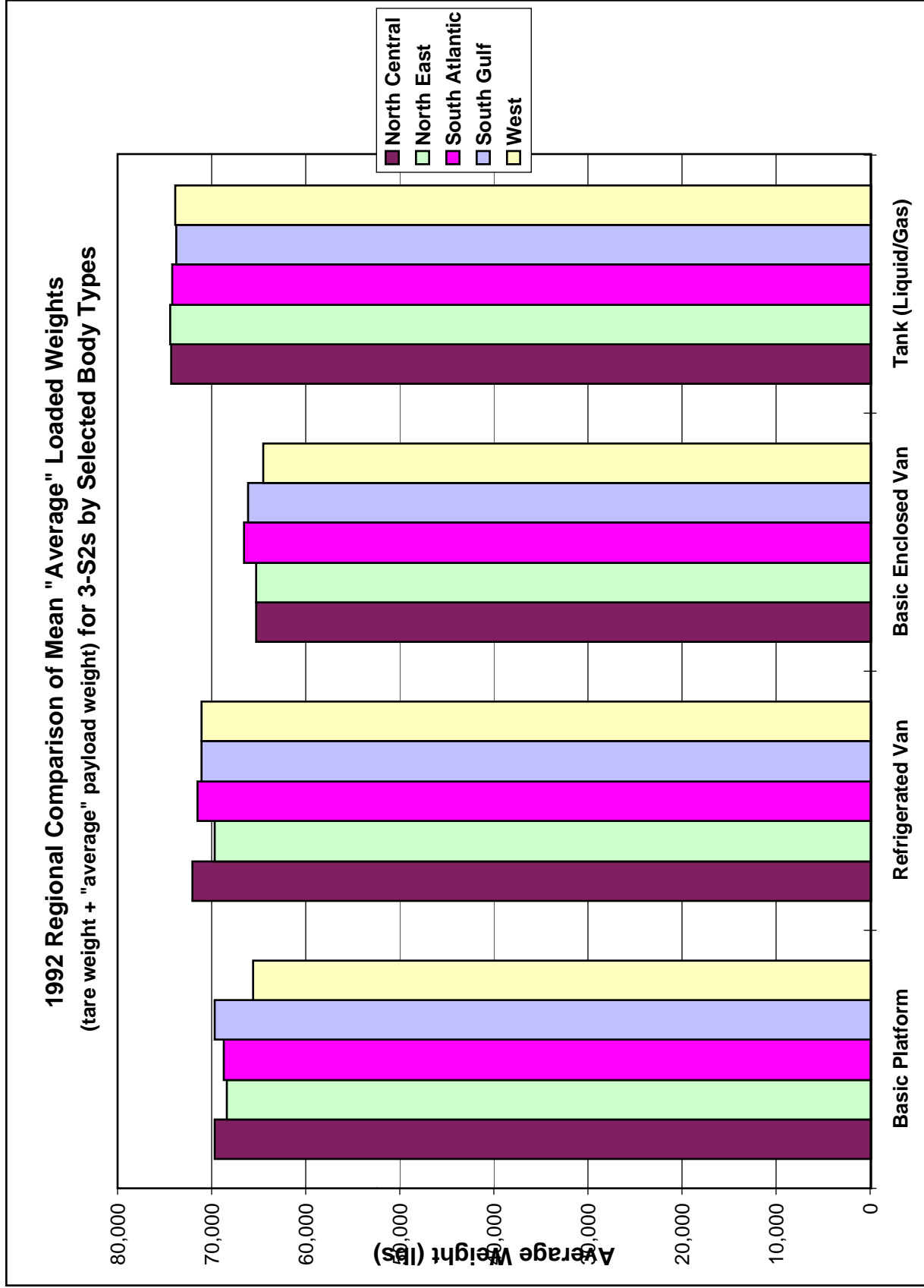


Table 7.5.3-3
Comparison of Mean Maximum Loaded Weights (tare weight + "maximum" payload weight)
by Vehicle Class/Body Type Combination (in kips)

Body Type	Vehicle Configuration							
	3+2		3-S2		3-S3		2-S1-2	
	1992	1987	1992	1987	1992	1987	1992	1987
Low Boy Platform	67.76 1.09	66.67	73.64 -2.63	76.27	95.03 1.84	93.19	*	*
Basic Platform	64.97 2.09	62.88	77.53 -0.03	77.56	87.61 4.76	82.85	79.06 2.17	76.89
Livestock Truck	*	*	78.84 0.52	78.32	*	*	*	*
Insulated Non-Refrigerated	*	*	78.29 1.39	76.90	*	*	*	*
Insulated Refrigerated	*	*	78.92 0.34	78.58	80.49 -4.28	84.77	*	*
Drop Frame Van	*	*	69.04 -0.47	69.51	*	*	73.41 -3.46	76.87
Basic Enclosed Van	70.15 -6.81	76.96	76.99 0.70	76.29	80.27 4.01	76.26	77.26 0.02	77.24
Pole, Logging etc. Truck	77.57 -1.40	78.97	79.83 -0.67	80.50	92.20 -10.90	103.10	*	*
Automobile Transporter	*	*	78.65 4.32	74.33	*	*	*	*
Grain Body	73.08 3.30	69.78	79.16 0.20	78.96	82.45 -1.85	84.30	81.08 0.86	80.22
Dump Truck	67.26 -2.37	69.63	77.45 -0.74	78.19	85.54 0.91	84.63	*	*
Tank Truck, Liquids or Gas	77.46 0.23	77.23	79.44 0.52	78.92	92.88 -0.29	93.17	*	*
Tank Truck, Dry Bulk	*	*	79.93 -0.65	80.58	*	*	*	*

Note: The change in kips from 1987 to 1992 is listed below each 1992 entry.

* Indicates very small sample size for the cell.

Table 7.5.3-4

**Comparison of Mean Maximum Payload Weight
by Vehicle Class/Body Type Combination (in kips)**

Body Type	Vehicle Configuration									
	3+2		3-S2		3-S3		2-S1-2			
	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987
Low Boy Platform	40.89 -0.51	41.40	44.87 -3.34	48.21	61.50 0.18	61.32	*	*	*	*
Basic Platform	39.86 -6.81	46.67	48.58 -0.52	49.10	56.29 0.79	55.50	*	*	51.58 2.38	49.20
Livestock Truck	*	*	48.77 -0.73	49.50	*	*	*	*	*	*
Insulated Non-Refrigerated	*	*	47.04 -0.26	47.30	*	*	*	*	*	*
Insulated Refrigerated	*	*	45.91 -0.63	46.54	47.41 -7.56	54.97	*	*	*	*
Drop Frame Van	*	*	34.40 -1.13	35.53	*	*	*	*	38.28 -4.15	42.43
Basic Enclosed Van	43.96 -6.41	50.37	47.10 -0.65	47.75	50.94 2.14	48.80	*	*	48.31 0.94	47.37
Pole, Logging etc. Truck	51.17 -2.10	53.27	52.52 -1.59	54.11	58.96 -12.67	71.63	*	*	*	*
Automobile Transporter	*	*	38.10 -2.60	40.70	*	*	*	*	*	*
Grain Body	52.90 0.56	52.34	51.97 -0.71	52.68	51.84 -2.70	54.54	*	*	57.30 1.86	55.44
Dump Truck	43.82 -2.22	46.04	47.65 -1.07	48.72	53.02 1.77	51.25	*	*	*	*
Tank Truck, Liquids or Gas	52.05 -0.32	52.37	49.86 -0.43	50.29	60.49 1.82	58.67	*	*	*	*
Tank Truck, Dry Bulk	*	*	51.72 -0.64	52.36	*	*	*	*	*	*

Note: The change in kips from 1987 to 1992 is listed below each 1992 entry.

* Indicates very small sample size for the cell.

Figure 7.5.3-5

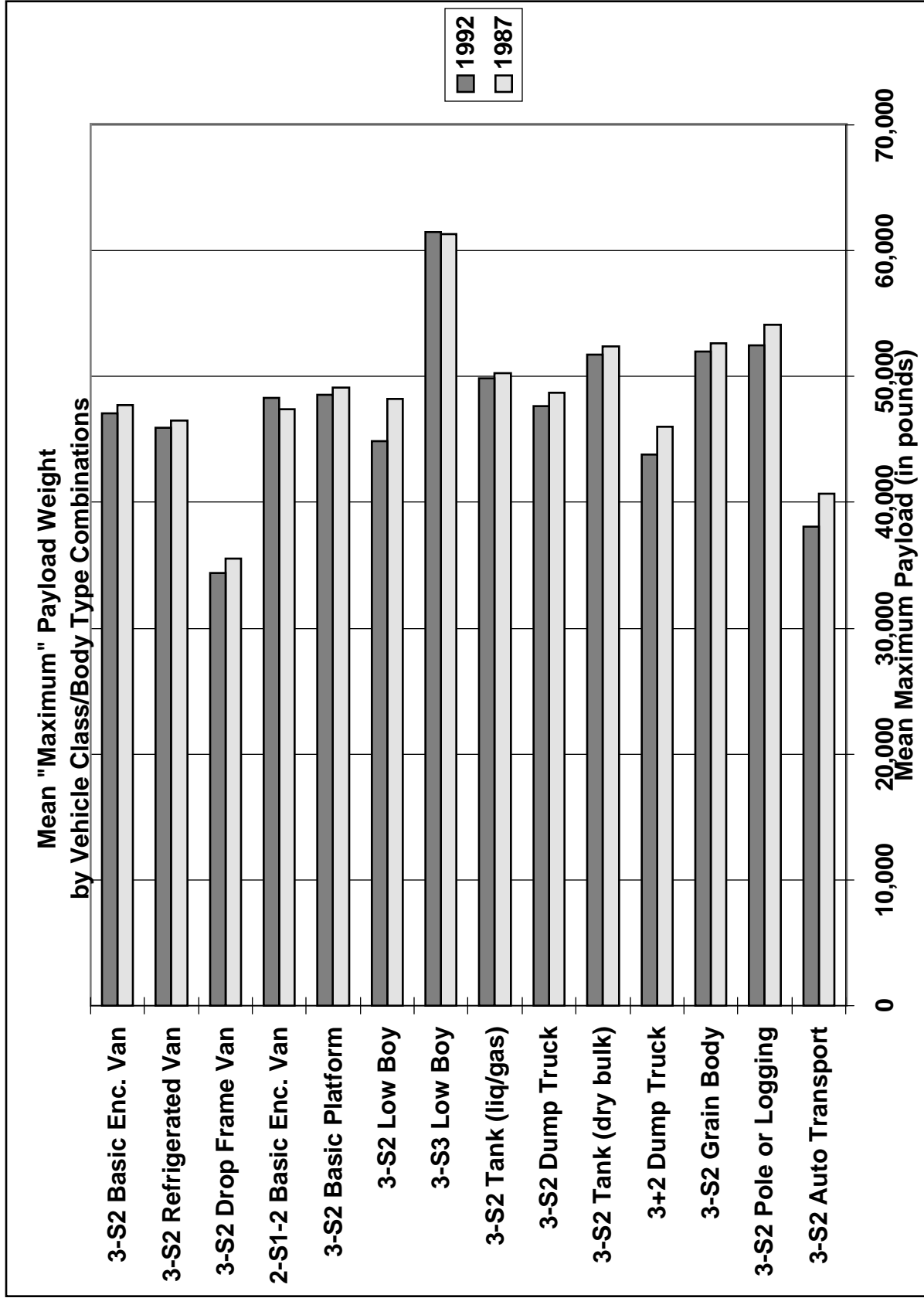


Table 7.5.3-5

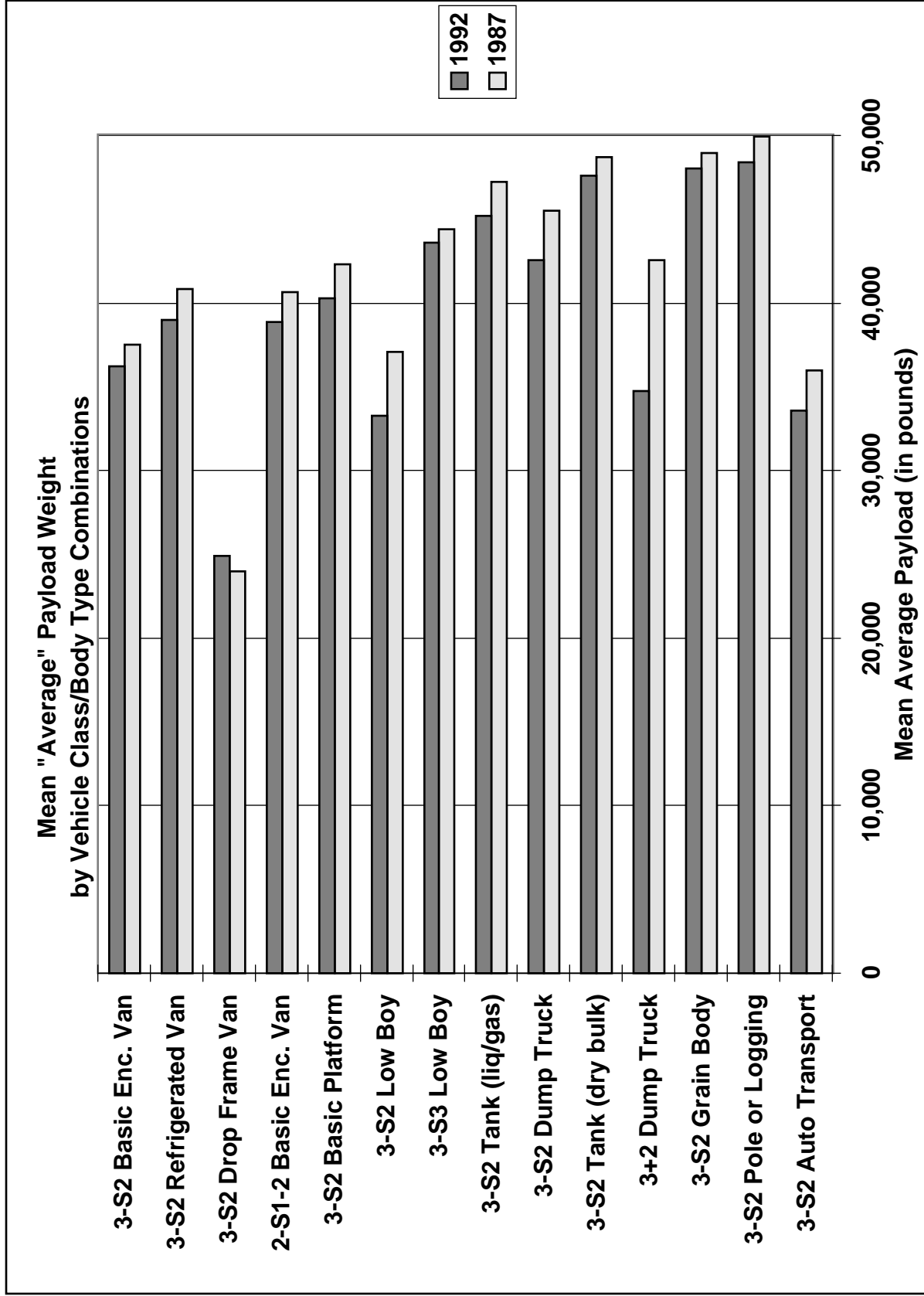
Comparison of Mean "Average" Payload Weight
by Vehicle Class/Body Type Combination (in kips)

Body Type	Vehicle Configuration									
	3+2		3-S2		3-S3		2-S1-2			
	1992	1987	1992	1987	1992	1987	1992	1987		
Low Boy Platform	28.22 -5.41	33.63	33.29 -3.81	37.10	43.58 2.25	41.33	*	*	*	
Basic Platform	33.21 -8.33	41.54	40.27 -2.03	42.30	43.58 -2.60	46.18	45.33 5.00	40.33		
Livestock Truck	*	*	40.88 -4.35	45.23	*	*	*	*	*	
Insulated Non-Refrigerated	*	*	37.50 -2.97	40.47	*	*	*	*	*	
Insulated Refrigerated	*	*	38.99 -1.85	40.84	38.90 -5.68	44.58	*	*	*	
Drop Frame Van	*	*	24.91 0.91	24.00	*	*	28.98 -3.55	32.53		
Basic Enclosed Van	34.89 -2.11	37.00	36.20 -1.33	37.53	39.81 1.72	38.09	38.89 -1.75	40.64		
Pole, Logging etc. Truck	45.85 -4.81	50.66	48.41 -1.50	49.91	51.70 -0.73	52.43	*	*	*	
Automobile Transporter	*	*	33.59 -2.41	36.00	*	*	*	*	*	
Grain Body	48.97 -1.24	50.21	48.03 -0.92	48.95	47.45 -4.94	52.39	56.38 4.49	51.89		
Dump Truck	34.76 -7.82	42.58	42.58 -2.95	45.53	46.37 -1.94	48.31	*	*	*	
Tank Truck, Liquids or Gas	47.98 -3.09	51.07	45.20 -2.06	47.26	53.44 -2.02	55.46	*	*	*	
Tank Truck, Dry Bulk	*	*	47.62 -1.06	48.68	*	*	*	*	*	

Note: The change in kips from 1987 to 1992 is listed below each 1992 entry.

* Indicates very small sample size for the cell.

Figure 7.5.3-6



8.0 Analysis of Vehicle Miles of Travel of the 5-Axles or More Truck Fleet

This section provides a comparison of the mean vehicle miles of travel (VMT) for 5-axles or more trucks.

8.1 Analysis Structure

The vehicle miles of travel (VMT) analysis evaluated the mean VMT for 5-axles or more trucks

- 8 vehicle groups (See Section 2.2)

- 11 major body type groups (collapsed from the 26 detailed body types) :
 - platform (which consists of low boys and basic platform types)
 - van (which includes multi-stop, basic enclosed, drop frame, insulated non-refrigerated, insulated refrigerated, and open top types)
 - auto transport
 - dump truck
 - grain bodies
 - garbage truck
 - livestock truck
 - pole, logging truck
 - tank truck, dry bulk
 - tank truck, liquids or gas
 - other (includes platforms with devices permanently mounted, beverage truck, utility truck, winch or crane truck, wrecker, service truck, yard tractor, oilfield truck, concrete mixer, and other)

8.2 Mean Annual VMT by Major Truck Configuration

Figure 8.2-1 shows a comparison of the mean annual VMT for the 8 major vehicle groups for 1992 and 1987. Table 8.2-1 provides a summary of the means for the vehicle groups, the 11 body types, and various vehicle group/body type combinations. Caution should be used in interpreting this data because of the small samples analyzed for given cases. Table 8.2-2 summarizes the number of sample records used to generate the different cell means. Statisticians have a basic rule that if the sample size is less than 30, no statements can be made. We also feel that caution should be used in interpreting means based on a sample size of less than 100 given the large population this sample represents.

NATIONWIDE - 1992

- The mean annual VMT for the 5-axles or more fleet was 64,000 miles per truck.
- Vehicles with the largest mean annual VMT in the fleet are STAA doubles and tractor + triple trailer combinations which have mean annual VMTs greater than 80,000 miles per truck.
- Vehicles with the smallest mean annual VMT in the fleet are truck + trailer combinations with 5-axles and with 6-axles or more which have mean annual VMT less than 35,000 miles per truck.
- 3-S2s have an mean annual VMT of 68,000 miles per truck. 4-S1/S2s have an mean annual VMT of 61,000 miles per truck. Tridem axle semitrailers have an mean annual VMT of 48,000 miles per truck.
- Doubles at 6-axles or more have an mean annual VMT of 70,702 miles per truck.

CHANGES BETWEEN 1987 AND 1992

- The mean annual VMT for the 5-axles or more fleet increased by 3,000 miles from 61,000 miles/truck in 1987 to 64,000 miles/truck in 1992.
- The mean annual VMT increased for truck + trailers with 6-axles or more, 3-S2s, 4-S1/S2, and double trailer combinations with 6-axles or more.
- The mean annual VMT for truck+trailers with 5-axles, tridem axle semitrailers, and STAA doubles did not change.
- The mean annual VMT for triples appears to have decreased. However, given that only a small sample of triples were surveyed (22 in 1987 and 38 in 1992), this may be a statistical anomaly.

8.3 Annual VMT by Major Truck Configuration by Body Type

NATIONWIDE - 1992

- Vans have the largest mean annual VMT (82,000 miles/truck). Tank trucks for liquid or gases have the next largest mean annual VMT (70,000 miles/truck), and tank trucks hauling bulk goods has a slightly lower mean VMT (68,000 miles/truck). Dump trucks and grain bodies have low mean VMT (<40,000 miles/truck).

CHANGES BETWEEN 1987 AND 1992

Figure 8.3-1 compares, for 1992 and 1987, the mean annual VMT for particular body type/truck configurations. Figure 8.3-2 compares regionally the mean VMT for 3-S2s for selected body types.

- The mean annual VMT for most body types did not vary significantly between the years.
- Tank trucks carrying liquid or gases experienced a 7,000 miles/truck increase, and vans experienced a 4,000 miles/truck increase.
- Several body types experienced a decrease in their mean VMT. Livestock trucks decreased by 5,000 miles/truck. Garbage trucks decreased by 3,000 miles/truck. Grain bodies decreased by 4,000 miles/truck.

Figure 8.2-1

**Comparison of Mean Annual VMT,
by Vehicle Group and by Year**

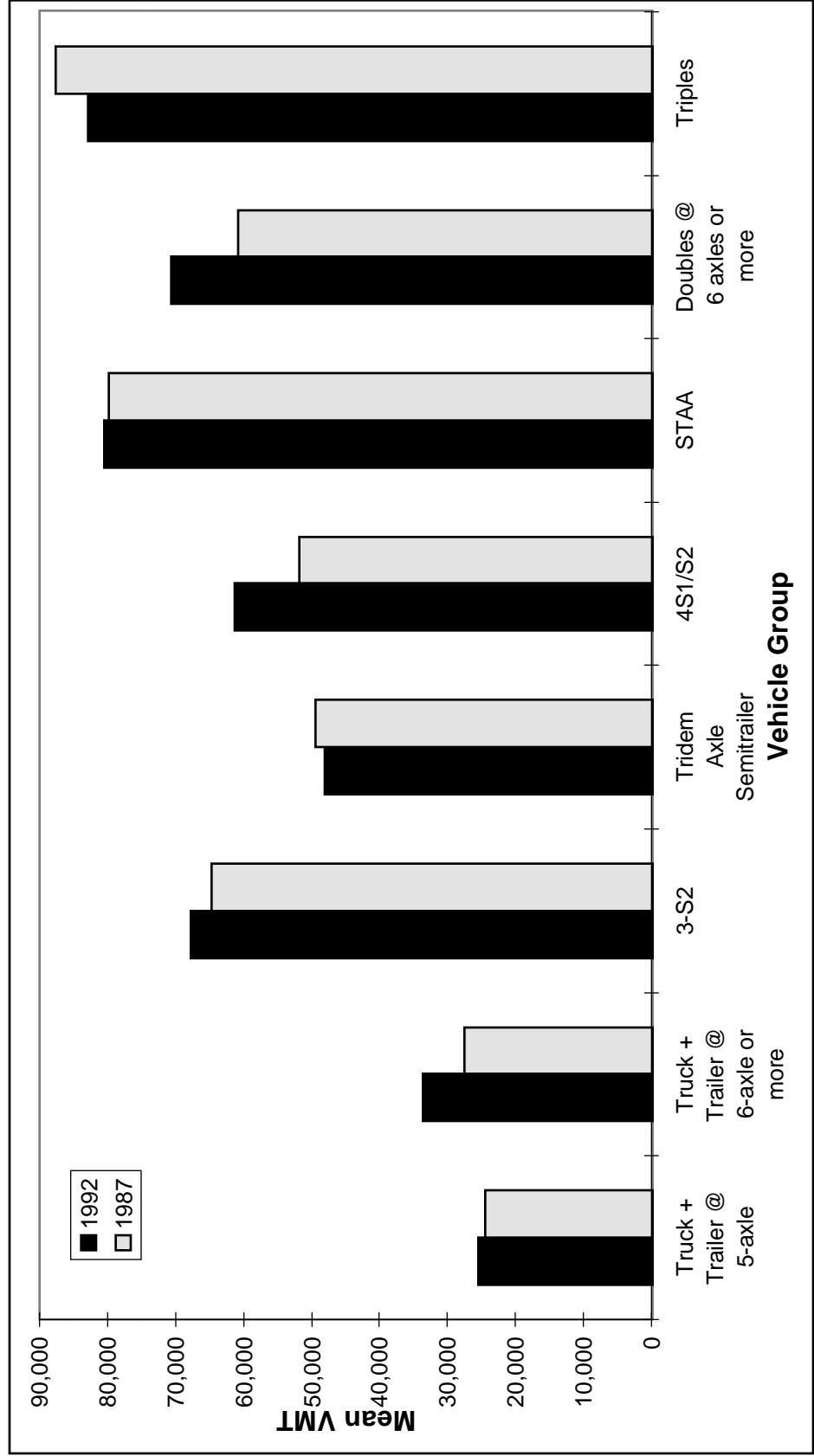
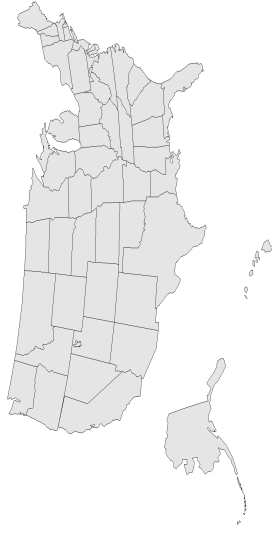


Table 8.2-1
Mean Annual VMT for Major Body Type, by Vehicle Group

1992 Truck Fleet

Major Body Type	Truck + Trailer @ 5- axle	Truck+Trailer @ 6-axes or more	3-S2	Tridem Axle Semitrailer	4S1/S2	STAA	Doubles @ 6 axes or more	Triples	Total Mean
Platform	19,865	22,944	51,551	33,652	54,056	55,788	57,453	73,358	47,255
Van	47,051	27,219	82,453	69,667	79,869	90,586	92,264	85,978	82,378
Auto Transport	59,852	-	56,169	61,897	69,314	-	-	-	56,758
Dump Truck	22,242	30,691	44,619	49,840	46,612	53,163	50,930	58,296	40,313
Grain Bodies	10,744	19,043	39,243	36,789	40,630	59,535	55,501	-	37,472
Garbage Truck	20,875	18,477	55,775	49,500	52,150	-	-	-	47,334
Livestock Truck	15,340	2,347	65,152	39,347	51,934	77,082	132,947	-	60,869
Pole, Logging Truck	46,232	38,062	50,101	51,940	58,018	-	65,114	-	49,895
Tank Truck, Dry Bulk	28,782	21,000	69,480	72,859	75,169	59,115	66,596	-	68,380
Tank Truck, Liquid or Gas	56,583	77,858	71,481	64,645	59,415	27,843	71,367	55,459	70,291
Other	18,586	19,628	34,946	45,973	45,958	13,894	61,864	-	34,214
Total Mean	25,538	33,553	67,747	48,048	61,236	80,410	70,702	82,905	63,868

1987 Truck Fleet

Major Body Type	Truck + Trailer @ 5- axle	Truck+Trailer @ 6-axes or more	3-S2	Tridem Axle Semitrailer	4S1/S2	STAA	Doubles @ 6 axes or more	Triples	Total Mean
Platform	15,865	28,499	52,910	39,223	39,734	69,910	51,865	24,257	47,604
Van	48,583	50,862	78,093	75,455	70,750	86,958	65,434	108,481	77,898
Auto Transport	50,721	10,000	56,784	42,081	74,659	-	-	-	56,938
Dump Truck	20,556	23,386	47,323	47,916	41,307	38,013	45,401	115,691	40,115
Grain Bodies	14,794	5,967	42,490	47,051	39,244	58,114	60,408	-	41,858
Garbage Truck	30,450	-	47,116	65,278	-	-	100,000	-	49,970
Livestock Truck	31,194	6,875	72,847	32,142	53,862	-	80,000	-	66,008
Pole, Logging Truck	44,646	54,843	48,881	47,802	51,970	-	20,000	-	48,308
Tank Truck, Dry Bulk	47,008	17,039	68,454	46,754	5,905	103,603	75,032	-	67,624
Tank Truck, Liquid or Gas	76,079	52,801	63,033	61,503	63,600	44,411	66,783	-	63,236
Other	15,089	17,739	32,257	37,011	35,122	33,950	75,000	-	27,775
Total Mean	24,406	27,539	64,726	49,364	51,837	79,828	60,720	87,599	60,548

Note: Some means are based on very small sample data. Accompanying table gives sample size.

Table 8.2-2

Sample Sizes for Body Type, by Vehicle Group

1992 Truck Fleet

Major Body Type	Truck + Trailer @ 5-axle	Truck + Trailer @ 6-axle +	3-S2	Tridem Axle Semitrailer	4S1/S2	STAA	Doubles @ 6 axles or more	Triples	Total
Platform	324	66	6,332	1,002	269	73	191	8	8,265
Van	99	12	13,868	456	288	391	285	34	15,433
Auto Transport	10	0	262	9	10	0	0	0	291
Dump Truck	556	142	2,059	564	141	21	184	4	3,671
Grain Bodies	79	16	1,304	48	61	19	74	0	1,601
Garbage Truck	6	2	95	16	6	0	0	0	125
Livestock Truck	17	2	480	22	30	4	10	0	565
Pole, Logging Truck	177	44	961	163	59	0	15	0	1,419
Tank Truck, Dry Bulk	13	1	534	33	20	28	79	0	708
Tank Truck, Liquid or Gas	102	52	2,350	217	77	2	128	2	2,930
Other	119	18	674	236	26	4	9	0	1,086
Total	1,502	355	28,919	2,766	987	542	975	48	36,094

1987 Truck Fleet

Major Body Type	Truck + Trailer @ 5-axle	Truck + Trailer @ 6-axle +	3-S2	Tridem Axle Semitrailer	4S1/S2	STAA	Doubles @ 6 axles or more	Triples	Total
Platform	342	57	4,691	653	178	47	38	7	6,013
Van	86	16	7,808	306	128	250	71	15	8,680
Auto Transport	7	1	232	4	8	0	0	0	252
Dump Truck	354	79	1,320	259	63	21	42	3	2,141
Grain Bodies	40	13	726	36	19	22	27	0	883
Garbage Truck	2	0	31	4	0	0	1	0	38
Livestock Truck	21	3	333	9	8	0	2	0	376
Pole, Logging Truck	142	23	579	58	28	0	1	0	831
Tank Truck, Dry Bulk	7	3	332	18	4	10	17	0	391
Tank Truck, Liquid or Gas	66	33	1,480	88	41	11	6	0	1,725
Other	106	36	371	76	30	2	1	0	622
Total	1,173	264	17,903	1,511	507	363	206	25	21,952

Figure 8.3-1

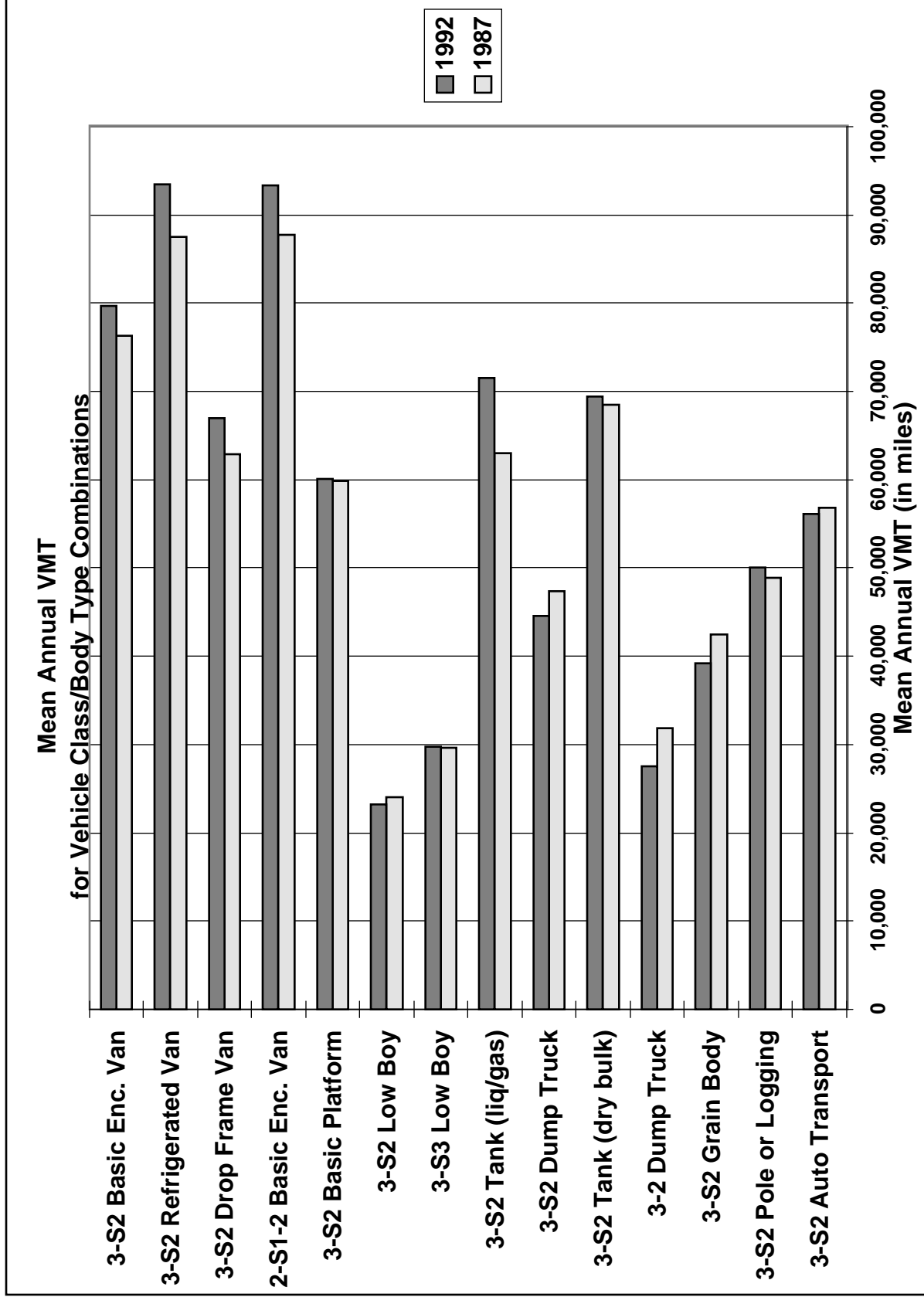
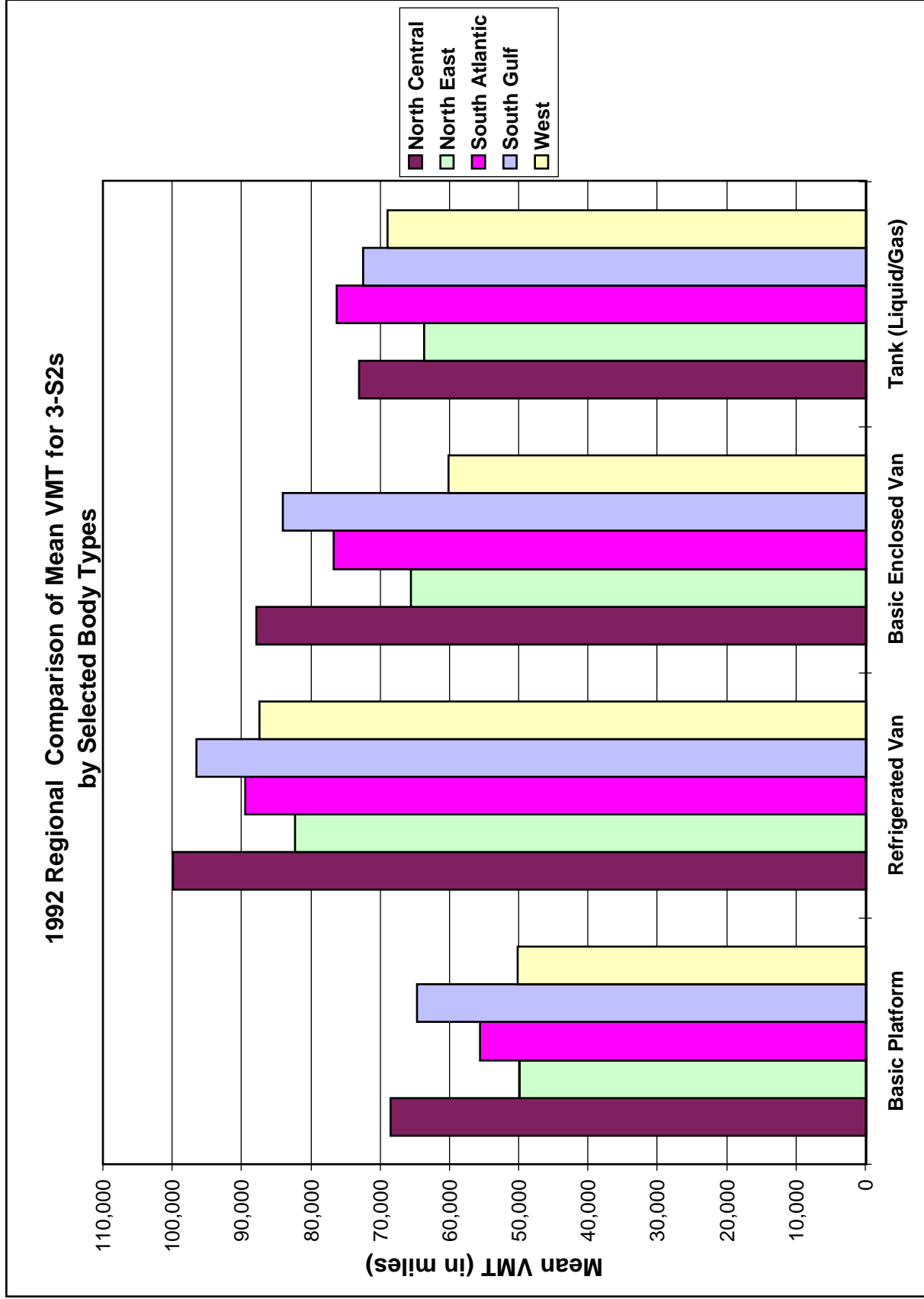


Figure 8.3-2



Appendix A

**Regional Distributions of
The Total Truck Fleet**

1992 Truck Fleet
Traffic Region: North Central

<i>Straight Truck</i>				
State	2-axle	3-axle	4-axle	Total
Illinois	112,353	25,084	1,640	139,077
Indiana	63,404	8,982	3,026	75,412
Iowa	46,923	15,759	1,143	63,825
Kansas	71,105	17,254	746	89,105
Michigan	60,135	8,251	5,896	74,281
Minnesota	51,583	19,267	2,942	73,792
Missouri	54,536	15,110	922	70,568
Nebraska	30,010	9,998	741	40,749
North Dakota	31,708	12,725	914	45,347
Ohio	103,380	19,414	3,707	126,501
South Dakota	20,510	5,474	507	26,491
Wisconsin	44,399	10,406	7,508	62,313
Total	690,046	167,723	29,693	887,462

<i>Truck + Trailer</i>							
State	2+2	2+3	3+2	3+3	*4+2	*4+3	Total
Illinois	8,593	0	2,463	0	111	0	11,167
Indiana	2,930	221	250	63	156	156	3,775
Iowa	1,611	513	662	30	30	30	2,875
Kansas	1,744	259	864	116	0	46	3,029
Michigan	3,326	1,772	895	138	522	886	7,539
Minnesota	2,935	184	1,209	374	279	98	5,080
Missouri	3,374	521	1,024	174	171	0	5,263
Nebraska	951	107	436	145	164	38	1,840
North Dakota	627	0	405	40	97	11	1,181
Ohio	5,391	344	521	0	200	0	6,456
South Dakota	831	77	83	48	130	41	1,210
Wisconsin	2,948	490	789	47	167	0	4,442
Total	35,261	4,488	9,600	1,173	2,027	1,307	53,856

<i>Tractor + Semitrailer</i>										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Illinois	4,453	9,733	222	438	93,996	3,322	0	2,224	222	114,611
Indiana	1,536	6,794	282	156	31,989	719	0	813	125	42,415
Iowa	1,130	2,121	202	89	23,605	1,014	0	722	266	29,149
Kansas	1,473	2,142	0	139	16,613	580	0	463	93	21,503
Michigan	2,880	3,784	310	138	20,043	6,698	0	413	619	34,884
Minnesota	962	2,670	47	169	15,788	1,906	0	505	427	22,475
Missouri	1,239	2,993	221	145	22,155	759	0	569	25	28,107
Nebraska	411	1,513	94	76	13,638	707	0	354	283	17,075
North Dakota	292	274	97	51	5,245	359	29	131	211	6,689
Ohio	2,173	6,462	501	196	35,586	2,911	0	1,031	157	49,018
South Dakota	275	387	56	50	4,997	279	68	215	83	6,410
Wisconsin	848	1,769	258	118	21,759	1,060	24	754	141	26,729
Total	17,672	40,640	2,290	1,765	305,414	20,314	121	8,195	2,653	399,064

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-4	*Other 9-axle	*Other 10-axle	Total
Illinois	5,964	556	438	0	0	0	0	0	0	0	6,957
Indiana	408	0	0	31	0	0	0	31	0	0	471
Iowa	237	30	0	0	0	0	0	0	30	0	296
Kansas	417	93	0	23	23	0	0	0	0	0	556
Michigan	275	69	0	206	34	103	69	1,858	0	413	3,027
Minnesota	95	119	0	0	0	0	24	0	0	0	237
Missouri	120	171	0	0	0	0	0	0	0	0	291
Nebraska	38	19	0	38	0	0	0	0	0	0	94
North Dakota	11	11	68	148	0	0	11	23	0	0	273
Ohio	439	78	0	0	0	0	0	39	0	0	557
South Dakota	25	33	0	66	0	25	0	8	0	68	225
Wisconsin	24	47	0	24	0	0	0	0	0	0	94
Total	8,052	1,225	506	536	58	128	104	1,959	30	481	13,079

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Illinois	0	0	0	0
Indiana	0	0	0	0
Iowa	0	0	0	0
Kansas	0	0	0	0
Michigan	0	0	0	0
Minnesota	0	71	0	71
Missouri	0	0	0	0
Nebraska	0	0	0	0
North Dakota	0	0	0	0
Ohio	0	0	0	0
South Dakota	8	0	0	8
Wisconsin	0	0	0	0
Total	8	71	0	79

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet
Traffic Region: North East

<i>Straight Truck</i>				
State	2-axle	3-axle	4-axle	Total
Connecticut	30,027	2,839	2,204	35,070
Maine	17,015	4,881	903	22,799
Massachusetts	33,002	6,090	817	39,909
New Hampshire	15,445	3,017	597	19,058
Rhode Island	6,838	1,100	167	8,104
Vermont	6,812	1,489	184	8,485
New Jersey	58,272	8,322	1,494	68,088
New York	108,568	19,171	2,580	130,319
Pennsylvania	121,617	16,728	12,148	150,493
Total	397,595	63,637	21,093	482,325

<i>Truck + Trailer</i>							
State	2+2	2+3	3+2	3+3	*4+2	*4+3	Total
Connecticut	571	231	175	0	58	7	1,042
Maine	405	225	297	60	21	0	1,007
Massachusetts	1,351	269	245	0	72	0	1,936
New Hampshire	771	142	144	51	16	0	1,124
Rhode Island	320	51	56	8	12	0	446
Vermont	364	91	112	2	33	0	602
New Jersey	2,059	429	712	0	0	0	3,199
New York	4,915	968	652	167	84	29	6,815
Pennsylvania	3,020	348	1,095	405	291	0	5,158
Total	13,776	2,753	3,487	693	586	36	21,330

<i>Tractor + Semitrailer</i>										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Connecticut	381	816	36	48	2,564	154	0	83	76	4,158
Maine	118	517	31	18	3,535	1,112	0	98	57	5,487
Massachusetts	614	2,487	35	23	6,696	228	0	331	0	10,414
New Hampshire	63	707	26	95	2,158	325	0	131	42	3,547
Rhode Island	85	297	36	32	1,183	54	0	48	6	1,740
Vermont	40	154	15	0	1,299	152	0	32	10	1,701
New Jersey	1,036	4,744	170	202	19,391	1,087	0	747	58	27,435
New York	1,864	4,818	58	283	17,232	1,609	0	549	87	26,498
Pennsylvania	1,603	8,490	285	114	36,180	2,168	0	2,339	342	51,520
Total	5,804	23,030	691	815	90,239	6,888	0	4,357	678	132,501

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-4	*Other 9-axle	*Other 10-axle	Total
Connecticut	283	0	0	7	0	0	0	0	0	0	290
Maine	18	0	0	0	0	0	0	0	0	0	18
Massachusetts	128	0	0	0	0	0	0	0	0	0	128
New Hampshire	31	0	0	21	0	0	0	0	0	0	52
Rhode Island	0	0	0	0	0	0	0	0	0	0	0
Vermont	15	0	0	2	0	0	0	0	0	0	17
New Jersey	202	86	29	58	0	0	0	0	0	0	375
New York	113	0	58	514	0	29	29	58	0	0	800
Pennsylvania	627	57	0	0	0	0	0	0	0	0	684
Total	1,417	144	87	602	0	29	29	58	0	0	2,365

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Connecticut	0	0	7	7
Maine	0	0	0	0
Massachusetts	0	0	0	0
New Hampshire	0	0	26	26
Rhode Island	0	0	0	0
Vermont	0	0	0	0
New Jersey	0	0	0	0
New York	0	0	0	0
Pennsylvania	0	0	0	0
Total	0	0	33	33

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet
Traffic Region: South Atlantic

<i>Straight Truck</i>				
State	2-axle	3-axle	4-axle	Total
Delaware	8,409	1,788	213	10,410
District of Columbia	1,570	96	26	1,692
Florida	86,607	16,341	1,684	104,632
Georgia	64,400	8,072	76	72,548
Maryland	51,669	8,291	329	60,290
North Carolina	70,274	8,541	2,088	80,903
South Carolina	35,080	4,199	838	40,117
Virginia	53,907	8,986	1,138	64,031
West Virginia	18,425	3,788	1,082	23,295
Total	390,340	60,103	7,474	457,918

<i>Truck + Trailer</i>							
State	2+2	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Delaware	329	115	72	4	0	0	521
District of Columbia	11	0	0	0	0	0	11
Florida	7,582	896	473	41	83	0	9,074
Georgia	2,655	263	87	0	0	0	3,004
Maryland	2,205	522	288	12	12	0	3,039
North Carolina	3,549	793	684	0	36	36	5,098
South Carolina	2,111	625	510	26	39	0	3,311
Virginia	4,253	171	367	13	0	0	4,804
West Virginia	589	325	106	49	24	0	1,093
Total	23,284	3,711	2,586	145	194	36	29,956

<i>Tractor + Semitrailer</i>										
State	2-S1	2-S2	2-*S3	3-S1	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Delaware	139	548	53	38	2,465	88	8	201	12	3,553
District of Columbia	0	14	0	0	68	4	0	3	6	96
Florida	2,913	8,320	248	290	27,467	1,475	0	497	124	41,335
Georgia	1,543	4,165	491	260	24,701	769	0	520	58	32,506
Maryland	693	976	61	98	7,643	491	0	288	12	10,263
North Carolina	2,356	4,313	72	216	29,003	790	0	970	216	37,935
South Carolina	920	1,955	26	91	10,147	301	0	588	39	14,067
Virginia	1,048	1,535	77	90	5,440	230	0	102	13	8,535
West Virginia	138	344	260	6	3,044	428	0	149	30	4,400
Total	9,749	22,170	1,288	1,089	109,979	4,576	8	3,318	511	152,689

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-*S2-4	*Other 9-axle	*Other 10-axle	Total
Delaware	0	4	0	0	0	0	0	0	0	0	4
District of Columbia	0	0	0	0	0	0	0	0	0	0	0
Florida	568	166	0	83	0	0	0	0	0	0	816
Georgia	144	29	0	0	0	0	0	0	0	0	173
Maryland	0	0	0	0	0	0	0	0	0	0	0
North Carolina	647	180	0	0	0	0	0	0	0	0	826
South Carolina	105	65	52	13	0	0	0	0	0	0	235
Virginia	51	0	0	0	0	0	0	0	13	0	64
West Virginia	71	6	0	0	0	0	0	0	0	0	77
Total	1,586	450	52	96	0	0	0	0	13	0	2,196

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Delaware	0	0	0	0
District of Columbia	0	0	0	0
Florida	0	0	0	0
Georgia	0	0	0	0
Maryland	0	0	0	0
North Carolina	0	0	0	0
South Carolina	0	0	0	0
Virginia	0	0	0	0
West Virginia	0	0	0	0
Total	0	0	0	0

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet
Traffic Region: South Gulf

<i>Straight Truck</i>				
State	2-axle	3-axle	4-axle	Total
Alabama	42,780	5,729	1,163	49,672
Arkansas	3,574	951	193	4,718
Kentucky	46,220	9,012	1,980	57,212
Louisiana	32,344	5,665	432	38,440
Mississippi	12,821	1,890	25	14,736
Oklahoma	52,359	9,004	539	61,902
Tennessee	43,345	6,652	3,066	53,063
Texas	103,814	20,988	1,094	125,896
Total	337,257	59,890	8,492	405,640

<i>Truck + Trailer</i>							
State	2+2	2+3	3+2	3+3	*4+2	*4+3	Total
Alabama	3,022	289	1,101	24	95	116	4,646
Arkansas	530	19	73	13	0	0	635
Kentucky	1,540	447	86	37	0	0	2,109
Louisiana	1,078	507	680	206	170	0	2,640
Mississippi	940	106	706	20	39	0	1,811
Oklahoma	2,112	164	394	0	29	0	2,699
Tennessee	2,978	531	302	0	54	0	3,865
Texas	8,437	683	4,666	223	149	0	14,157
Total	20,636	2,744	8,008	522	535	116	32,561

<i>Tractor + Semitrailer</i>										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Alabama	1,454	4,488	166	142	24,530	1,080	0	379	142	32,381
Arkansas	281	574	83	20	3,729	112	0	95	10	4,905
Kentucky	1,090	2,121	282	104	9,456	1,233	18	484	221	15,009
Louisiana	1,629	1,519	84	149	10,670	1,271	0	522	89	15,934
Mississippi	401	1,723	89	44	5,853	172	20	167	10	8,478
Oklahoma	1,166	2,674	321	893	19,050	1,578	29	379	58	26,148
Tennessee	858	2,478	369	210	16,462	771	0	561	122	21,830
Texas	4,024	10,187	905	520	52,550	3,560	0	1,425	219	73,390
Total	10,903	25,764	2,299	2,083	142,300	9,776	67	4,012	871	198,074

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-*4	*Other 9-axle	*Other 10-axle	Total
Alabama	189	118	0	0	0	24	0	0	0	0	331
Arkansas	20	0	0	0	0	0	0	0	0	0	20
Kentucky	110	0	0	0	0	0	31	0	0	0	141
Louisiana	240	0	0	0	0	0	0	0	0	0	240
Mississippi	166	0	20	0	0	0	0	0	0	0	186
Oklahoma	29	87	0	29	0	0	0	87	0	0	233
Tennessee	1,234	24	0	0	0	0	0	0	0	0	1,258
Texas	743	0	0	0	0	74	74	74	0	0	965
Total	2,732	230	20	29	0	98	105	162	0	0	3,375

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alabama	0	0	0	0
Arkansas	0	0	0	0
Kentucky	0	0	0	0
Louisiana	0	0	0	0
Mississippi	0	0	0	0
Oklahoma	0	0	0	0
Tennessee	0	0	0	0
Texas	0	0	0	0
Total	0	0	0	0

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet
Traffic Region: West

Straight Truck				
State	2-axle	3-axle	4-axle	Total
Alaska	5,717	2,114	226	8,057
Arizona	24,777	3,756	630	29,164
California	238,111	22,732	5,857	266,700
Colorado	35,623	10,282	219	46,124
Hawaii	6,830	1,974	183	8,986
Montana	16,140	3,903	209	20,252
Nevada	12,928	2,535	590	16,052
Utah	13,893	3,341	434	17,667
Washington	31,610	8,142	980	40,732
Wyoming	4,401	1,777	77	6,255
Idaho	21,358	7,755	92	29,205
New Mexico	15,797	2,004	153	17,953
Oregon	26,597	8,322	593	35,512
Total	453,782	78,636	10,242	542,659

Truck + Trailer							
State	2+2	2+3	3+2	3+3	*4+2	*4+3	Total
Alaska	168	110	224	21	25	11	560
Arizona	1,778	254	878	24	24	0	2,957
California	6,657	309	10,013	964	964	0	18,906
Colorado	1,907	185	1,348	100	65	0	3,605
Hawaii	142	0	274	27	0	0	443
Montana	605	0	698	113	74	112	1,602
Nevada	598	8	173	26	8	0	814
Utah	502	20	441	0	107	0	1,069
Washington	3,648	267	1,689	126	267	267	6,265
Wyoming	316	40	32	0	0	13	401
Idaho	724	91	1,323	92	70	29	2,329
New Mexico	971	53	257	10	10	0	1,301
Oregon	1,112	229	2,290	110	166	19	3,926
Total	19,130	1,565	19,640	1,612	1,780	451	44,179

Tractor + Semitrailer										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Alaska	38	299	12	15	1,113	262	0	109	128	1,976
Arizona	1,141	912	116	60	4,873	318	0	167	12	7,599
California	13,970	13,547	1,001	1,425	53,005	2,118	0	1,232	115	86,414
Colorado	1,267	1,140	49	260	9,297	309	0	227	32	12,581
Hawaii	40	365	27	60	1,796	126	0	12	34	2,460
Montana	149	493	90	0	6,348	315	0	260	240	7,894
Nevada	638	576	33	57	3,448	267	0	189	8	5,215
Utah	723	456	80	109	8,880	474	0	89	60	10,872
Washington	1,551	1,158	151	366	7,832	820	22	556	706	13,161
Wyoming	200	292	27	41	2,883	399	0	153	113	4,109
Idaho	190	468	242	131	5,048	567	0	169	199	7,015
New Mexico	275	698	21	10	1,294	182	0	62	5	2,545
Oregon	1,683	1,051	148	148	11,892	1,346	0	387	433	17,086
Total	21,863	21,455	1,995	2,683	117,711	7,502	22	3,612	2,086	178,927

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-*4	*Other 9-axle	*Other 10-axle	Total
Alaska	11	8	0	120	0	25	4	58	0	8	234
Arizona	536	60	72	0	12	0	12	0	0	0	691
California	17,703	231	924	540	577	0	346	0	0	115	20,436
Colorado	81	97	49	16	16	0	16	32	0	0	309
Hawaii	7	7	7	0	7	0	0	0	0	0	27
Montana	28	18	0	528	9	166	92	129	37	0	1,008
Nevada	122	106	0	98	8	35	16	212	0	8	605
Utah	200	239	10	347	0	148	60	308	48	60	1,418
Washington	200	479	0	694	22	323	172	108	22	0	2,018
Wyoming	5	0	5	263	0	46	5	49	0	0	371
Idaho	29	168	0	698	50	138	0	120	0	0	1,203
New Mexico	10	10	0	0	0	0	15	0	0	0	36
Oregon	748	486	19	414	56	860	38	38	0	0	2,658
Total	19,680	1,910	1,084	3,716	758	1,739	777	1,054	107	191	31,015

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alaska	0	0	11	11
Arizona	0	0	0	0
California	115	0	0	115
Colorado	81	0	0	81
Hawaii	0	0	0	0
Montana	0	9	9	18
Nevada	16	8	8	33
Utah	10	0	10	20
Washington	0	0	22	22
Wyoming	0	9	5	14
Idaho	0	10	10	20
New Mexico	0	0	0	0
Oregon	56	226	19	301
Total	279	262	93	635

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet

Number of Vehicles by Truck Configuration, by Region

Vehicle Group	Regions					
	North Central	North East	South Atlantic	South Gulf	West	Total
Straight Truck						
2-axle	722,116	408,203	406,472	373,542	410,248	2,320,581
3-axle	144,536	60,391	61,541	65,933	65,563	397,964
4-axle	18,234	15,279	9,536	5,857	4,207	53,113
Subtotal	884,886	483,874	477,549	445,333	480,018	2,771,659
Truck + Trailer						
2+2	23,533	11,393	11,739	26,025	17,443	90,134
2+*3	5,687	4,283	4,689	5,262	3,667	23,588
3+2	6,734	2,583	3,532	6,550	14,044	33,442
3+*3	1,298	1,023	1,373	810	2,090	6,594
*4+2	767	494	175	287	294	2,017
*4+*3	1,331	121	54	31	564	2,100
Subtotal	39,349	19,898	21,561	38,965	38,103	157,876
Tractor + Semitrailer						
2-S1	22,132	6,076	10,760	11,647	20,098	70,712
2-S2	43,919	26,210	27,833	25,901	20,797	144,660
2-*S3	3,593	1,178	2,828	1,403	2,385	11,389
3-S1	5,965	3,372	3,756	7,809	6,602	27,504
3-S2	249,345	81,229	97,250	128,337	77,314	633,475
3-*S3	16,425	4,824	3,930	7,922	4,250	37,350
4-S1	302	106	153	85	190	837
4-S2	4,813	2,222	2,380	2,543	1,598	13,556
4-*S3	2,173	620	747	835	724	5,098
Subtotal	348,667	125,837	149,637	186,483	133,957	944,581
Tractor + Double						
2-S1-2	7,734	519	1,310	1,643	13,713	24,919
3-S1-2	3,318	0	31	289	1,290	4,927
2-S2-2	0	0	0	0	60	60
3-S2-2	0	0	0	0	421	421
Other @ 7-axle	9	0	7	0	4	20
3-S2-3	0	0	0	0	180	180
Other @ 8-axle	0	0	0	0	0	0
3-*S2-*4	1,085	86	0	0	408	1,579
Other @ 9-axle	0	0	0	0	0	0
Other @ 10-axle	88	0	0	0	58	146
Subtotal	12,233	604	1,348	1,932	16,135	32,252
Tractor + Triples						
2-S1-2-2	9	0	0	5	308	321
3-S1-2-2	0	0	0	0	67	67
Other	0	10	0	0	33	43
Subtotal	9	10	0	5	408	432
Total	1,285,144	630,223	650,095	672,717	668,621	3,906,800

* Note: Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet
Traffic Region: North Central

Straight Truck				
State	2-axle	3-axle	4-axle	Total
Illinois	114,677	25,283	1,013	140,973
Indiana	69,687	9,160	1,985	80,832
Iowa	44,335	12,143	465	56,943
Kansas	72,933	11,472	262	84,667
Michigan	69,339	9,143	3,295	81,777
Minnesota	52,730	16,255	1,623	70,608
Missouri	57,259	13,087	187	70,533
Nebraska	38,451	8,558	826	47,835
North Dakota	38,290	10,562	737	49,589
Ohio	93,932	16,336	2,530	112,798
South Dakota	21,342	3,681	250	25,273
Wisconsin	49,141	8,857	5,060	63,058
Total	722,116	144,536	18,234	884,886

Truck + Trailer							
State	2+2	2+3	3+2	3+3	*4+2	*4+3	Total
Illinois	6,420	407	766	0	0	0	7,593
Indiana	1,957	494	570	220	0	0	3,242
Iowa	1,260	0	291	0	0	0	1,551
Kansas	1,234	243	534	162	0	0	2,173
Michigan	1,661	602	441	238	150	759	3,852
Minnesota	2,183	385	781	187	269	0	3,805
Missouri	1,313	294	869	294	0	0	2,770
Nebraska	548	137	729	67	0	184	1,664
North Dakota	140	324	366	73	41	38	982
Ohio	3,539	2,256	425	0	0	144	6,363
South Dakota	143	126	172	56	26	0	522
Wisconsin	3,136	420	790	0	281	205	4,832
Total	23,533	5,687	6,734	1,298	767	1,331	39,349

Tractor + Semitrailer										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Illinois	5,576	10,527	855	896	74,597	1,992	188	1,545	778	96,954
Indiana	1,988	4,019	136	678	28,343	904	45	407	45	36,565
Iowa	868	3,101	170	344	17,235	613	0	291	99	22,720
Kansas	1,530	2,254	137	440	12,045	459	19	174	19	17,075
Michigan	3,657	5,591	485	591	15,638	5,173	0	529	132	31,797
Minnesota	1,379	2,047	106	237	10,964	1,294	25	438	393	16,883
Missouri	2,933	3,606	153	371	16,988	840	0	277	0	25,167
Nebraska	351	1,192	76	294	15,756	591	0	395	92	18,746
North Dakota	48	780	19	127	3,571	469	0	102	67	5,183
Ohio	2,672	7,737	1,004	1,308	35,601	2,687	0	365	73	51,447
South Dakota	172	425	17	133	4,150	111	26	133	0	5,165
Wisconsin	959	2,641	436	548	14,458	1,293	0	158	474	20,967
Total	22,132	43,919	3,593	5,965	249,345	16,425	302	4,813	2,173	348,667

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-*4	*Other 9-axle	*Other 10-axle	Total
Illinois	5,872	2,629	0	0	0	0	0	0	0	0	8,501
Indiana	0	90	0	0	0	0	0	0	0	0	90
Iowa	0	96	0	0	0	0	0	0	0	0	96
Kansas	260	93	0	0	0	0	0	0	0	0	353
Michigan	132	44	0	0	0	0	1,077	0	0	88	1,341
Minnesota	0	0	0	0	0	0	0	0	0	0	0
Missouri	30	60	0	0	0	0	0	0	0	0	90
Nebraska	479	177	0	0	0	0	0	0	0	0	656
North Dakota	10	0	0	0	0	0	0	0	0	0	10
Ohio	871	73	0	0	0	0	0	0	0	0	944
South Dakota	0	56	0	0	9	0	0	9	0	0	73
Wisconsin	79	0	0	0	0	0	0	0	0	0	79
Total	7,734	3,318	0	0	9	0	0	1,085	0	88	12,233

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Illinois	0	0	0	0
Indiana	0	0	0	0
Iowa	0	0	0	0
Kansas	0	0	0	0
Michigan	0	0	0	0
Minnesota	0	0	0	0
Missouri	0	0	0	0
Nebraska	0	0	0	0
North Dakota	0	0	0	0
Ohio	0	0	0	0
South Dakota	9	0	0	9
Wisconsin	0	0	0	0
Total	9	0	0	9

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet
Traffic Region: North East

Straight Truck				
State	2-axle	3-axle	4-axle	Total
Connecticut	26,693	2,453	2,159	31,305
Maine	16,759	3,710	975	21,444
Massachusetts	50,936	7,805	632	59,374
New Hampshire	13,721	3,397	330	17,448
Rhode Island	7,949	893	47	8,889
Vermont	8,201	1,585	138	9,923
New Jersey	69,412	8,722	947	79,081
New York	112,854	17,643	1,908	132,405
Pennsylvania	101,679	14,183	8,144	124,006
Total	408,203	60,391	15,279	483,874

Truck + Trailer							
State	2+2	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Connecticut	1,115	157	70	24	35	24	1,424
Maine	629	265	163	159	19	31	1,266
Massachusetts	1,339	676	327	99	50	0	2,492
New Hampshire	486	204	119	37	45	17	909
Rhode Island	181	110	82	7	7	7	395
Vermont	247	102	43	13	9	0	414
New Jersey	2,451	532	164	288	0	41	3,477
New York	1,646	1,088	1,040	396	0	0	4,170
Pennsylvania	3,297	1,149	574	0	330	0	5,350
Total	11,393	4,283	2,583	1,023	494	121	19,898

Tractor + Semitrailer										
State	2-S1	2-S2	2-*S3	3-S1	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Connecticut	557	1,371	22	109	2,864	177	22	100	11	5,233
Maine	255	935	90	101	3,265	830	10	109	78	5,674
Massachusetts	860	3,049	78	142	8,123	625	0	220	0	13,098
New Hampshire	164	965	55	102	2,373	127	8	93	25	3,913
Rhode Island	246	568	6	55	1,157	53	7	41	0	2,133
Vermont	38	286	21	43	1,236	38	0	13	4	1,680
New Jersey	1,313	5,917	205	1,681	16,544	821	0	452	164	27,097
New York	1,541	5,532	187	327	15,572	701	0	322	47	24,228
Pennsylvania	1,103	7,588	513	813	30,095	1,451	58	871	290	42,781
Total	6,076	26,210	1,178	3,372	81,229	4,824	106	2,222	620	125,837

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Connecticut	44	0	0	0	0	0	0	0	0	0	44
Maine	50	0	0	0	0	0	0	10	0	0	61
Massachusetts	28	0	0	0	0	0	0	28	0	0	57
New Hampshire	0	0	0	0	0	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	0	0	0
Vermont	0	0	0	0	0	0	0	0	0	0	0
New Jersey	0	0	0	0	0	0	0	0	0	0	0
New York	280	0	0	0	0	0	0	47	0	0	327
Pennsylvania	116	0	0	0	0	0	0	0	0	0	116
Total	519	0	0	0	0	0	0	86	0	0	604

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Connecticut	0	0	0	0
Maine	0	0	10	10
Massachusetts	0	0	0	0
New Hampshire	0	0	0	0
Rhode Island	0	0	0	0
Vermont	0	0	0	0
New Jersey	0	0	0	0
New York	0	0	0	0
Pennsylvania	0	0	0	0
Total	0	0	10	10

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet
Traffic Region: South Atlantic

Straight Truck				
State	2-axle	3-axle	4-axle	Total
Delaware	8,382	1,709	115	10,205
District of Columbia	1,739	202	16	1,956
Florida	70,625	12,324	1,786	84,735
Georgia	69,272	9,854	819	79,945
Maryland	46,006	8,658	238	54,902
North Carolina	86,052	10,734	3,107	99,893
South Carolina	33,985	2,637	630	37,251
Virginia	70,967	12,120	1,618	84,705
West Virginia	19,445	3,304	1,208	23,957
Total	406,472	61,541	9,536	477,549

Truck + Trailer							
State	2+2	2+3	3+2	3+3	*4+2	*4+3	Total
Delaware	182	69	21	0	0	0	272
District of Columbia	0	0	2	0	0	0	2
Florida	1,040	593	481	197	0	0	2,311
Georgia	3,660	1,395	767	336	75	0	6,233
Maryland	1,282	756	338	0	0	54	2,430
North Carolina	2,832	569	1,201	432	0	0	5,034
South Carolina	1,749	295	282	138	14	0	2,478
Virginia	695	796	376	256	85	0	2,209
West Virginia	299	217	65	14	0	0	594
Total	11,739	4,689	3,532	1,373	175	54	21,561

Tractor + Semitrailer										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Delaware	146	741	21	65	3,212	211	7	217	0	4,620
District of Columbia	2	25	0	3	49	2	0	3	0	83
Florida	2,597	9,494	769	567	19,129	1,133	0	330	47	34,065
Georgia	1,943	5,243	902	674	22,024	601	38	188	150	31,763
Maryland	911	1,983	308	140	7,468	444	23	304	0	11,581
North Carolina	3,148	4,905	286	1,133	24,074	501	72	787	346	35,253
South Carolina	626	1,564	72	538	6,385	400	0	132	43	9,760
Virginia	1,127	3,464	423	586	11,680	528	0	293	147	18,248
West Virginia	260	413	47	51	3,229	111	14	127	14	4,264
Total	10,760	27,833	2,828	3,756	97,250	3,930	153	2,380	747	149,637

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-4	*Other 9-axle	*Other 10-axle	Total
Delaware	0	0	0	0	7	0	0	0	0	0	7
District of Columbia	0	0	0	0	0	0	0	0	0	0	0
Florida	94	0	0	0	0	0	0	0	0	0	94
Georgia	0	0	0	0	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	0	0	0	0	0
North Carolina	931	0	0	0	0	0	0	0	0	0	931
South Carolina	0	31	0	0	0	0	0	0	0	0	31
Virginia	261	0	0	0	0	0	0	0	0	0	261
West Virginia	24	0	0	0	0	0	0	0	0	0	24
Total	1,310	31	0	0	7	0	0	0	0	0	1,348

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Delaware	0	0	0	0
District of Columbia	0	0	0	0
Florida	0	0	0	0
Georgia	0	0	0	0
Maryland	0	0	0	0
North Carolina	0	0	0	0
South Carolina	0	0	0	0
Virginia	0	0	0	0
West Virginia	0	0	0	0
Total	0	0	0	0

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet
Traffic Region: South Gulf

Straight Truck				
State	2-axle	3-axle	4-axle	Total
Alabama	39,608	6,191	966	46,765
Arkansas	1,531	578	191	2,300
Kentucky	56,686	9,356	1,401	67,443
Louisiana	41,378	6,063	782	48,223
Mississippi	10,438	2,167	70	12,675
Oklahoma	47,447	8,962	603	57,012
Tennessee	47,896	5,108	1,583	54,587
Texas	128,558	27,507	261	156,326
Total	373,542	65,933	5,857	445,333

Truck + Trailer							
State	2*2	2*3	3*2	3*3	*4*2	*4*3	Total
Alabama	2,144	224	892	73	70	0	3,404
Arkansas	66	29	158	0	0	0	253
Kentucky	508	320	107	43	0	0	978
Louisiana	2,534	437	1,173	172	203	0	4,518
Mississippi	655	106	496	66	14	0	1,337
Oklahoma	4,518	599	653	36	0	0	5,806
Tennessee	1,272	789	406	159	0	31	2,658
Texas	14,329	2,759	2,663	261	0	0	20,012
Total	26,025	5,262	6,550	810	287	31	38,965

Tractor + Semitrailer										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Alabama	865	1,994	183	1,048	21,019	905	0	293	251	26,558
Arkansas	176	340	5	146	4,228	131	5	87	5	5,123
Kentucky	824	2,449	70	409	7,760	840	49	285	113	12,800
Louisiana	491	2,340	245	1,006	10,682	1,184	0	342	74	16,365
Mississippi	627	1,620	88	598	7,988	210	31	63	28	11,253
Oklahoma	1,710	2,302	396	1,071	14,238	802	0	252	72	20,843
Tennessee	1,231	3,778	155	1,150	15,340	720	0	569	31	22,974
Texas	5,723	11,077	261	2,381	47,082	3,130	0	652	261	70,567
Total	11,647	25,901	1,403	7,809	128,337	7,922	85	2,543	835	186,483

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-4	*Other 9-axle	*Other 10-axle	Total
Alabama	110	37	0	0	0	0	0	0	0	0	147
Arkansas	45	0	0	0	0	0	0	0	0	0	45
Kentucky	253	21	0	0	0	0	0	0	0	0	275
Louisiana	25	0	0	0	0	0	0	0	0	0	25
Mississippi	0	28	0	0	0	0	0	0	0	0	28
Oklahoma	0	72	0	0	0	0	0	0	0	0	72
Tennessee	558	0	0	0	0	0	0	0	0	0	558
Texas	652	130	0	0	0	0	0	0	0	0	783
Total	1,643	289	0	0	0	0	0	0	0	0	1,932

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alabama	0	0	0	0
Arkansas	5	0	0	5
Kentucky	0	0	0	0
Louisiana	0	0	0	0
Mississippi	0	0	0	0
Oklahoma	0	0	0	0
Tennessee	0	0	0	0
Texas	0	0	0	0
Total	5	0	0	5

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet
Traffic Region: West

<i>Straight Truck</i>				
State	2-axle	3-axle	4-axle	Total
Alaska	6,745	2,131	177	9,053
Arizona	23,934	3,308	356	27,598
California	178,196	20,663	1,970	200,829
Colorado	45,974	10,474	69	56,517
Hawaii	6,622	1,671	153	8,446
Montana	19,217	3,374	117	22,708
Nevada	6,836	943	36	7,816
Utah	14,046	2,006	336	16,388
Washington	37,949	6,145	531	44,625
Wyoming	11,316	3,325	101	14,743
Idaho	14,422	4,347	113	18,881
New Mexico	15,430	1,575	93	17,098
Oregon	29,560	5,600	156	35,316
Total	410,248	65,563	4,207	480,018

<i>Truck + Trailer</i>							
State	2+2	2+3	3+2	3+3	*4+2	*4+3	Total
Alaska	230	38	107	33	4	31	443
Arizona	1,092	154	700	31	0	0	1,978
California	8,192	1,681	6,057	979	113	427	17,449
Colorado	1,593	336	655	46	11	0	2,640
Hawaii	114	5	68	0	0	0	186
Montana	696	109	406	78	32	46	1,368
Nevada	312	39	268	48	9	0	675
Utah	504	188	380	43	41	0	1,155
Washington	1,234	292	2,643	432	0	51	4,653
Wyoming	497	91	205	34	43	9	878
Idaho	840	336	589	79	41	0	1,885
New Mexico	744	184	112	91	0	0	1,131
Oregon	1,396	215	1,855	197	0	0	3,663
Total	17,443	3,667	14,044	2,090	294	564	38,103

<i>Tractor + Semitrailer</i>										
State	2-S1	2-S2	2-S3	3-S1	3-S2	3-S3	4-S1	4-S2	4-S3	Total
Alaska	46	132	22	98	808	107	13	222	280	1,730
Arizona	1,509	956	139	235	4,055	157	0	16	0	7,065
California	14,255	13,059	1,916	4,383	36,189	1,566	113	451	0	71,931
Colorado	214	343	11	55	1,053	22	11	0	0	1,709
Hawaii	121	282	10	78	1,099	61	5	150	5	1,809
Montana	217	604	21	100	3,607	263	11	174	121	5,118
Nevada	554	282	58	123	1,639	65	14	26	0	2,762
Utah	614	532	26	118	4,522	280	0	103	32	6,227
Washington	820	1,208	77	212	7,326	392	0	110	26	10,171
Wyoming	151	313	18	72	2,888	187	0	171	61	3,859
Idaho	177	463	32	88	2,671	126	0	17	15	3,589
New Mexico	176	650	33	33	1,546	115	0	16	66	2,635
Oregon	1,243	1,973	24	1,007	9,911	910	24	143	119	15,352
Total	20,098	20,797	2,385	6,602	77,314	4,250	190	1,598	724	133,957

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-S2-4	*Other 9-axle	*Other 10-axle	Total
Alaska	0	9	0	0	4	0	0	13	0	9	35
Arizona	376	16	0	0	0	0	0	0	0	0	391
California	12,585	777	0	0	0	0	0	0	0	0	13,362
Colorado	0	0	0	0	0	0	0	0	0	0	0
Hawaii	14	5	0	0	0	0	0	0	0	0	19
Montana	32	11	0	0	0	0	0	53	0	32	128
Nevada	69	19	0	0	0	0	0	28	0	0	116
Utah	107	41	0	26	0	9	0	152	0	17	351
Washington	179	103	51	282	0	154	0	103	0	0	871
Wyoming	9	54	0	0	0	0	0	0	0	0	63
Idaho	9	44	9	114	0	17	0	35	0	0	227
New Mexico	0	0	0	0	0	0	0	0	0	0	0
Oregon	333	214	0	0	0	0	0	24	0	0	570
Total	13,713	1,290	60	421	4	180	0	408	0	58	16,135

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alaska	0	0	0	0
Arizona	0	0	0	0
California	0	0	0	0
Colorado	0	0	0	0
Hawaii	0	0	0	0
Montana	0	0	0	0
Nevada	14	0	7	21
Utah	9	0	0	9
Washington	0	26	26	51
Wyoming	0	18	0	18
Idaho	0	0	0	0
New Mexico	0	0	0	0
Oregon	285	24	0	309
Total	308	67	33	408

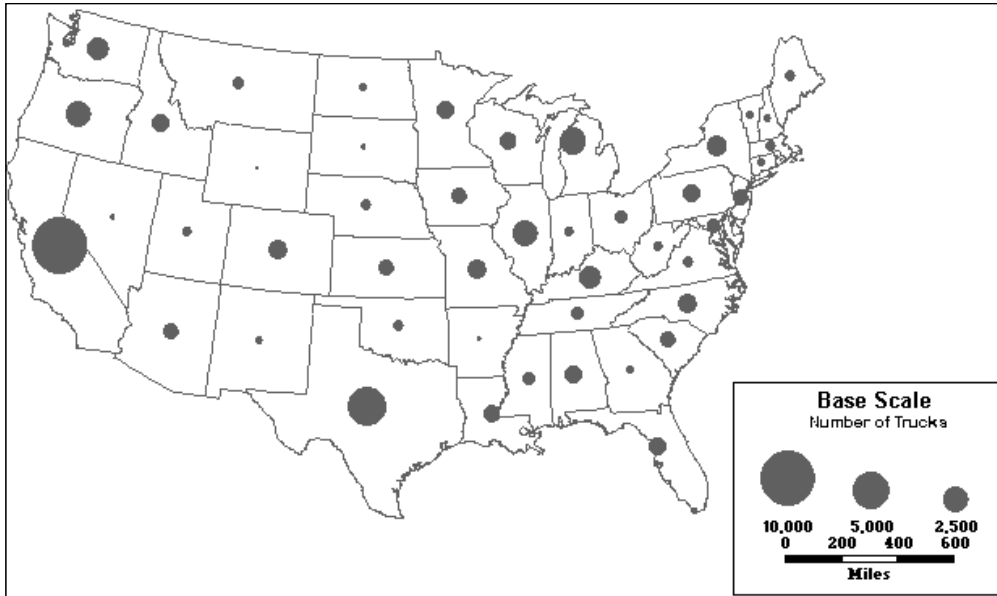
* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

Appendix B

Regional Distributions of The 5-Axles or More Truck Fleet

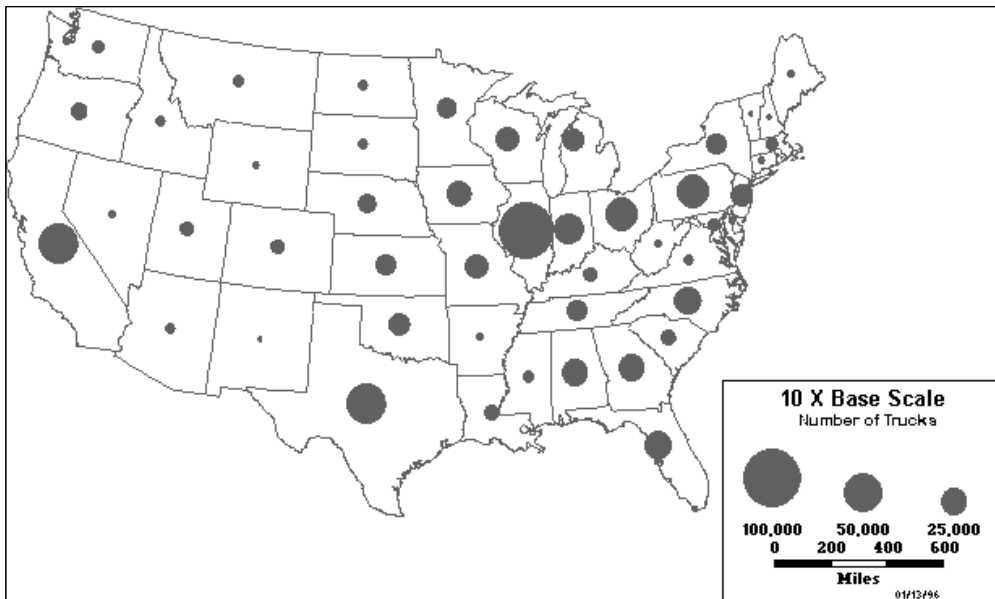
Truck+Trailer @ 5-axles (1992)



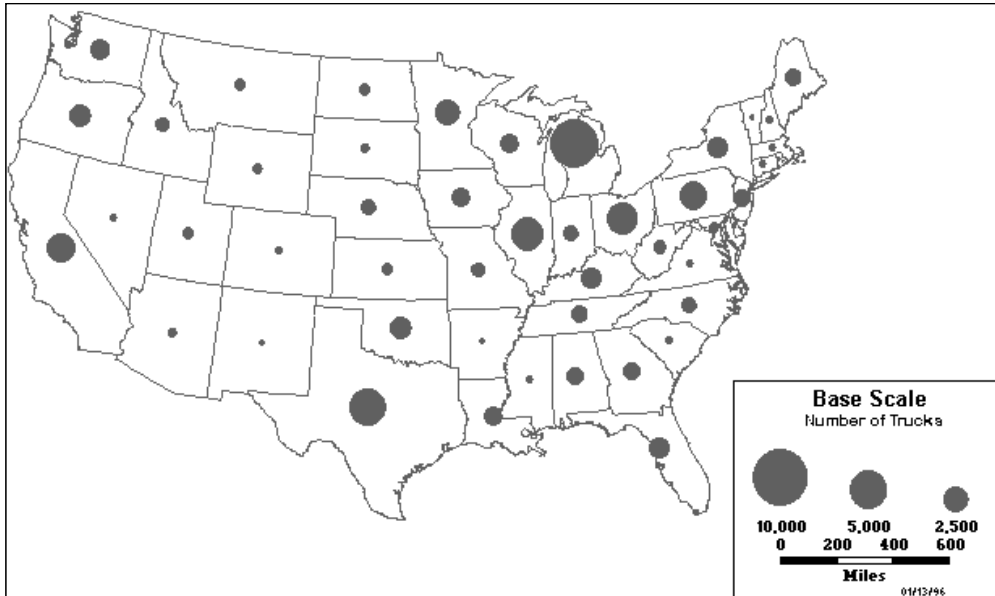
Truck+Trailer @6+axles (1992)



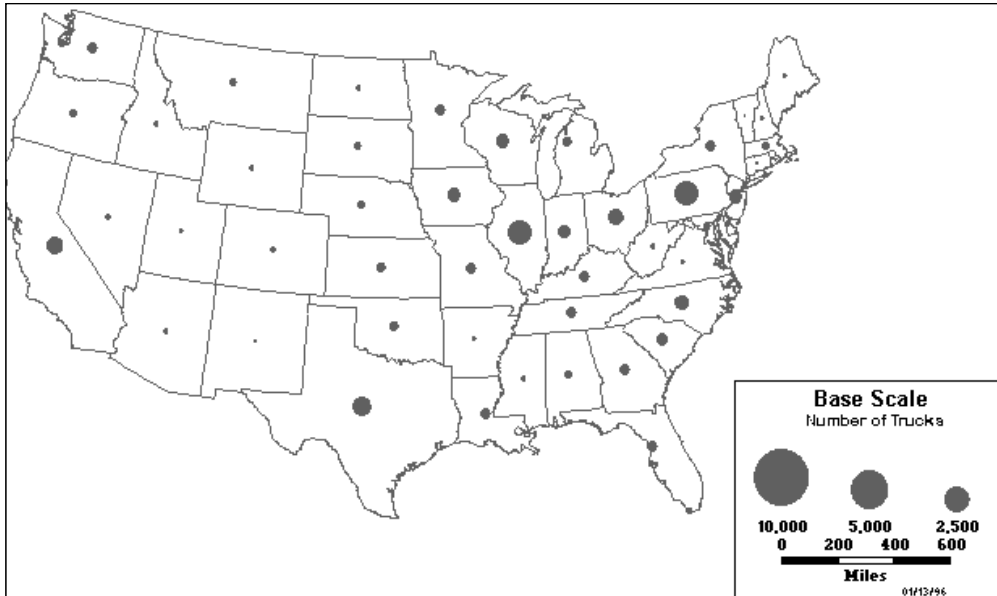
3-S2 (1992)



Tridem-axle Tractor-Semi (1992)



4S1(S2) Tractor-Semi (1992)

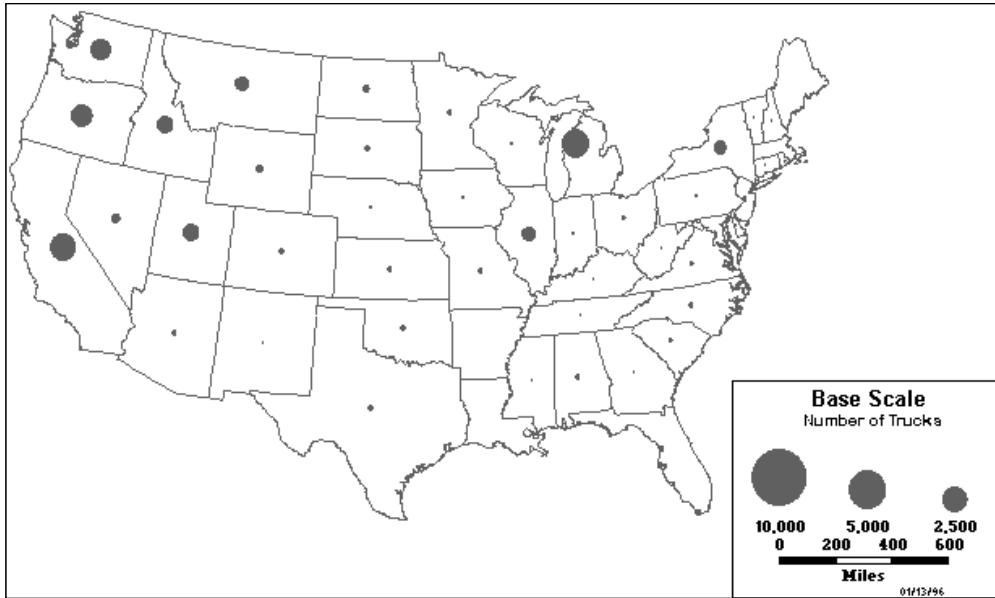


2-S1-2 STAA Double (1992)



Source: 1992 Truck Inventory and Use Survey

Tractor+Double @ 6+axles (1992)



Tractor-Triple Trailer (1992)



1992 Truck Fleet (@ 5-axes or more)
Traffic Region: North Central

Truck + Trailer						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Illinois	0	2,463	0	111	0	2,574
Indiana	221	250	63	156	156	845
Iowa	513	662	30	30	30	1,264
Kansas	259	864	116	0	46	1,285
Michigan	1,772	895	138	522	886	4,213
Minnesota	184	1,209	374	279	98	2,145
Missouri	521	1,024	174	171	0	1,889
Nebraska	107	436	145	164	38	889
North Dakota	0	405	40	97	11	553
Ohio	344	521	0	200	0	1,065
South Dakota	77	83	48	130	41	379
Wisconsin	490	789	47	167	0	1,494
Total	4,488	9,600	1,173	2,027	1,307	18,595

Tractor + Semitrailer							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Illinois	222	93,996	3,322	0	2,224	222	99,987
Indiana	282	31,989	719	0	813	125	33,928
Iowa	202	23,605	1,014	0	722	266	25,810
Kansas	0	16,613	580	0	463	93	17,749
Michigan	310	20,043	6,698	0	413	619	28,083
Minnesota	47	15,788	1,906	0	505	427	18,673
Missouri	221	22,155	759	0	569	25	23,730
Nebraska	94	13,638	707	0	354	283	15,077
North Dakota	97	5,245	359	29	131	211	6,072
Ohio	501	35,586	2,911	0	1,031	157	40,186
South Dakota	56	4,997	279	68	215	83	5,698
Wisconsin	258	21,759	1,060	24	754	141	23,995
Total	2,290	305,414	20,314	121	8,195	2,653	338,988

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	Other 7-axle	3-S2-3	Other 8-axle	3-*S2-*4	Other 9-axle	Other 10-axle	Total
Illinois	5,964	556	438	0	0	0	0	0	0	0	6,957
Indiana	408	0	0	31	0	0	0	31	0	0	471
Iowa	237	30	0	0	0	0	0	0	30	0	296
Kansas	417	93	0	23	23	0	0	0	0	0	556
Michigan	275	69	0	206	34	103	69	1,858	0	413	3,027
Minnesota	95	119	0	0	0	0	24	0	0	0	237
Missouri	120	171	0	0	0	0	0	0	0	0	291
Nebraska	38	19	0	38	0	0	0	0	0	0	94
North Dakota	11	11	68	148	0	0	11	23	0	0	273
Ohio	439	78	0	0	0	0	0	39	0	0	557
South Dakota	25	33	0	66	0	25	0	8	0	68	225
Wisconsin	24	47	0	24	0	0	0	0	0	0	94
Total	8,052	1,225	506	536	58	128	104	1,959	30	481	13,079

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Illinois	0	0	0	0
Indiana	0	0	0	0
Iowa	0	0	0	0
Kansas	0	0	0	0
Michigan	0	0	0	0
Minnesota	0	71	0	71
Missouri	0	0	0	0
Nebraska	0	0	0	0
North Dakota	0	0	0	0
Ohio	0	0	0	0
South Dakota	8	0	0	8
Wisconsin	0	0	0	0
Total	8	71	0	79

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet (@ 5-axes or more)

Traffic Region: North East

<i>Truck + Trailer</i>						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Connecticut	231	175	0	58	7	471
Maine	225	297	60	21	0	602
Massachusetts	269	245	0	72	0	586
New Hampshire	142	144	51	16	0	352
Rhode Island	51	56	8	12	0	126
Vermont	91	112	2	33	0	239
New Jersey	429	712	0	0	0	1,140
New York	968	652	167	84	29	1,900
Pennsylvania	348	1,095	405	291	0	2,138
Total	2,753	3,487	693	586	36	7,554

<i>Tractor + Semitrailer</i>							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Connecticut	36	2,564	154	0	83	76	2,913
Maine	31	3,535	1,112	0	98	57	4,833
Massachusetts	35	6,696	228	0	331	0	7,289
New Hampshire	26	2,158	325	0	131	42	2,682
Rhode Island	36	1,183	54	0	48	6	1,327
Vermont	15	1,299	152	0	32	10	1,507
New Jersey	170	19,391	1,087	0	747	58	21,453
New York	58	17,232	1,609	0	549	87	19,534
Pennsylvania	285	36,180	2,168	0	2,339	342	41,314
Total	691	90,239	6,888	0	4,357	678	102,853

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Connecticut	283	0	0	7	0	0	0	0	0	0	290
Maine	18	0	0	0	0	0	0	0	0	0	18
Massachusetts	128	0	0	0	0	0	0	0	0	0	128
New Hampshire	31	0	0	21	0	0	0	0	0	0	52
Rhode Island	0	0	0	0	0	0	0	0	0	0	0
Vermont	15	0	0	2	0	0	0	0	0	0	17
New Jersey	202	86	29	58	0	0	0	0	0	0	375
New York	113	0	58	514	0	29	29	58	0	0	800
Pennsylvania	627	57	0	0	0	0	0	0	0	0	684
Total	1,417	144	87	602	0	29	29	58	0	0	2,365

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Connecticut	0	0	7	7
Maine	0	0	0	0
Massachusetts	0	0	0	0
New Hampshire	0	0	26	26
Rhode Island	0	0	0	0
Vermont	0	0	0	0
New Jersey	0	0	0	0
New York	0	0	0	0
Pennsylvania	0	0	0	0
Total	0	0	33	33

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet (@ 5-axles or more)
Traffic Region: South Atlantic

Truck + Trailer						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Delaware	115	72	4	0	0	192
District of Columbia	0	0	0	0	0	0
Florida	896	473	41	83	0	1,493
Georgia	263	87	0	0	0	349
Maryland	522	288	12	12	0	834
North Carolina	793	684	0	36	36	1,549
South Carolina	625	510	26	39	0	1,200
Virginia	171	367	13	0	0	551
West Virginia	325	106	49	24	0	504
Total	3,711	2,586	145	194	36	6,672

Tractor + Semitrailer							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Delaware	53	2,465	88	8	201	12	2,828
District of Columbia	0	68	4	0	3	6	81
Florida	248	27,467	1,475	0	497	124	29,812
Georgia	491	24,701	769	0	520	58	26,538
Maryland	61	7,643	491	0	288	12	8,495
North Carolina	72	29,003	790	0	970	216	31,051
South Carolina	26	10,147	301	0	588	39	11,101
Virginia	77	5,440	230	0	102	13	5,862
West Virginia	260	3,044	428	0	149	30	3,912
Total	1,288	109,979	4,576	8	3,318	511	119,681

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	*Other 3-S2-3	*Other 8-axle	*Other 3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Delaware	0	4	0	0	0	0	0	0	0	0	4
District of Columbia	0	0	0	0	0	0	0	0	0	0	0
Florida	568	166	0	83	0	0	0	0	0	0	816
Georgia	144	29	0	0	0	0	0	0	0	0	173
Maryland	0	0	0	0	0	0	0	0	0	0	0
North Carolina	647	180	0	0	0	0	0	0	0	0	826
South Carolina	105	65	52	13	0	0	0	0	0	0	235
Virginia	51	0	0	0	0	0	0	0	13	0	64
West Virginia	71	6	0	0	0	0	0	0	0	0	77
Total	1,586	450	52	96	0	0	0	0	13	0	2,196

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Delaware	0	0	0	0
District of Columbia	0	0	0	0
Florida	0	0	0	0
Georgia	0	0	0	0
Maryland	0	0	0	0
North Carolina	0	0	0	0
South Carolina	0	0	0	0
Virginia	0	0	0	0
West Virginia	0	0	0	0
Total	0	0	0	0

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet (@ 5-axles or more)
Traffic Region: South Gulf

<i>Truck + Trailer</i>						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Alabama	289	1,101	24	95	116	1,625
Arkansas	19	73	13	0	0	105
Kentucky	447	86	37	0	0	569
Louisiana	507	680	206	170	0	1,562
Mississippi	106	706	20	39	0	871
Oklahoma	164	394	0	29	0	587
Tennessee	531	302	0	54	0	887
Texas	683	4,666	223	149	0	5,720
Total	2,744	8,008	522	535	116	11,925

<i>Tractor + Semitrailer</i>							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Alabama	166	24,530	1,080	0	379	142	26,296
Arkansas	83	3,729	112	0	95	10	4,030
Kentucky	282	9,456	1,233	18	484	221	11,694
Louisiana	84	10,670	1,271	0	522	89	12,636
Mississippi	89	5,853	172	20	167	10	6,310
Oklahoma	321	19,050	1,578	29	379	58	21,415
Tennessee	369	16,462	771	0	561	122	18,284
Texas	905	52,550	3,560	0	1,425	219	58,660
Total	2,299	142,300	9,776	67	4,012	871	159,324

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	*Other 3-S2-3	*Other 8-axle	*Other 3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Alabama	189	118	0	0	0	24	0	0	0	0	331
Arkansas	20	0	0	0	0	0	0	0	0	0	20
Kentucky	110	0	0	0	0	0	31	0	0	0	141
Louisiana	240	0	0	0	0	0	0	0	0	0	240
Mississippi	166	0	20	0	0	0	0	0	0	0	186
Oklahoma	29	87	0	29	0	0	0	87	0	0	233
Tennessee	1,234	24	0	0	0	0	0	0	0	0	1,258
Texas	743	0	0	0	0	74	74	74	0	0	965
Total	2,732	230	20	29	0	98	105	162	0	0	3,375

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alabama	0	0	0	0
Arkansas	0	0	0	0
Kentucky	0	0	0	0
Louisiana	0	0	0	0
Mississippi	0	0	0	0
Oklahoma	0	0	0	0
Tennessee	0	0	0	0
Texas	0	0	0	0
Total	0	0	0	0

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1992 Truck Fleet (@ 5-axes or more)
Traffic Region: West

Truck + Trailer						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Alaska	110	224	21	25	11	392
Arizona	254	878	24	24	0	1,179
California	309	10,013	964	964	0	12,249
Colorado	185	1,348	100	65	0	1,698
Hawaii	0	274	27	0	0	301
Montana	0	698	113	74	112	997
Nevada	8	173	26	8	0	216
Utah	20	441	0	107	0	567
Washington	267	1,689	126	267	267	2,617
Wyoming	40	32	0	0	13	85
Idaho	91	1,323	92	70	29	1,604
New Mexico	53	257	10	10	0	330
Oregon	229	2,290	110	166	19	2,814
Total	1,565	19,640	1,612	1,780	451	25,049

Tractor + Semitrailer							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Alaska	12	1,113	262	0	109	128	1,624
Arizona	116	4,873	318	0	167	12	5,486
California	1,001	53,005	2,118	0	1,232	115	57,472
Colorado	49	9,297	309	0	227	32	9,914
Hawaii	27	1,796	126	0	12	34	1,994
Montana	90	6,348	315	0	260	240	7,252
Nevada	33	3,448	267	0	189	8	3,945
Utah	80	8,880	474	0	89	60	9,584
Washington	151	7,832	820	22	556	706	10,087
Wyoming	27	2,883	399	0	153	113	3,576
Idaho	242	5,048	567	0	169	199	6,225
New Mexico	21	1,294	182	0	62	5	1,563
Oregon	148	11,892	1,346	0	387	433	14,205
Total	1,995	117,711	7,502	22	3,612	2,086	132,927

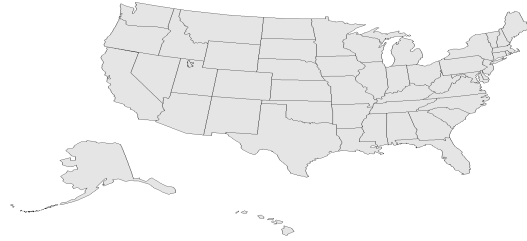
Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	*Other 3-S2-3	*Other 8-axle	*Other 3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Alaska	11	8	0	120	0	25	4	58	0	8	234
Arizona	536	60	72	0	12	0	12	0	0	0	691
California	17,703	231	924	540	577	0	346	0	0	115	20,436
Colorado	81	97	49	16	16	0	16	32	0	0	309
Hawaii	7	7	7	0	7	0	0	0	0	0	27
Montana	28	18	0	528	9	166	92	129	37	0	1,008
Nevada	122	106	0	98	8	35	16	212	0	8	605
Utah	200	239	10	347	0	148	60	308	48	60	1,418
Washington	200	479	0	694	22	323	172	108	22	0	2,018
Wyoming	5	0	5	263	0	46	5	49	0	0	371
Idaho	29	168	0	698	50	138	0	120	0	0	1,203
New Mexico	10	10	0	0	0	0	15	0	0	0	36
Oregon	748	486	19	414	56	860	38	38	0	0	2,658
Total	19,680	1,910	1,084	3,716	758	1,739	777	1,054	107	191	31,015

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alaska	0	0	11	11
Arizona	0	0	0	0
California	115	0	0	115
Colorado	81	0	0	81
Hawaii	0	0	0	0
Montana	0	9	9	18
Nevada	16	8	8	33
Utah	10	0	10	20
Washington	0	0	22	22
Wyoming	0	9	5	14
Idaho	0	10	10	20
New Mexico	0	0	0	0
Oregon	56	226	19	301
Total	279	262	93	635

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet (@ 5-axles or more)
Number of Trucks in Each Truck
Configuration, by Region



Vehicle Group	Regions					Total
	North Central	North East	South Atlantic	South Gulf	West	
Truck + Trailer						
2+*3	5,687	4,283	4,689	5,262	3,667	23,588
3+2	6,734	2,583	3,532	6,550	14,044	33,442
3+*3	1,298	1,023	1,373	810	2,090	6,594
*4+2	767	494	175	287	294	2,017
*4+*3	1,331	121	54	31	564	2,100
Subtotal	15,816	8,504	9,822	12,940	20,660	67,742
Tractor + Semitrailer						
2-*S3	3,593	1,178	2,828	1,403	2,385	11,389
3-S2	249,345	81,229	97,250	128,337	77,314	633,475
3-*S3	16,425	4,824	3,930	7,922	4,250	37,350
4-S1	302	106	153	85	190	837
4-S2	4,813	2,222	2,380	2,543	1,598	13,556
4-*S3	2,173	620	747	835	724	5,098
Subtotal	276,651	90,178	107,288	141,126	86,461	701,704
Tractor + Double						
2-S1-2	7,734	519	1,310	1,643	13,713	24,919
3-S1-2	3,318	0	31	289	1,290	4,927
2-S2-2	0	0	0	0	60	60
3-S2-2	0	0	0	0	421	421
Other @ 7-axle	9	0	7	0	4	20
3-S2-3	0	0	0	0	180	180
Other @ 8-axle	0	0	0	0	0	0
3-*S2-*4	1,085	86	0	0	408	1,579
Other @ 9-axle	0	0	0	0	0	0
Other @ 10-axle	88	0	0	0	58	146
Subtotal	12,233	604	1,348	1,932	16,135	32,252
Tractor + Triples						
2-S1-2-2	9	0	0	5	308	321
3-S1-2-2	0	0	0	0	67	67
Other	0	10	0	0	33	43
Subtotal	9	10	0	5	408	432
Total	304,709	99,297	118,458	156,003	123,663	802,130

* Note: Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet (@ 5-axes or more)
Traffic Region: North Central

<i>Truck + Trailer</i>						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Illinois	407	766	0	0	0	1,173
Indiana	494	570	220	0	0	1,284
Iowa	0	291	0	0	0	291
Kansas	243	534	162	0	0	939
Michigan	602	441	238	150	759	2,191
Minnesota	385	781	187	269	0	1,623
Missouri	294	869	294	0	0	1,457
Nebraska	137	729	67	0	184	1,116
North Dakota	324	366	73	41	38	842
Ohio	2,256	425	0	0	144	2,825
South Dakota	126	172	56	26	0	379
Wisconsin	420	790	0	281	205	1,696
Total	5,687	6,734	1,298	767	1,331	15,816

<i>Tractor + Semitrailer</i>							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Illinois	855	74,597	1,992	188	1,545	778	79,955
Indiana	136	28,343	904	45	407	45	29,879
Iowa	170	17,235	613	0	291	99	18,408
Kansas	137	12,045	459	19	174	19	12,851
Michigan	485	15,638	5,173	0	529	132	21,958
Minnesota	106	10,964	1,294	25	438	393	13,220
Missouri	153	16,988	840	0	277	0	18,258
Nebraska	76	15,756	591	0	395	92	16,909
North Dakota	19	3,571	469	0	102	67	4,227
Ohio	1,004	35,601	2,687	0	365	73	39,731
South Dakota	17	4,150	111	26	133	0	4,436
Wisconsin	436	14,458	1,293	0	158	474	16,819
Total	3,593	249,345	16,425	302	4,813	2,173	276,651

<i>Tractor + Doubles</i>											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	*Other 3-S2-3	*Other 8-axle	*Other 3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Illinois	5,872	2,629	0	0	0	0	0	0	0	0	8,501
Indiana	0	90	0	0	0	0	0	0	0	0	90
Iowa	0	96	0	0	0	0	0	0	0	0	96
Kansas	260	93	0	0	0	0	0	0	0	0	353
Michigan	132	44	0	0	0	0	0	1,077	0	88	1,341
Minnesota	0	0	0	0	0	0	0	0	0	0	0
Missouri	30	60	0	0	0	0	0	0	0	0	90
Nebraska	479	177	0	0	0	0	0	0	0	0	656
North Dakota	10	0	0	0	0	0	0	0	0	0	10
Ohio	871	73	0	0	0	0	0	0	0	0	944
South Dakota	0	56	0	0	9	0	9	0	0	0	73
Wisconsin	79	0	0	0	0	0	0	0	0	0	79
Total	7,734	3,318	0	0	9	0	0	1,085	0	88	12,233

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Illinois	0	0	0	0
Indiana	0	0	0	0
Iowa	0	0	0	0
Kansas	0	0	0	0
Michigan	0	0	0	0
Minnesota	0	0	0	0
Missouri	0	0	0	0
Nebraska	0	0	0	0
North Dakota	0	0	0	0
Ohio	0	0	0	0
South Dakota	9	0	0	9
Wisconsin	0	0	0	0
Total	9	0	0	9

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet (@ 5-axes or more)
Traffic Region: North East

Truck + Trailer						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Connecticut	157	70	24	35	24	309
Maine	265	163	159	19	31	637
Massachusetts	676	327	99	50	0	1,153
New Hampshire	204	119	37	45	17	423
Rhode Island	110	82	7	7	7	214
Vermont	102	43	13	9	0	167
New Jersey	532	164	288	0	41	1,026
New York	1,088	1,040	396	0	0	2,524
Pennsylvania	1,149	574	0	330	0	2,053
Total	4,283	2,583	1,023	494	121	8,504

Tractor + Semitrailer							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Connecticut	22	2,864	177	22	100	11	3,196
Maine	90	3,265	830	10	109	78	4,384
Massachusetts	78	8,123	625	0	220	0	9,047
New Hampshire	55	2,373	127	8	93	25	2,682
Rhode Island	6	1,157	53	7	41	0	1,265
Vermont	21	1,236	38	0	13	4	1,313
New Jersey	205	16,544	821	0	452	164	18,187
New York	187	15,572	701	0	322	47	16,828
Pennsylvania	513	30,095	1,451	58	871	290	33,278
Total	1,178	81,229	4,824	106	2,222	620	90,178

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Connecticut	44	0	0	0	0	0	0	0	0	0	44
Maine	50	0	0	0	0	0	0	10	0	0	61
Massachusetts	28	0	0	0	0	0	0	28	0	0	57
New Hampshire	0	0	0	0	0	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	0	0	0
Vermont	0	0	0	0	0	0	0	0	0	0	0
New Jersey	0	0	0	0	0	0	0	0	0	0	0
New York	280	0	0	0	0	0	0	47	0	0	327
Pennsylvania	116	0	0	0	0	0	0	0	0	0	116
Total	519	0	0	0	0	0	0	86	0	0	604

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Connecticut	0	0	0	0
Maine	0	0	10	10
Massachusetts	0	0	0	0
New Hampshire	0	0	0	0
Rhode Island	0	0	0	0
Vermont	0	0	0	0
New Jersey	0	0	0	0
New York	0	0	0	0
Pennsylvania	0	0	0	0
Total	0	0	10	10

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet (@ 5-axes or more)
Traffic Region: South Atlantic

<i>Truck + Trailer</i>						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Delaware	69	21	0	0	0	90
District of Columbia	0	2	0	0	0	2
Florida	593	481	197	0	0	1,271
Georgia	1,395	767	336	75	0	2,572
Maryland	756	338	0	0	54	1,148
North Carolina	569	1,201	432	0	0	2,201
South Carolina	295	282	138	14	0	729
Virginia	796	376	256	85	0	1,513
West Virginia	217	65	14	0	0	295
Total	4,689	3,532	1,373	175	54	9,822

<i>Tractor + Semitrailer</i>							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Delaware	21	3,212	211	7	217	0	3,667
District of Columbia	0	49	2	0	3	0	53
Florida	769	19,129	1,133	0	330	47	21,408
Georgia	902	22,024	601	38	188	150	23,903
Maryland	308	7,468	444	23	304	0	8,547
North Carolina	286	24,074	501	72	787	346	26,066
South Carolina	72	6,385	400	0	132	43	7,031
Virginia	423	11,680	528	0	293	147	13,071
West Virginia	47	3,229	111	14	127	14	3,541
Total	2,828	97,250	3,930	153	2,380	747	107,288

<i>Tractor + Doubles</i>											
State					*Other		*Other		*Other		Total
	2-S1-2	3-S1-2	2-S2-2	3-S2-2	7-axle	3-S2-3	8-axle	3-*S2-*4	9-axle	10-axle	
Delaware	0	0	0	0	7	0	0	0	0	0	7
District of Columbia	0	0	0	0	0	0	0	0	0	0	0
Florida	94	0	0	0	0	0	0	0	0	0	94
Georgia	0	0	0	0	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	0	0	0	0	0
North Carolina	931	0	0	0	0	0	0	0	0	0	931
South Carolina	0	31	0	0	0	0	0	0	0	0	31
Virginia	261	0	0	0	0	0	0	0	0	0	261
West Virginia	24	0	0	0	0	0	0	0	0	0	24
Total	1,310	31	0	0	7	0	0	0	0	0	1,348

<i>Tractor + Triples</i>				
State	2-S1-2-2	3-S1-2-2	Other	Total
Delaware	0	0	0	0
District of Columbia	0	0	0	0
Florida	0	0	0	0
Georgia	0	0	0	0
Maryland	0	0	0	0
North Carolina	0	0	0	0
South Carolina	0	0	0	0
Virginia	0	0	0	0
West Virginia	0	0	0	0
Total	0	0	0	0

* Number of axes equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet (@ 5-axles or more)
Traffic Region: South Gulf

Truck + Trailer						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Alabama	224	892	73	70	0	1,259
Arkansas	29	158	0	0	0	187
Kentucky	320	107	43	0	0	471
Louisiana	437	1,173	172	203	0	1,984
Mississippi	106	496	66	14	0	682
Oklahoma	599	653	36	0	0	1,289
Tennessee	789	406	159	0	31	1,385
Texas	2,759	2,663	261	0	0	5,683
Total	5,262	6,550	810	287	31	12,940

Tractor + Semitrailer							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Alabama	183	21,019	905	0	293	251	22,651
Arkansas	5	4,228	131	5	87	5	4,461
Kentucky	70	7,760	840	49	285	113	9,117
Louisiana	245	10,682	1,184	0	342	74	12,528
Mississippi	88	7,988	210	31	63	28	8,408
Oklahoma	396	14,238	802	0	252	72	15,760
Tennessee	155	15,340	720	0	569	31	16,815
Texas	261	47,082	3,130	0	652	261	51,386
Total	1,403	128,337	7,922	85	2,543	835	141,126

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	3-S2-3	*Other 8-axle	3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Alabama	110	37	0	0	0	0	0	0	0	0	147
Arkansas	45	0	0	0	0	0	0	0	0	0	45
Kentucky	253	21	0	0	0	0	0	0	0	0	275
Louisiana	25	0	0	0	0	0	0	0	0	0	25
Mississippi	0	28	0	0	0	0	0	0	0	0	28
Oklahoma	0	72	0	0	0	0	0	0	0	0	72
Tennessee	558	0	0	0	0	0	0	0	0	0	558
Texas	652	130	0	0	0	0	0	0	0	0	783
Total	1,643	289	0	0	0	0	0	0	0	0	1,932

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alabama	0	0	0	0
Arkansas	5	0	0	5
Kentucky	0	0	0	0
Louisiana	0	0	0	0
Mississippi	0	0	0	0
Oklahoma	0	0	0	0
Tennessee	0	0	0	0
Texas	0	0	0	0
Total	5	0	0	5

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

1987 Truck Fleet (@ 5-axles or more)

Traffic Region: West

Truck + Trailer						
State	2+*3	3+2	3+*3	*4+2	*4+*3	Total
Alaska	38	107	33	4	31	213
Arizona	154	700	31	0	0	886
California	1,681	6,057	979	113	427	9,257
Colorado	336	655	46	11	0	1,048
Hawaii	5	68	0	0	0	73
Montana	109	406	78	32	46	672
Nevada	39	268	48	9	0	363
Utah	188	380	43	41	0	651
Washington	292	2,643	432	0	51	3,419
Wyoming	91	205	34	43	9	381
Idaho	336	589	79	41	0	1,045
New Mexico	184	112	91	0	0	387
Oregon	215	1,855	197	0	0	2,267
Total	3,667	14,044	2,090	294	564	20,660

Tractor + Semitrailer							
State	2-*S3	3-S2	3-*S3	4-S1	4-S2	4-*S3	Total
Alaska	22	808	107	13	222	280	1,453
Arizona	139	4,055	157	0	16	0	4,366
California	1,916	36,189	1,566	113	451	0	40,234
Colorado	11	1,053	22	11	0	0	1,097
Hawaii	10	1,099	61	5	150	5	1,328
Montana	21	3,607	263	11	174	121	4,198
Nevada	58	1,639	65	14	26	0	1,802
Utah	26	4,522	280	0	103	32	4,963
Washington	77	7,326	392	0	110	26	7,931
Wyoming	18	2,888	187	0	171	61	3,324
Idaho	32	2,671	126	0	17	15	2,861
New Mexico	33	1,546	115	0	16	66	1,776
Oregon	24	9,911	910	24	143	119	11,130
Total	2,385	77,314	4,250	190	1,598	724	86,461

Tractor + Doubles											
State	2-S1-2	3-S1-2	2-S2-2	3-S2-2	*Other 7-axle	*Other 3-S2-3	*Other 8-axle	*Other 3-*S2-*4	*Other 9-axle	*Other 10-axle	Total
Alaska	0	9	0	0	4	0	0	13	0	9	35
Arizona	376	16	0	0	0	0	0	0	0	0	391
California	12,585	777	0	0	0	0	0	0	0	0	13,362
Colorado	0	0	0	0	0	0	0	0	0	0	0
Hawaii	14	5	0	0	0	0	0	0	0	0	19
Montana	32	11	0	0	0	0	0	53	0	32	128
Nevada	69	19	0	0	0	0	0	28	0	0	116
Utah	107	41	0	26	0	9	0	152	0	17	351
Washington	179	103	51	282	0	154	0	103	0	0	871
Wyoming	9	54	0	0	0	0	0	0	0	0	63
Idaho	9	44	9	114	0	17	0	35	0	0	227
New Mexico	0	0	0	0	0	0	0	0	0	0	0
Oregon	333	214	0	0	0	0	0	24	0	0	570
Total	13,713	1,290	60	421	4	180	0	408	0	58	16,135

Tractor + Triples				
State	2-S1-2-2	3-S1-2-2	Other	Total
Alaska	0	0	0	0
Arizona	0	0	0	0
California	0	0	0	0
Colorado	0	0	0	0
Hawaii	0	0	0	0
Montana	0	0	0	0
Nevada	14	0	7	21
Utah	9	0	0	9
Washington	0	26	26	51
Wyoming	0	18	0	18
Idaho	0	0	0	0
New Mexico	0	0	0	0
Oregon	285	24	0	309
Total	308	67	33	408

* Number of axles equal to or more than specified number.

** Excludes pickups, mini-vans, utility sports, station wagons, trucks or truck-tractors with 4-tires, and trucks pulling 1-axle trailer or 1-axle utility trailer.

Appendix C

Detailed Body Type Analysis by the 5 Regions For the 5-Axles or More Truck Fleet

**1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
At the National Level**

Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle or more	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Multi-Stop or Step Van	34	0	374	0	111	319	9	0	848
Platform with Devices	1,981	161	5,297	878	222	115	150	0	8,803
Low Boy Platform	2,913	887	36,710	16,739	1,322	482	437	49	59,540
Basic Platform	13,202	1,279	122,023	6,906	5,517	4,640	3,622	36	157,223
Livestock Truck	885	78	10,012	389	575	440	116	0	12,496
Insulated Non-refrigerated Van	134	0	9,391	662	192	255	31	0	10,666
Insulated Refrigerated Van	669	78	95,224	2,203	2,293	513	812	109	101,900
Drop Frame Van	34	11	15,514	476	314	1,611	259	99	18,320
Open Top Van	609	84	7,876	1,319	326	127	512	10	10,862
Basic Enclosed Van	1,576	106	253,777	6,917	4,359	20,812	4,933	401	292,881
Beverage Truck	0	0	1,393	0	76	59	38	0	1,567
Utility Truck	1,422	47	338	167	0	0	0	0	1,974
Winch/Crane Truck	1,091	117	1,597	604	75	0	0	0	3,484
Wrecker	0	9	127	47	0	0	0	0	183
Pole, Logging Truck	4,147	815	22,313	2,476	1,084	0	418	0	31,253
Auto Transport	717	0	13,164	515	230	0	0	0	14,626
Service Truck	281	0	46	0	0	0	0	0	327
Yard Tractor	0	10	2,304	57	4	0	0	0	2,375
Oilfield Truck	699	23	3,165	320	138	0	5	0	4,350
Grain Bodies	3,342	579	32,697	1,224	1,461	946	968	0	41,217
Garbage Truck	578	176	2,195	281	254	0	0	0	3,483
Dump Truck	20,666	5,430	51,301	12,891	3,084	1,780	3,680	34	98,865
Tank Truck For Liquid or Gases	2,759	1,327	61,043	4,261	1,546	127	1,470	9	72,543
Tank Truck For Dry Bulk	224	29	15,809	606	503	1,240	1,006	0	19,417
Concrete Mixer	123	0	351	145	0	0	0	0	618
Other	200	262	1,602	4,337	27	0	97	0	6,525
Total	58,286	11,509	765,642	64,418	23,712	33,468	18,564	747	976,345

1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: North Central

Body Type	Vehicle Group								Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples		
Multi-Stop or Step Van	0	0	222	0	111	0	0	0	0	333
Platform with Devices	594	113	1,889	383	11	0	34	0	0	3,025
Low Boy Platform	1,079	116	13,235	6,433	327	373	179	0	0	21,741
Basic Platform	3,285	649	42,794	3,322	1,572	63	426	0	0	52,110
Livestock Truck	8	0	5,451	102	264	0	0	0	0	5,825
Insulated Non-refrigerated Van	134	0	3,387	246	75	127	11	0	0	3,980
Insulated Refrigerated Van	111	0	38,268	877	1,160	47	259	71	0	40,793
Drop Frame Van	0	11	7,467	82	137	266	111	8	0	8,082
Open Top Van	0	0	1,386	111	78	0	0	0	0	1,576
Basic Enclosed Van	362	0	110,884	2,599	1,850	6,942	1,431	0	0	124,067
Beverage Truck	0	0	226	0	24	47	0	0	0	297
Utility Truck	0	34	23	0	0	0	0	0	0	58
Winch/Crane Truck	529	107	384	240	71	0	0	0	0	1,330
Wrecker	0	0	46	34	0	0	0	0	0	80
Pole, Logging Truck	460	381	1,762	497	291	0	0	0	0	3,391
Auto Transport	679	0	9,622	402	186	0	0	0	0	10,889
Service Truck	0	0	39	0	0	0	0	0	0	39
Yard Tractor	0	0	509	0	0	0	0	0	0	509
Oilfield Truck	35	23	347	82	0	0	0	0	0	486
Grain Bodies	1,983	459	21,758	807	1,081	187	209	0	0	26,484
Garbage Truck	135	161	481	172	0	0	0	0	0	949
Dump Truck	4,158	2,267	16,164	6,008	596	0	2,169	0	0	31,361
Tank Truck For Liquid or Gases	480	186	22,292	1,708	222	0	56	0	0	24,943
Tank Truck For Dry Bulk	25	0	6,553	279	254	0	142	0	0	7,253
Concrete Mixer	24	0	161	145	0	0	0	0	0	329
Other	8	0	66	730	8	0	0	0	0	812
Total	14,087	4,507	305,414	25,258	8,316	8,052	5,027	79	79	370,741

1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: North East

Body Type	Vehicle Group								Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples		
Multi-Stop or Step Van	0	0	2	0	0	0	0	0	0	2
Platform with Devices	527	35	756	100	71	0	0	0	0	1,489
Low Boy Platform	71	114	5,168	2,022	239	57	5	0	0	7,676
Basic Platform	1,057	25	13,174	1,346	606	69	2	0	0	16,279
Livestock Truck	0	0	291	6	0	0	29	0	0	326
Insulated Non-refrigerated Van	0	0	781	0	92	0	0	0	0	873
Insulated Refrigerated Van	65	0	9,288	276	200	12	87	0	0	9,927
Drop Frame Van	0	0	1,891	69	46	410	57	26	0	2,499
Open Top Van	29	0	895	295	106	0	0	0	0	1,326
Basic Enclosed Van	135	84	35,425	673	1,189	870	539	7	0	38,921
Beverage Truck	0	0	254	0	34	0	29	0	0	317
Utility Truck	439	0	29	0	0	0	0	0	0	468
Winch/Crane Truck	6	0	114	0	0	0	0	0	0	120
Wrecker	0	0	0	0	0	0	0	0	0	0
Pole, Logging Truck	17	62	681	721	21	0	0	0	0	1,501
Auto Transport	0	0	527	2	12	0	0	0	0	541
Service Truck	0	0	7	0	0	0	0	0	0	7
Yard Tractor	0	0	302	2	0	0	0	0	0	304
Oilfield Truck	0	0	31	0	30	0	0	0	0	61
Grain Bodies	58	0	403	26	60	0	0	0	0	547
Garbage Truck	2	15	845	109	230	0	0	0	0	1,202
Dump Truck	3,684	973	7,893	2,188	1,020	0	0	0	0	15,759
Tank Truck For Liquid or Gases	99	0	9,469	281	396	0	58	0	0	10,302
Tank Truck For Dry Bulk	8	29	1,878	58	6	0	113	0	0	2,091
Concrete Mixer	0	0	2	0	0	0	0	0	0	2
Other	20	0	133	83	0	0	29	0	0	264
Total	6,218	1,336	90,238	8,256	4,357	1,417	948	33	112,804	

1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: South Atlantic

Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Multi-Stop or Step Van	0	0	140	0	0	319	0	0	460
Platform with Devices	187	12	847	58	35	0	0	0	1,140
Low Boy Platform	503	78	5,829	1,785	294	52	65	0	8,606
Basic Platform	1,728	60	17,526	513	784	0	0	0	20,611
Livestock Truck	299	0	769	25	101	0	0	0	1,194
Insulated Non-refrigerated Van	0	0	1,305	4	4	29	0	0	1,342
Insulated Refrigerated Van	137	36	14,181	281	275	26	61	0	14,995
Drop Frame Van	0	0	1,668	70	4	237	0	0	1,978
Open Top Van	83	41	1,955	36	75	0	0	0	2,191
Basic Enclosed Van	172	23	38,505	983	483	923	481	0	41,570
Beverage Truck	0	0	357	0	0	0	0	0	357
Utility Truck	189	12	123	0	0	0	0	0	324
Winch/Crane Truck	0	0	43	29	0	0	0	0	72
Wrecker	0	0	27	12	0	0	0	0	40
Pole, Logging Truck	169	26	6,718	305	209	0	0	0	7,427
Auto Transport	0	0	668	48	13	0	0	0	729
Service Truck	281	0	0	0	0	0	0	0	281
Yard Tractor	0	0	504	0	0	0	0	0	504
Oilfield Truck	0	0	0	0	0	0	0	0	0
Grain Bodies	4	0	1,429	38	61	0	4	0	1,535
Garbage Truck	0	0	286	0	0	0	0	0	286
Dump Truck	2,091	80	6,180	931	467	0	0	0	9,750
Tank Truck For Liquid or Gases	64	6	8,221	217	386	0	0	0	8,893
Tank Truck For Dry Bulk	12	0	2,574	35	137	0	0	0	2,758
Concrete Mixer	43	0	85	0	0	0	0	0	128
Other	83	252	39	1,005	0	0	0	0	1,380
Total	6,044	628	109,979	6,375	3,327	1,586	611	0	128,549

1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: South Gulf

Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Multi-Stop or Step Van	0	0	0	0	0	0	0	0	0
Platform with Devices	68	0	912	134	84	0	0	0	1,198
Low Boy Platform	934	549	6,632	4,547	214	0	24	0	12,901
Basic Platform	2,499	126	23,330	873	1,005	0	181	0	28,013
Livestock Truck	361	74	1,746	103	74	0	0	0	2,360
Insulated Non-refrigerated Van	0	0	1,604	66	5	95	0	0	1,770
Insulated Refrigerated Van	149	24	12,670	194	536	64	47	0	13,683
Drop Frame Van	0	0	1,933	93	74	340	24	0	2,465
Open Top Van	63	32	1,856	98	14	0	0	0	2,063
Basic Enclosed Van	317	0	44,762	764	732	2,234	218	0	49,028
Beverage Truck	0	0	215	0	0	0	0	0	215
Utility Truck	710	0	5	167	0	0	0	0	881
Winch/Crane Truck	280	0	323	305	0	0	0	0	907
Wrecker	0	0	0	0	0	0	0	0	0
Pole, Logging Truck	1,048	100	6,008	394	164	0	149	0	7,862
Auto Transport	0	0	1,369	53	19	0	0	0	1,441
Service Truck	0	0	0	0	0	0	0	0	0
Yard Tractor	0	0	635	33	0	0	0	0	668
Oilfield Truck	638	0	2,388	201	103	0	0	0	3,330
Grain Bodies	1,002	0	6,221	83	144	0	0	0	7,449
Garbage Truck	0	0	279	0	24	0	0	0	303
Dump Truck	2,246	164	10,089	1,988	468	0	0	0	14,956
Tank Truck For Liquid or Gases	307	103	15,157	958	334	0	0	0	16,859
Tank Truck For Dry Bulk	28	0	3,678	29	82	0	0	0	3,818
Concrete Mixer	29	0	54	0	0	0	0	0	83
Other	74	0	433	1,864	0	0	0	0	2,371
Total	10,752	1,173	142,300	12,946	4,079	2,732	644	0	174,625

1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: West

Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Multi-Stop or Step Van	34	0	9	0	0	0	9	0	53
Platform with Devices	606	0	894	202	20	115	115	0	1,952
Low Boy Platform	326	30	5,845	1,953	248	0	164	49	8,615
Basic Platform	4,634	418	25,199	852	1,551	4,508	3,012	36	40,210
Livestock Truck	217	4	1,755	153	136	440	87	0	2,792
Insulated Non-refrigerated Van	0	0	2,314	346	16	4	20	0	2,701
Insulated Refrigerated Van	208	19	20,817	575	122	365	358	38	22,502
Drop Frame Van	34	0	2,556	163	54	359	67	65	3,297
Open Top Van	434	10	1,783	778	52	127	512	10	3,707
Basic Enclosed Van	590	0	24,201	1,898	105	9,844	2,264	394	39,296
Beverage Truck	0	0	340	0	19	12	9	0	380
Utility Truck	85	0	158	0	0	0	0	0	243
Winch/Crane Truck	276	10	735	30	4	0	0	0	1,055
Wrecker	0	9	54	0	0	0	0	0	63
Pole, Logging Truck	2,452	247	7,145	560	399	0	270	0	11,072
Auto Transport	38	0	978	10	0	0	0	0	1,027
Service Truck	0	0	0	0	0	0	0	0	0
Yard Tractor	0	10	353	21	4	0	0	0	389
Oilfield Truck	27	0	399	37	5	0	5	0	472
Grain Bodies	295	120	2,886	271	116	759	755	0	5,202
Garbage Truck	440	0	304	0	0	0	0	0	745
Dump Truck	8,486	1,946	10,974	1,776	533	1,780	1,511	34	27,040
Tank Truck For Liquid or Gases	1,811	1,032	5,905	1,098	208	127	1,356	9	11,546
Tank Truck For Dry Bulk	151	0	1,126	205	23	1,240	751	0	3,497
Concrete Mixer	27	0	49	0	0	0	0	0	76
Other	14	10	932	655	19	0	68	0	1,698
Total	21,184	3,865	117,711	11,583	3,633	19,681	11,335	635	189,627

**1987 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
At the National Level**

Body Type	Vehicle Group								Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle or more	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples		
Multi-Stop or Step Van	352	50	920	0	0	0	0	0	0	1,322
Platform with Devices	1,586	905	6,563	1,192	200	113	26	0	0	10,583
Low Boy Platform	4,806	715	31,456	14,107	1,477	134	125	74	0	52,895
Basic Platform	15,414	1,459	129,473	9,446	3,136	2,542	1,054	34	0	162,557
Livestock Truck	1,165	197	10,377	510	144	0	17	0	0	12,410
Insulated Non-refrigerated Van	119	163	11,238	326	260	113	4	24	0	12,246
Insulated Refrigerated Van	450	84	68,734	2,140	984	277	72	0	0	72,741
Drop Frame Van	109	38	12,703	965	472	1,571	130	9	0	15,995
Open Top Van	330	57	5,888	586	128	0	68	0	0	7,056
Basic Enclosed Van	1,991	570	191,619	6,362	2,588	15,984	3,544	275	0	222,932
Beverage Truck	0	0	490	94	22	113	0	0	0	719
Utility Truck	1,445	8	63	0	0	0	0	0	0	1,517
Winch/Crane Truck	1,473	214	1,540	243	9	0	0	0	0	3,480
Wrecker	181	55	190	11	0	0	0	0	0	437
Pole, Logging Truck	4,048	668	16,045	1,250	587	0	9	0	0	22,607
Auto Transport	262	5	9,898	136	305	0	0	0	0	10,606
Service Truck	338	0	15	0	0	0	0	0	0	353
Yard Tractor	4	0	1,908	76	12	0	0	0	0	2,000
Oilfield Truck	155	10	2,166	216	212	0	0	0	0	2,759
Grain Bodies	1,251	482	20,042	1,226	496	1,298	664	0	0	25,460
Garbage Truck	51	0	945	140	0	0	31	0	0	1,167
Dump Truck	17,792	4,054	45,947	10,048	1,967	1,352	1,039	17	0	82,216
Tank Truck For Liquid or Gases	2,439	386	51,018	2,829	1,068	679	105	0	0	58,524
Tank Truck For Dry Bulk	178	110	13,536	737	270	744	445	0	0	16,020
Concrete Mixer	5	670	230	48	0	0	0	0	0	952
Other	726	174	468	1,150	57	0	0	0	0	2,575
Total	56,669	11,073	633,473	53,837	14,393	24,918	7,333	432	0	802,127

1987 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: North Central

Body Type	Vehicle Group								Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples		
Multi-Stop or Step Van	352	0	351	0	0	0	0	0	0	703
Platform with Devices	487	242	1,394	635	82	0	0	0	0	2,841
Low Boy Platform	600	209	9,856	5,969	163	88	45	0	0	16,932
Basic Platform	3,066	629	51,920	4,601	1,187	156	250	0	0	61,808
Livestock Truck	612	166	4,817	65	77	0	9	0	0	5,746
Insulated Non-refrigerated Van	53	0	5,286	98	104	0	0	0	0	5,542
Insulated Refrigerated Van	55	0	30,438	940	239	0	0	0	0	31,673
Drop Frame Van	0	0	7,006	89	89	598	130	9	0	7,921
Open Top Van	25	0	910	25	0	0	0	0	0	960
Basic Enclosed Van	642	45	81,913	1,772	1,415	6,836	2,850	0	0	95,472
Beverage Truck	0	0	176	0	22	0	0	0	0	198
Utility Truck	262	0	0	0	0	0	0	0	0	262
Winch/Crane Truck	90	44	211	25	0	0	0	0	0	370
Wrecker	0	0	36	0	0	0	0	0	0	36
Pole, Logging Truck	51	116	549	142	34	0	0	0	0	892
Auto Transport	44	0	4,416	25	294	0	0	0	0	4,778
Service Truck	162	0	0	0	0	0	0	0	0	162
Yard Tractor	0	0	495	0	0	0	0	0	0	495
Oilfield Truck	28	10	181	54	90	0	0	0	0	362
Grain Bodies	825	311	13,169	762	299	56	272	0	0	15,695
Garbage Truck	0	0	335	45	0	0	0	0	0	380
Dump Truck	4,275	1,431	13,757	4,736	714	0	768	0	0	25,681
Tank Truck For Liquid or Gases	518	48	16,778	1,315	297	0	44	0	0	19,000
Tank Truck For Dry Bulk	0	0	4,938	431	0	0	132	0	0	5,502
Concrete Mixer	0	242	175	0	0	0	0	0	0	417
Other	0	174	238	460	9	0	0	0	0	881
Total	12,148	3,668	249,344	22,191	5,115	7,734	4,499	9	9	304,708

1987 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: North East

Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Multi-Stop or Step Van	0	0	113	0	0	0	0	0	113
Platform with Devices	150	189	1,127	151	14	0	0	0	1,633
Low Boy Platform	335	372	5,414	1,716	360	0	0	0	8,197
Basic Platform	2,772	84	16,796	777	261	0	28	10	20,730
Livestock Truck	0	0	242	0	8	0	0	0	250
Insulated Non-refrigerated Van	41	19	998	77	49	0	0	0	1,184
Insulated Refrigerated Van	0	0	6,850	215	173	0	0	0	7,238
Drop Frame Van	0	0	1,730	10	41	0	0	0	1,782
Open Top Van	0	0	690	130	0	0	10	0	831
Basic Enclosed Van	6	8	26,049	627	562	519	47	0	27,817
Beverage Truck	0	0	127	0	0	0	0	0	127
Utility Truck	28	8	11	0	0	0	0	0	48
Winch/Crane Truck	57	50	118	0	0	0	0	0	225
Wrecker	50	47	59	6	0	0	0	0	161
Pole, Logging Truck	11	77	537	482	162	0	0	0	1,268
Auto Transport	0	0	1,355	50	6	0	0	0	1,411
Service Truck	0	0	0	0	0	0	0	0	0
Yard Tractor	0	0	161	0	0	0	0	0	161
Oilfield Truck	0	0	10	0	0	0	0	0	10
Grain Bodies	0	0	309	4	0	0	0	0	313
Garbage Truck	0	0	291	69	0	0	0	0	361
Dump Truck	3,285	734	7,710	1,938	352	0	0	0	14,020
Tank Truck For Liquid or Gases	21	0	8,568	236	339	0	0	0	9,163
Tank Truck For Dry Bulk	0	82	1,949	58	0	0	0	0	2,089
Concrete Mixer	0	0	14	0	0	0	0	0	14
Other	75	0	0	75	0	0	0	0	150
Total	6,832	1,672	81,228	6,622	2,328	519	86	10	99,297

1987 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: South Atlantic

Body Type	Vehicle Group							Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more		Triples
Multi-Stop or Step Van	0	0	360	0	0	0	0	0	360
Platform with Devices	126	277	1,249	23	95	0	0	0	1,771
Low Boy Platform	1,290	59	5,375	1,810	483	0	0	0	9,018
Basic Platform	2,345	123	18,123	979	703	0	0	0	22,273
Livestock Truck	0	0	809	72	0	0	0	0	881
Insulated Non-refrigerated Van	0	0	1,278	47	16	0	0	0	1,341
Insulated Refrigerated Van	0	47	11,360	289	383	47	0	0	12,126
Drop Frame Van	16	38	1,104	758	72	523	0	0	2,510
Open Top Van	72	0	1,653	38	38	0	0	0	1,799
Basic Enclosed Van	62	380	31,571	1,305	228	739	7	0	34,292
Beverage Truck	0	0	153	94	0	0	0	0	248
Utility Truck	710	0	47	0	0	0	0	0	757
Winch/Crane Truck	335	85	24	0	0	0	0	0	444
Wrecker	0	0	52	0	0	0	0	0	52
Pole, Logging Truck	548	38	3,772	147	82	0	0	0	4,587
Auto Transport	47	0	1,360	62	0	0	0	0	1,468
Service Truck	0	0	0	0	0	0	0	0	0
Yard Tractor	0	0	443	72	0	0	0	0	515
Oilfield Truck	0	0	0	0	0	0	0	0	0
Grain Bodies	0	0	1,010	81	0	0	0	0	1,091
Garbage Truck	0	0	0	0	0	0	31	0	31
Dump Truck	2,380	488	5,921	841	195	0	0	0	9,825
Tank Truck For Liquid or Gases	0	66	8,394	495	239	0	0	0	9,194
Tank Truck For Dry Bulk	91	0	3,062	51	0	0	0	0	3,204
Concrete Mixer	0	0	14	0	0	0	0	0	14
Other	199	0	114	342	0	0	0	0	655
Total	8,221	1,601	97,249	7,505	2,533	1,310	38	0	118,458

1987 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: South Gulf

Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Multi-Stop or Step Van	0	0	0	0	0	0	0	0	0
Platform with Devices	455	130	1,827	57	0	0	0	0	2,469
Low Boy Platform	2,195	50	6,191	3,344	247	45	21	5	12,098
Basic Platform	3,389	160	26,366	1,516	550	25	0	0	32,006
Livestock Truck	149	0	3,412	266	43	0	0	0	3,869
Insulated Non-refrigerated Van	25	31	1,337	62	31	0	0	0	1,485
Insulated Refrigerated Van	243	37	10,811	144	121	0	0	0	11,356
Drop Frame Van	93	0	2,031	66	158	290	0	0	2,637
Open Top Van	78	31	1,473	90	37	0	0	0	1,708
Basic Enclosed Van	678	128	35,917	1,405	224	1,283	181	0	39,816
Beverage Truck	0	0	17	0	0	0	0	0	17
Utility Truck	201	0	5	0	0	0	0	0	206
Winch/Crane Truck	166	0	658	194	0	0	0	0	1,018
Wrecker	10	0	35	0	0	0	0	0	45
Pole, Logging Truck	1,017	262	4,705	404	135	0	0	0	6,522
Auto Transport	135	0	1,251	0	5	0	0	0	1,391
Service Truck	139	0	0	0	0	0	0	0	139
Yard Tractor	0	0	605	0	0	0	0	0	605
Oilfield Truck	118	0	1,610	121	0	0	0	0	1,849
Grain Bodies	140	84	3,753	50	184	0	36	0	4,247
Garbage Truck	0	0	144	0	0	0	0	0	144
Dump Truck	2,005	198	11,245	1,700	499	0	36	0	15,683
Tank Truck For Liquid or Gases	220	0	12,335	337	87	0	14	0	12,992
Tank Truck For Dry Bulk	87	17	2,584	151	261	0	0	0	3,100
Concrete Mixer	0	0	5	48	0	0	0	0	53
Other	270	0	21	207	48	0	0	0	547
Total	11,812	1,128	128,337	10,160	2,628	1,643	289	5	156,003

1987 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Body Type by Vehicle Group
Traffic Region: West

Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Multi-Stop or Step Van	0	50	95	0	0	0	0	0	146
Platform with Devices	367	65	966	324	9	113	26	0	1,870
Low Boy Platform	386	25	4,620	1,268	224	0	58	69	6,651
Basic Platform	3,842	463	16,269	1,573	435	2,361	776	24	25,742
Livestock Truck	404	31	1,097	107	15	0	9	0	1,663
Insulated Non-refrigerated Van	0	113	2,339	41	60	113	4	24	2,694
Insulated Refrigerated Van	152	0	9,275	552	67	230	72	0	10,348
Drop Frame Van	0	0	832	41	113	160	0	0	1,145
Open Top Van	156	26	1,162	304	53	0	58	0	1,759
Basic Enclosed Van	603	9	16,171	1,253	160	6,608	460	275	25,537
Beverage Truck	0	0	16	0	0	113	0	0	129
Utility Truck	244	0	0	0	0	0	0	0	244
Winch/Crane Truck	825	35	529	25	9	0	0	0	1,423
Wrecker	121	9	9	5	0	0	0	0	143
Pole, Logging Truck	2,421	175	6,482	76	175	0	9	0	9,338
Auto Transport	35	5	1,517	0	0	0	0	0	1,557
Service Truck	37	0	15	0	0	0	0	0	52
Yard Tractor	4	0	204	5	12	0	0	0	225
Oilfield Truck	9	0	365	41	121	0	0	0	536
Grain Bodies	285	87	1,800	329	14	1,243	355	0	4,113
Garbage Truck	51	0	174	26	0	0	0	0	251
Dump Truck	5,847	1,203	7,314	833	207	1,352	235	17	17,008
Tank Truck For Liquid or Gases	1,680	273	4,942	446	106	679	47	0	8,173
Tank Truck For Dry Bulk	0	11	1,004	46	9	744	313	0	2,125
Concrete Mixer	5	427	21	0	0	0	0	0	453
Other	182	0	94	65	0	0	0	0	342
Total	17,656	3,004	77,315	7,359	1,788	13,713	2,421	408	123,664

Appendix D

Major Body Type Analysis by the 5 Regions For the 5-Axles or More Truck Fleet

**1992 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: North Central**

Major Body Type	Vehicle Group							Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more		Triples
Platform	4,363	765	56,029	9,755	1,898	435	605	0	73,850
Van	607	11	161,614	3,915	3,410	7,382	1,812	79	178,832
Auto Transport	679	0	9,622	402	186	0	0	0	10,889
Dump Truck	4,158	2,267	16,164	6,008	596	0	2,169	0	31,361
Grain Bodies	1,983	459	21,758	807	1,081	187	209	0	26,484
Garbage Truck	135	161	481	172	0	0	0	0	949
Livestock Truck	8	0	5,451	102	264	0	0	0	5,825
Pole, Logging etc. Truck	460	381	1,762	497	291	0	0	0	3,391
Tank Truck, Dry Bulk	25	0	6,553	279	254	0	142	0	7,253
Tank Truck, Liquid or Gases	480	186	22,292	1,708	222	0	56	0	24,943
Other	1,189	278	3,688	1,614	114	47	34	0	6,965
Total	14,087	4,507	305,414	25,258	8,316	8,052	5,027	79	370,741

**1992 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: North East**

Major Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Platform	1,129	139	18,342	3,368	844	126	8	0	23,955
Van	229	84	48,282	1,313	1,633	1,291	683	33	53,547
Auto Transport	0	0	527	2	12	0	0	0	541
Dump Truck	3,684	973	7,893	2,188	1,020	0	0	0	15,759
Grain Bodies	58	0	403	26	60	0	0	0	547
Garbage Truck	2	15	845	109	230	0	0	0	1,202
Livestock Truck	0	0	291	6	0	0	29	0	326
Pole, Logging etc. Truck	17	62	681	721	21	0	0	0	1,501
Tank Truck, Dry Bulk	8	29	1,878	58	6	0	113	0	2,091
Tank Truck, Liquid or Gases	99	0	9,469	281	396	0	58	0	10,302
Other	992	35	1,628	185	135	0	58	0	3,033
Total	6,218	1,336	90,238	8,256	4,357	1,417	948	33	112,804

1992 Truck Fleet (@ 5-axles or more)
Number of Vehicles by Major Body Type by Vehicle Group
Traffic Region: South Atlantic

Major Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Platform	2,231	138	23,355	2,298	1,078	52	65	0	29,218
Van	392	100	57,753	1,374	841	1,533	541	0	62,535
Auto Transport	0	0	668	48	13	0	0	0	729
Dump Truck	2,091	80	6,180	931	467	0	0	0	9,750
Grain Bodies	4	0	1,429	38	61	0	4	0	1,535
Garbage Truck	0	0	286	0	0	0	0	0	286
Livestock Truck	299	0	769	25	101	0	0	0	1,194
Pole, Logging etc. Truck	169	26	6,718	305	209	0	0	0	7,427
Tank Truck, Dry Bulk	12	0	2,574	35	137	0	0	0	2,758
Tank Truck, Liquid or Gases	64	6	8,221	217	386	0	0	0	8,893
Other	782	277	2,026	1,105	35	0	0	0	4,225
Total	6,044	628	109,979	6,375	3,327	1,586	611	0	128,549

**1992 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: South Gulf**

Major Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more	Triples	
Platform	3,433	675	29,962	5,420	1,219	0	205	0	40,915
Van	529	56	62,825	1,215	1,362	2,732	290	0	69,009
Auto Transport	0	0	1,369	53	19	0	0	0	1,441
Dump Truck	2,246	164	10,089	1,988	468	0	0	0	14,956
Grain Bodies	1,002	0	6,221	83	144	0	0	0	7,449
Garbage Truck	0	0	279	0	24	0	0	0	303
Livestock Truck	361	74	1,746	103	74	0	0	0	2,360
Pole, Logging etc. Truck	1,048	100	6,008	394	164	0	149	0	7,862
Tank Truck, Dry Bulk	28	0	3,678	29	82	0	0	0	3,818
Tank Truck, Liquid or Gases	307	103	15,157	958	334	0	0	0	16,859
Other	1,798	0	4,965	2,703	188	0	0	0	9,654
Total	10,752	1,173	142,300	12,946	4,079	2,732	644	0	174,625

**1992 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: West**

Major Body Type	Vehicle Group							Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6-axle or more		Triples
Platform	4,960	449	31,044	2,805	1,799	4,508	3,177	84	48,826
Van	1,301	28	51,680	3,760	349	10,700	3,230	507	71,554
Auto Transport	38	0	978	10	0	0	0	0	1,027
Dump Truck	8,486	1,946	10,974	1,776	533	1,780	1,511	34	27,040
Grain Bodies	295	120	2,886	271	116	759	755	0	5,202
Garbage Truck	440	0	304	0	0	0	0	0	745
Livestock Truck	217	4	1,755	153	136	440	87	0	2,792
Pole, Logging etc. Truck	2,452	247	7,145	560	399	0	270	0	11,072
Tank Truck, Dry Bulk	151	0	1,126	205	23	1,240	751	0	3,497
Tank Truck, Liquid or Gases	1,811	1,032	5,905	1,098	208	127	1,356	9	11,546
Other	1,034	39	3,913	946	70	127	197	0	6,328
Total	21,184	3,865	117,711	11,583	3,633	19,681	11,335	635	189,627

**1987 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: North Central**

Major Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6 axles or more	Triples	
Platform	3,666	838	61,776	10,571	1,350	244	295	0	78,740
Van	1,126	45	125,904	2,925	1,848	7,434	2,980	9	142,270
Auto Transport	44	0	4,416	25	294	0	0	0	4,778
Dump Truck	4,275	1,431	13,757	4,736	714	0	768	0	25,681
Grain Bodies	825	311	13,169	762	299	56	272	0	15,695
Garbage Truck	0	0	335	45	0	0	0	0	380
Livestock Truck	612	166	4,817	65	77	0	9	0	5,746
Pole, Logging etc. Truck	51	116	549	142	34	0	0	0	892
Tank Truck, Dry Bulk	0	0	4,938	431	0	0	132	0	5,502
Tank Truck, Liquid or Gases	518	48	16,778	1,315	297	0	44	0	19,000
Other	1,030	712	2,906	1,174	203	0	0	0	6,025
Total	12,148	3,668	249,344	22,191	5,115	7,734	4,499	9	304,708

**1987 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: North East**

Major Body Type	Vehicle Group							Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6 axles or more		Triples
Platform	3,107	456	22,210	2,493	621	0	28	10	28,927
Van	47	27	36,431	1,059	825	519	57	0	38,965
Auto Transport	0	0	1,355	50	6	0	0	0	1,411
Dump Truck	3,285	734	7,710	1,938	352	0	0	0	14,020
Grain Bodies	0	0	309	4	0	0	0	0	313
Garbage Truck	0	0	291	69	0	0	0	0	361
Livestock Truck	0	0	242	0	8	0	0	0	250
Pole, Logging etc. Truck	11	77	537	482	162	0	0	0	1,268
Tank Truck, Dry Bulk	0	82	1,949	58	0	0	0	0	2,089
Tank Truck, Liquid or Gases	21	0	8,568	236	339	0	0	0	9,163
Other	361	294	1,628	233	14	0	0	0	2,530
Total	6,832	1,672	81,228	6,622	2,328	519	86	10	99,297

**1987 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: South Atlantic**

Major Body Type	Vehicle Group							Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6 axles or more		Triples
Platform	3,635	182	23,498	2,790	1,186	0	0	0	31,291
Van	149	465	47,326	2,436	736	1,310	7	0	52,429
Auto Transport	47	0	1,360	62	0	0	0	0	1,468
Dump Truck	2,380	488	5,921	841	195	0	0	0	9,825
Grain Bodies	0	0	1,010	81	0	0	0	0	1,091
Garbage Truck	0	0	0	0	0	0	31	0	31
Livestock Truck	0	0	809	72	0	0	0	0	881
Pole, Logging etc. Truck	548	38	3,772	147	82	0	0	0	4,587
Tank Truck, Dry Bulk	91	0	3,062	51	0	0	0	0	3,204
Tank Truck, Liquid or Gases	0	66	8,394	495	239	0	0	0	9,194
Other	1,370	363	2,097	531	95	0	0	0	4,456
Total	8,221	1,601	97,249	7,505	2,533	1,310	38	0	118,458

**1987 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: South Gulf**

Major Body Type	Vehicle Group								Total
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6 axles or more	Triples	
Platform	5,584	210	32,557	4,859	796	70	21	5	44,103
Van	1,117	226	51,568	1,766	571	1,573	181	0	57,002
Auto Transport	135	0	1,251	0	5	0	0	0	1,391
Dump Truck	2,005	198	11,245	1,700	499	0	36	0	15,683
Grain Bodies	140	84	3,753	50	184	0	36	0	4,247
Garbage Truck	0	0	144	0	0	0	0	0	144
Livestock Truck	149	0	3,412	266	43	0	0	0	3,869
Pole, Logging etc. Truck	1,017	262	4,705	404	135	0	0	0	6,522
Tank Truck, Dry Bulk	87	17	2,584	151	261	0	0	0	3,100
Tank Truck, Liquid or Gases	220	0	12,335	337	87	0	14	0	12,992
Other	1,358	130	4,783	628	48	0	0	0	6,948
Total	11,812	1,128	128,337	10,160	2,628	1,643	289	5	156,003

**1987 Truck Fleet (@ 5-axles or more)
 Number of Vehicles by Major Body Type by Vehicle Group
 Traffic Region: West**

Major Body Type	Vehicle Group							Total	
	Truck + Trailer @ 5- axle	Truck + Trailer @ 6- axle	3-S2	Tridem axle semitrailer	4S1/S2	STAA (2-S1-2)	Doubles @ 6 axles or more		Triples
Platform	4,228	488	20,889	2,841	659	2,361	834	93	32,393
Van	911	197	29,875	2,191	453	7,110	593	298	41,628
Auto Transport	35	5	1,517	0	0	0	0	0	1,557
Dump Truck	5,847	1,203	7,314	833	207	1,352	235	17	17,008
Grain Bodies	285	87	1,800	329	14	1,243	355	0	4,113
Garbage Truck	51	0	174	26	0	0	0	0	251
Livestock Truck	404	31	1,097	107	15	0	9	0	1,663
Pole, Logging etc. Truck	2,421	175	6,482	76	175	0	9	0	9,338
Tank Truck, Dry Bulk	0	11	1,004	46	9	744	313	0	2,125
Tank Truck, Liquid or Gases	1,680	273	4,942	446	106	679	47	0	8,173
Other	1,794	536	2,220	464	151	225	26	0	5,416
Total	17,656	3,004	77,315	7,359	1,788	13,713	2,421	408	123,664

Appendix E

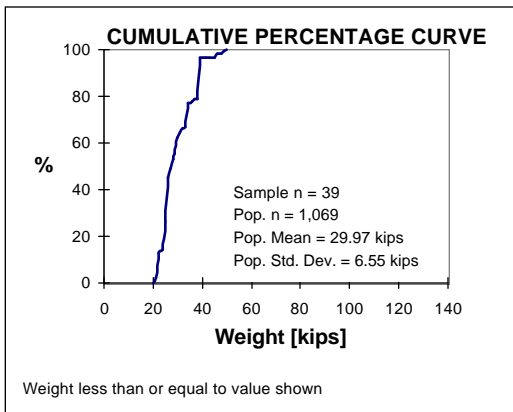
Weights, Dimensions, and Operating Characteristics Plots and Means For the 5-Axles or More Truck Fleet

Ratio of Sample Size to Population Size
by Vehicle Configuration/Body Type Combinations

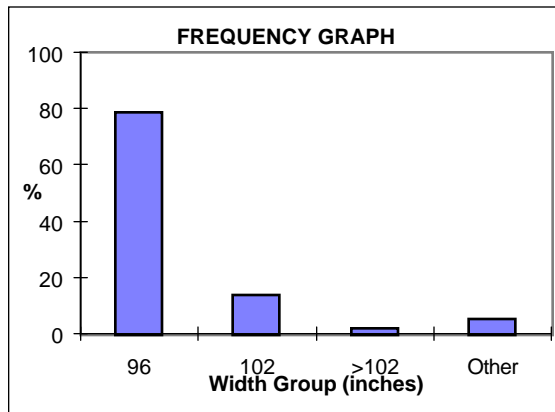
1992 Fleet

Pop. N Sample N	3+2	3-S2	3-S3	2-S1-2
Low Boy	1,526 60	36,709 1,479	13,430 527	
Basic Platform	7,370 197	122,022 4,853	5,788 237	4,640 66
Livestock Truck		10,012 480		
Insulated Non-Refrigerated		9,391 446		
Insulated Refrigerated		95,224 3,823	1,772 68	
Drop Frame Van		15,514 513		1,611 48
Basic Enclosed	1,344 49	253,776 8,706	5,932 201	20,812 317
Pole Logging	4,147 177	22,313 961	2,087 138	
Auto Transport		13,164 262		
Grain Bodies	3,313 78	32,696 1,304	1,014 41	946 19
Dump Truck	15,426 479	51,300 2,059	10,542 470	
Tank Truck For Liquid	2,664 100	61,043 2,350	3,447 158	
Tank Truck For Dry Bulk		15,809 534		

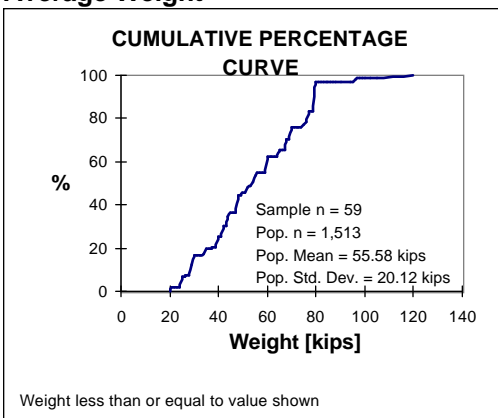
Empty Weight



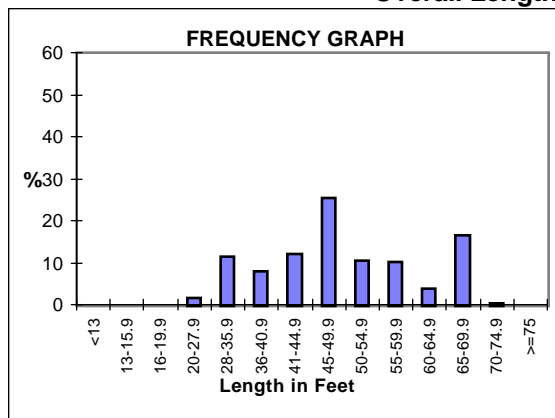
External Trailer Width



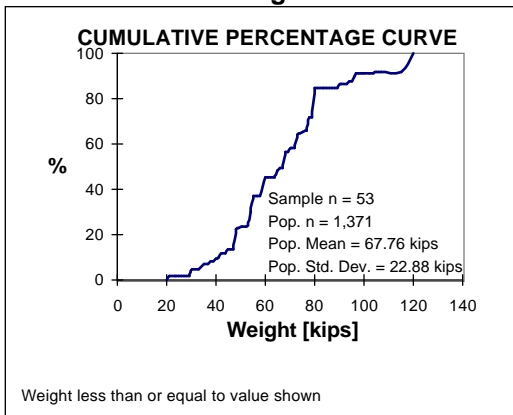
Average Weight



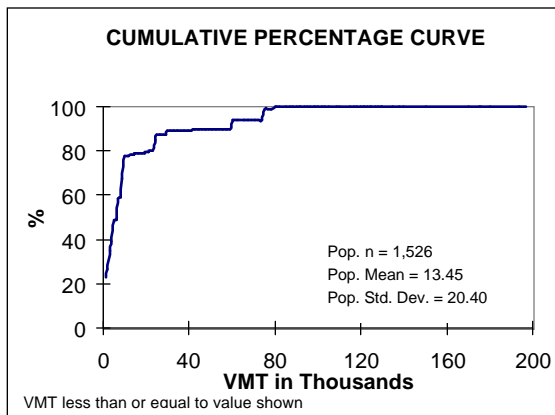
Overall Length



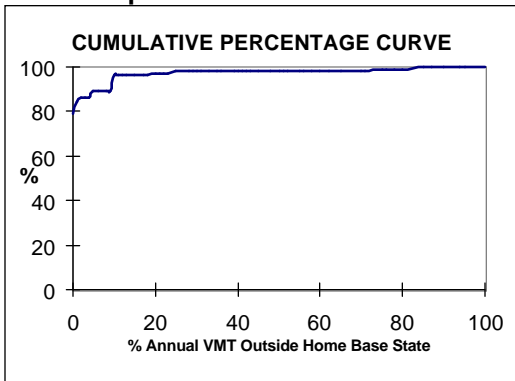
Maximum Gross Weight



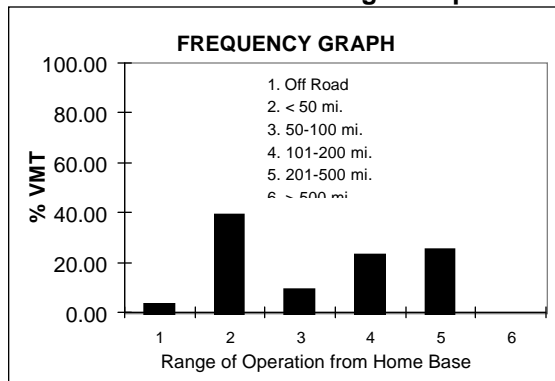
Annual VMT



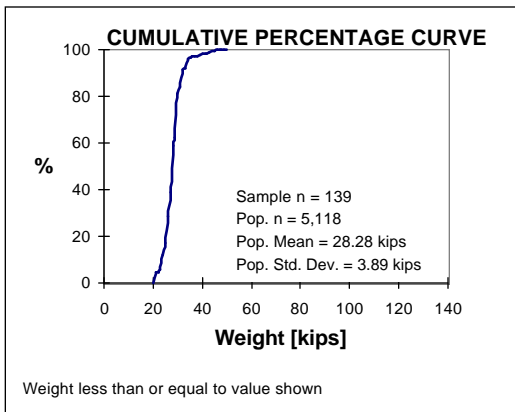
Base of Operation



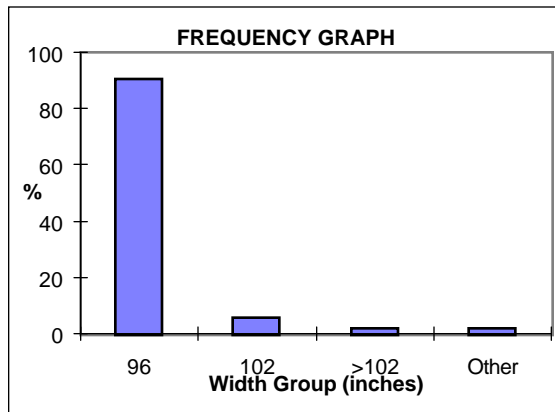
Range of Operation



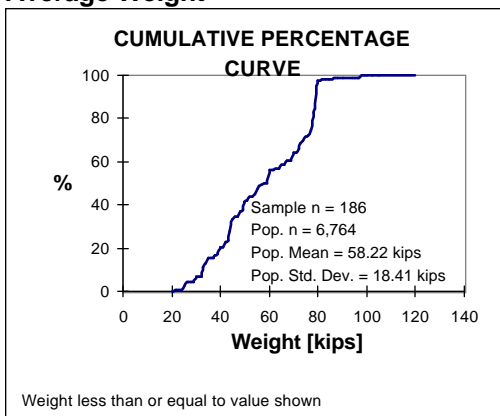
Empty Weight



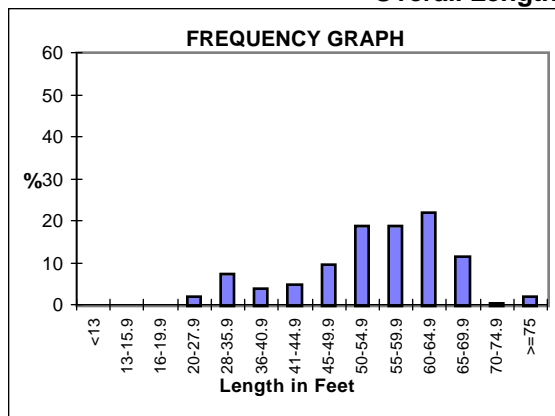
External Trailer Width



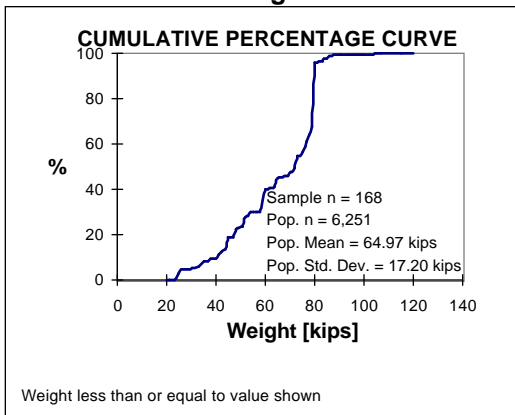
Average Weight



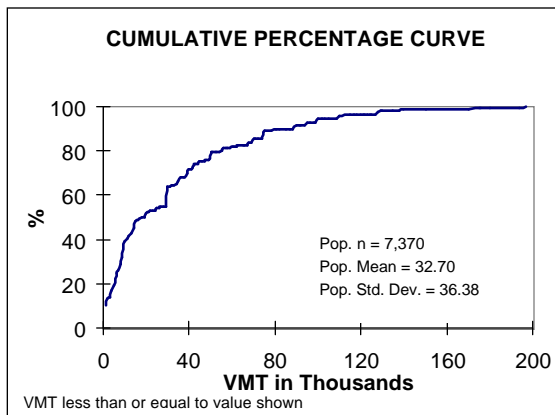
Overall Length



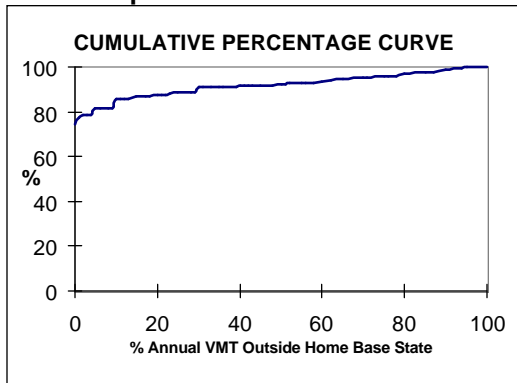
Maximum Gross Weight



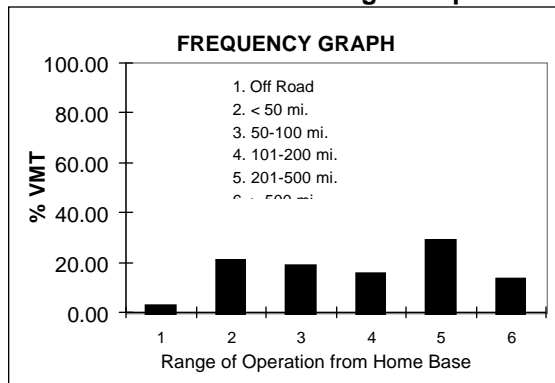
Annual VMT



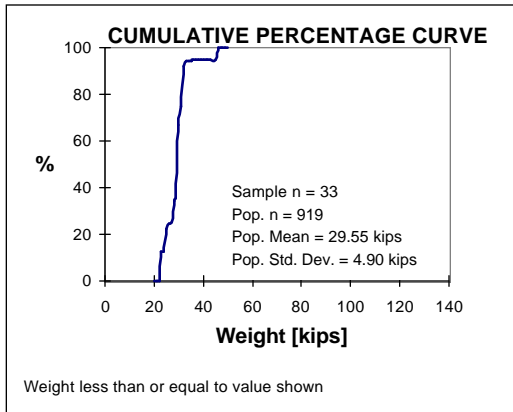
Base of Operation



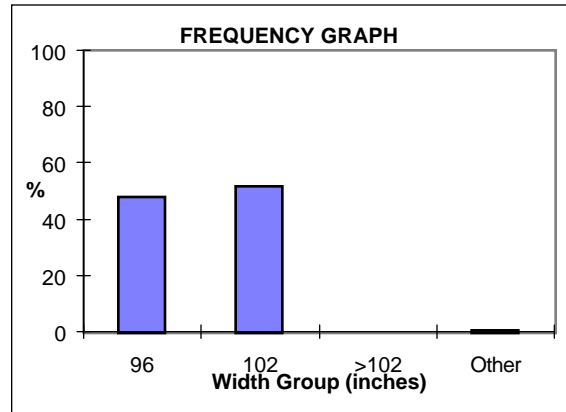
Range of Operation



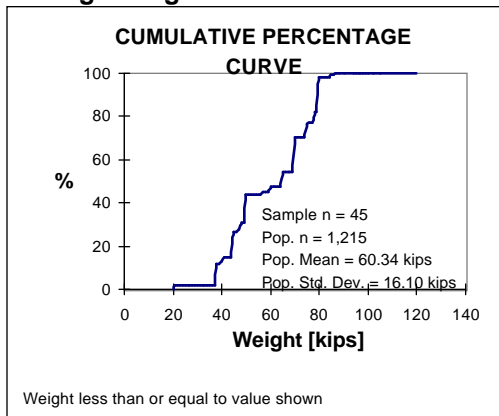
Empty Weight



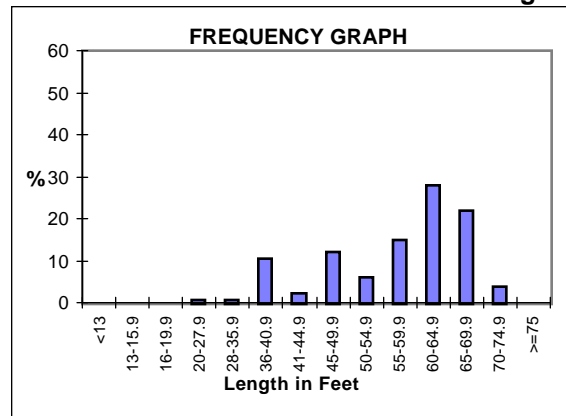
External Trailer Width



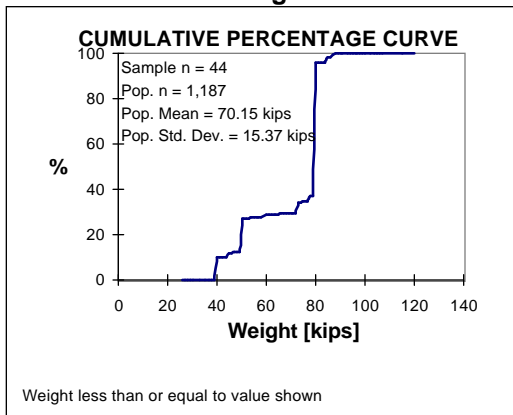
Average Weight



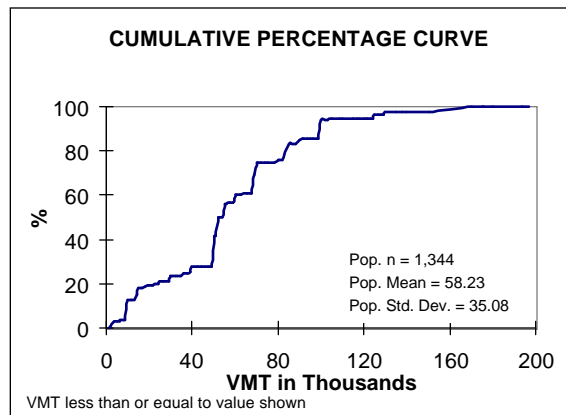
Overall Length



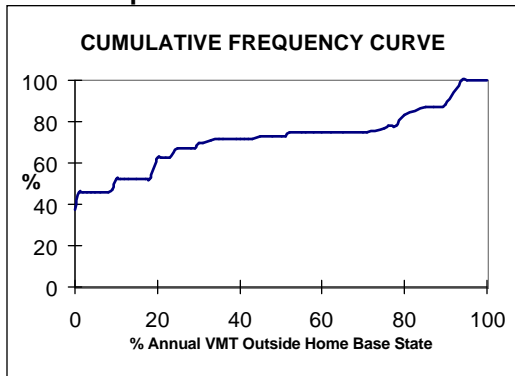
Maximum Gross Weight



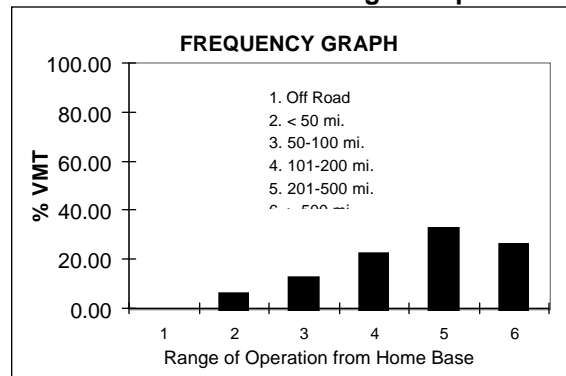
Annual VMT



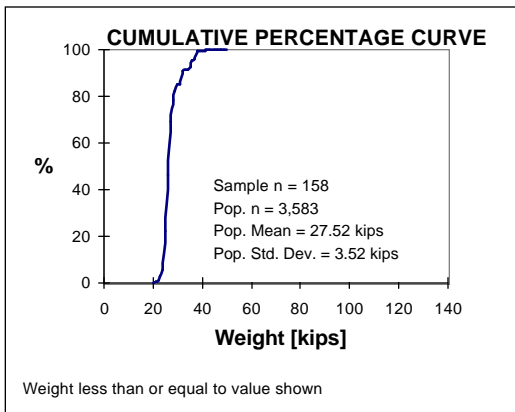
Base of Operation



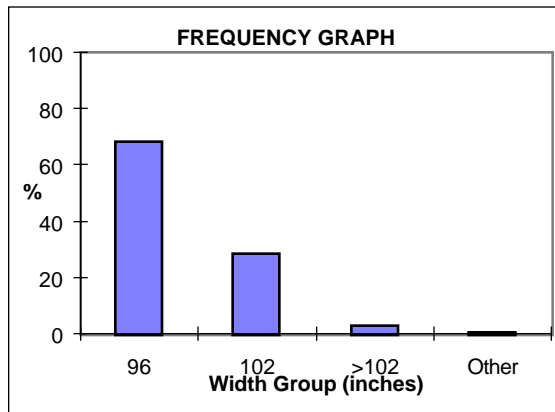
Range of Operation



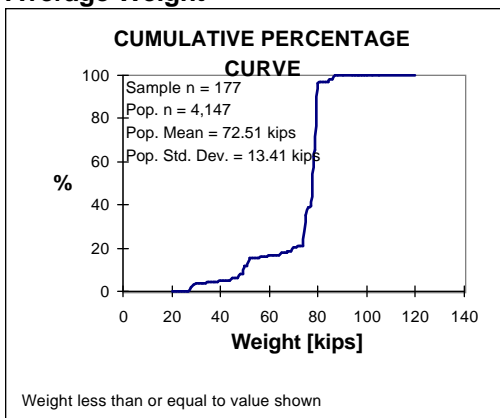
Empty Weight



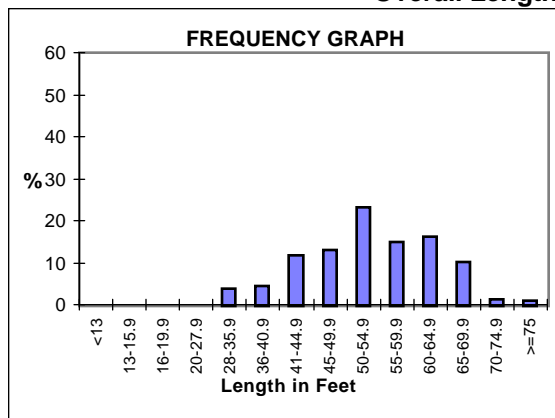
External Trailer Width



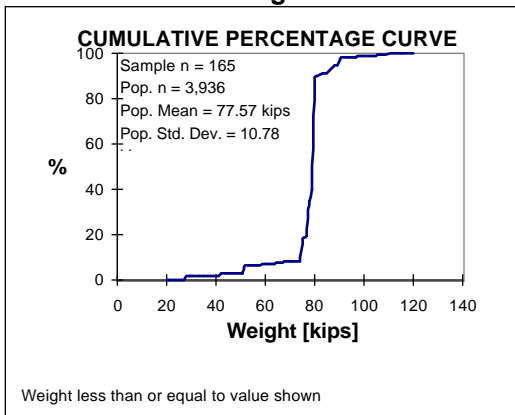
Average Weight



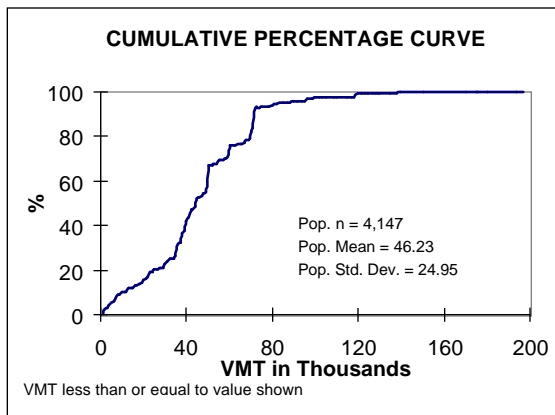
Overall Length



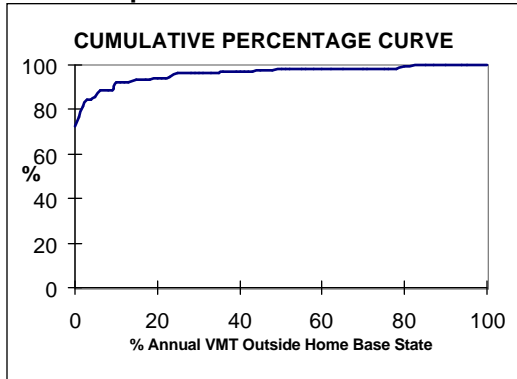
Maximum Gross Weight



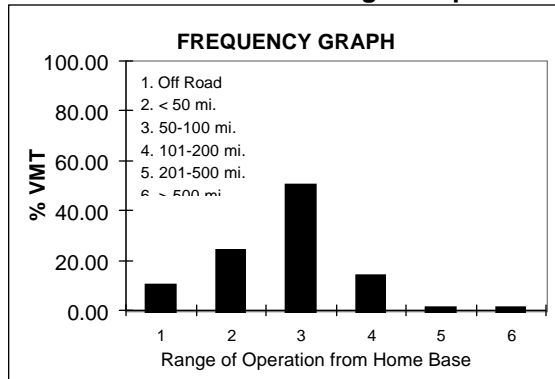
Annual VMT



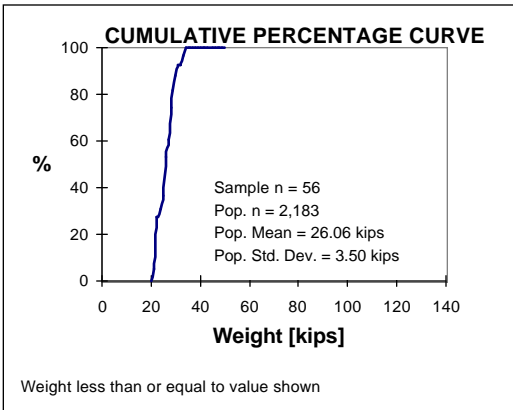
Base of Operation



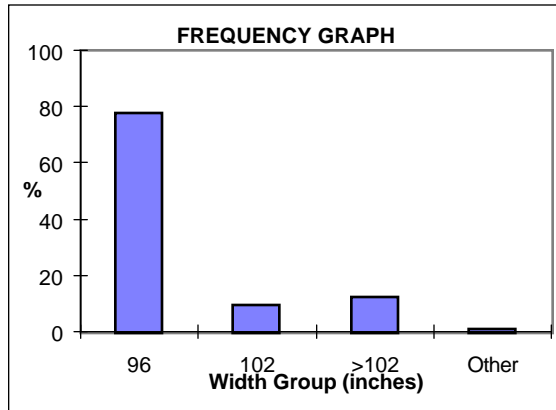
Range of Operation



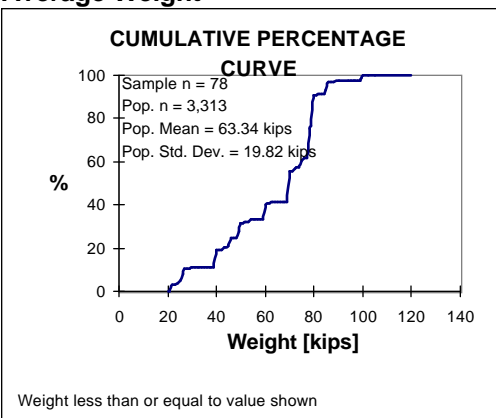
Empty Weight



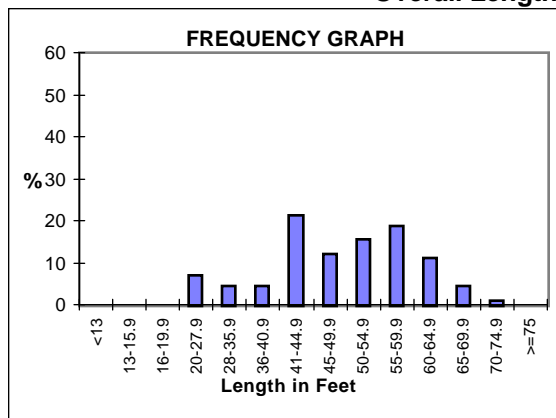
External Trailer Width



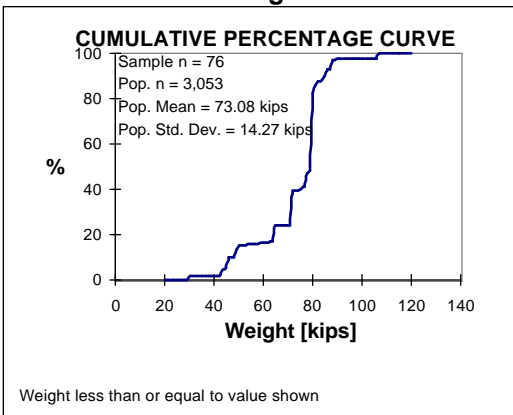
Average Weight



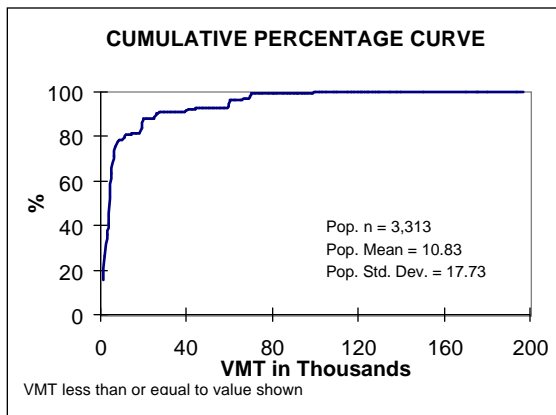
Overall Length



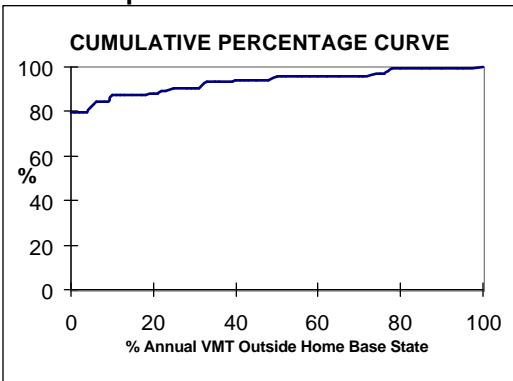
Maximum Gross Weight



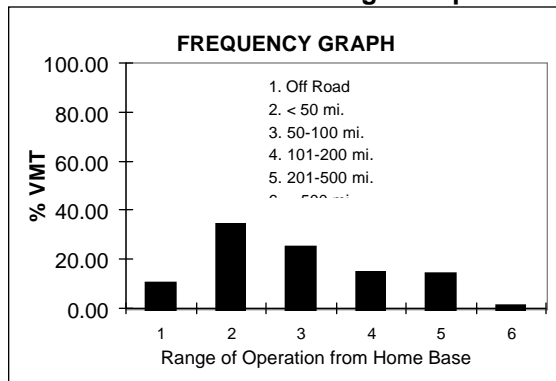
Annual VMT



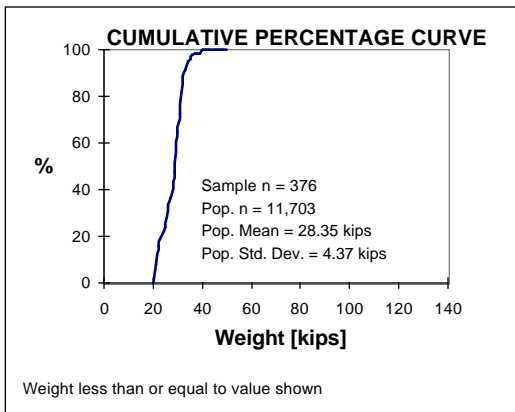
Base of Operation



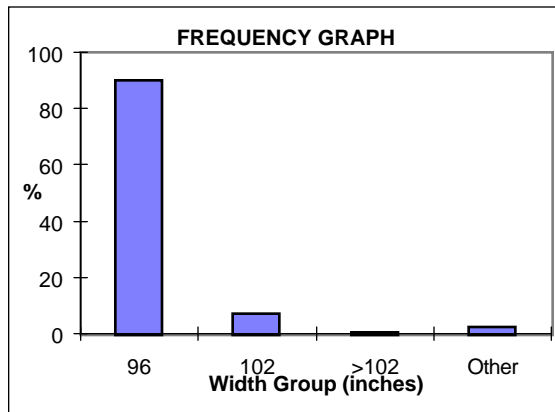
Range of Operation



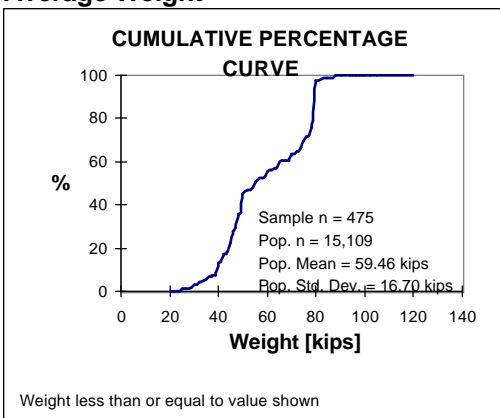
Empty Weight



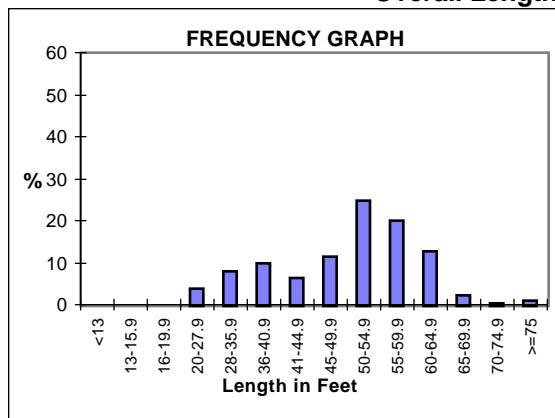
External Trailer Width



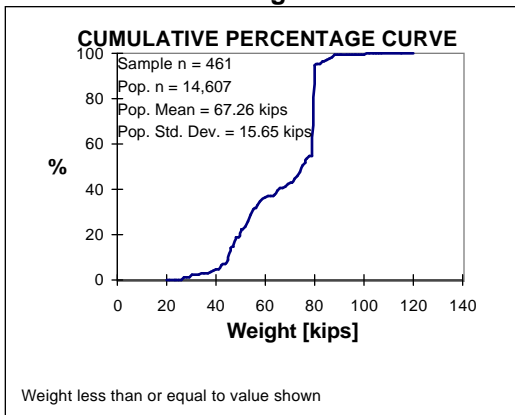
Average Weight



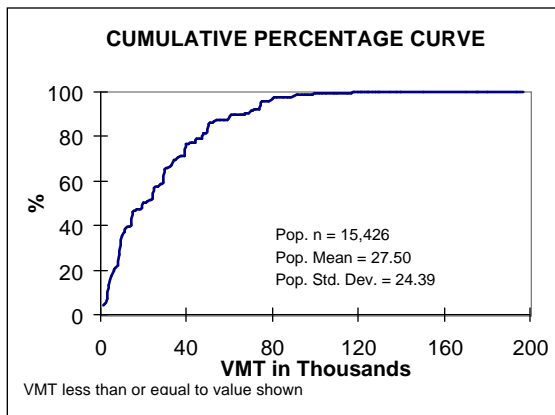
Overall Length



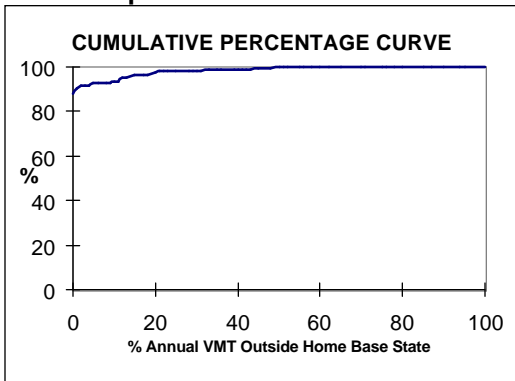
Maximum Gross Weight



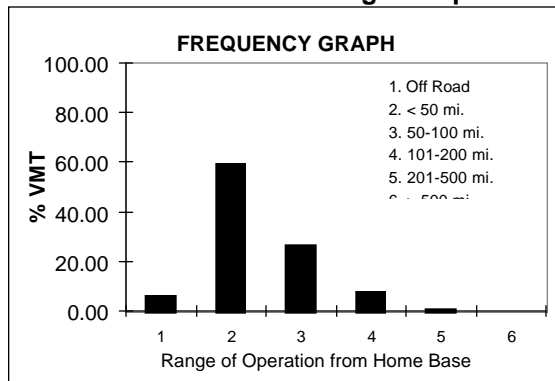
Annual VMT



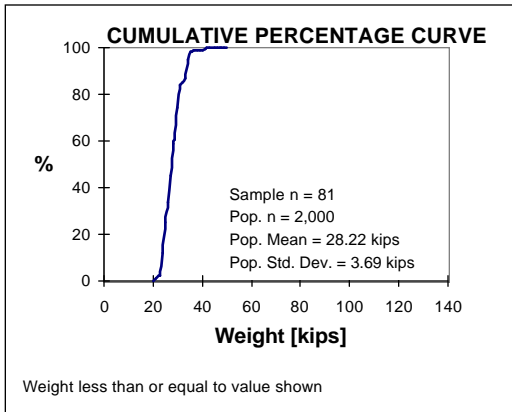
Base of Operation



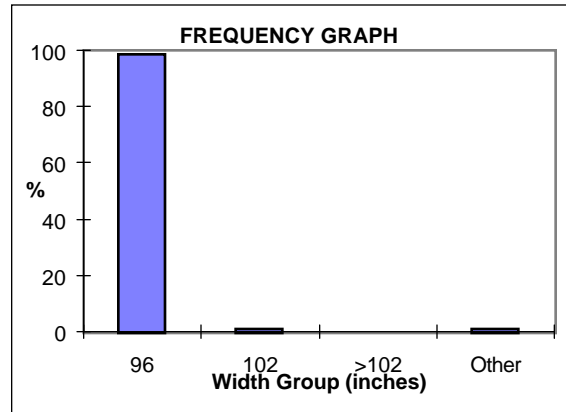
Range of Operation



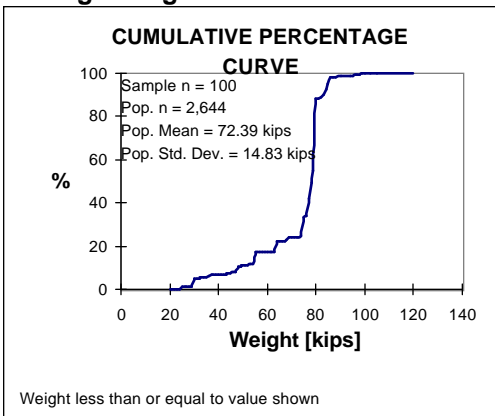
Empty Weight



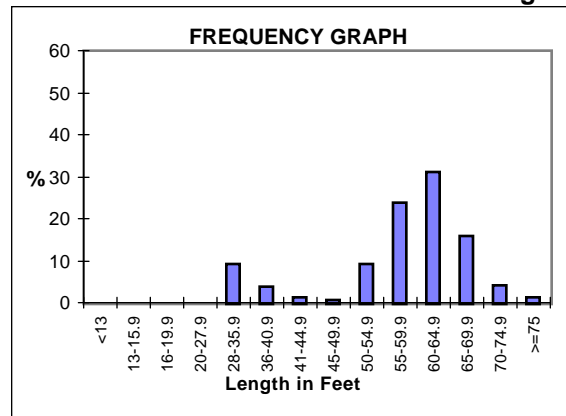
External Trailer Width



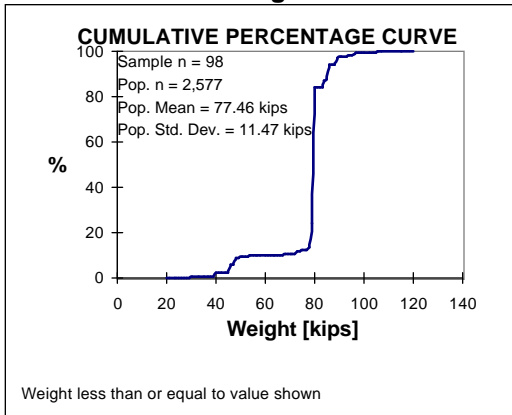
Average Weight



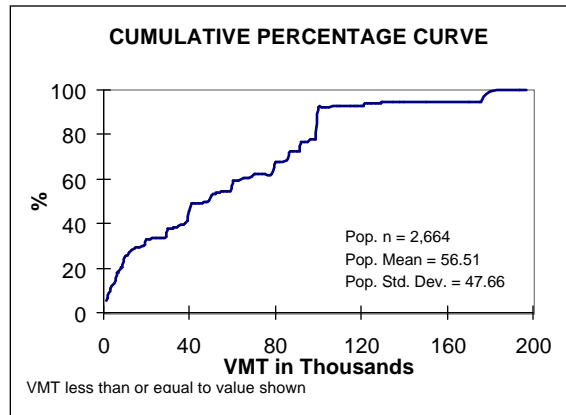
Overall Length



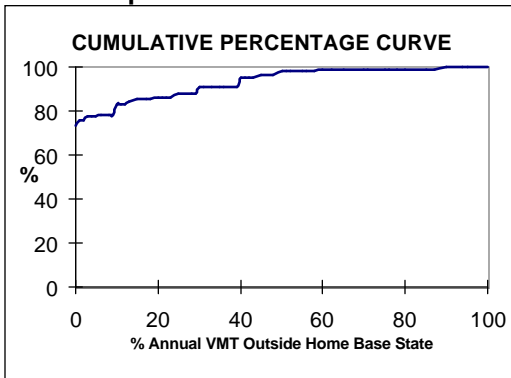
Maximum Gross Weight



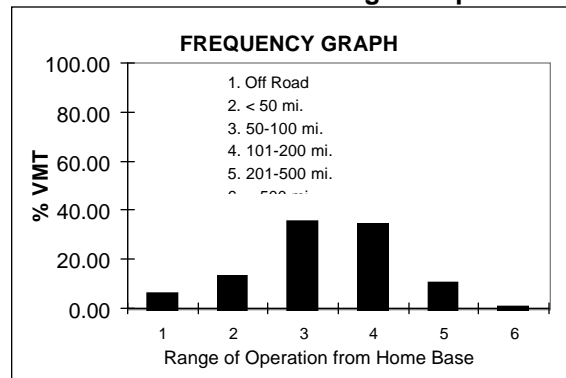
Annual VMT



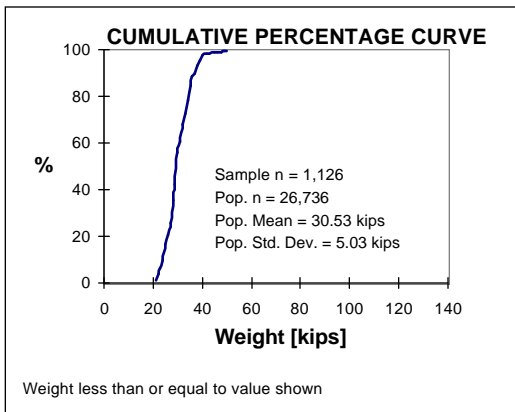
Base of Operation



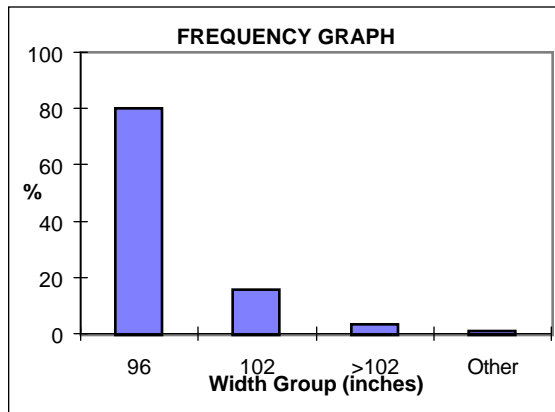
Range of Operation



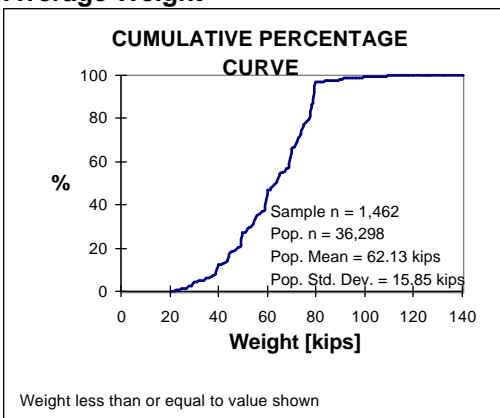
Empty Weight



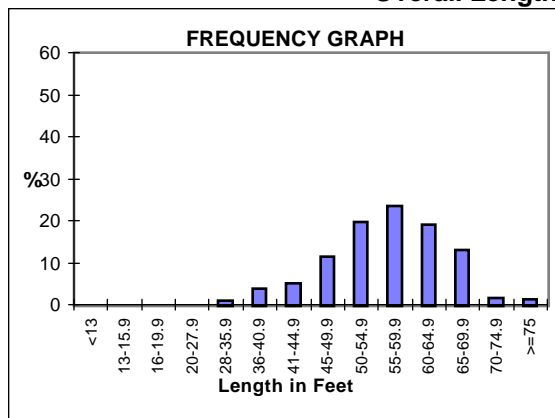
External Trailer Width



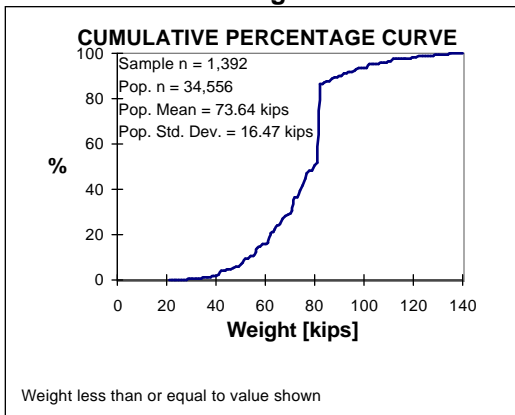
Average Weight



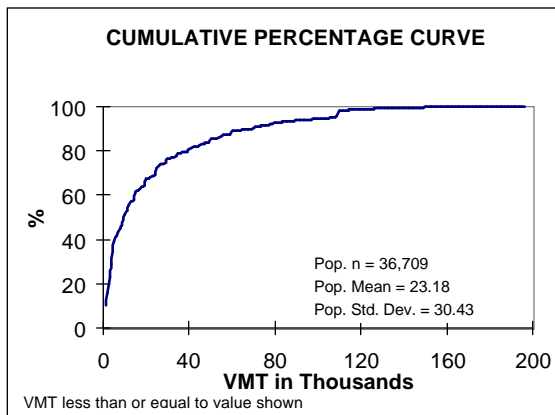
Overall Length



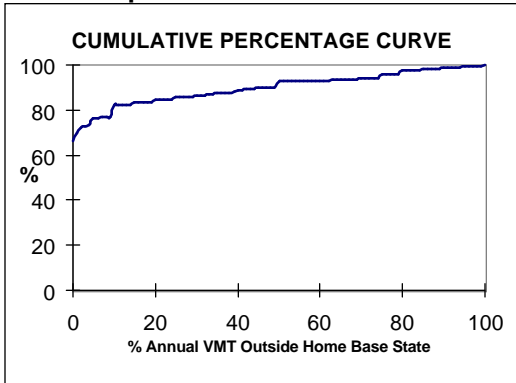
Maximum Gross Weight



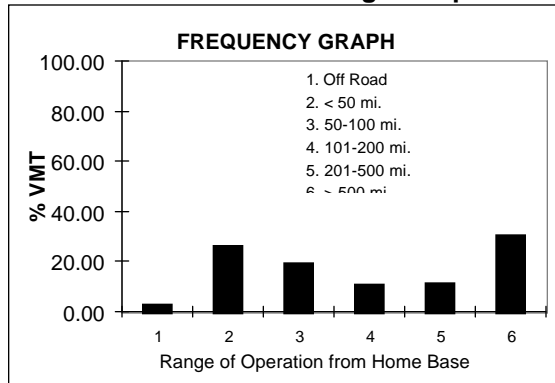
Annual VMT



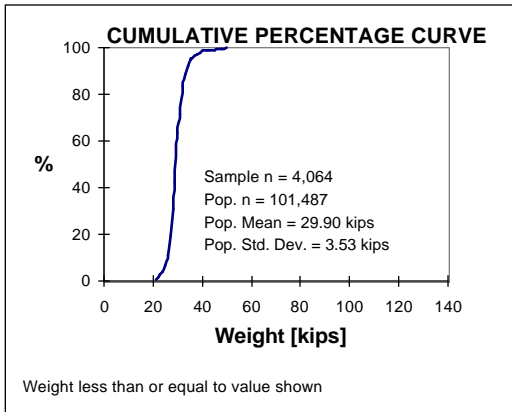
Base of Operation



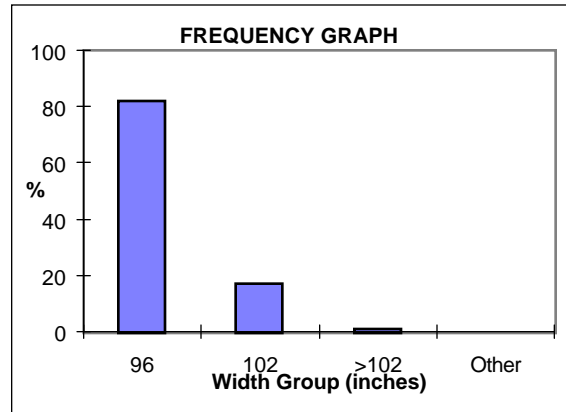
Range of Operation



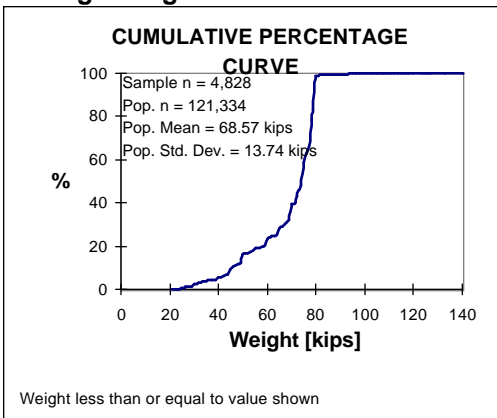
Empty Weight



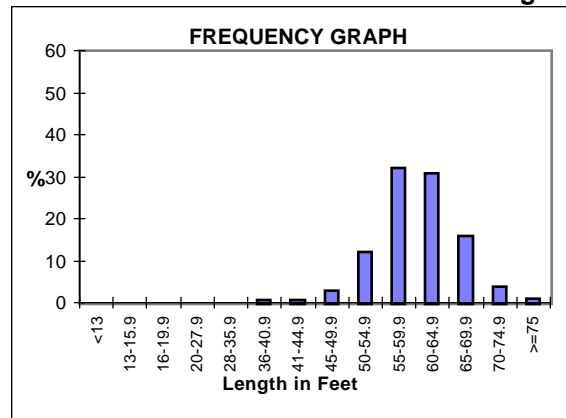
External Trailer Width



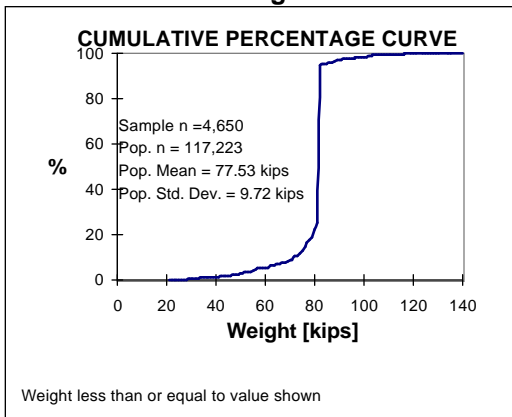
Average Weight



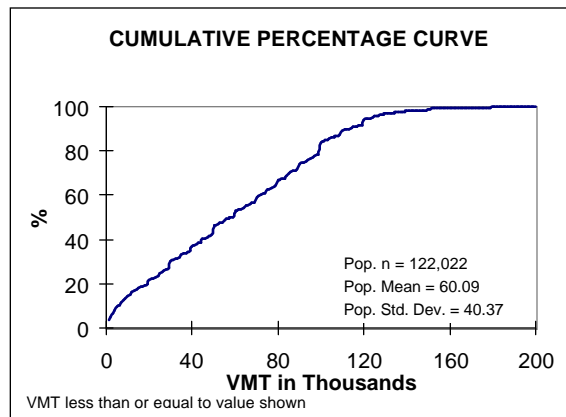
Overall Length



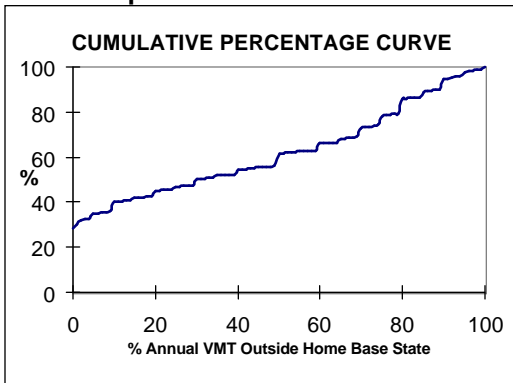
Maximum Gross Weight



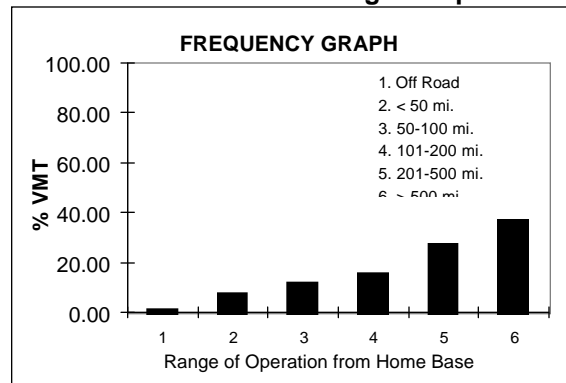
Annual VMT



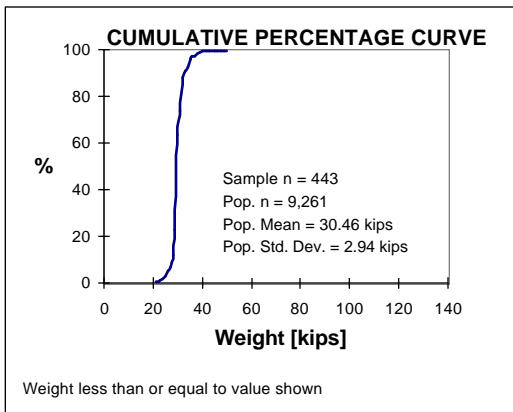
Base of Operation



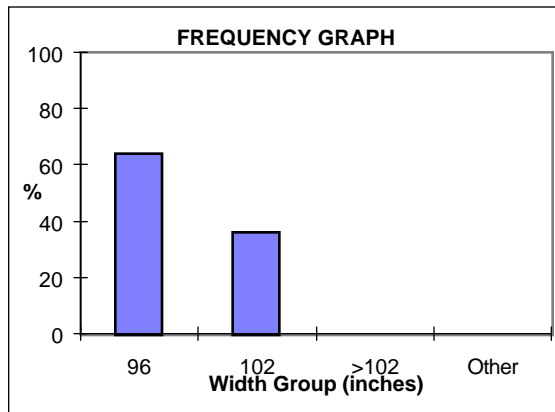
Range of Operation



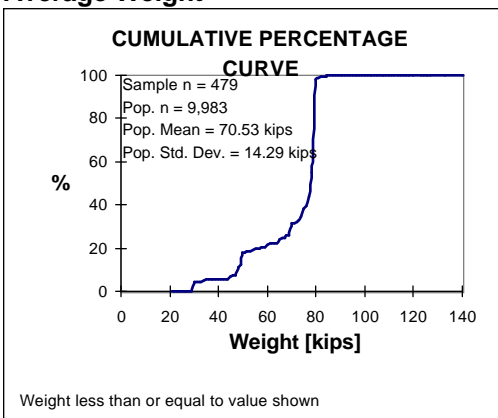
Empty Weight



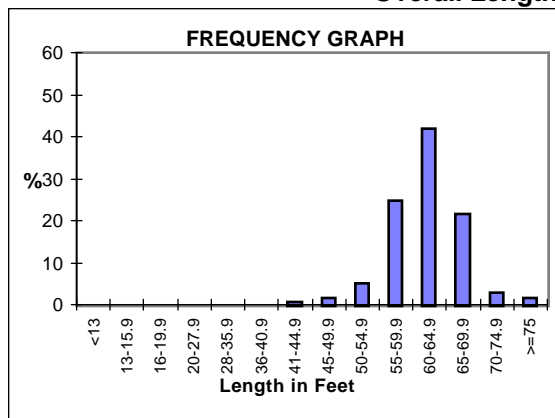
External Trailer Width



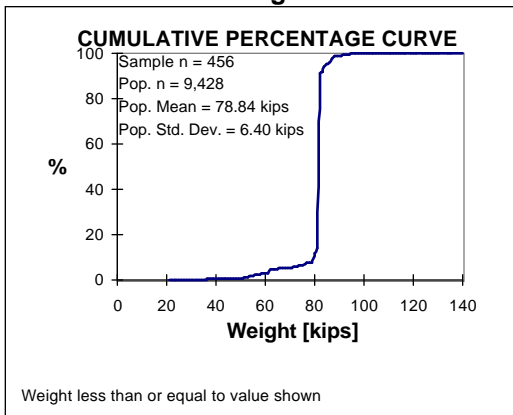
Average Weight



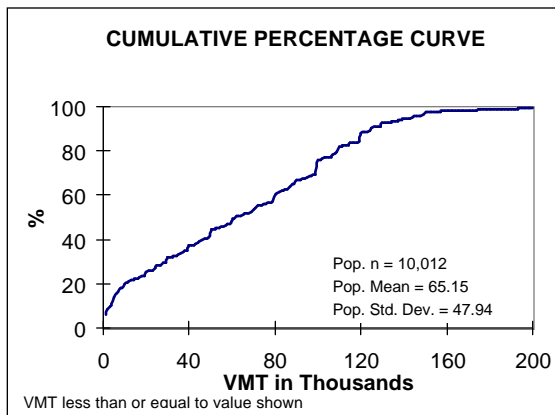
Overall Length



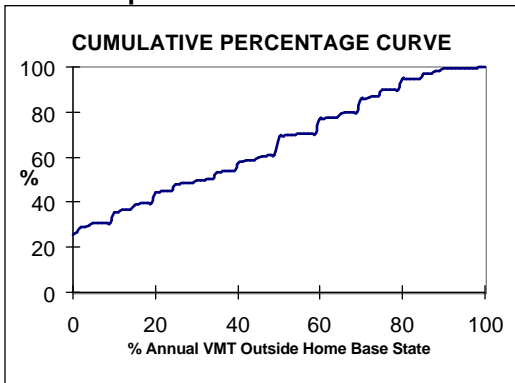
Maximum Gross Weight



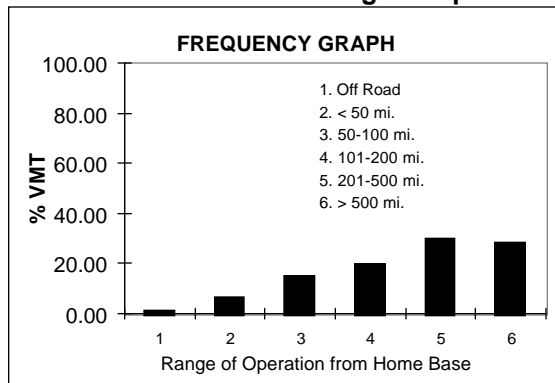
Annual VMT



Base of Operation

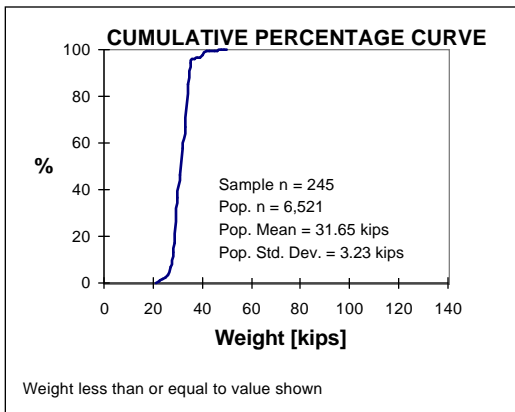


Range of Operation

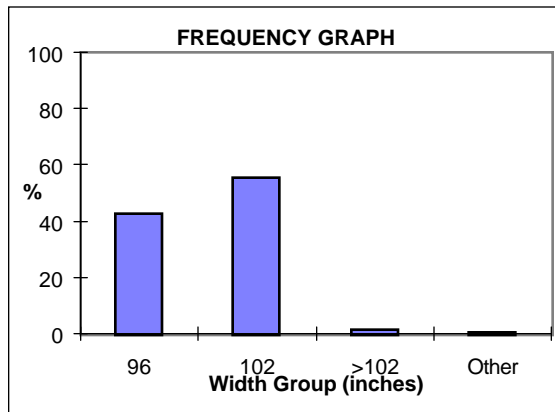


Body Type: Insulated Non-Refrigerated
 Population Size: 9,391 Sample Size: 446

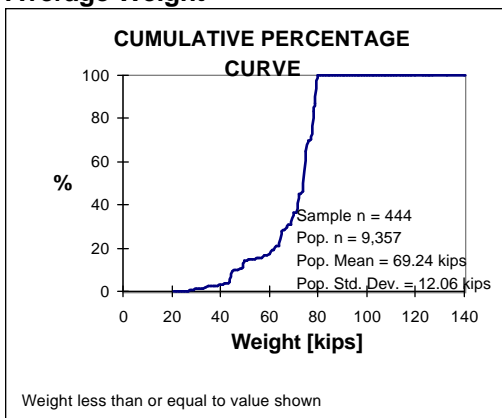
Empty Weight



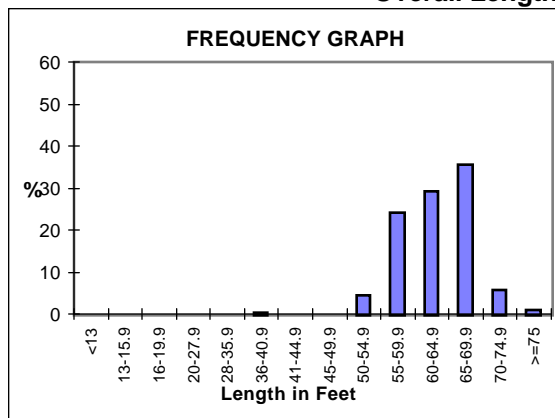
External Trailer Width



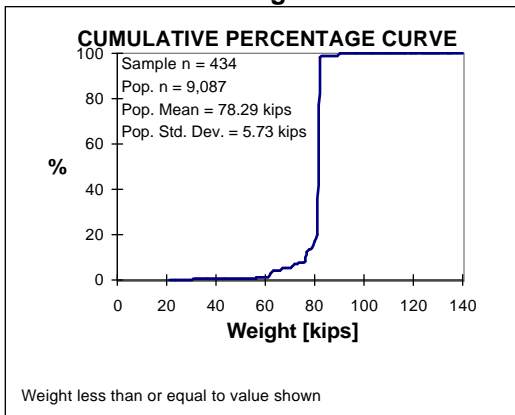
Average Weight



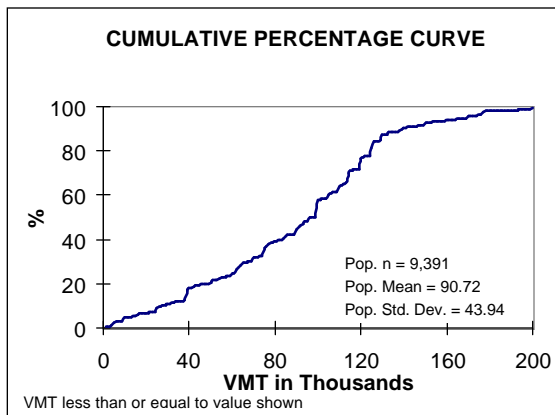
Overall Length



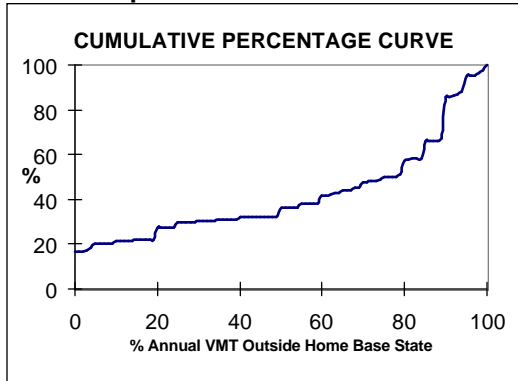
Maximum Gross Weight



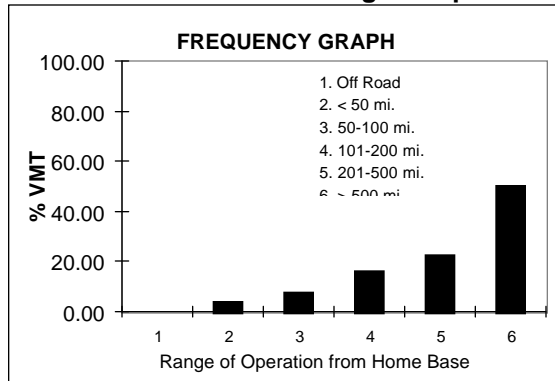
Annual VMT



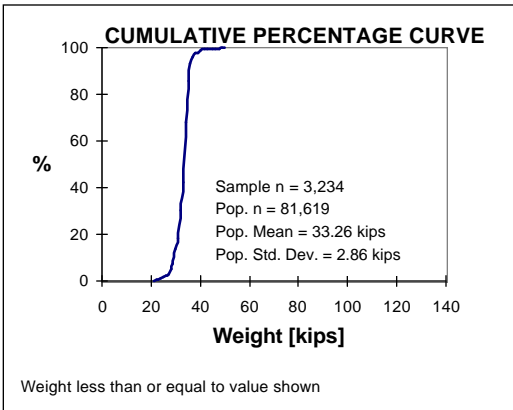
Base of Operation



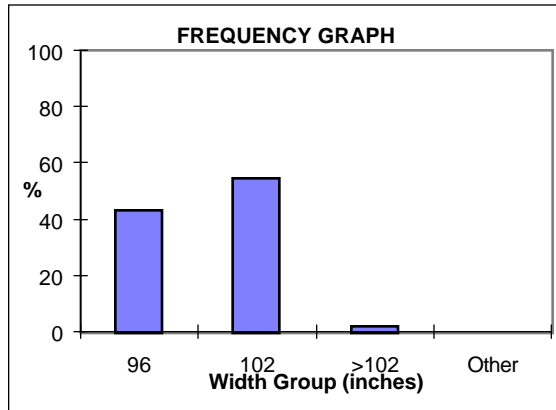
Range of Operation



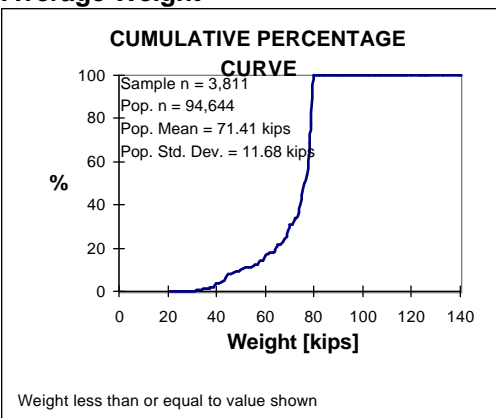
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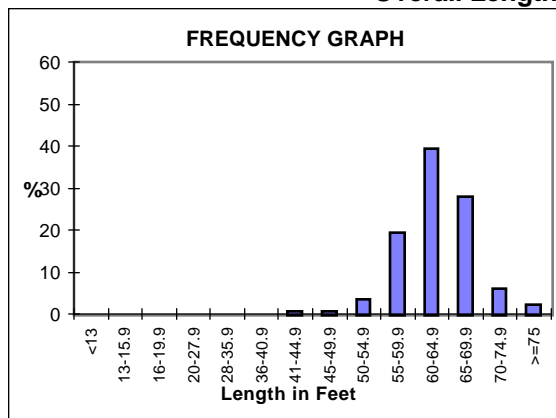
External Trailer Width



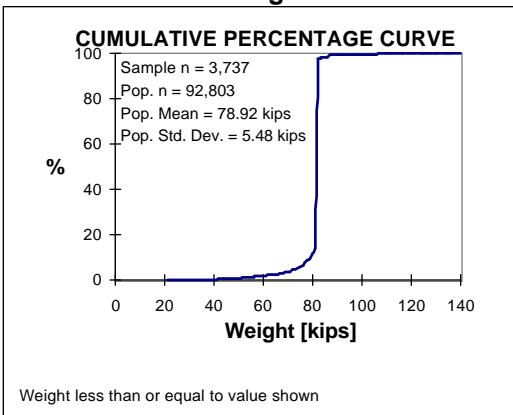
Average Weight



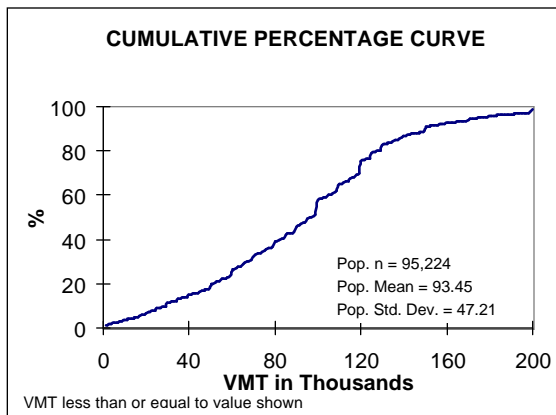
Overall Length



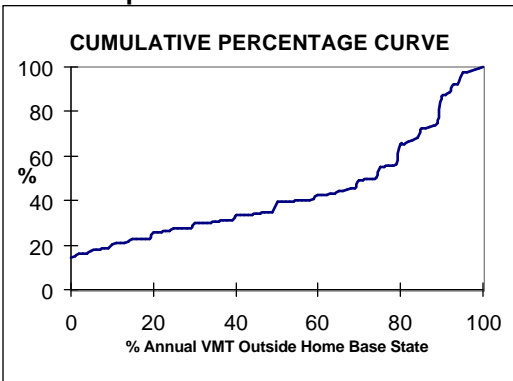
Maximum Gross Weight



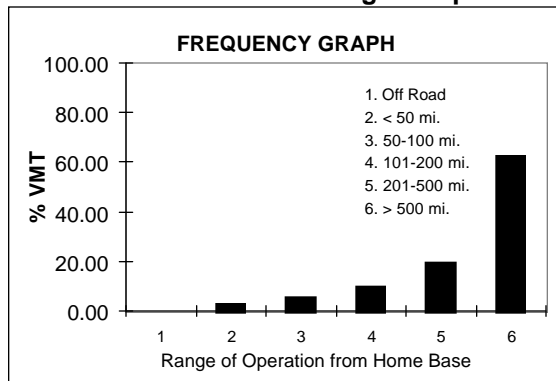
Annual VMT



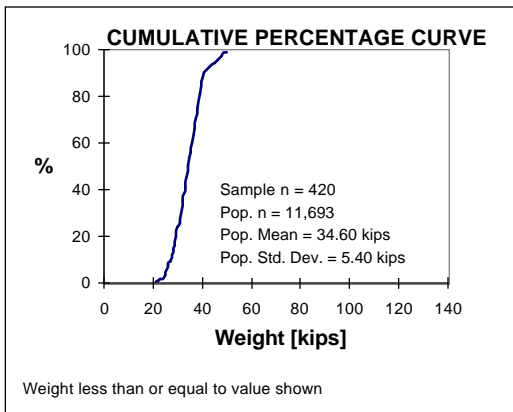
Base of Operation



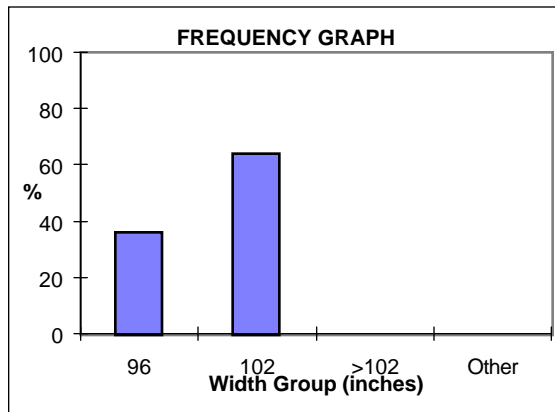
Range of Operation



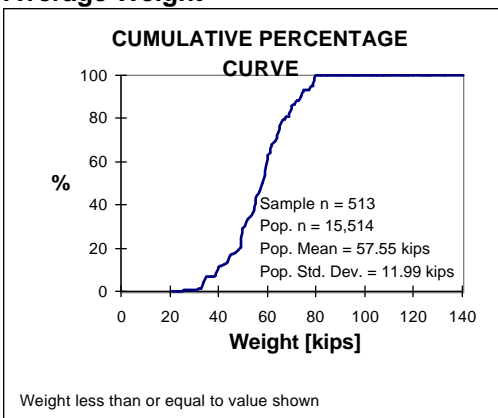
Empty Weight



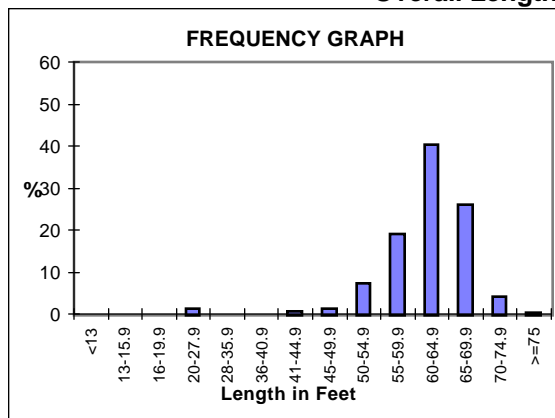
External Trailer Width



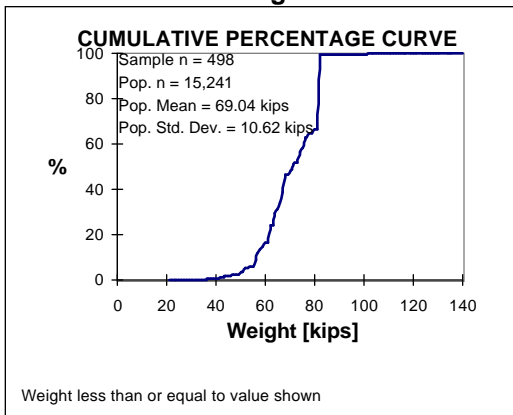
Average Weight



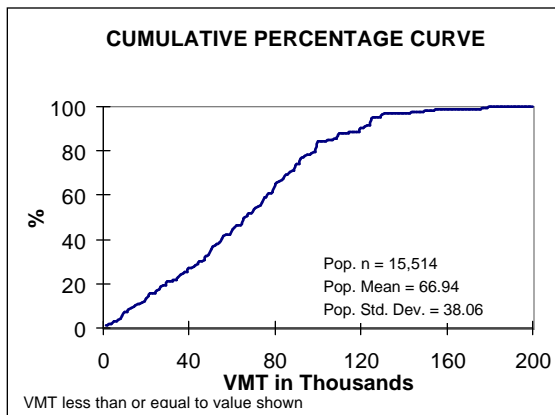
Overall Length



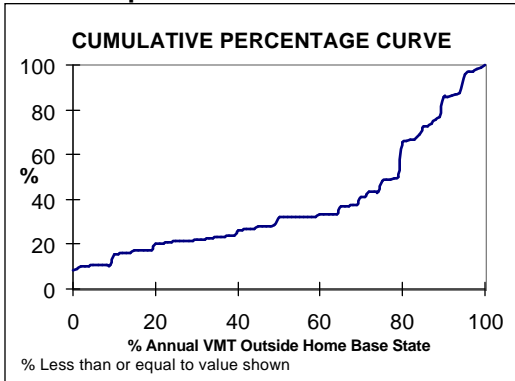
Maximum Gross Weight



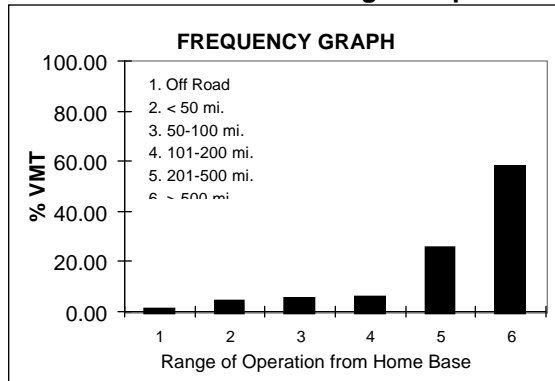
Annual VMT



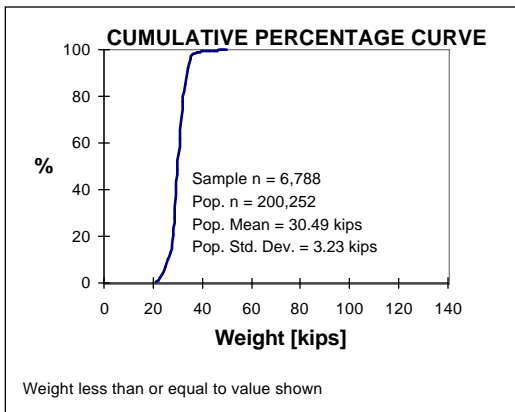
Base of Operation



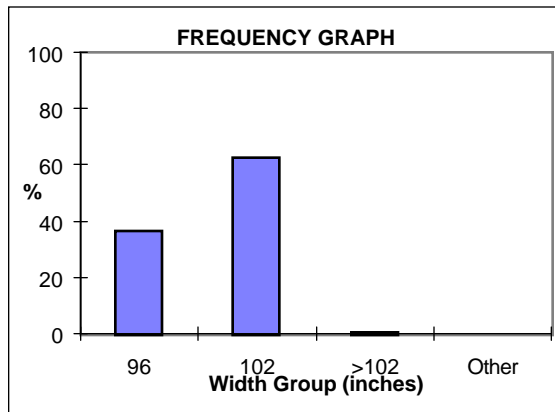
Range of Operation



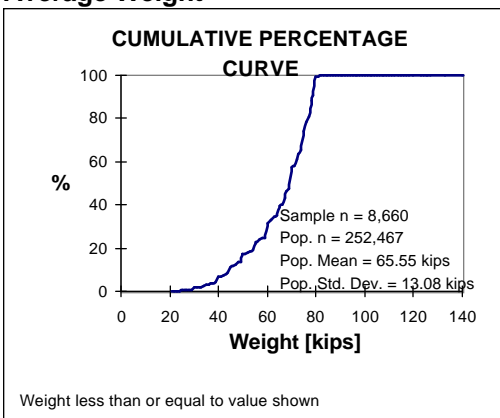
Empty Weight



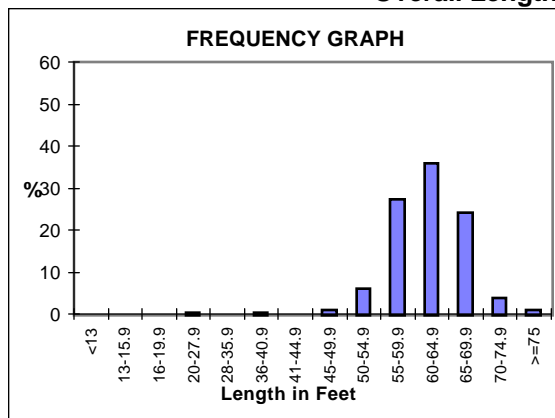
External Trailer Width



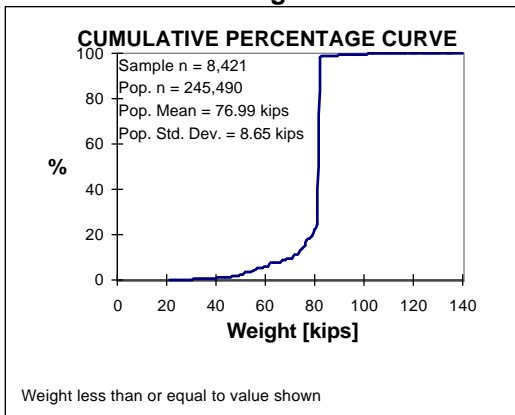
Average Weight



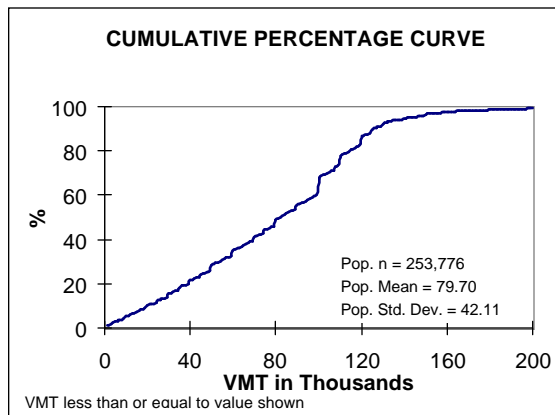
Overall Length



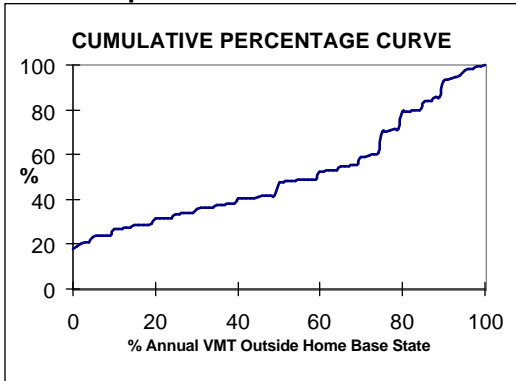
Maximum Gross Weight



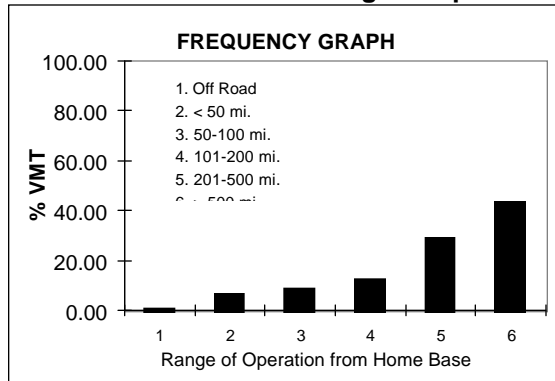
Annual VMT



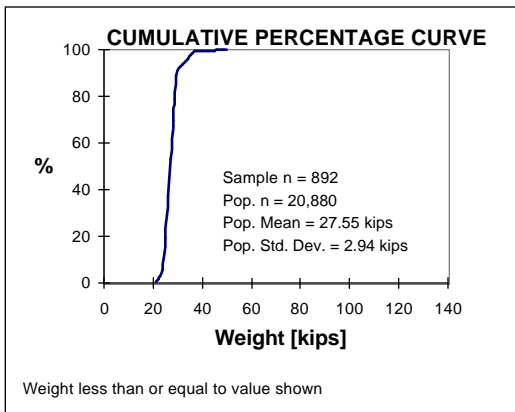
Base of Operation



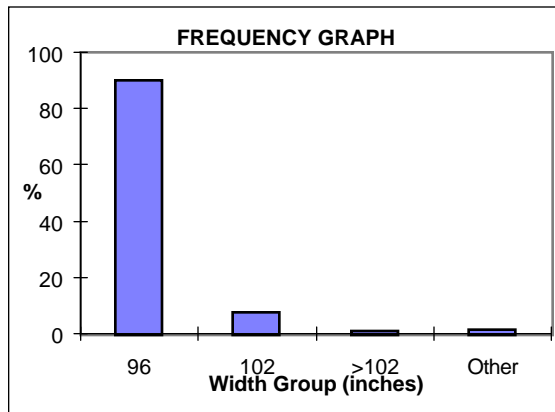
Range of Operation



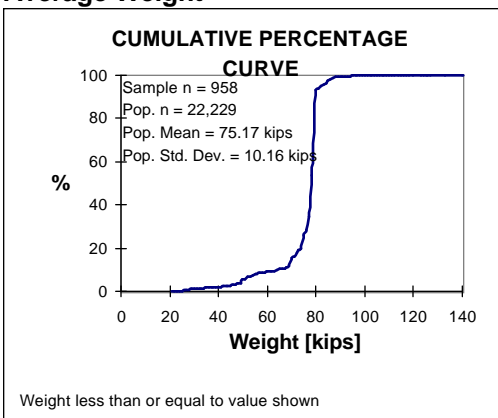
Empty Weight



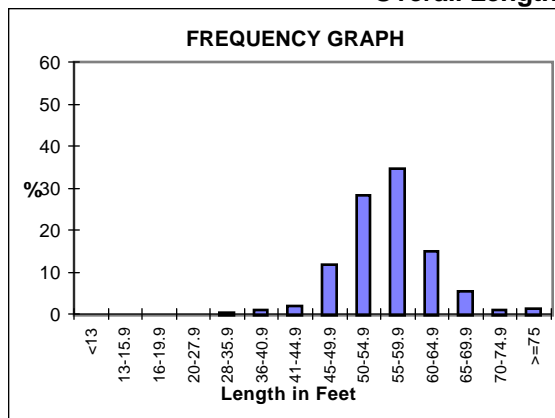
External Trailer Width



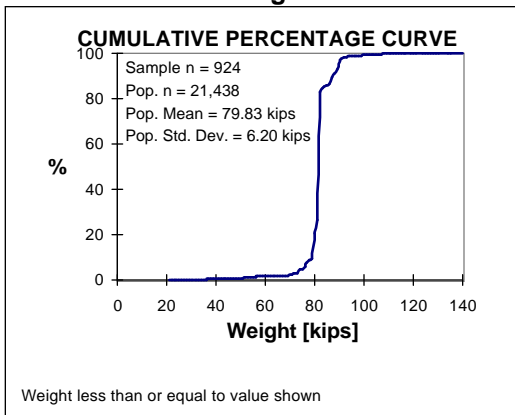
Average Weight



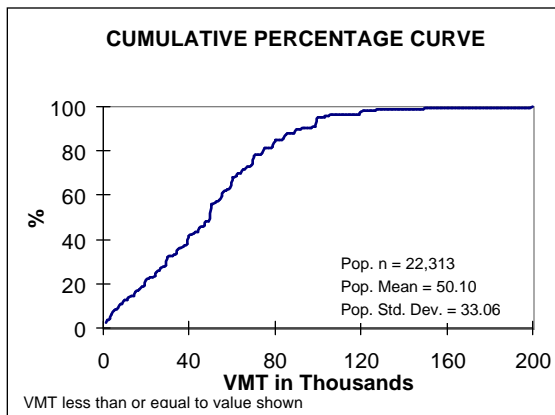
Overall Length



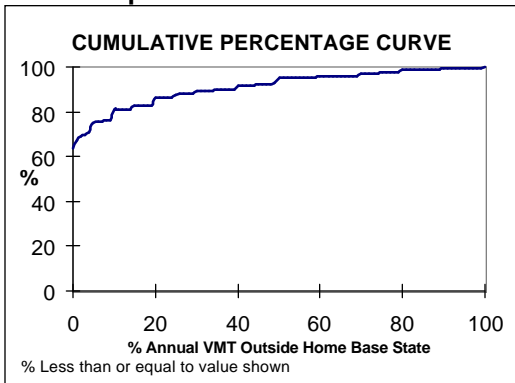
Maximum Gross Weight



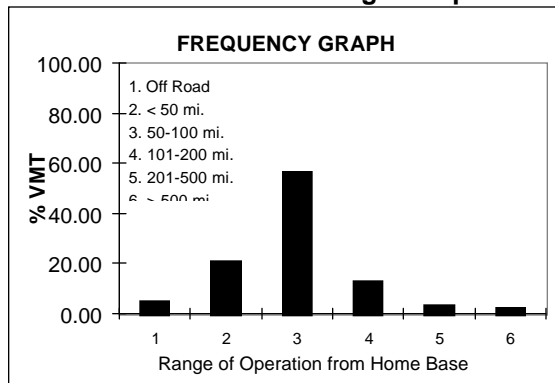
Annual VMT



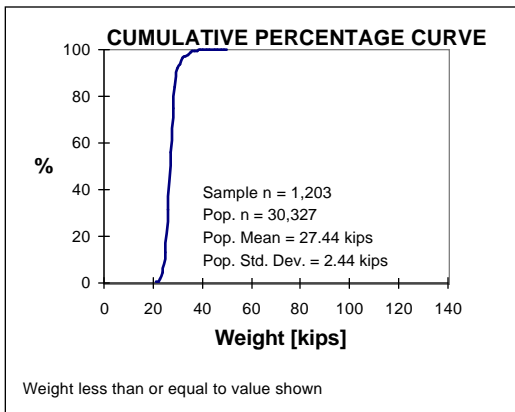
Base of Operation



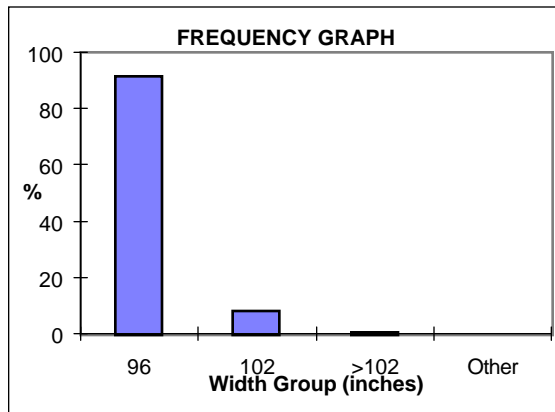
Range of Operation



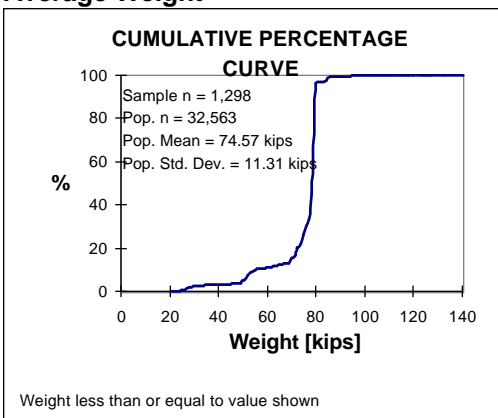
Empty Weight



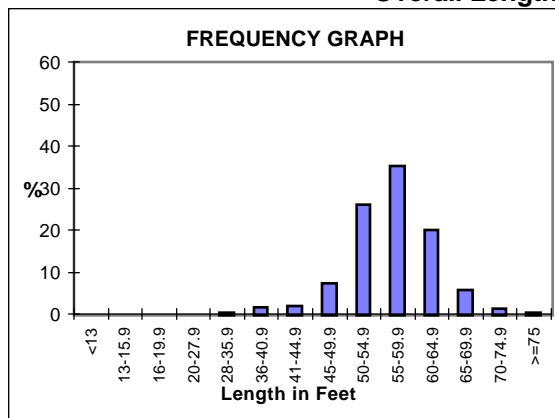
External Trailer Width



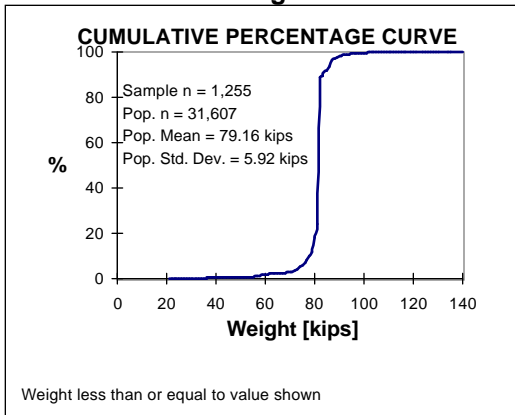
Average Weight



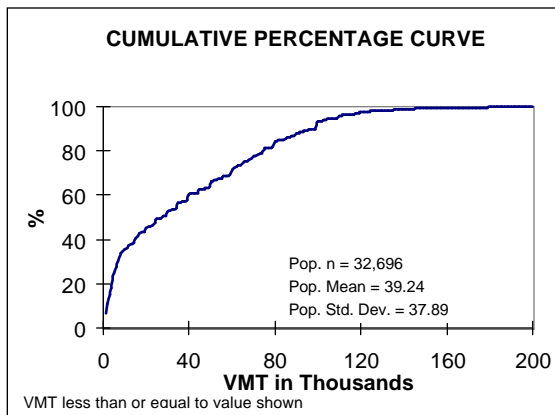
Overall Length



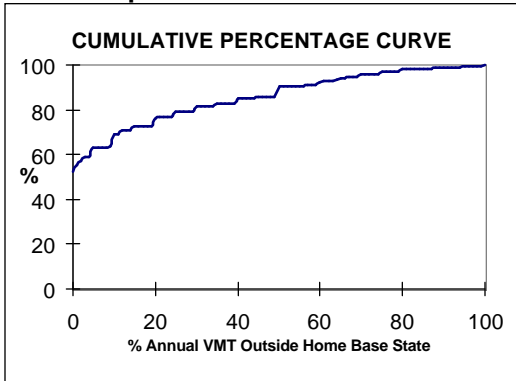
Maximum Gross Weight



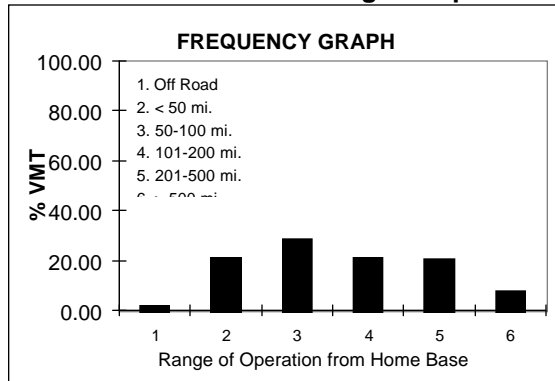
Annual VMT



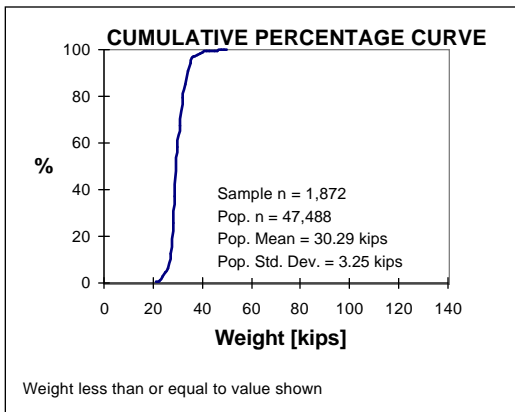
Base of Operation



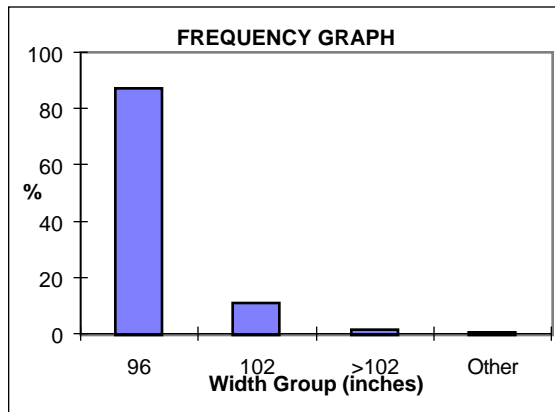
Range of Operation



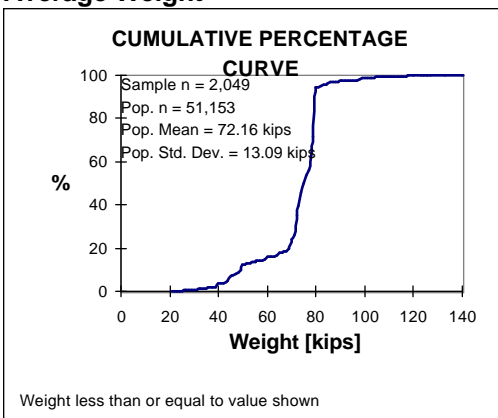
Empty Weight



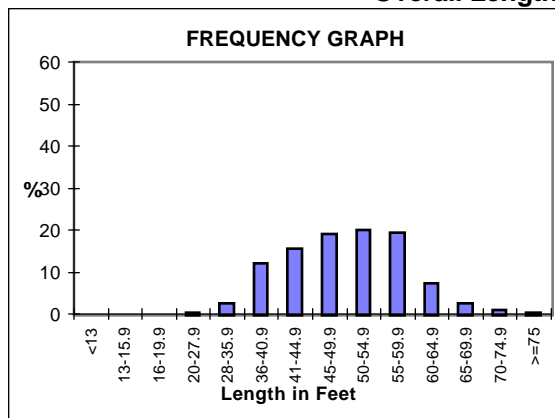
External Trailer Width



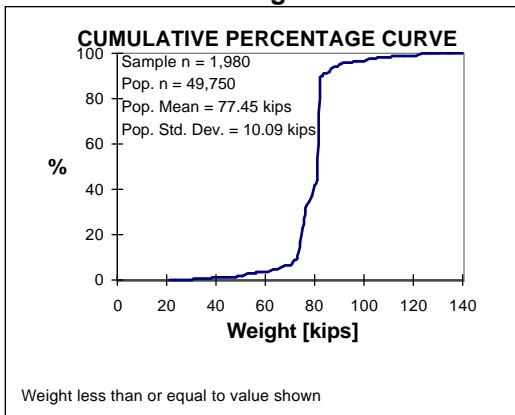
Average Weight



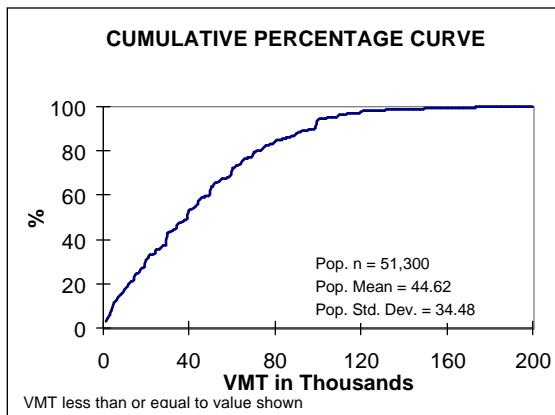
Overall Length



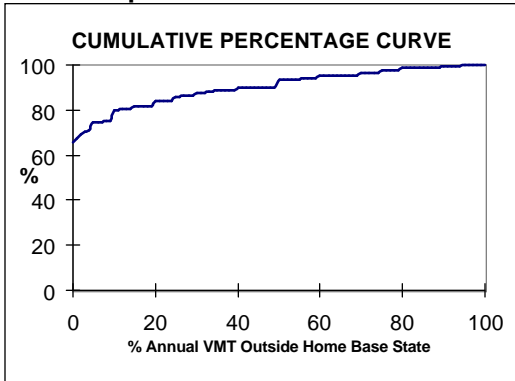
Maximum Gross Weight



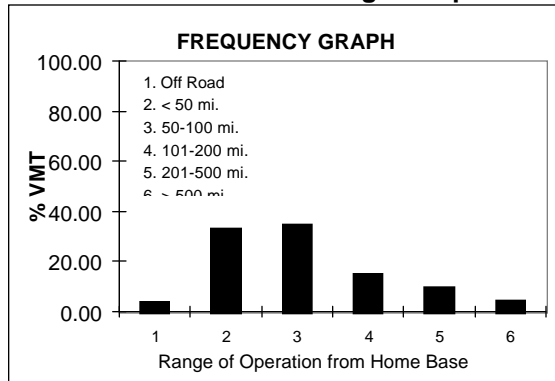
Annual VMT



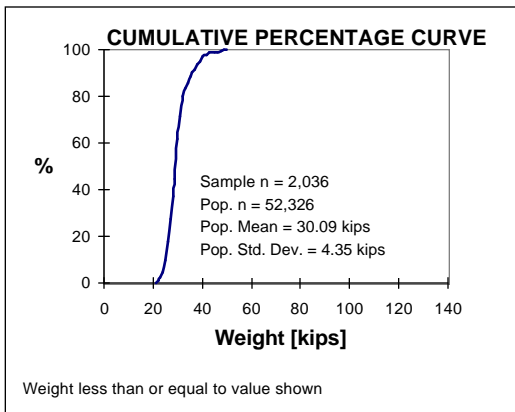
Base of Operation



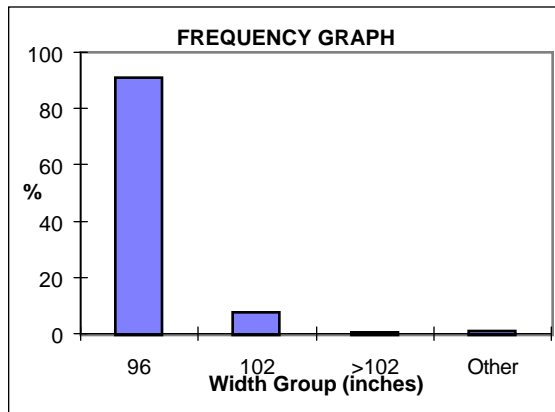
Range of Operation



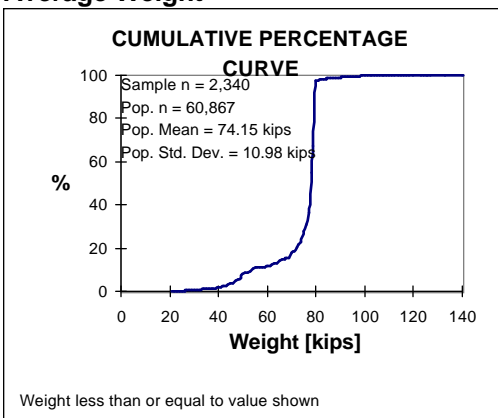
Empty Weight



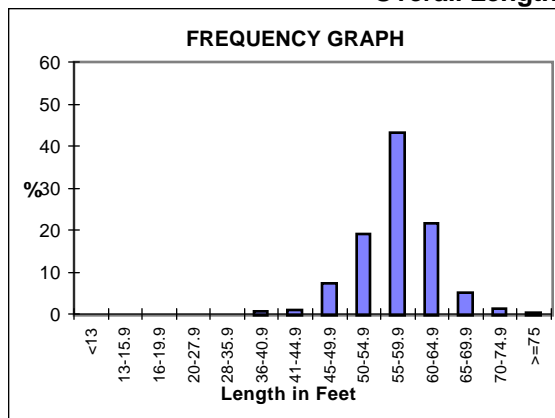
External Trailer Width



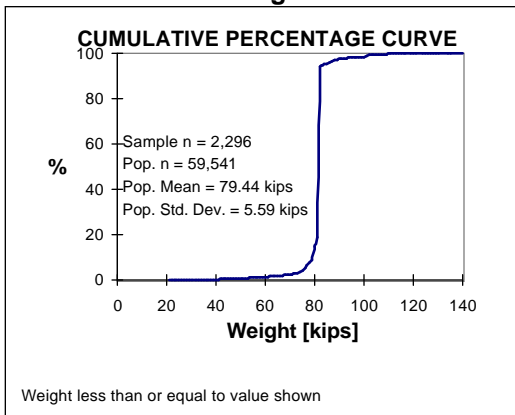
Average Weight



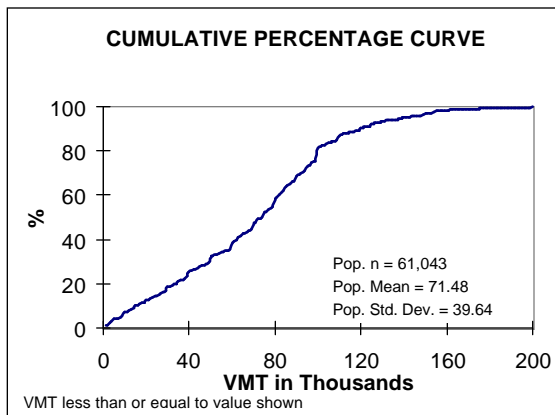
Overall Length



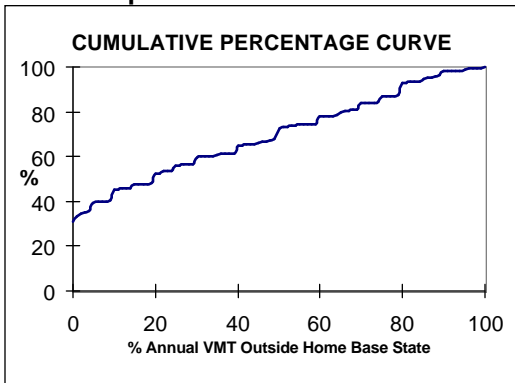
Maximum Gross Weight



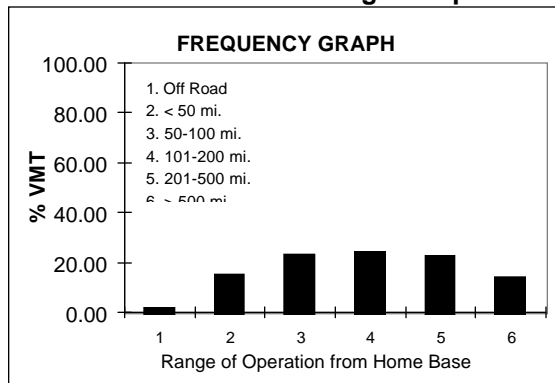
Annual VMT



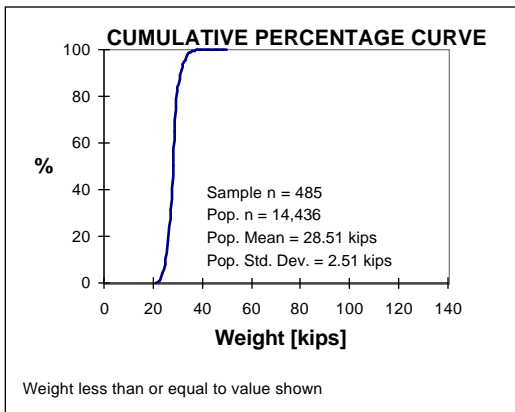
Base of Operation



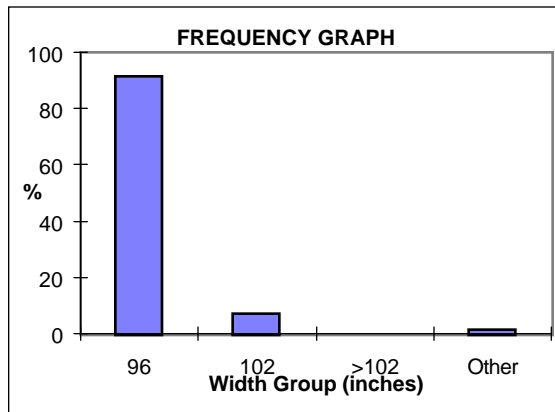
Range of Operation



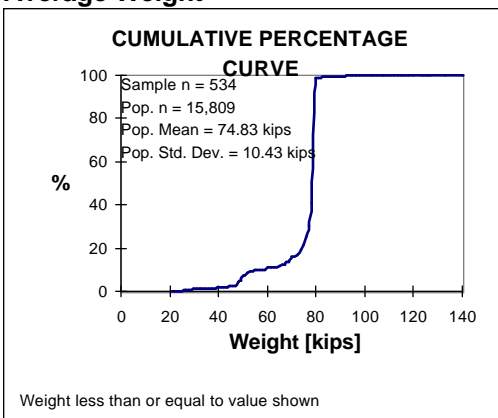
Empty Weight



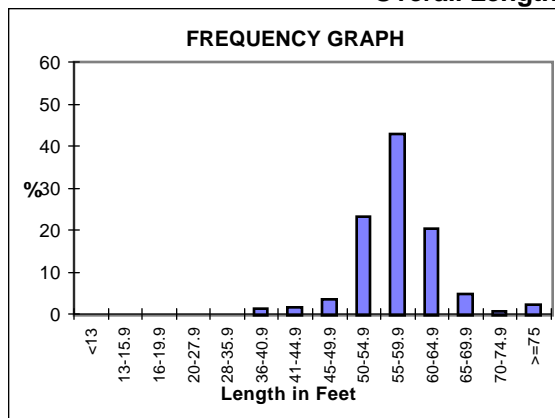
External Trailer Width



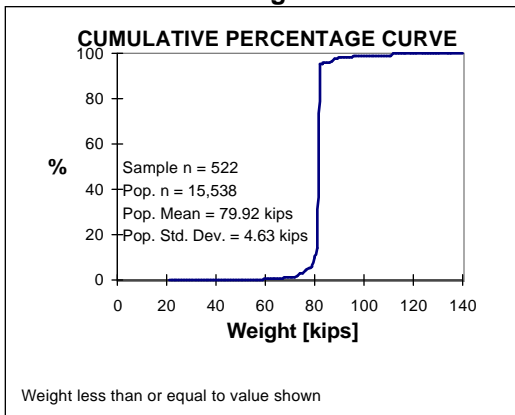
Average Weight



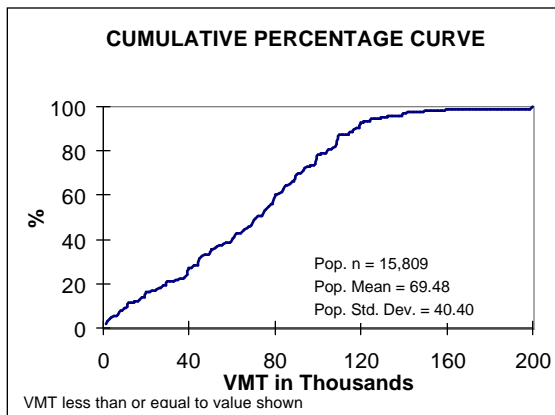
Overall Length



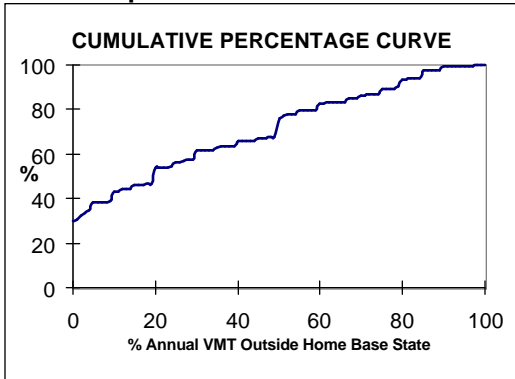
Maximum Gross Weight



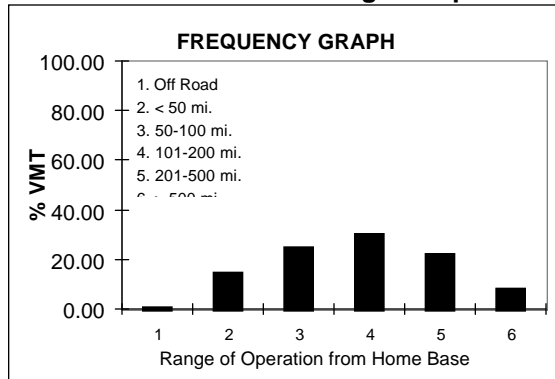
Annual VMT



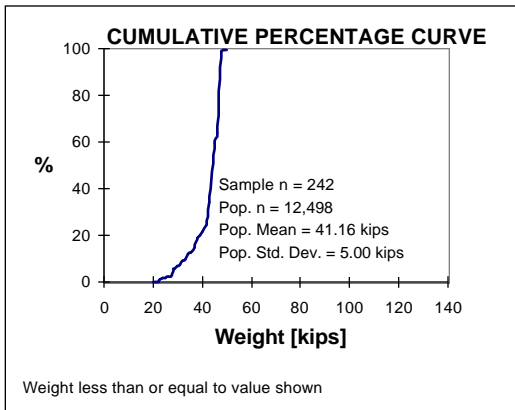
Base of Operation



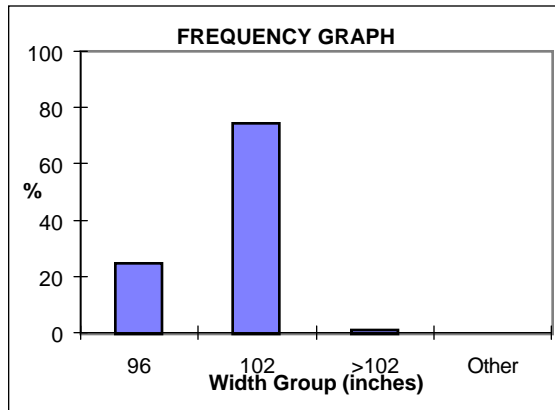
Range of Operation



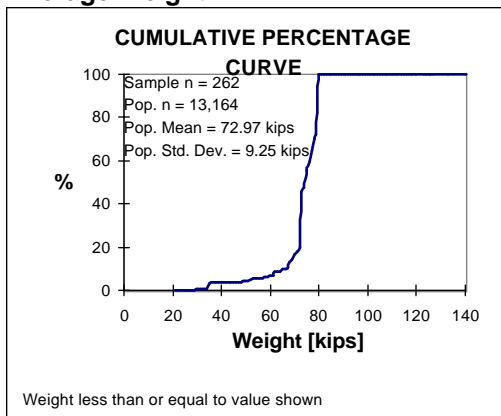
Empty Weight



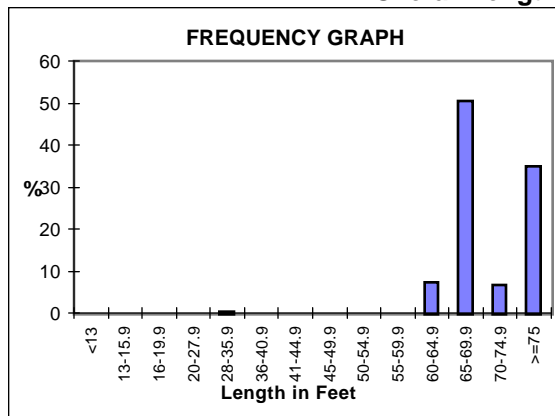
External Trailer Width



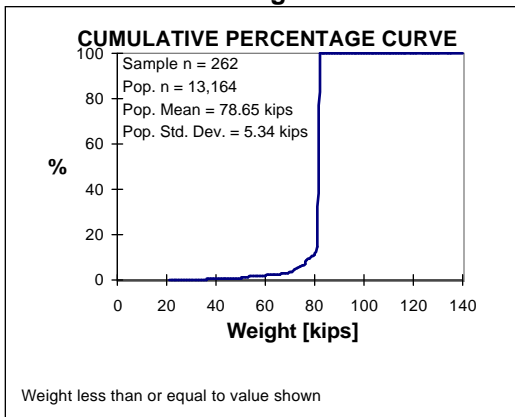
Average Weight



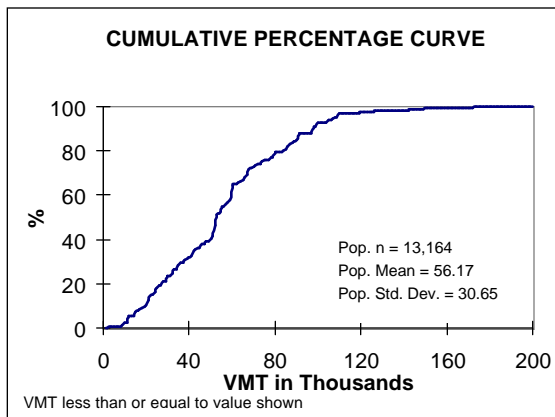
Overall Length



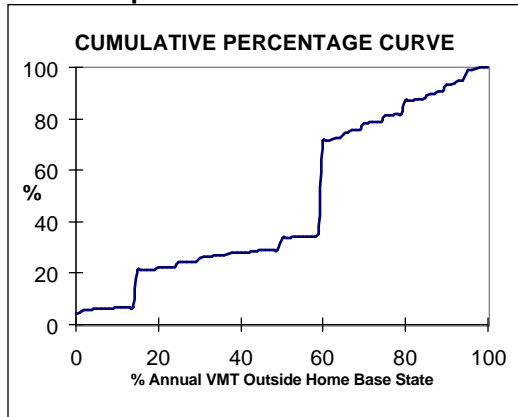
Maximum Gross Weight



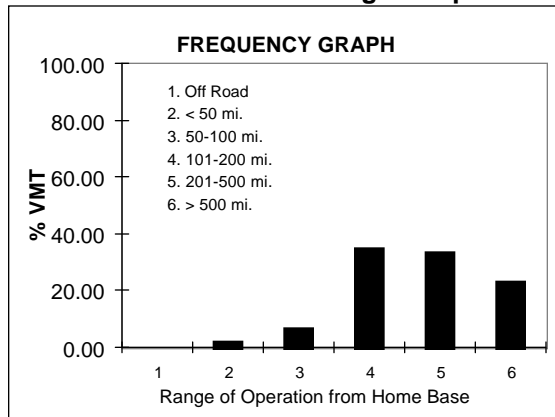
Annual VMT



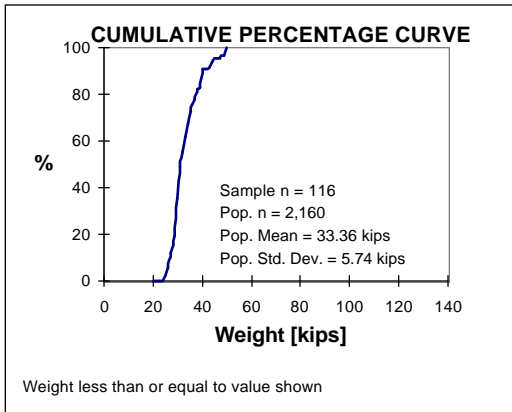
Base of Operation



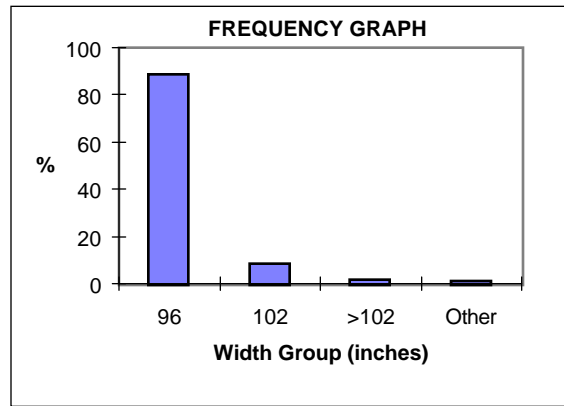
Range of Operation



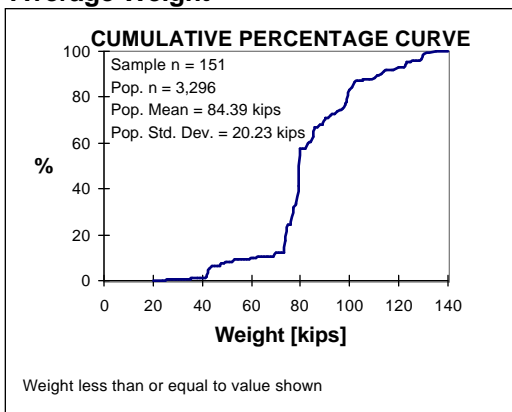
Empty Weight



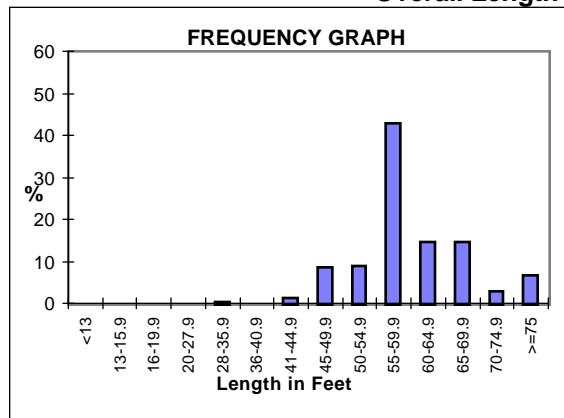
External Trailer Width



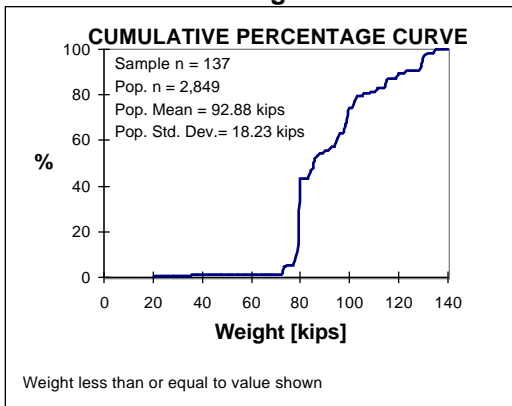
Average Weight



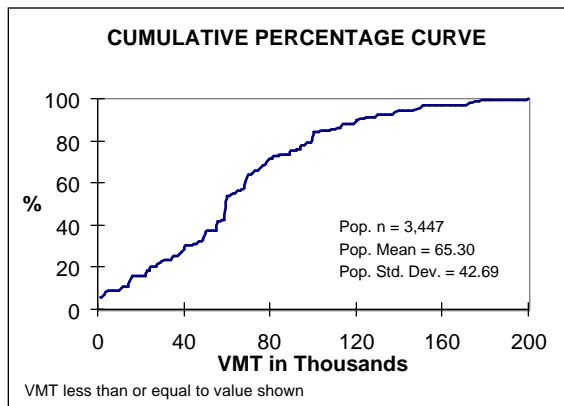
Overall Length



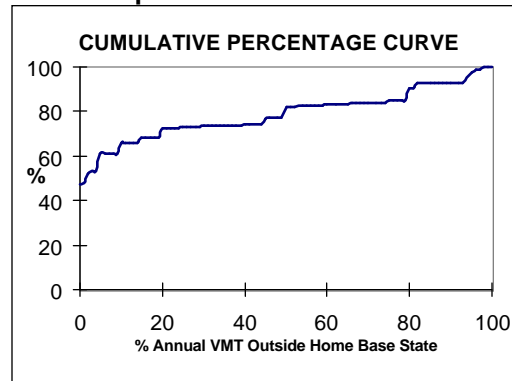
Maximum Gross Weight



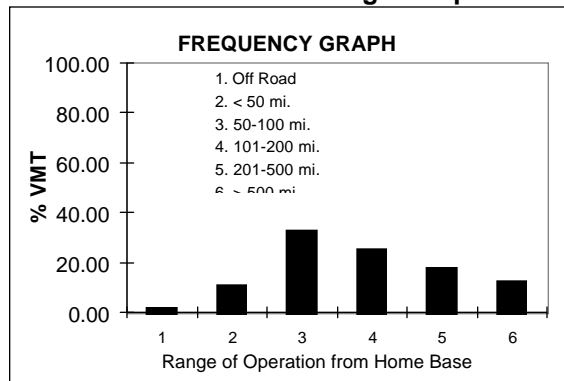
Annual VMT



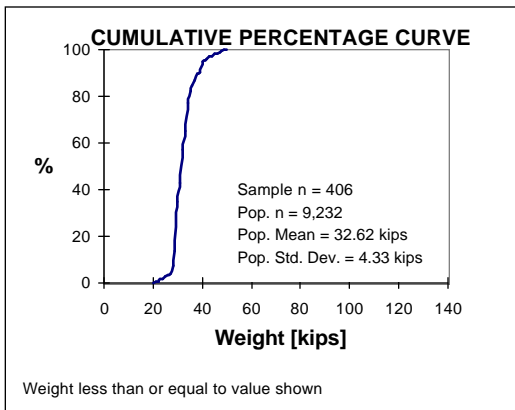
Base of Operation



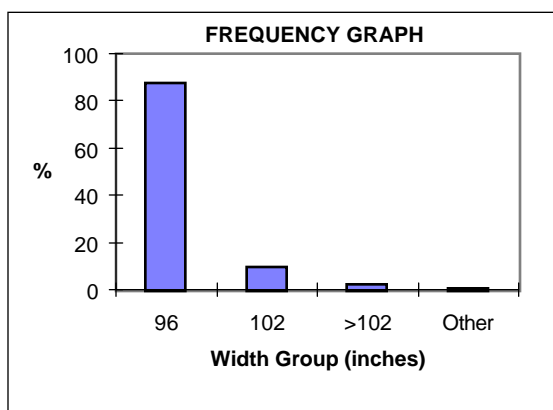
Range of Operation



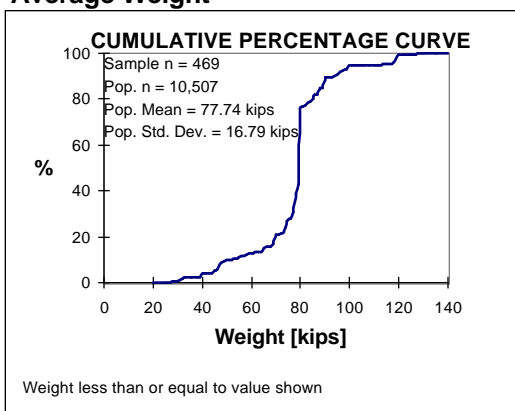
Empty Weight



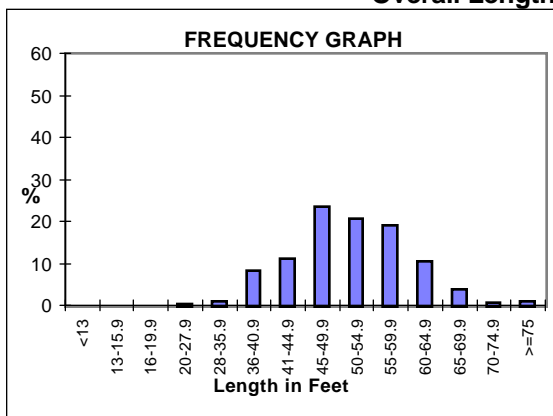
External Trailer Width



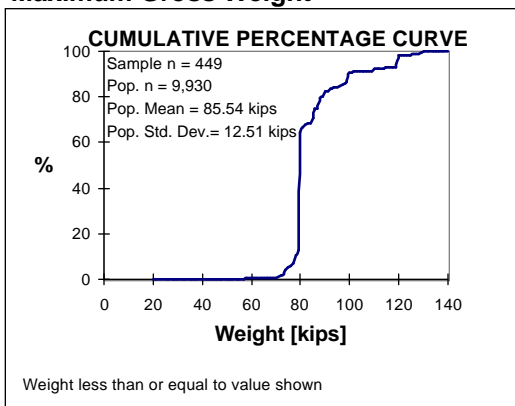
Average Weight



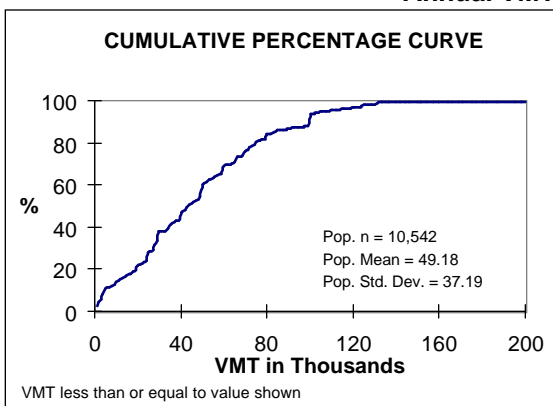
Overall Length



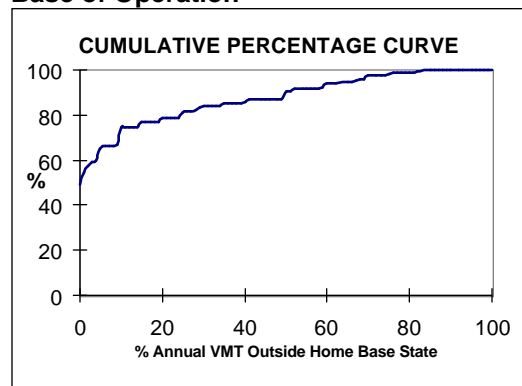
Maximum Gross Weight



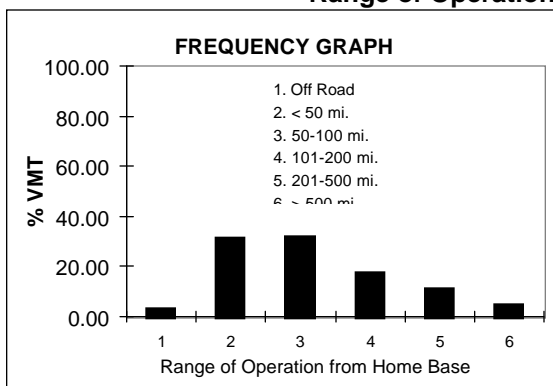
Annual VMT



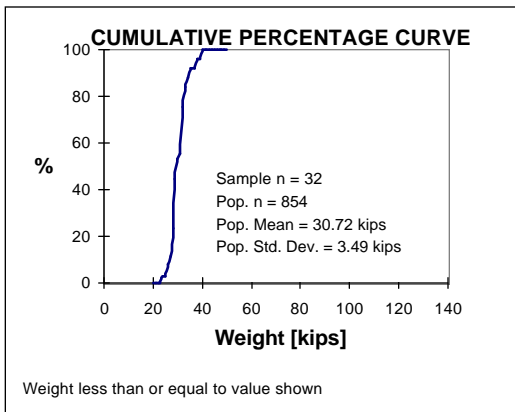
Base of Operation



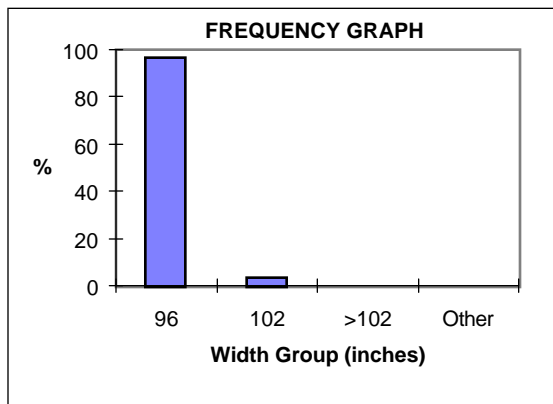
Range of Operation



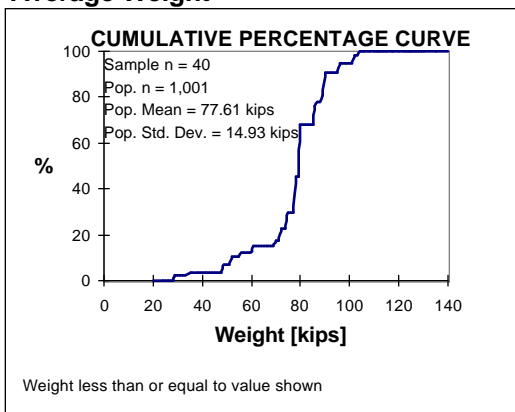
Empty Weight



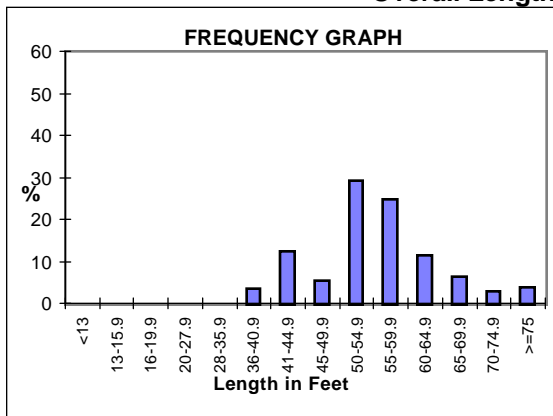
External Trailer Width



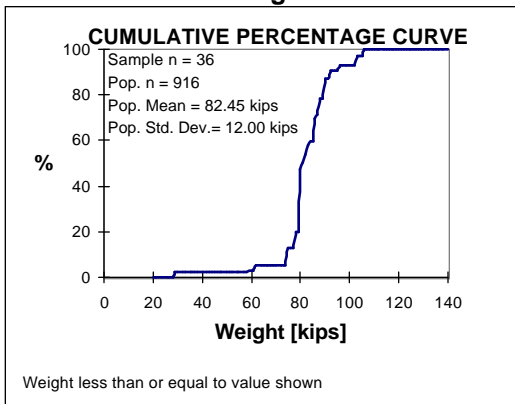
Average Weight



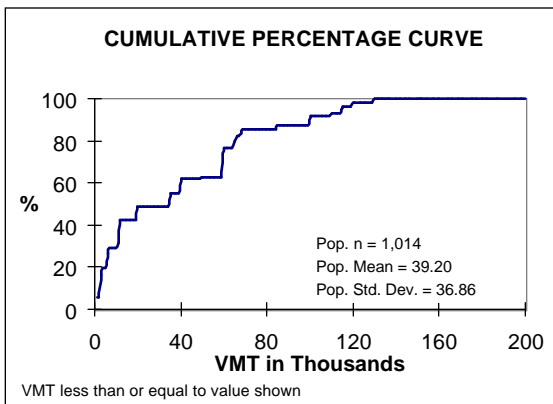
Overall Length



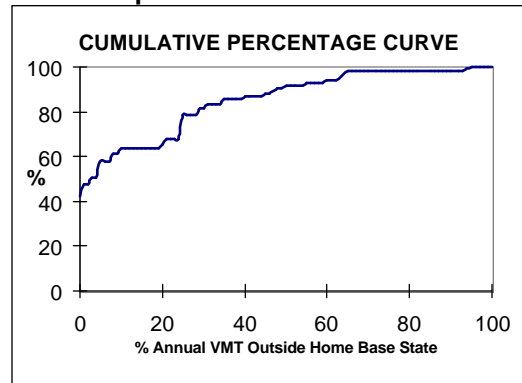
Maximum Gross Weight



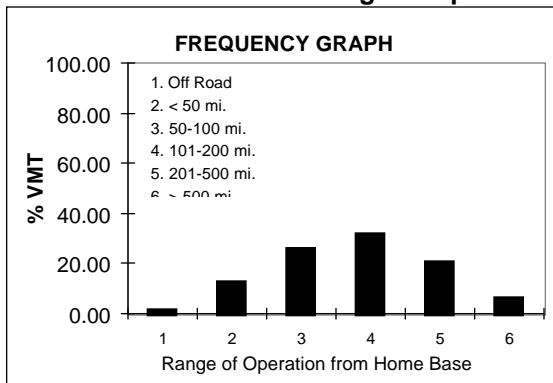
Annual VMT



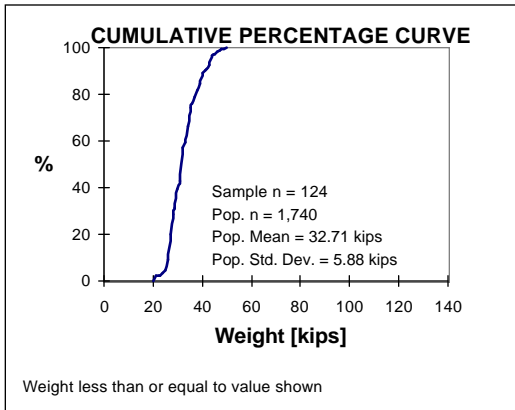
Base of Operation



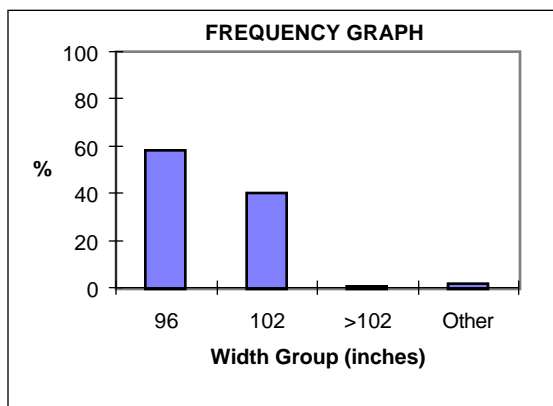
Range of Operation



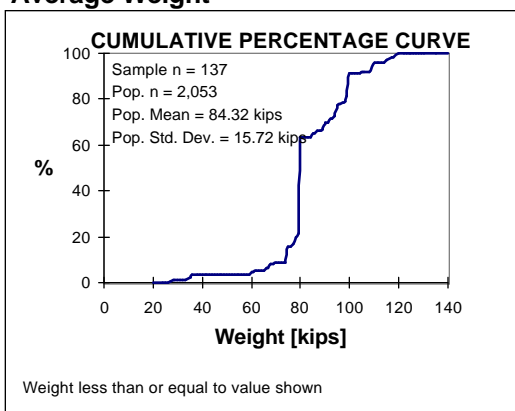
Empty Weight



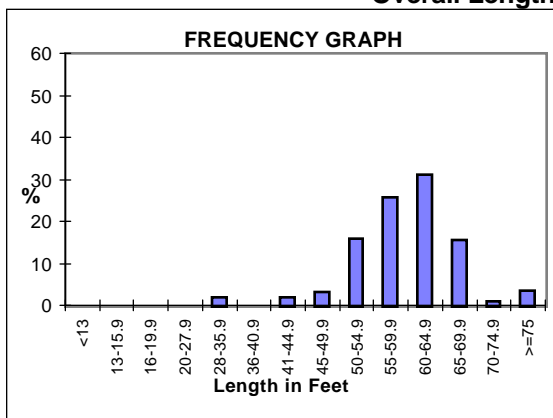
External Trailer Width



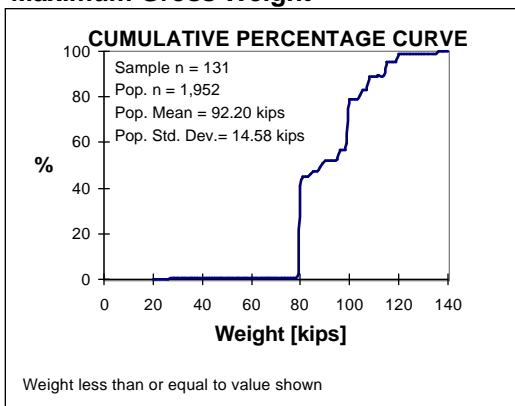
Average Weight



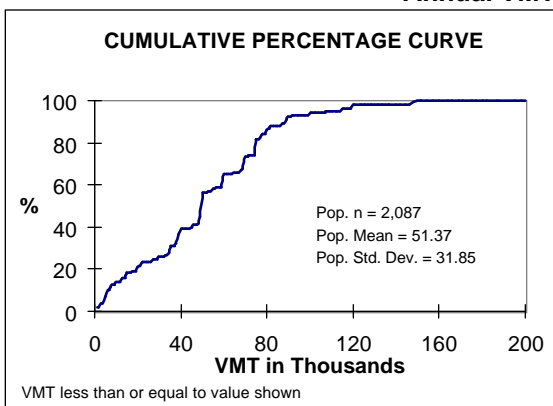
Overall Length



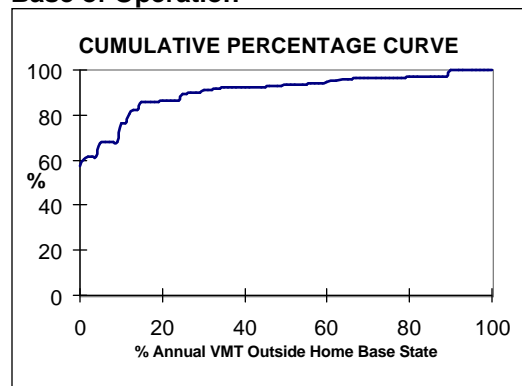
Maximum Gross Weight



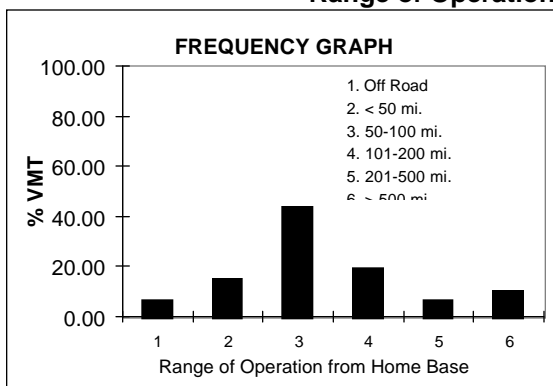
Annual VMT



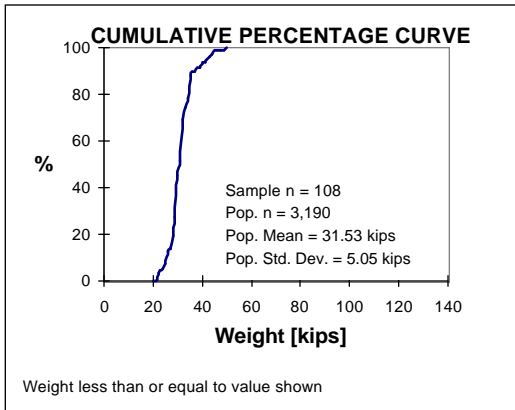
Base of Operation



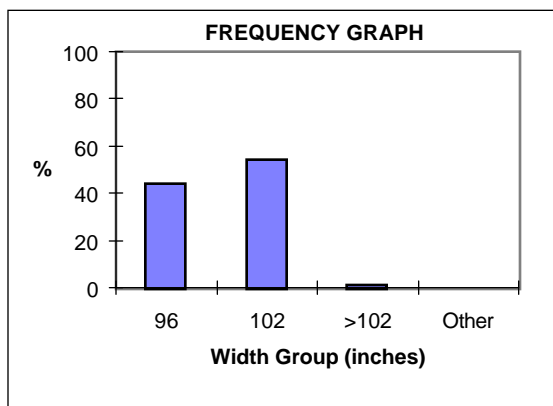
Range of Operation



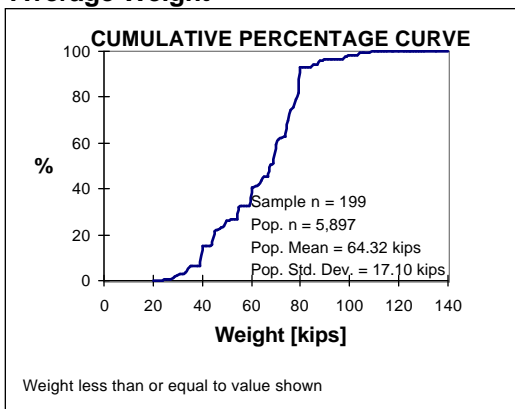
Empty Weight



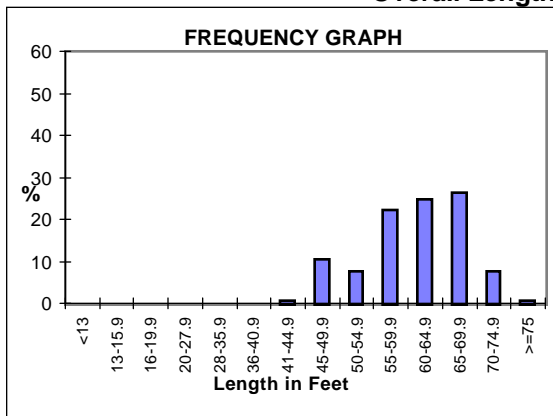
External Trailer Width



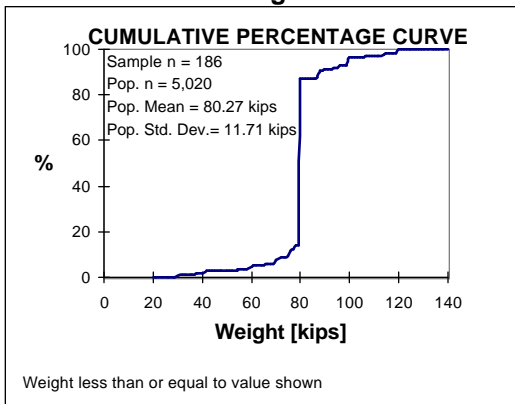
Average Weight



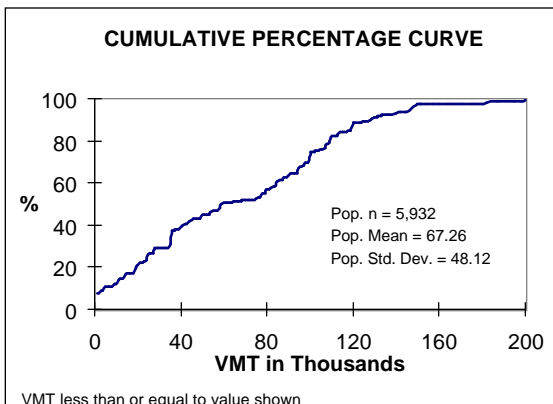
Overall Length



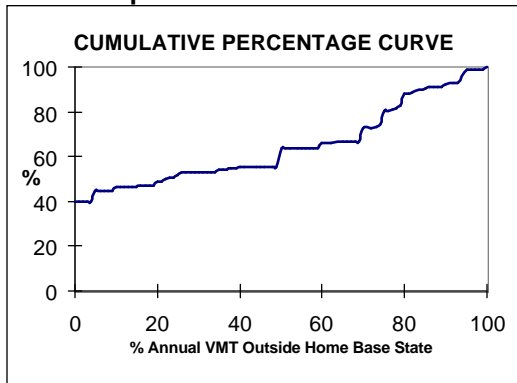
Maximum Gross Weight



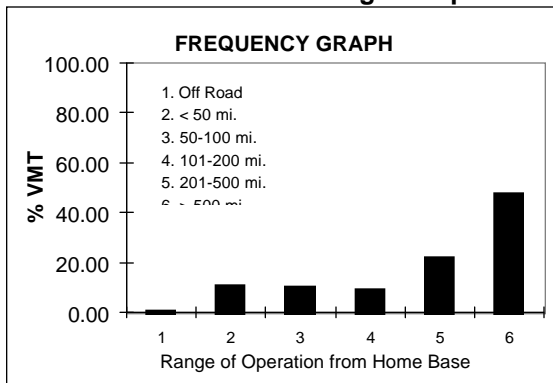
Annual VMT



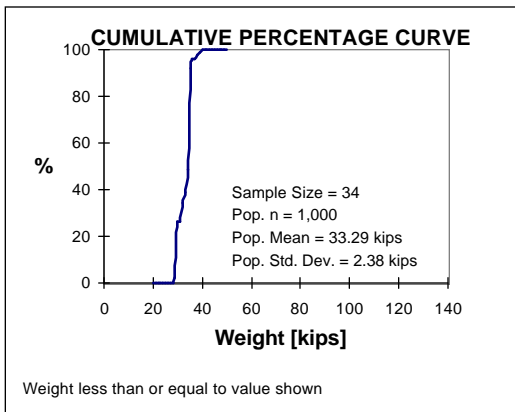
Base of Operation



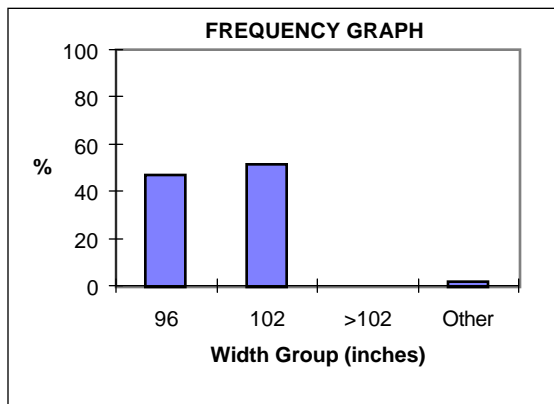
Range of Operation



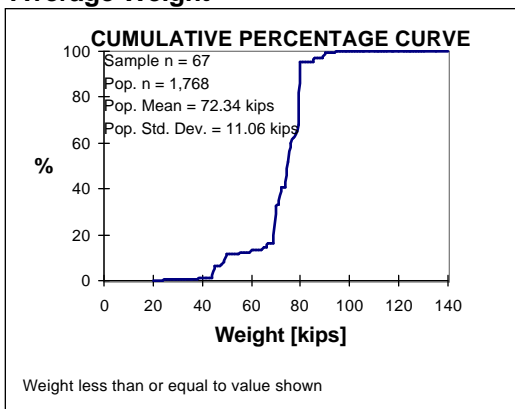
Empty Weight



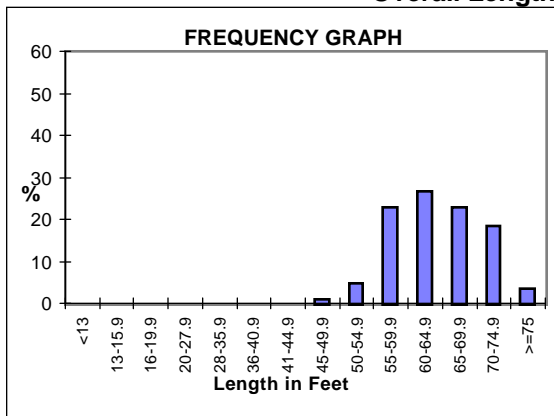
External Trailer Width



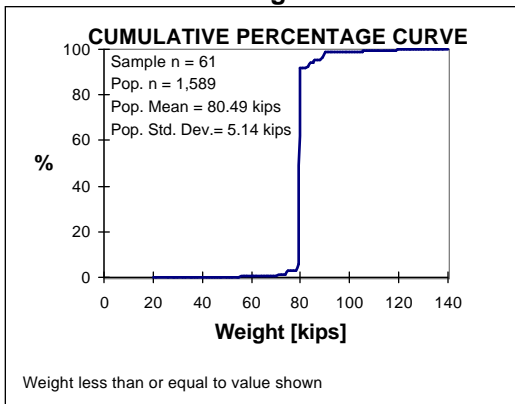
Average Weight



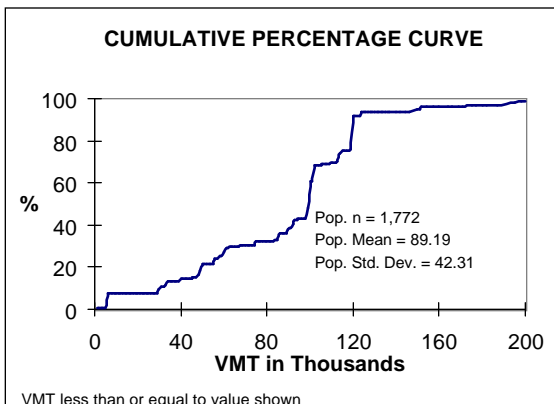
Overall Length



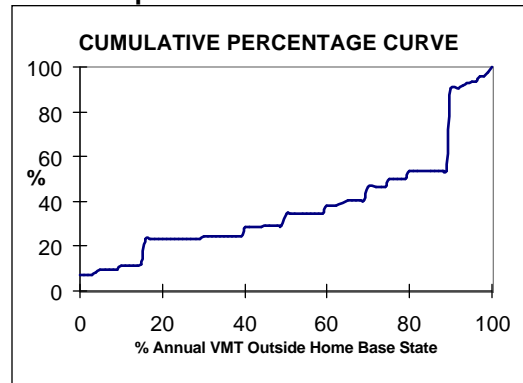
Maximum Gross Weight



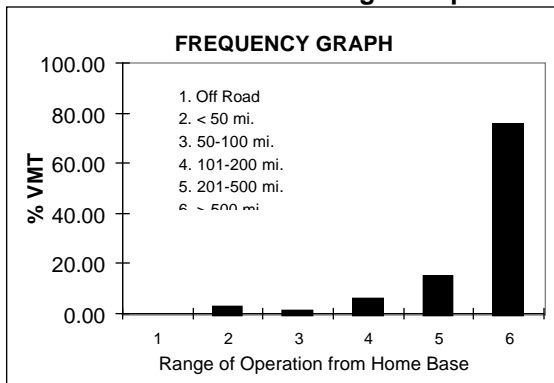
Annual VMT



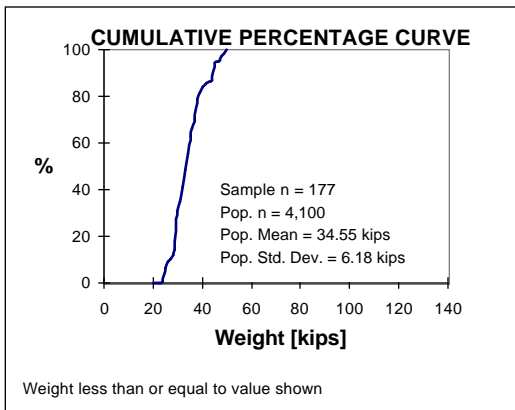
Base of Operation



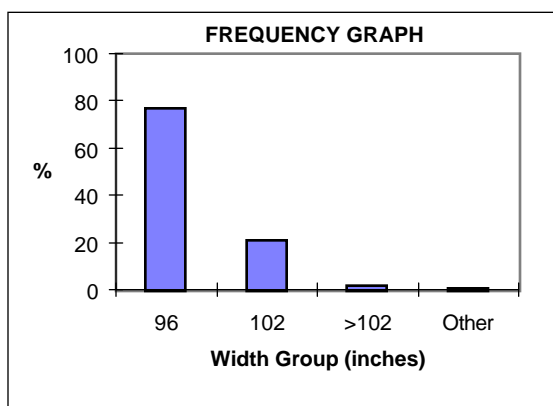
Range of Operation



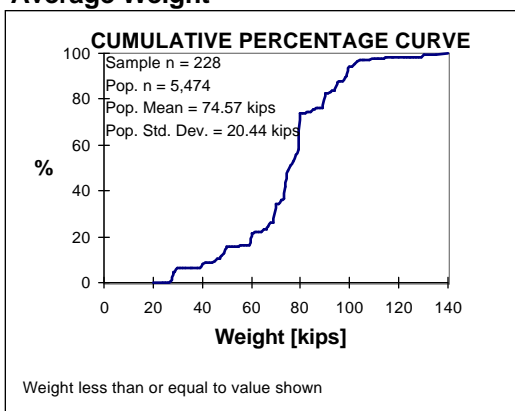
Empty Weight



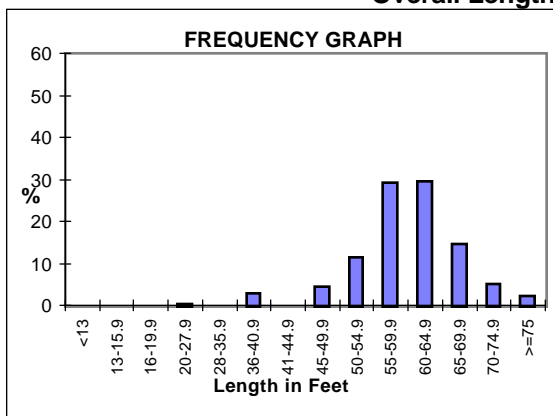
External Trailer Width



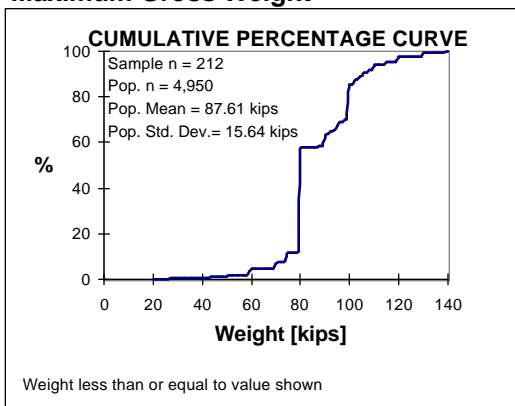
Average Weight



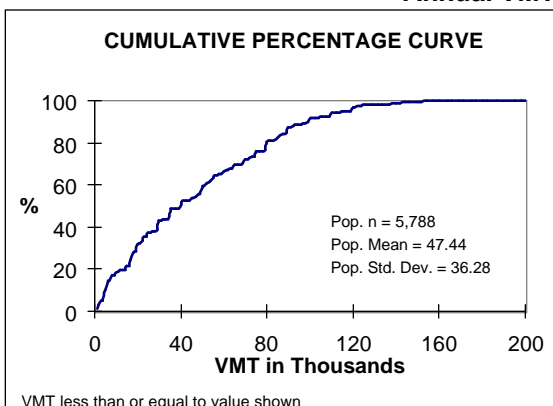
Overall Length



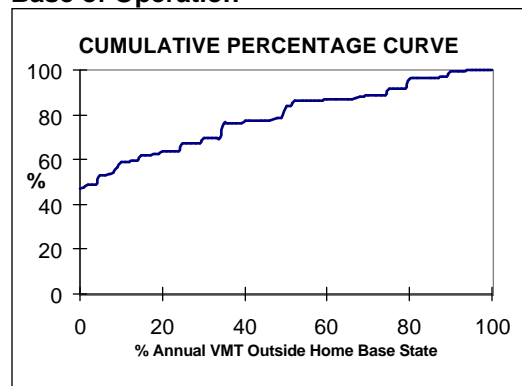
Maximum Gross Weight



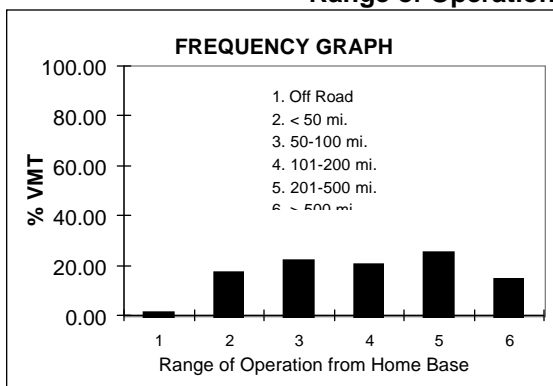
Annual VMT



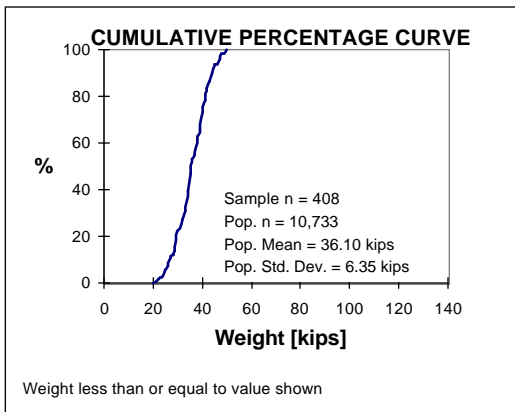
Base of Operation



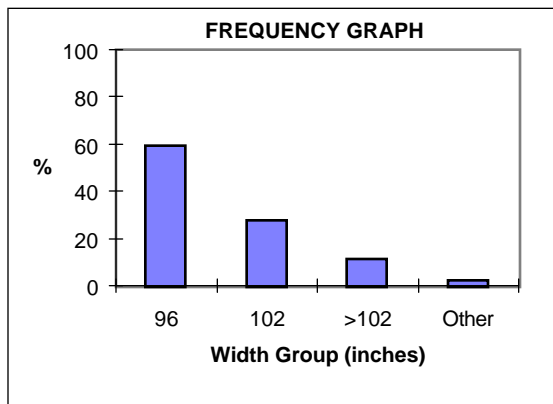
Range of Operation



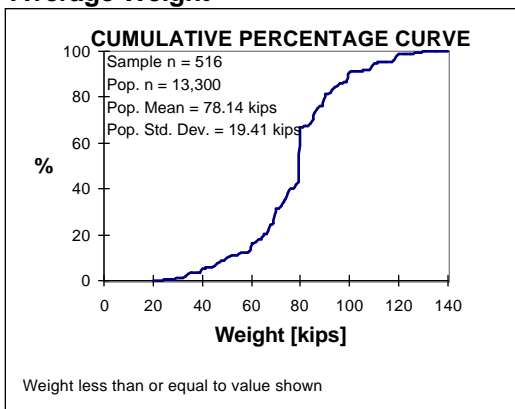
Empty Weight



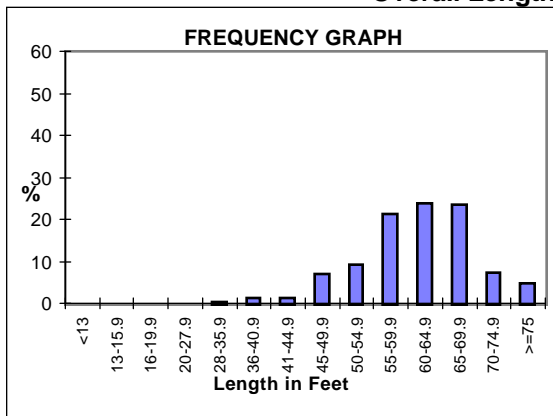
External Trailer Width



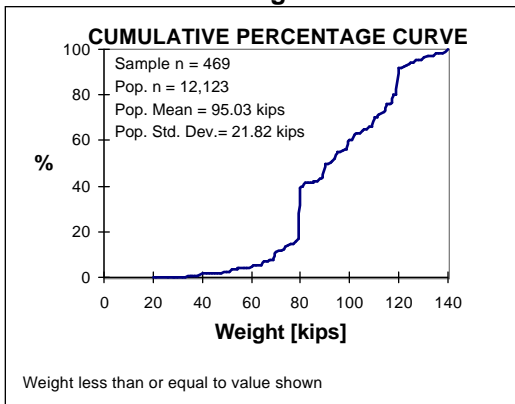
Average Weight



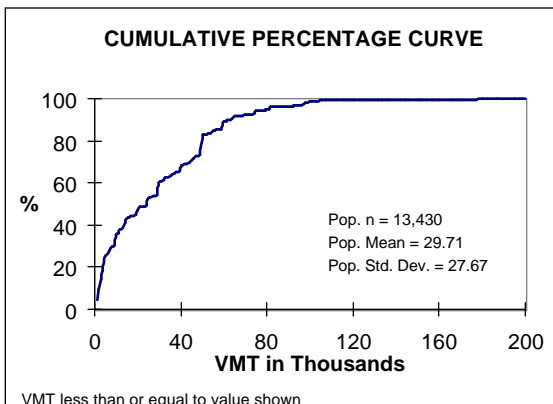
Overall Length



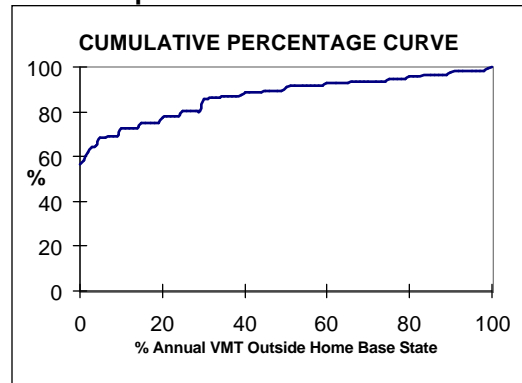
Maximum Gross Weight



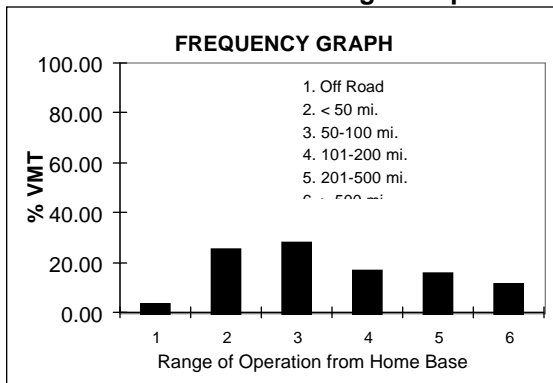
Annual VMT



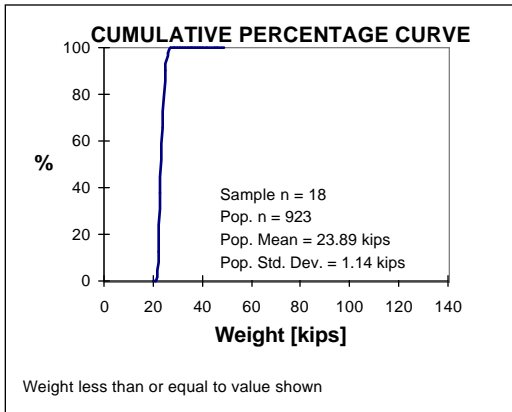
Base of Operation



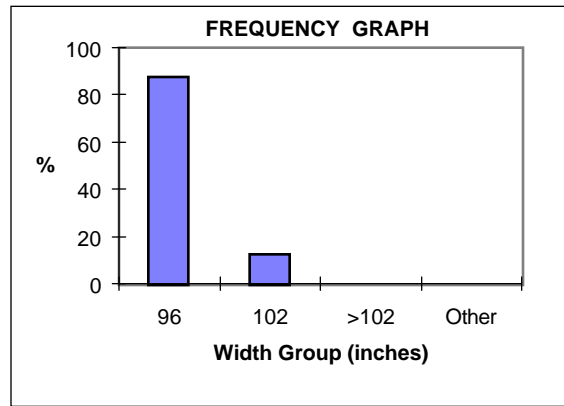
Range of Operation



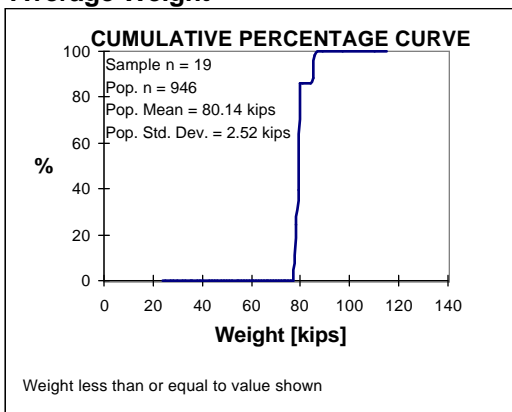
Empty Weight



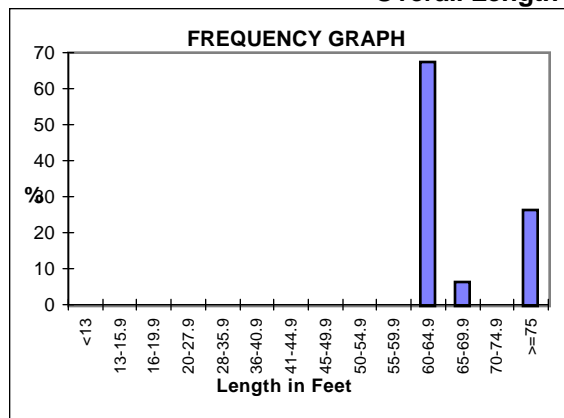
External Trailer Width



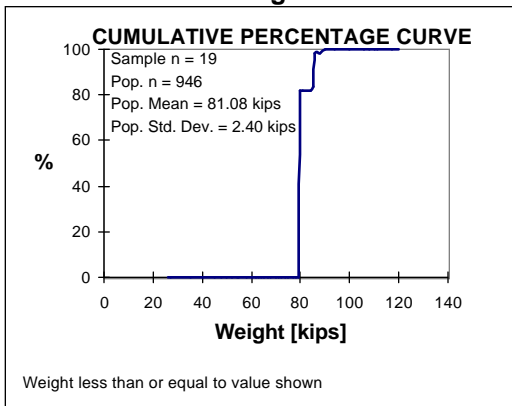
Average Weight



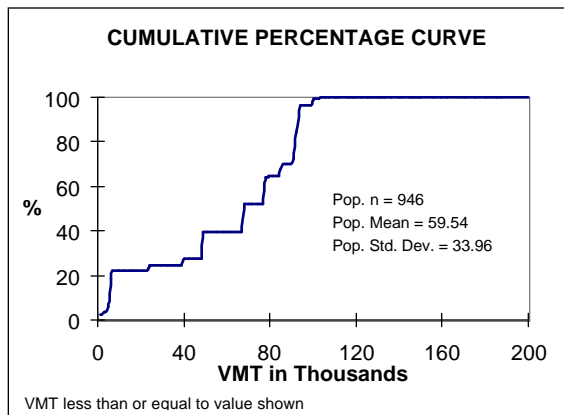
Overall Length



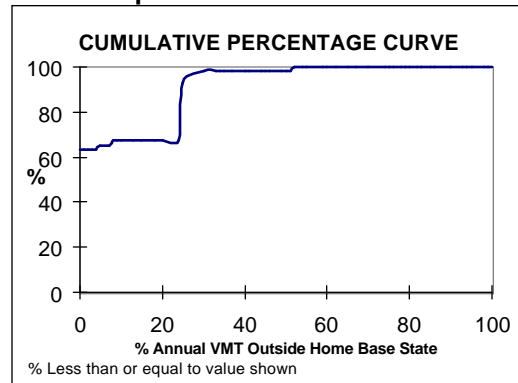
Maximum Gross Weight



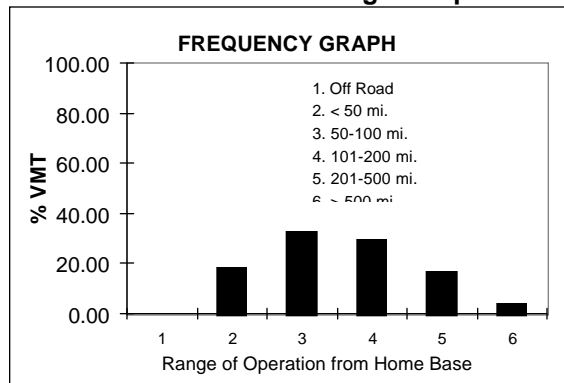
Annual VMT



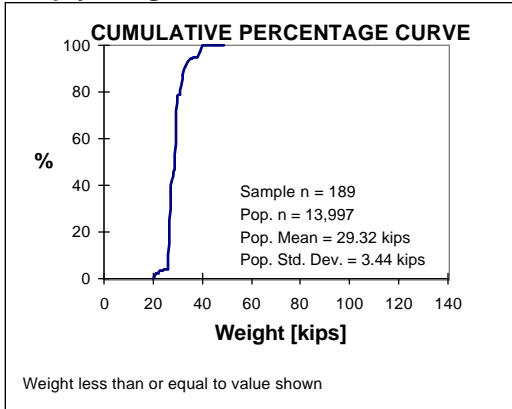
Base of Operation



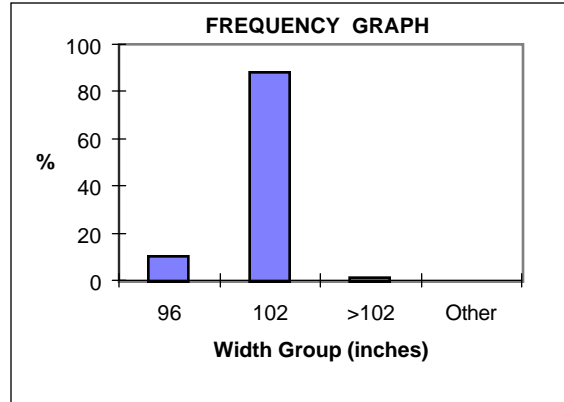
Range of Operation



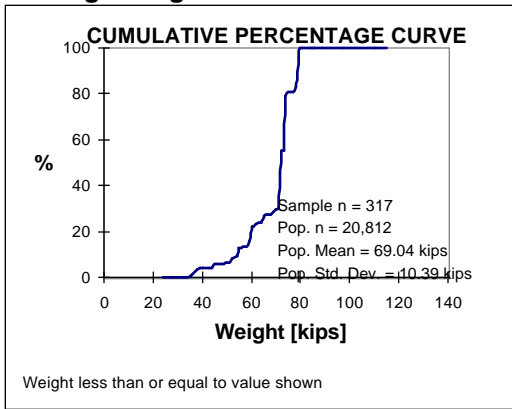
Empty Weight



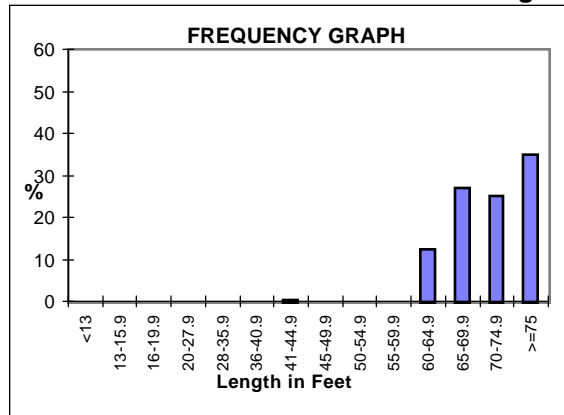
External Trailer Width



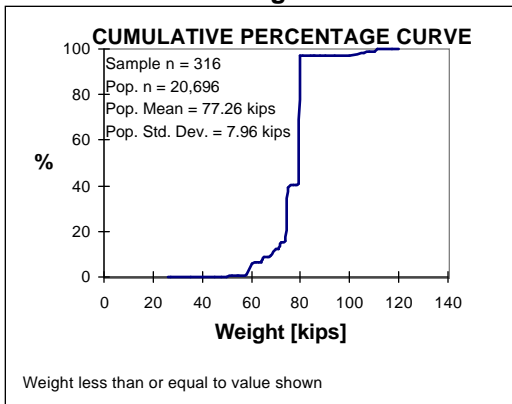
Average Weight



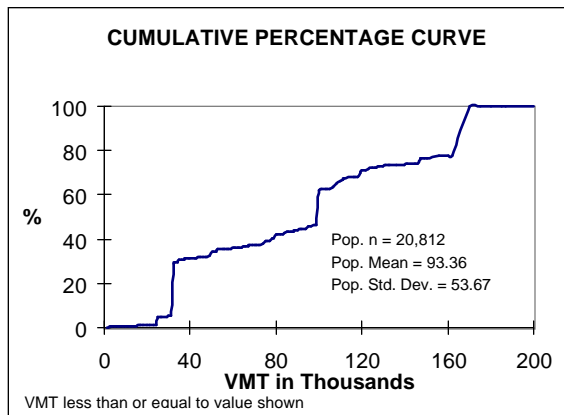
Overall Length



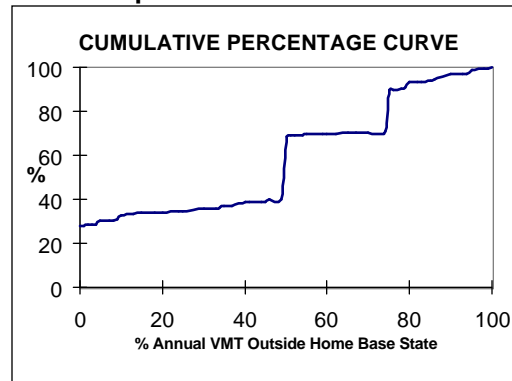
Maximum Gross Weight



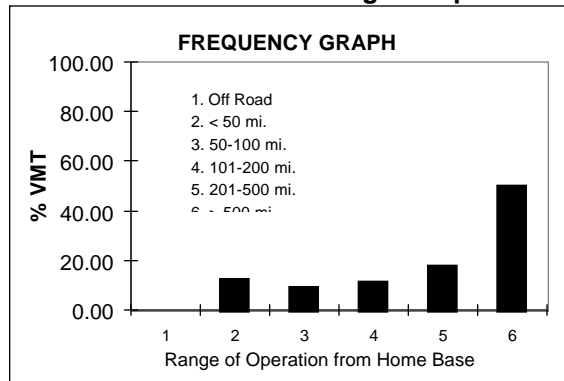
Annual VMT



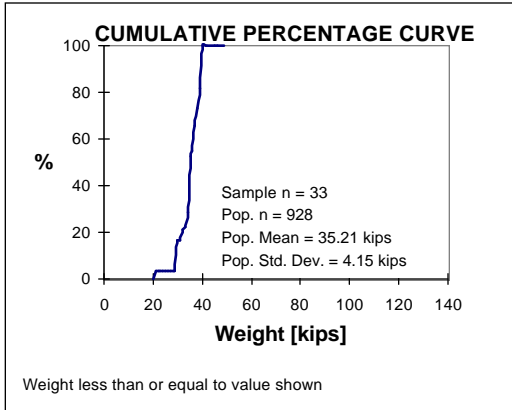
Base of Operation



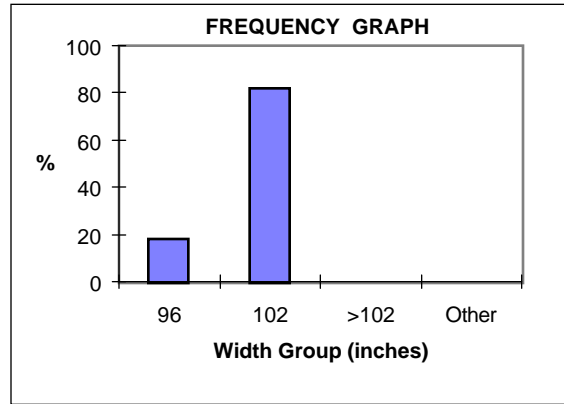
Range of Operation



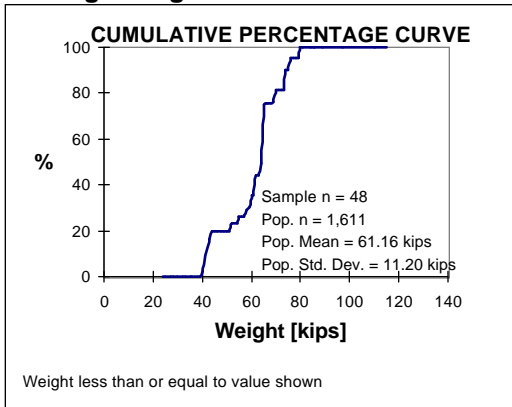
Empty Weight



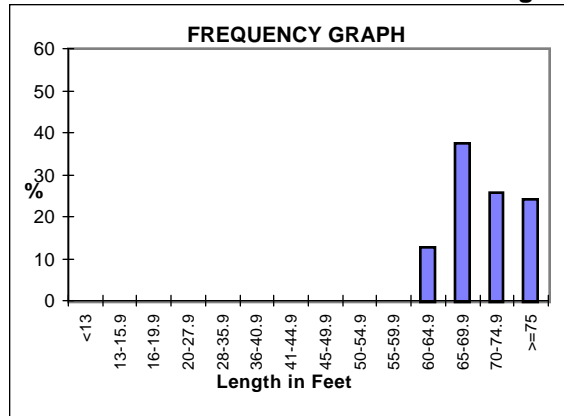
External Trailer Width



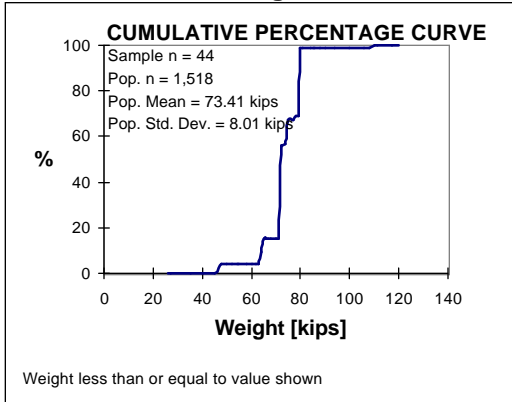
Average Weight



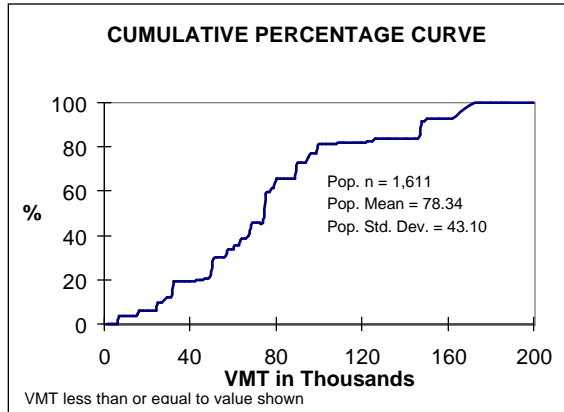
Overall Length



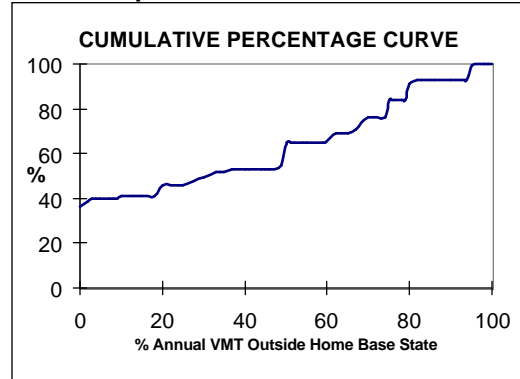
Maximum Gross Weight



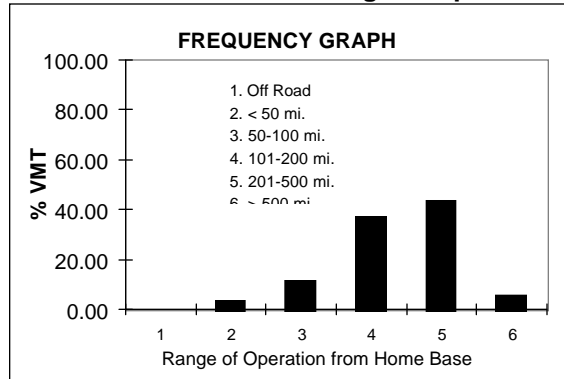
Annual VMT



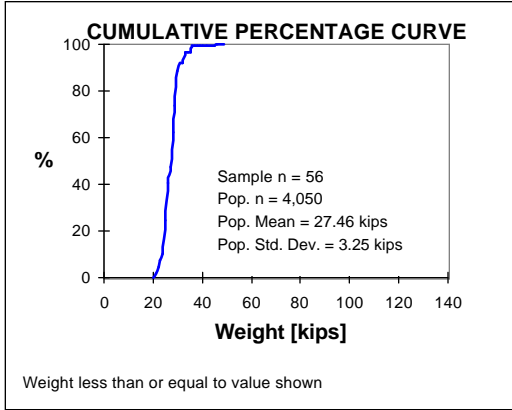
Base of Operation



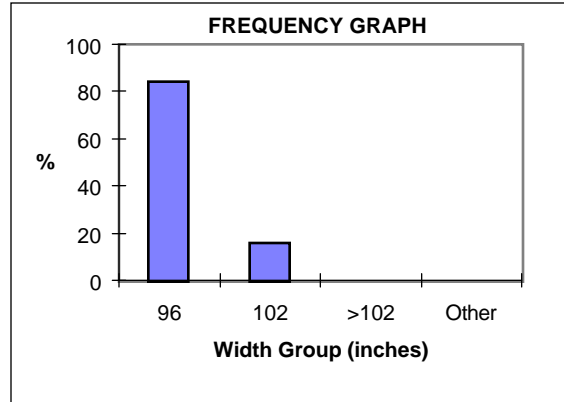
Range of Operation



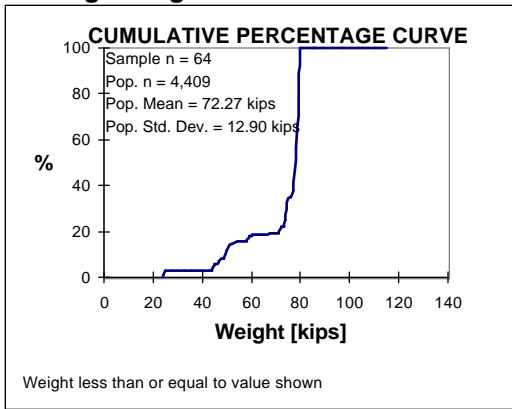
Empty Weight



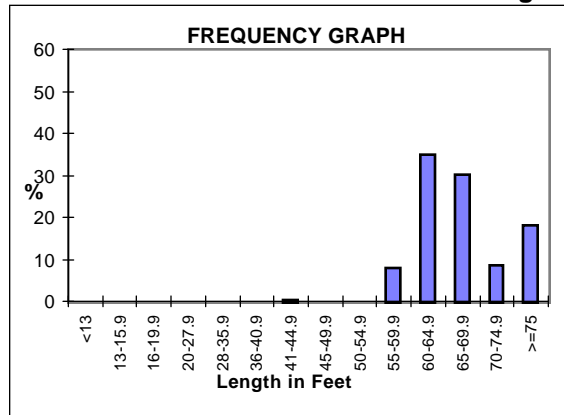
External Trailer Width



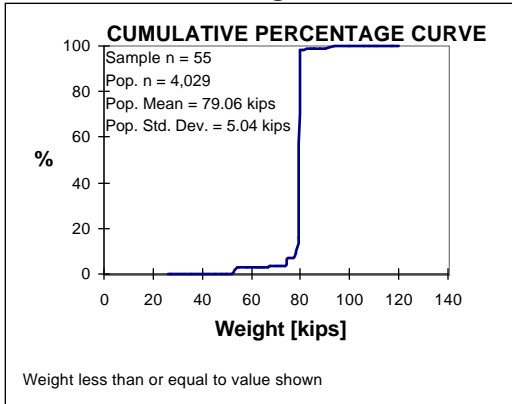
Average Weight



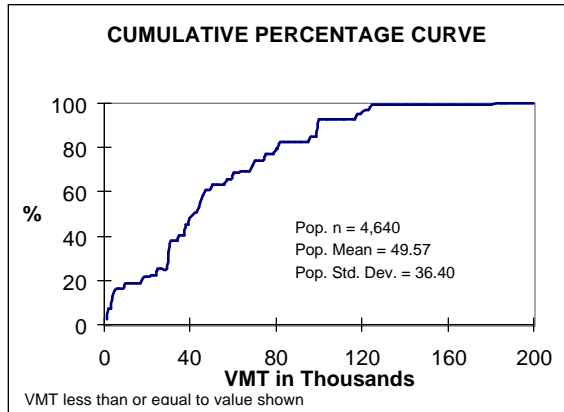
Overall Length



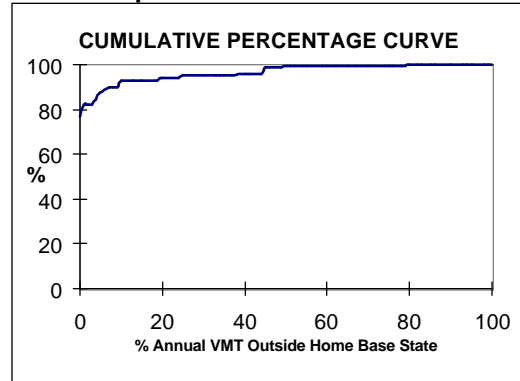
Maximum Gross Weight



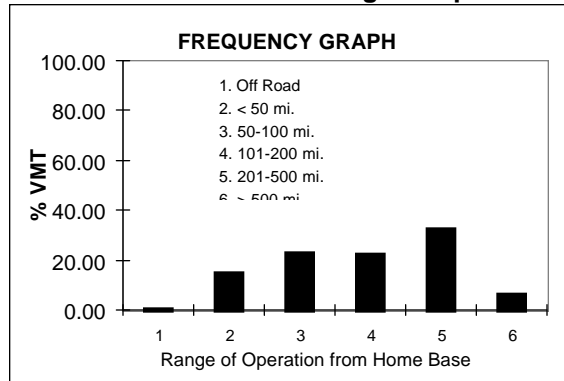
Annual VMT



Base of Operation



Range of Operation

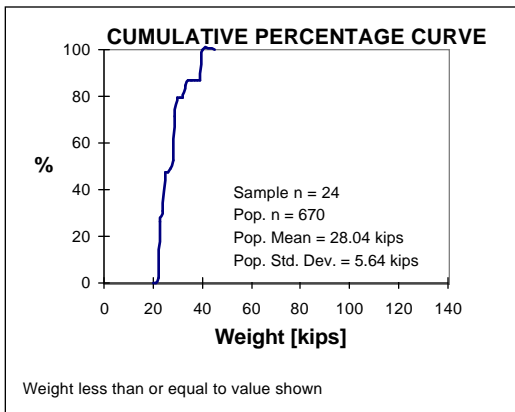


Ratio of Sample Size to Population Size
by Vehicle Configuration/Body Type Combinations

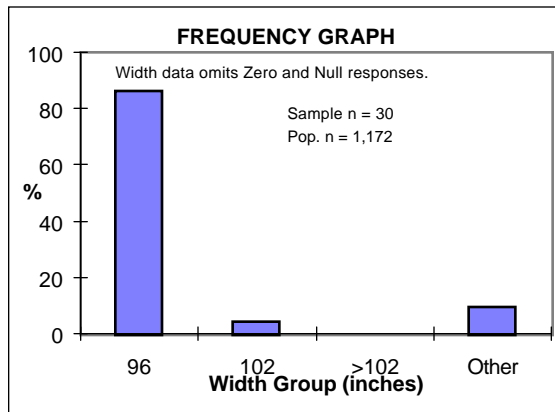
1987 Fleet

Pop. N Sample N	3+2	3-S2	3-S3	2-S1-2
Low Boy	2,090 53	31,456 996	10,484 309	
Basic Platform	7,232 188	129,473 3,695	6,739 174	2,542 36
Livestock Truck		10,377 333		
Insul Non-refrig Non-Refrigerated		11,238 322		
Insulated Refrigerated		68,734 2,087	1,538 49	
Drop Frame Van		12,703 323		1,571 34
Basic Enclosed	1,601 42	191,620 4,827	4,716 133	15,984 211
Pole Logging	4,024 141	16,045 579	687 40	
Auto Transport		9,898 232		
Grain Bodies	1,143 39	20,042 726	913 30	1,298 22
Dump Truck	10,211 253	45,947 1,320	7,451 205	
Tank Truck For Liquid	2,430 65	51,018 1,480	1,763 56	
Tank Truck For Dry Bulk		13,536 332		

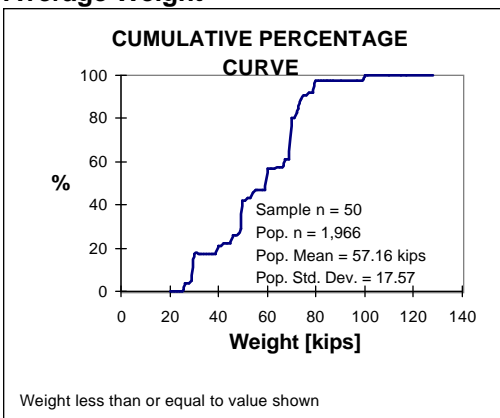
Empty Weight



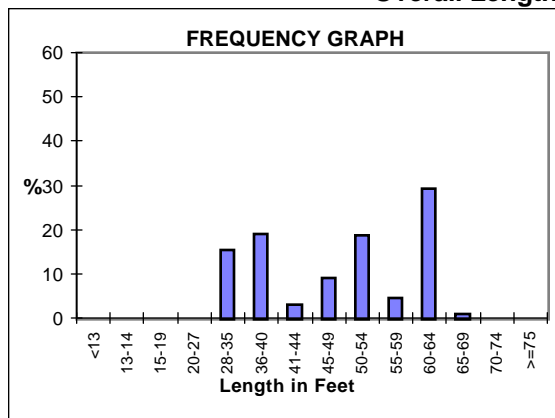
External Trailer Width



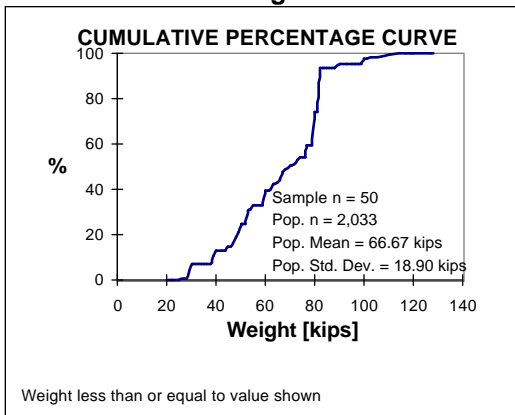
Average Weight



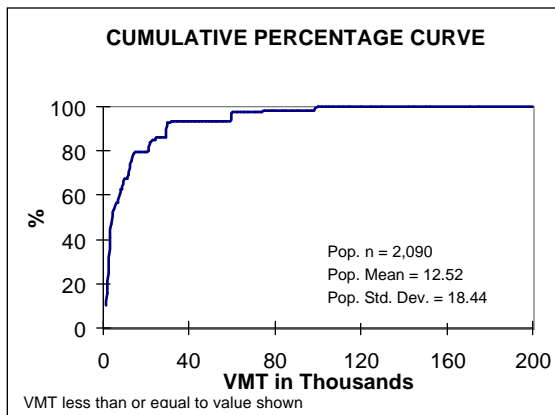
Overall Length



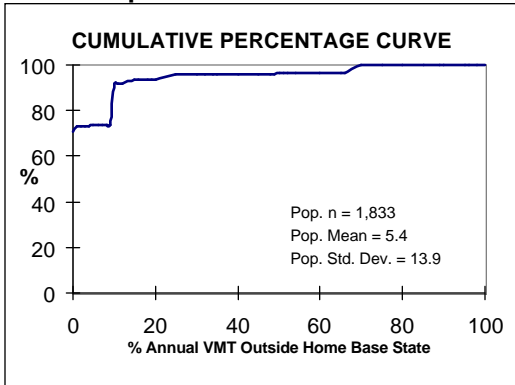
Maximum Gross Weight



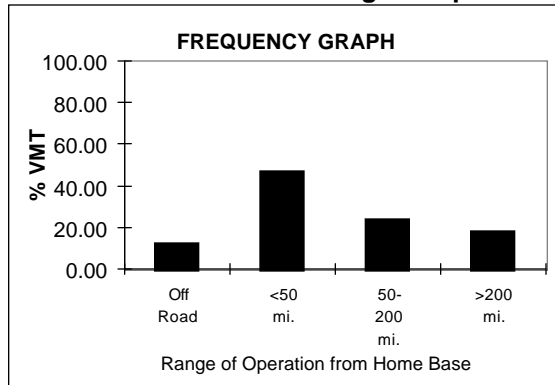
Annual VMT



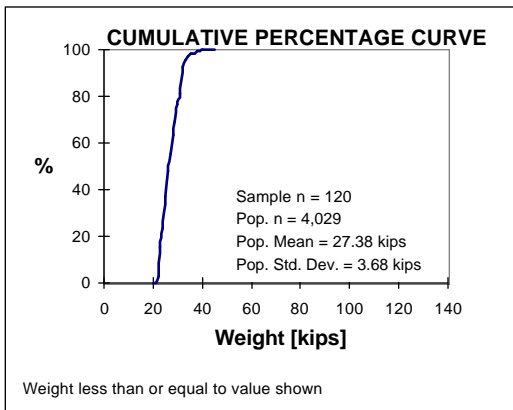
Base of Operation



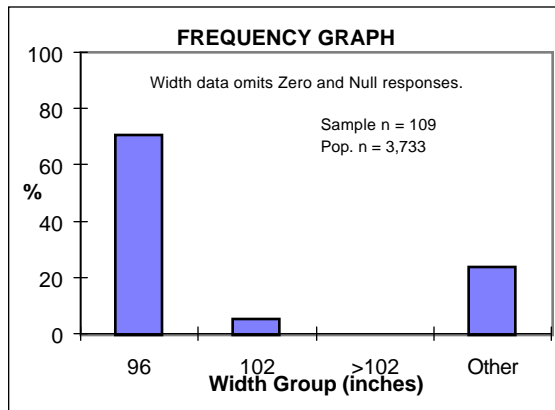
Range of Operation



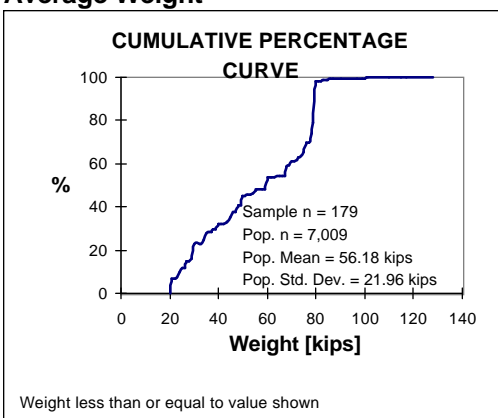
Empty Weight



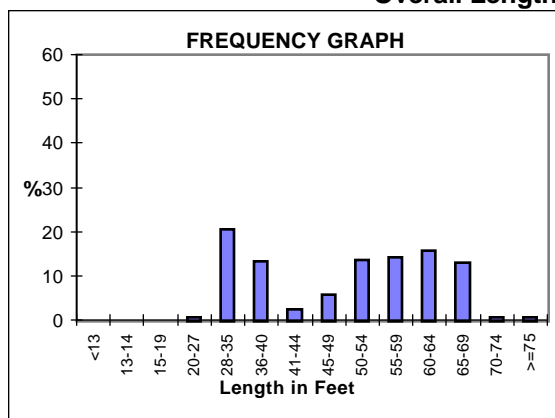
External Trailer Width



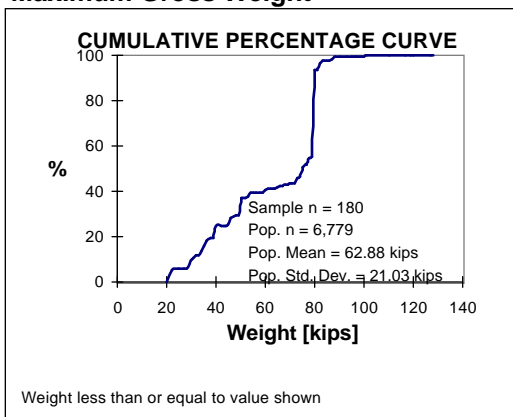
Average Weight



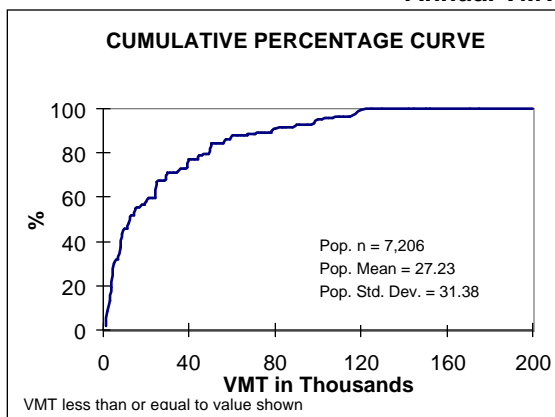
Overall Length



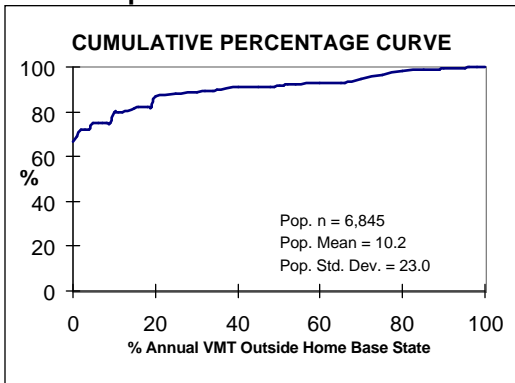
Maximum Gross Weight



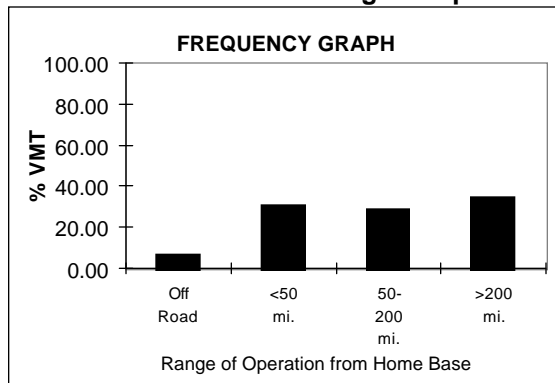
Annual VMT



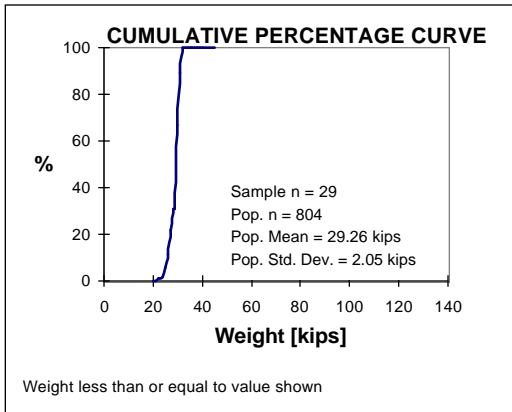
Base of Operation



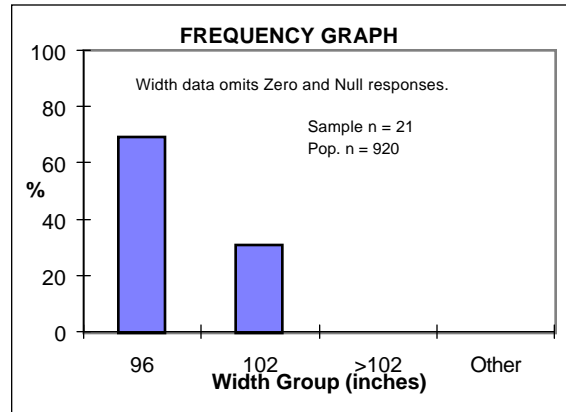
Range of Operation



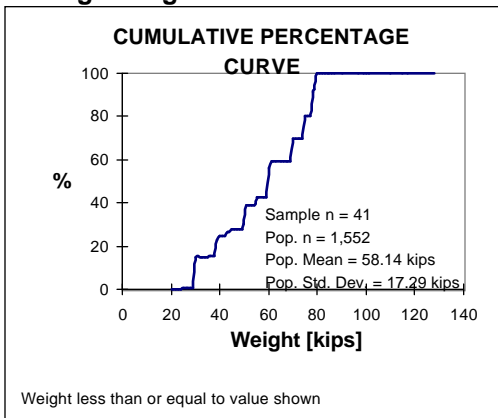
Empty Weight



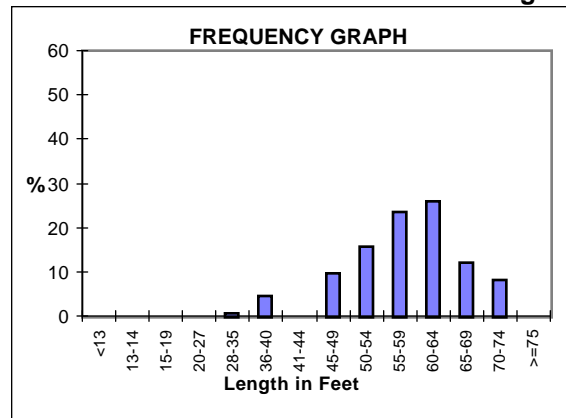
External Trailer Width



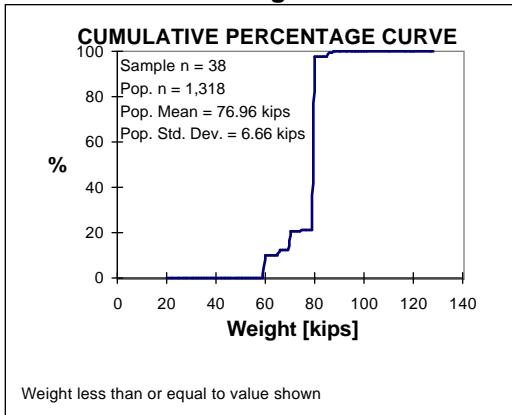
Average Weight



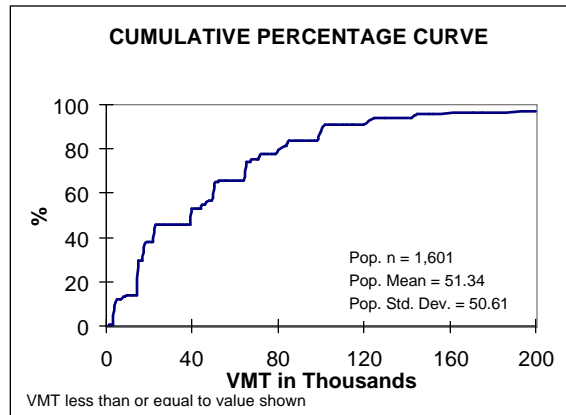
Overall Length



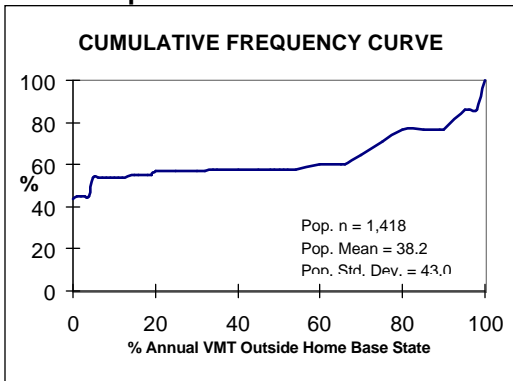
Maximum Gross Weight



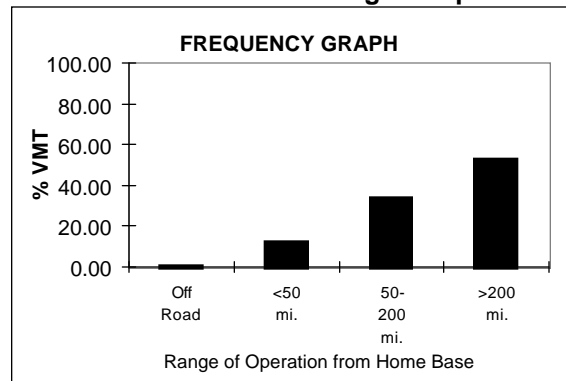
Annual VMT



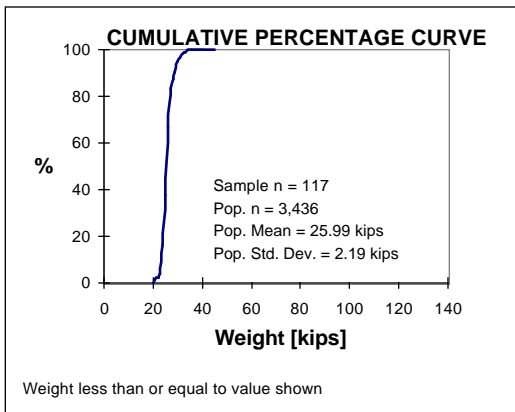
Base of Operation



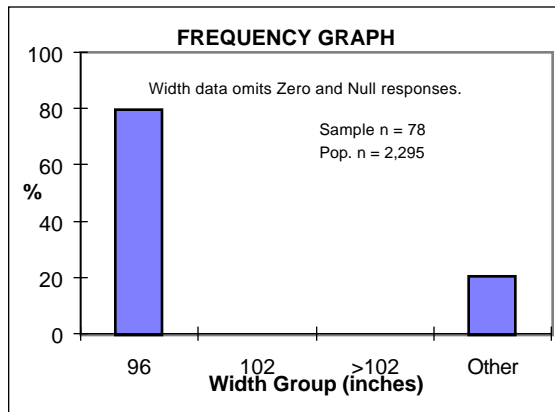
Range of Operation



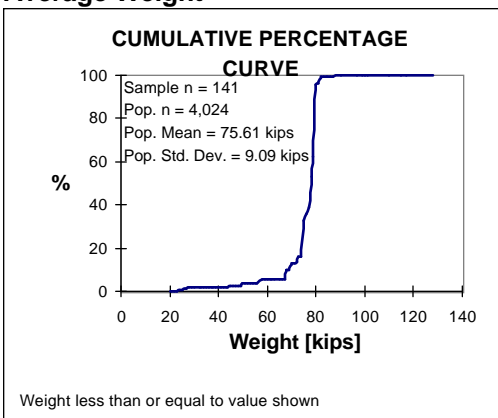
Empty Weight



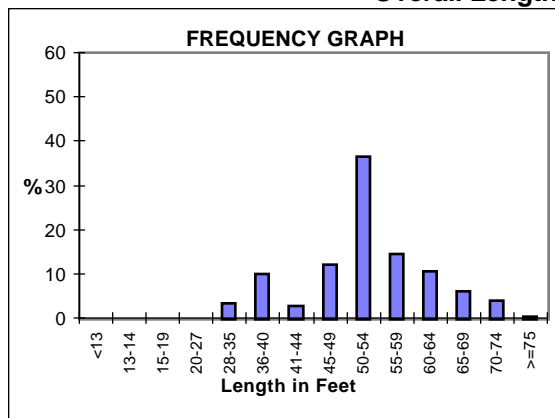
External Trailer Width



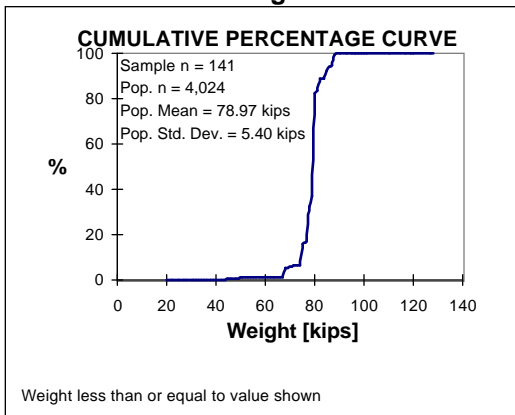
Average Weight



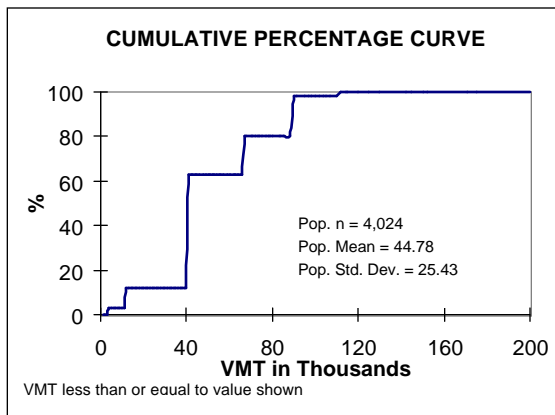
Overall Length



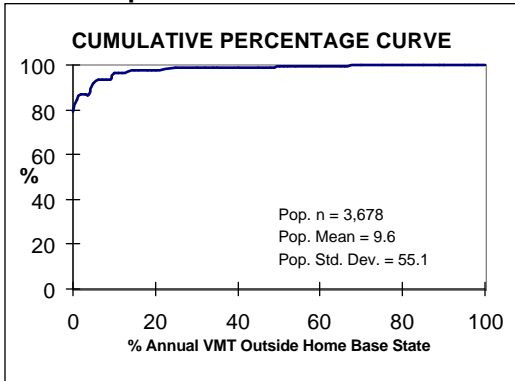
Maximum Gross Weight



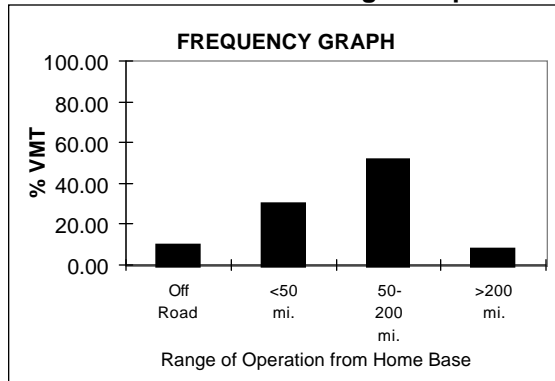
Annual VMT



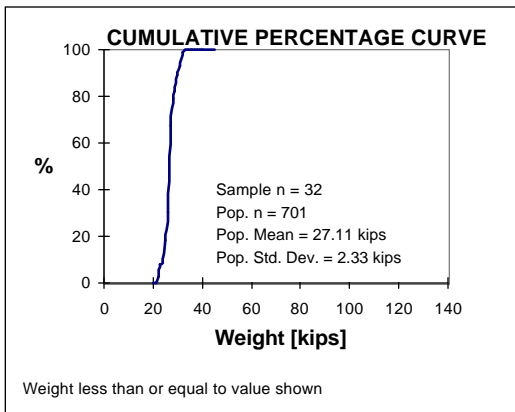
Base of Operation



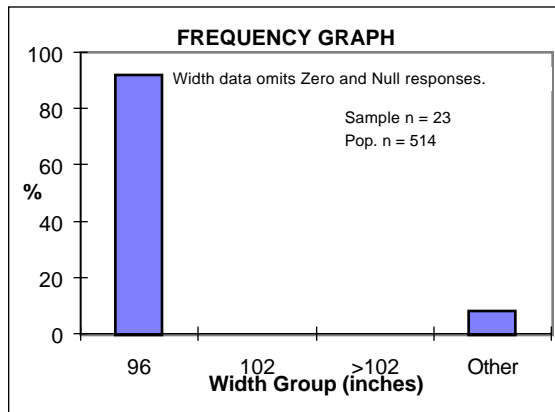
Range of Operation



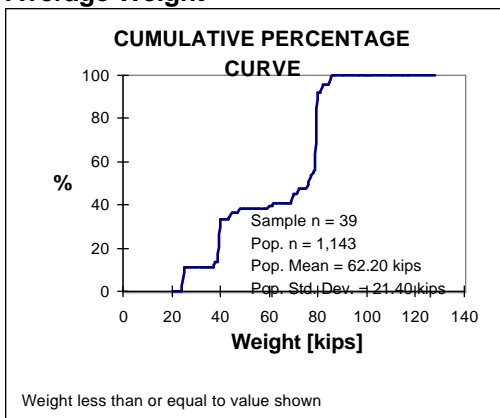
Empty Weight



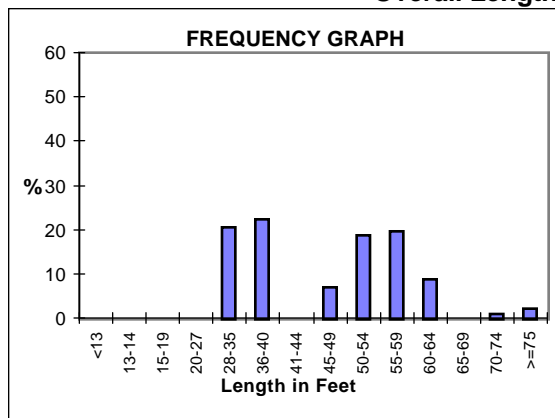
External Trailer Width



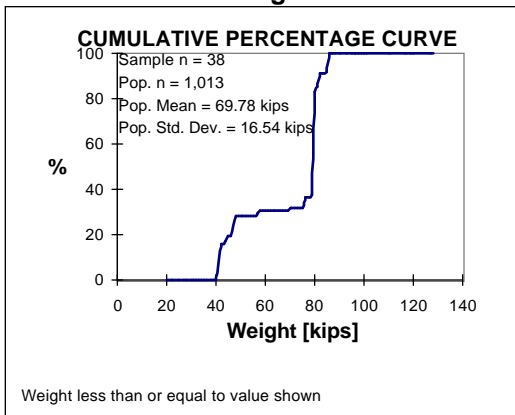
Average Weight



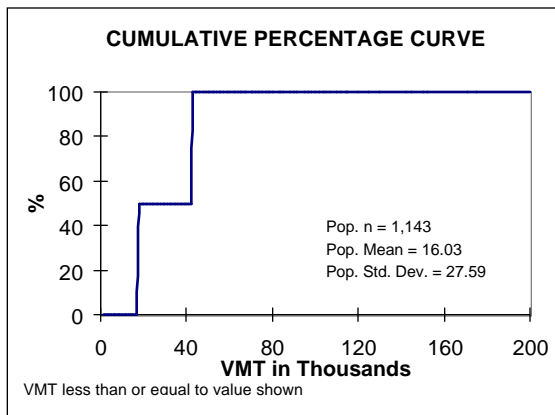
Overall Length



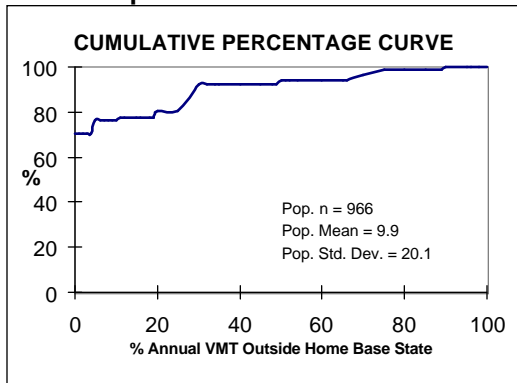
Maximum Gross Weight



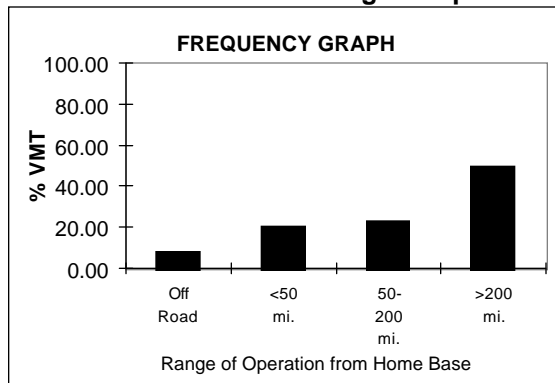
Annual VMT



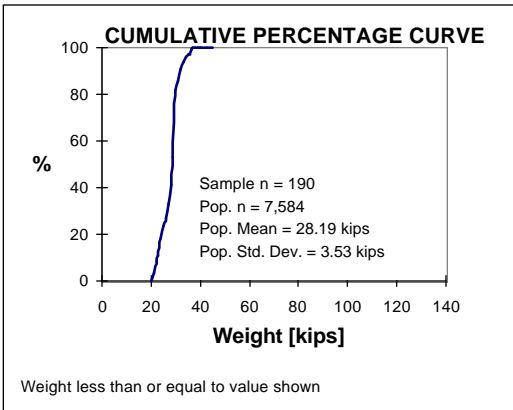
Base of Operation



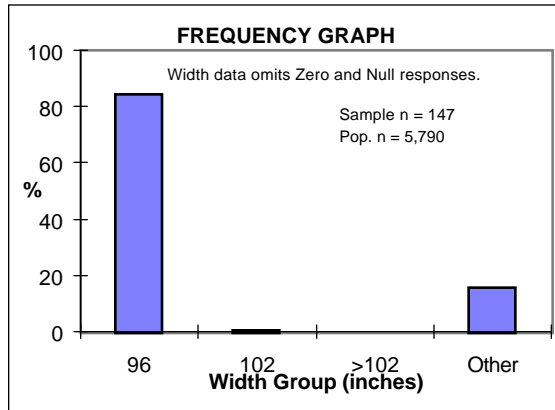
Range of Operation



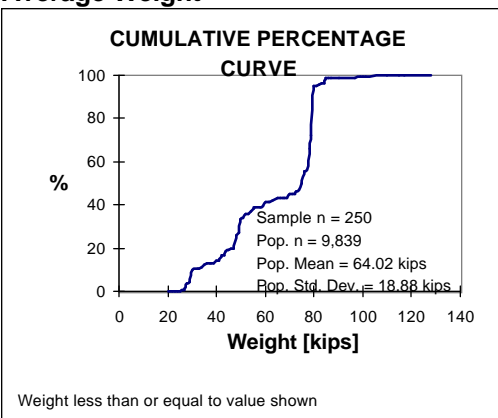
Empty Weight



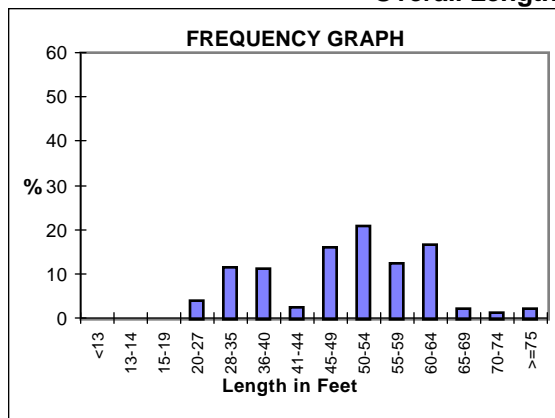
External Trailer Width



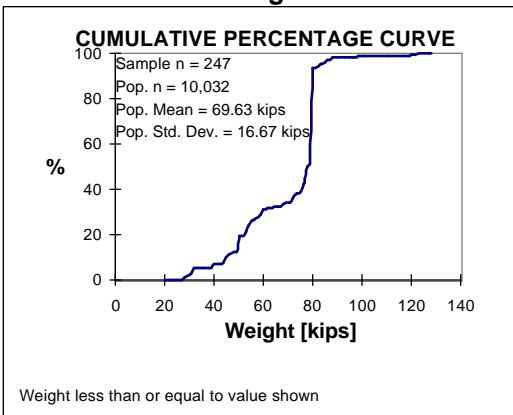
Average Weight



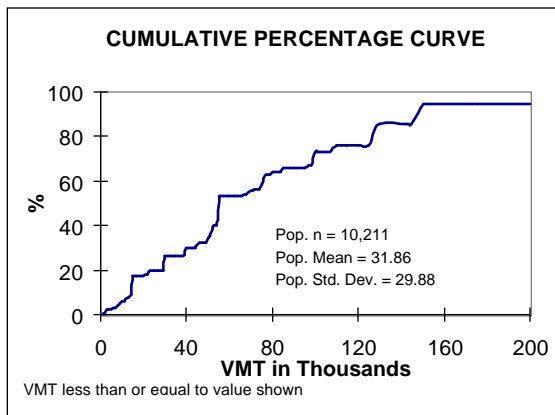
Overall Length



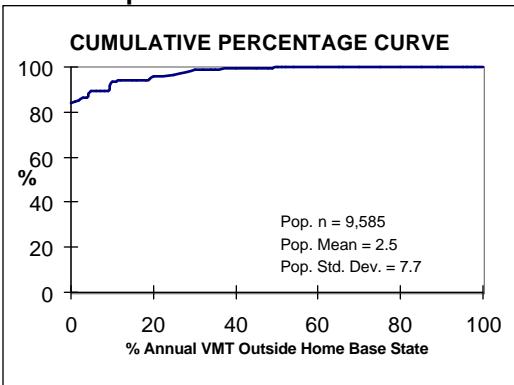
Maximum Gross Weight



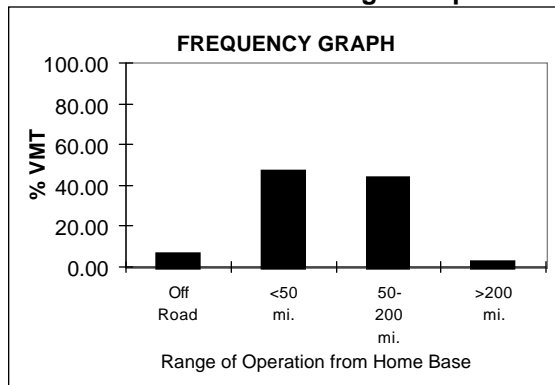
Annual VMT



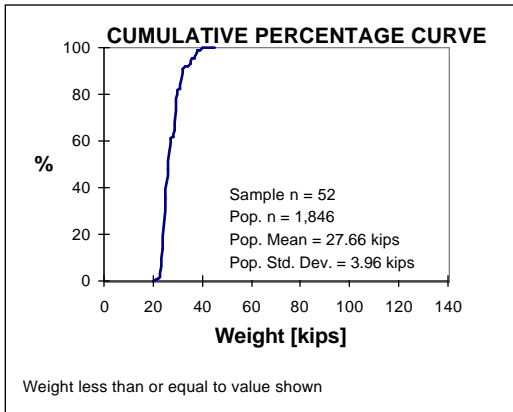
Base of Operation



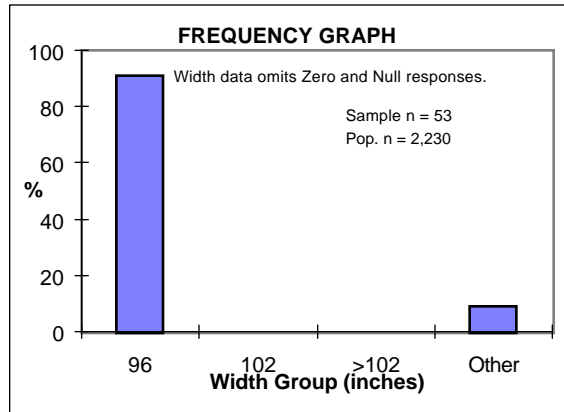
Range of Operation



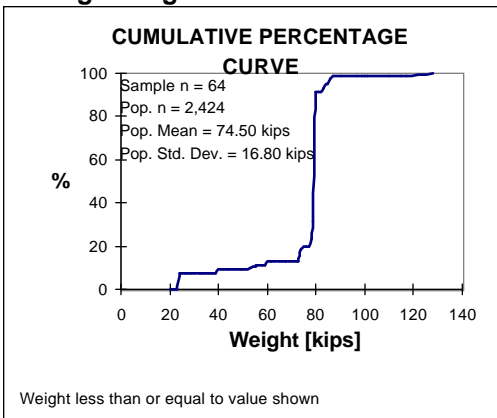
Empty Weight



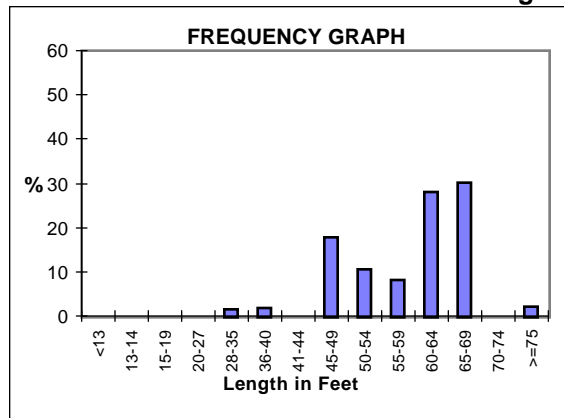
External Trailer Width



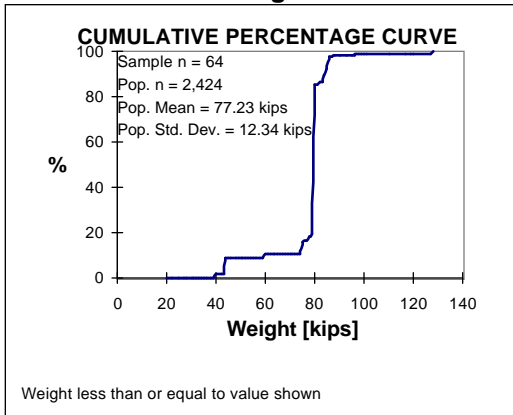
Average Weight



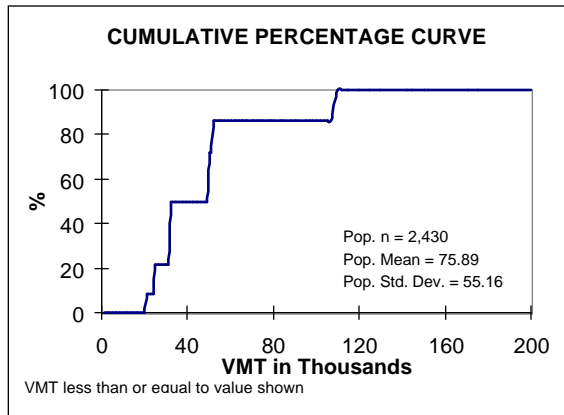
Overall Length



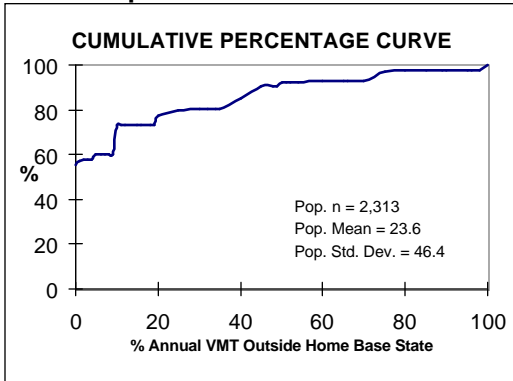
Maximum Gross Weight



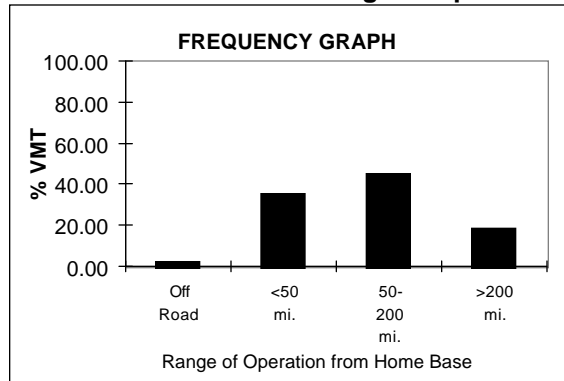
Annual VMT



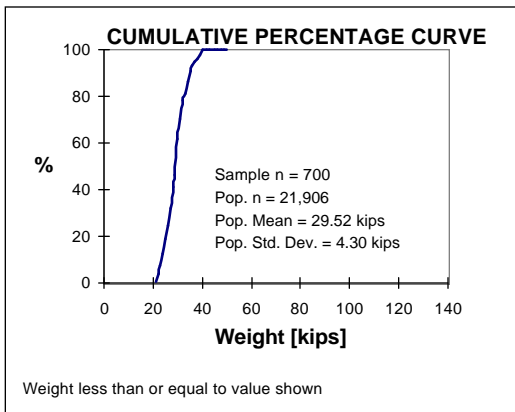
Base of Operation



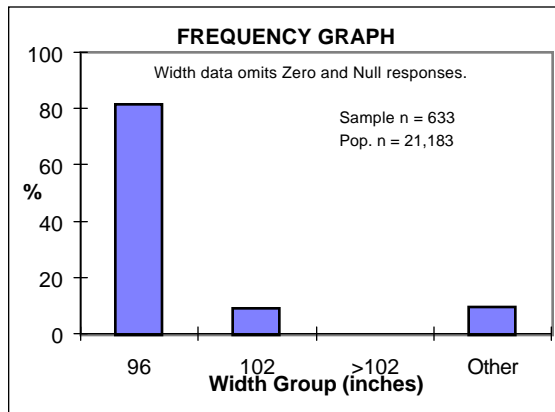
Range of Operation



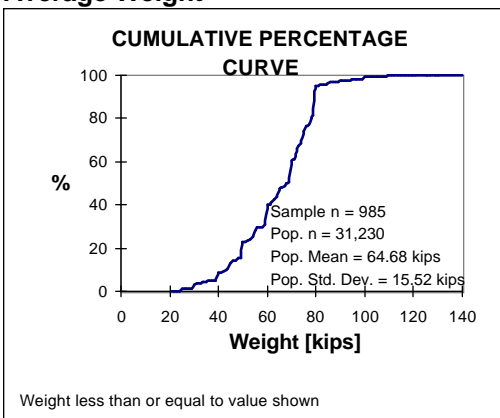
Empty Weight



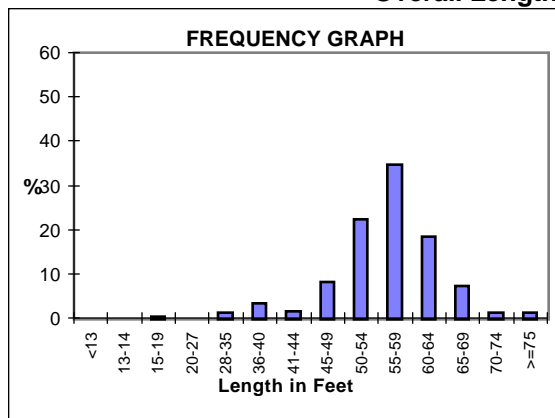
External Trailer Width



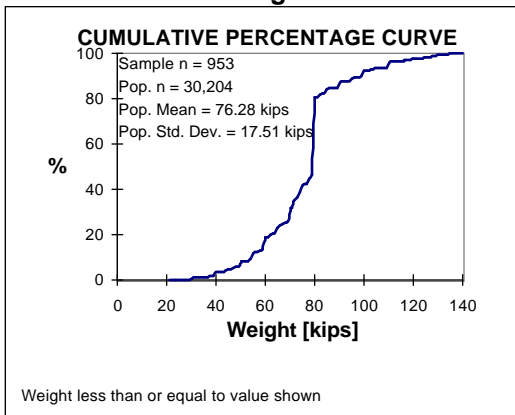
Average Weight



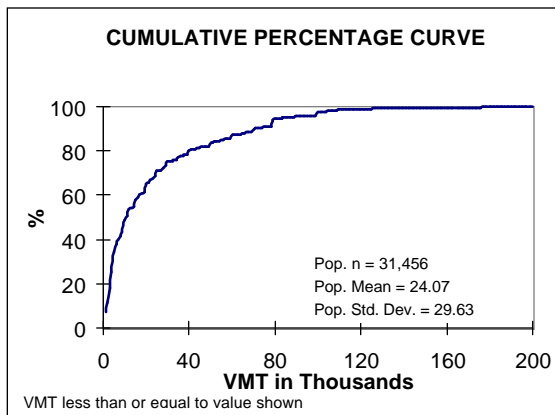
Overall Length



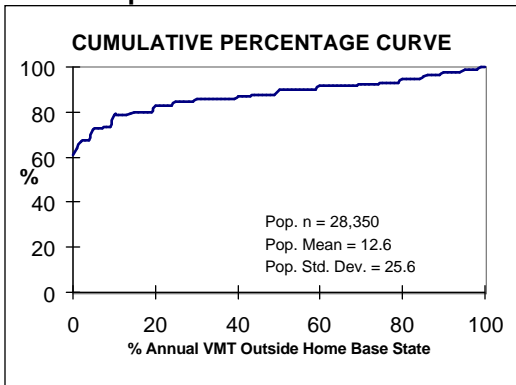
Maximum Gross Weight



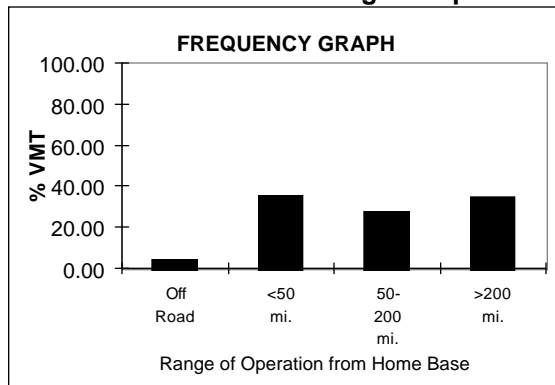
Annual VMT



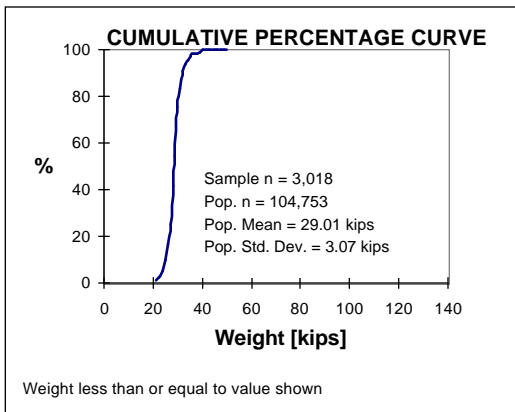
Base of Operation



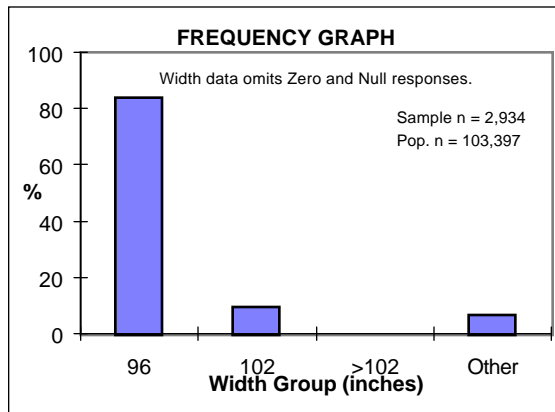
Range of Operation



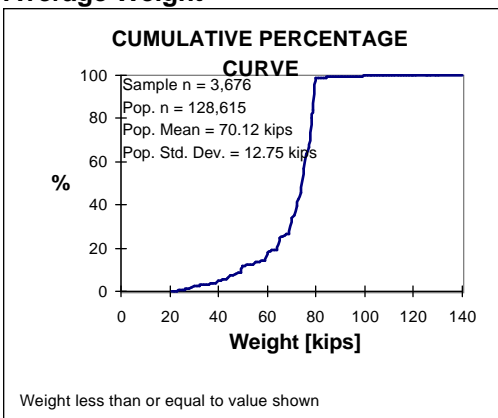
Empty Weight



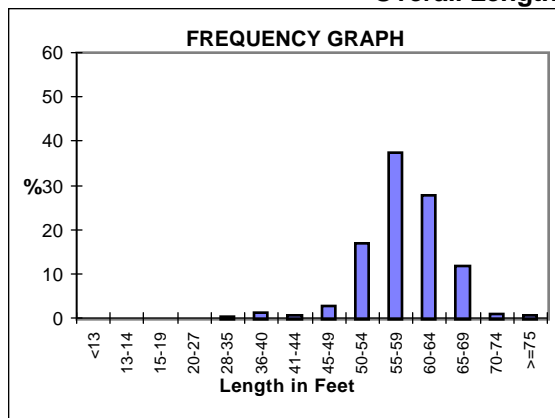
External Trailer Width



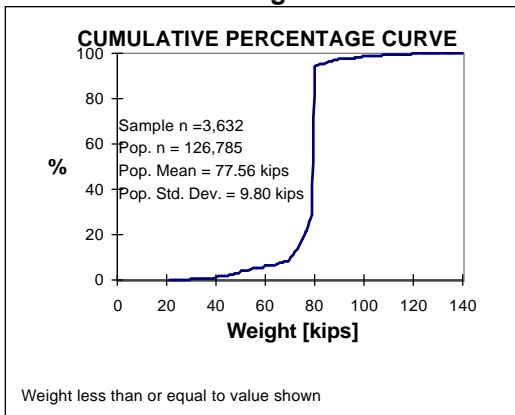
Average Weight



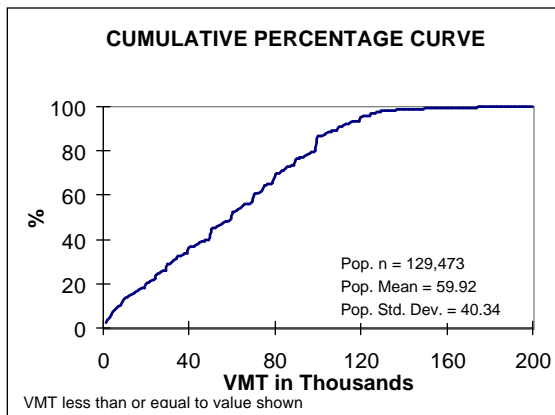
Overall Length



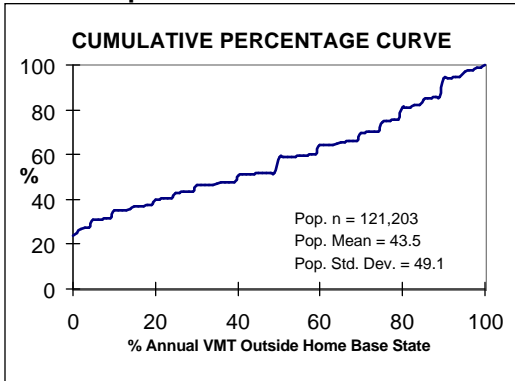
Maximum Gross Weight



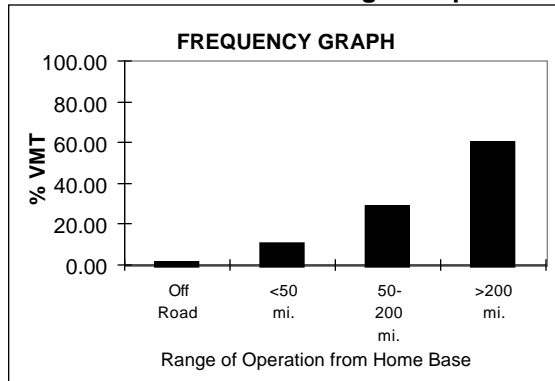
Annual VMT



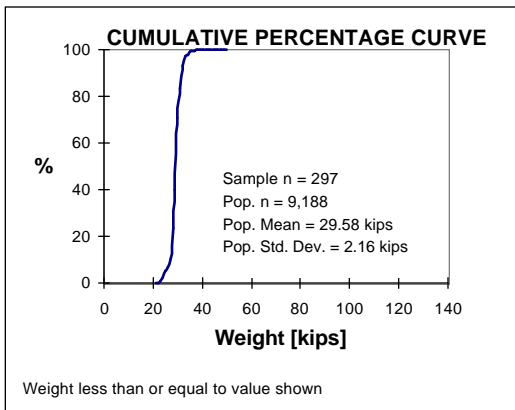
Base of Operation



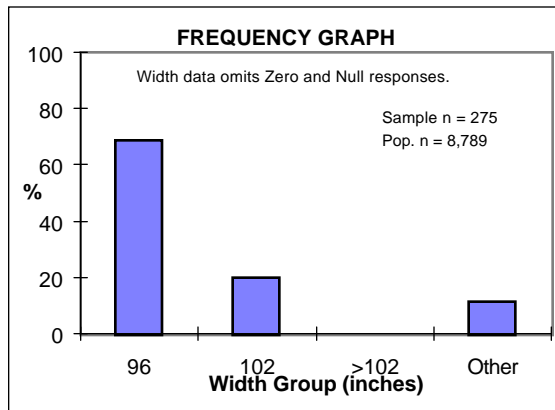
Range of Operation



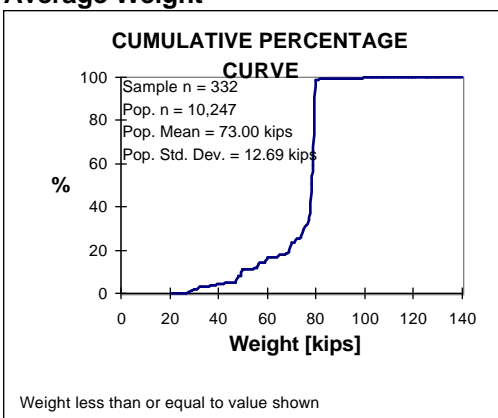
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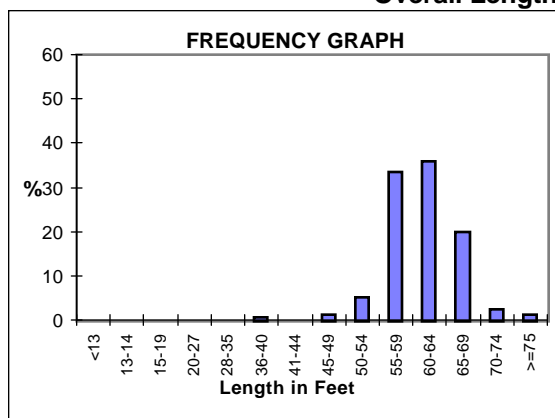
External Trailer Width



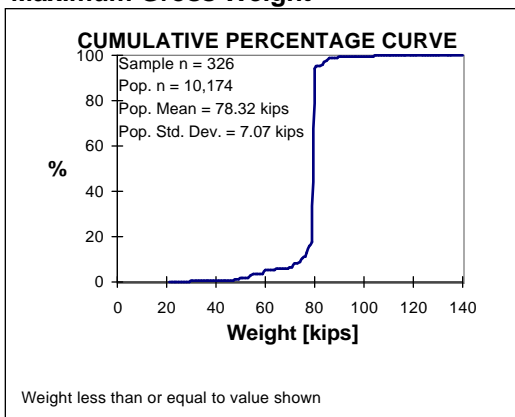
Average Weight



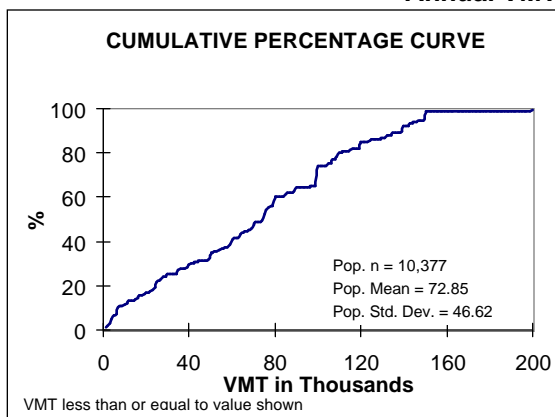
Overall Length



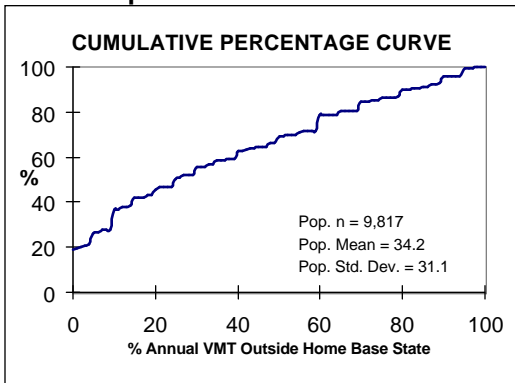
Maximum Gross Weight



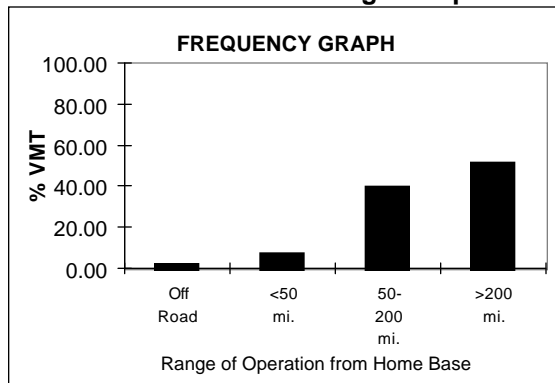
Annual VMT



Base of Operation

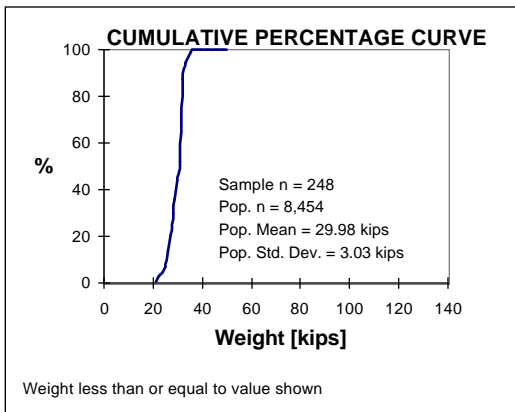


Range of Operation

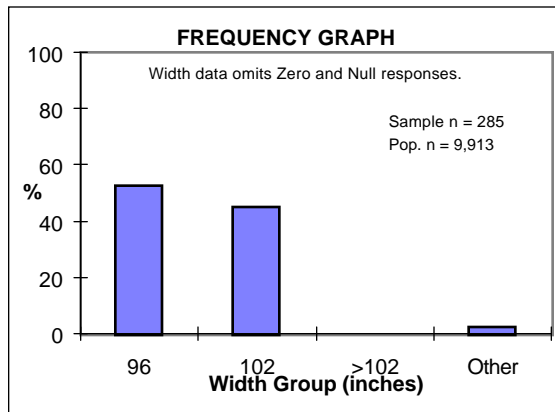


Body Type: Insulated Non-Refrigerated
 Population Size: 11,238 Sample Size: 322

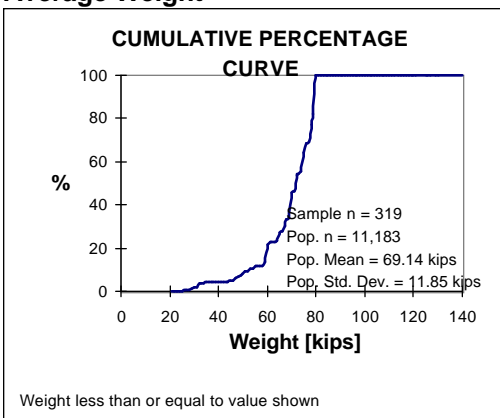
Empty Weight



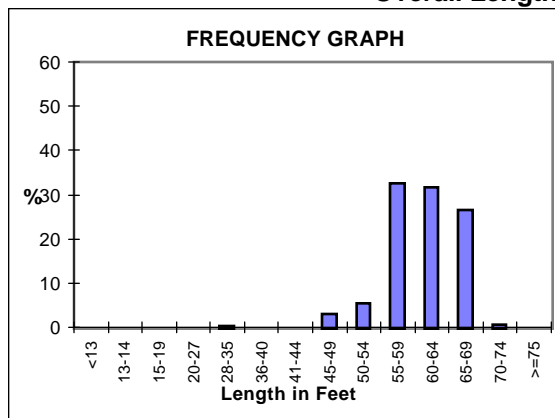
External Trailer Width



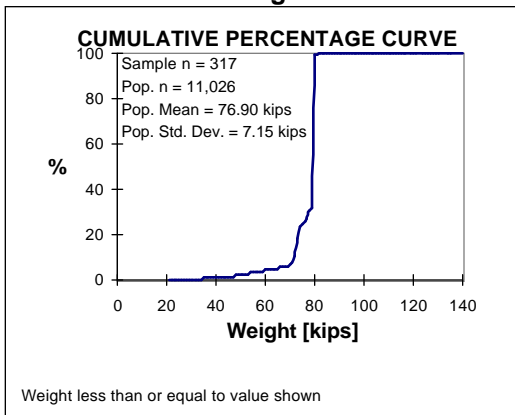
Average Weight



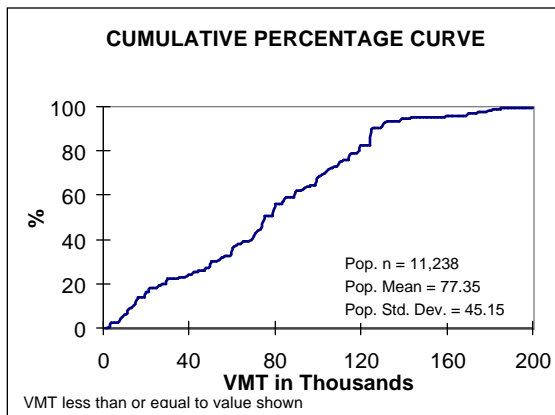
Overall Length



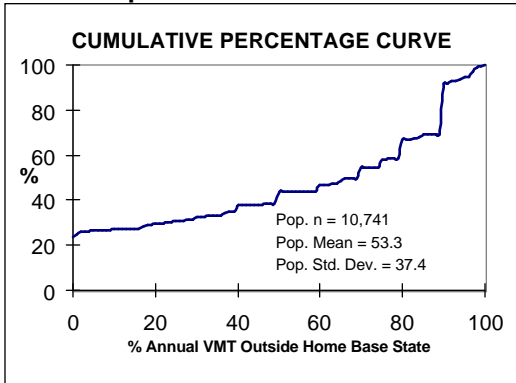
Maximum Gross Weight



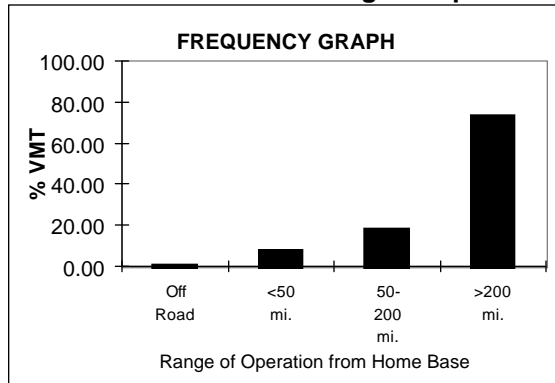
Annual VMT



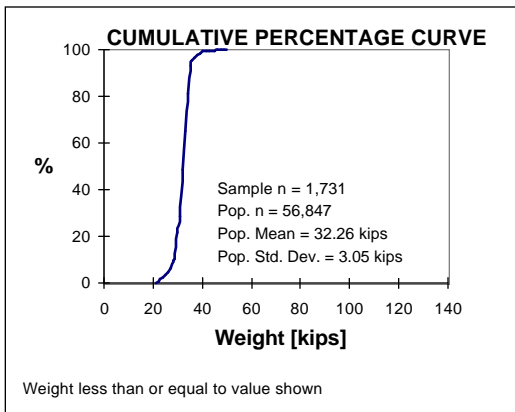
Base of Operation



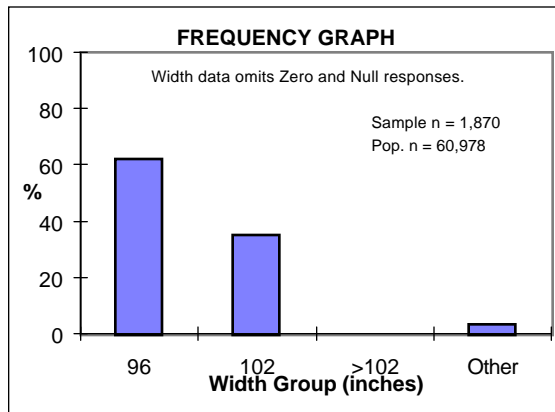
Range of Operation



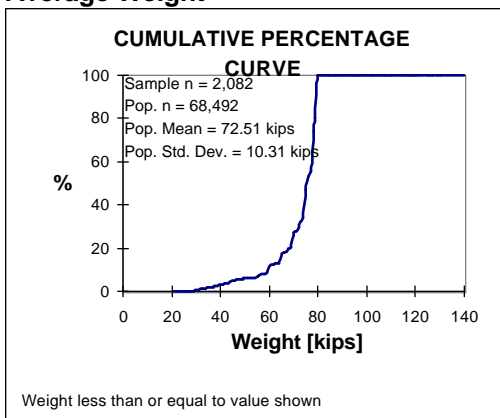
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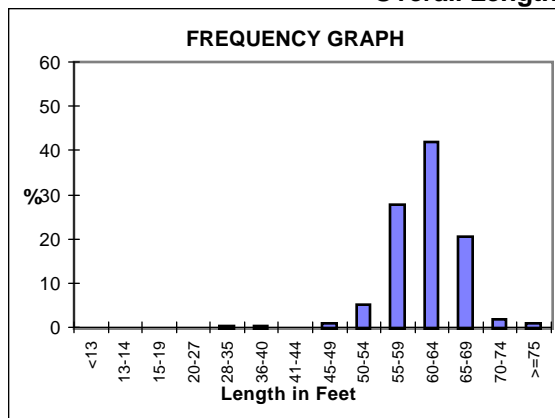
External Trailer Width



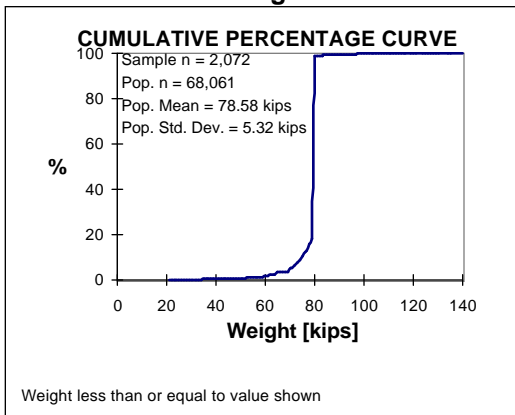
Average Weight



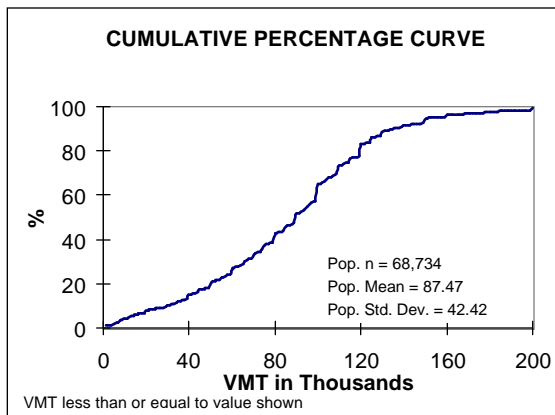
Overall Length



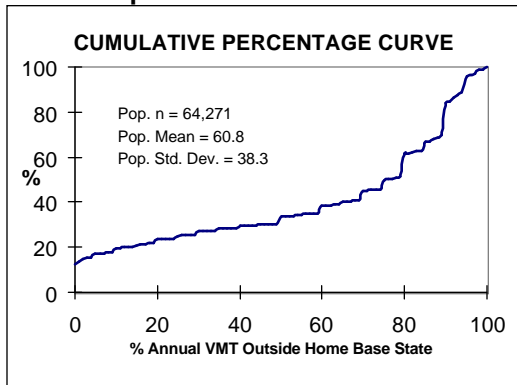
Maximum Gross Weight



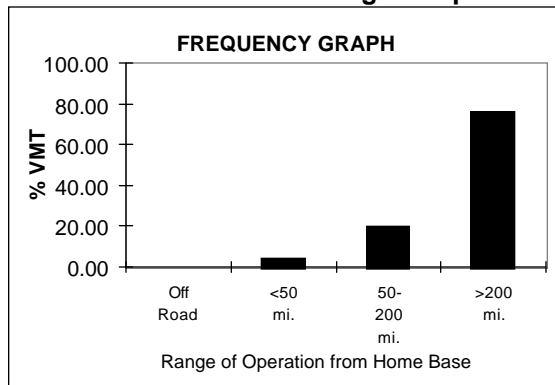
Annual VMT



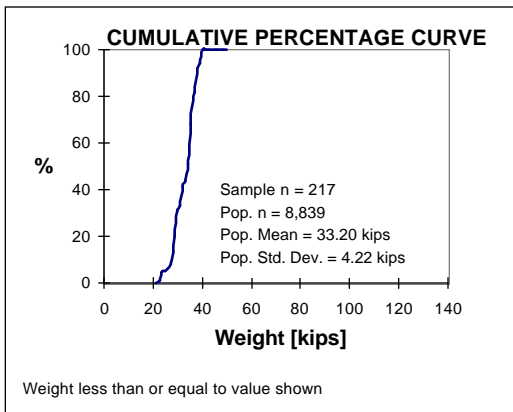
Base of Operation



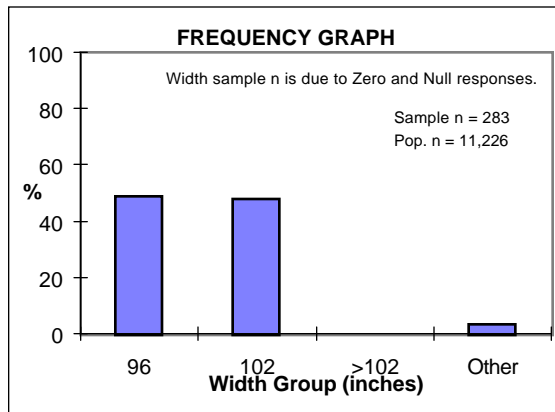
Range of Operation



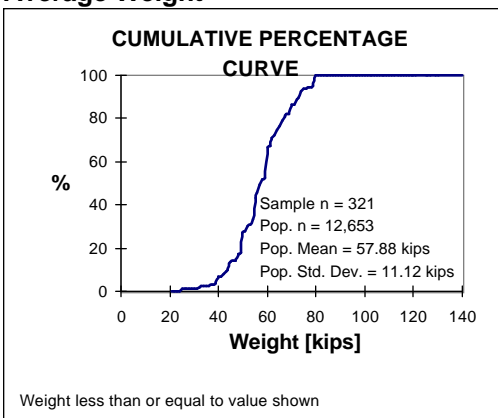
Empty Weight



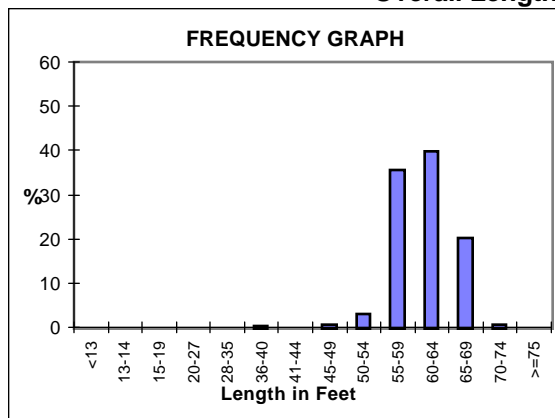
External Trailer Width



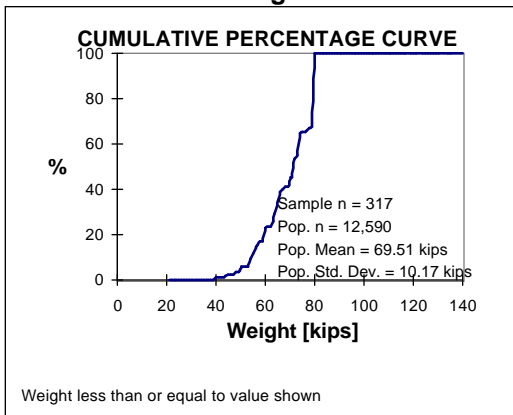
Average Weight



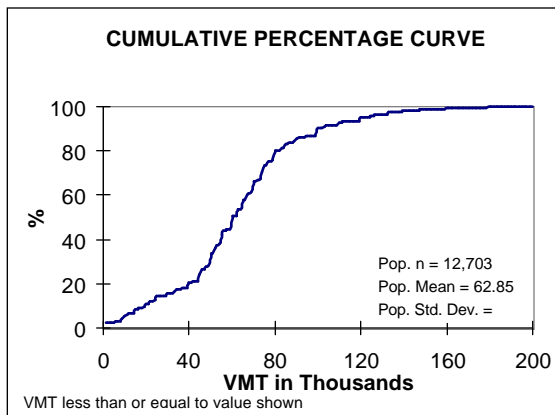
Overall Length



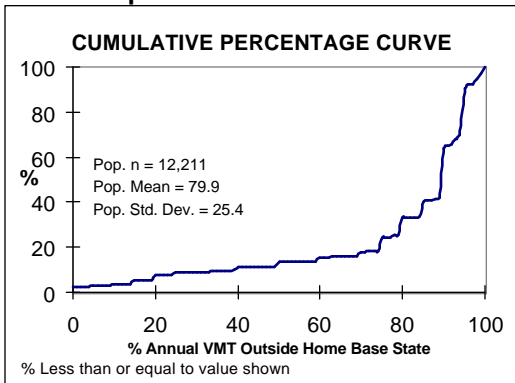
Maximum Gross Weight



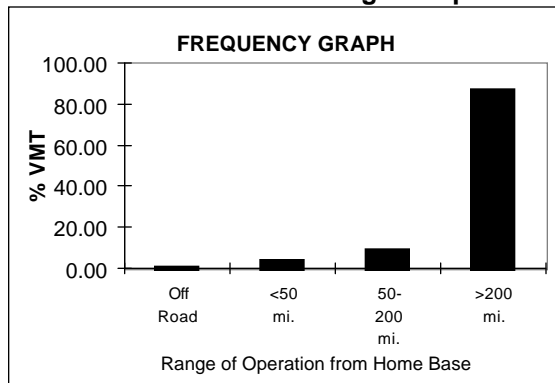
Annual VMT



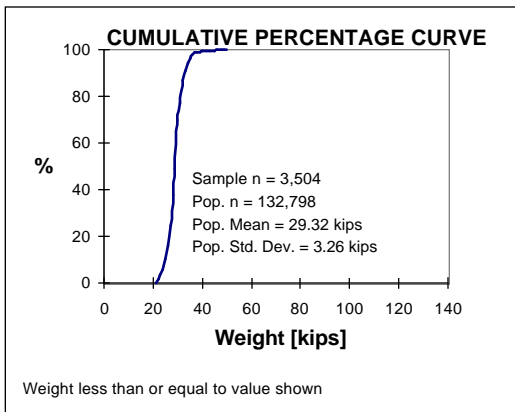
Base of Operation



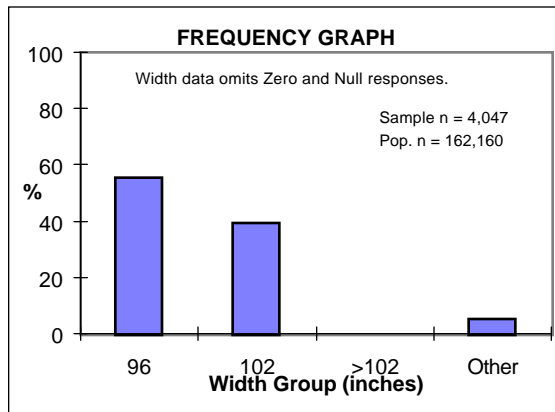
Range of Operation



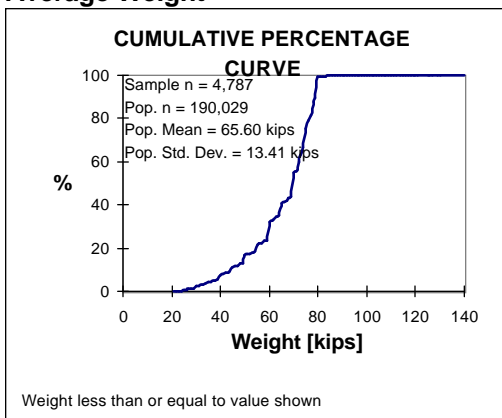
Empty Weight



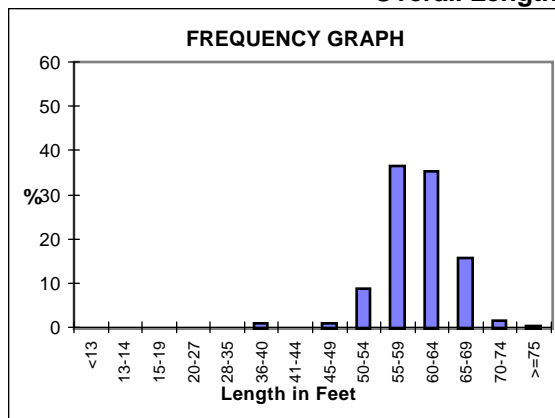
External Trailer Width



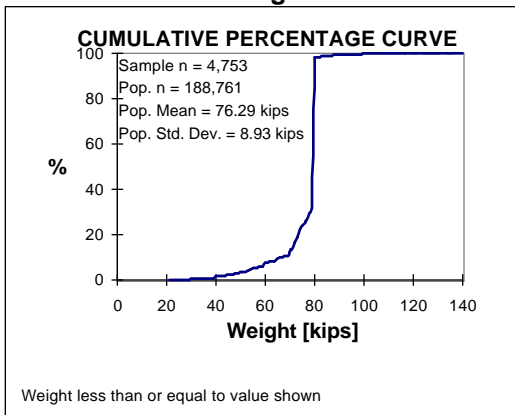
Average Weight



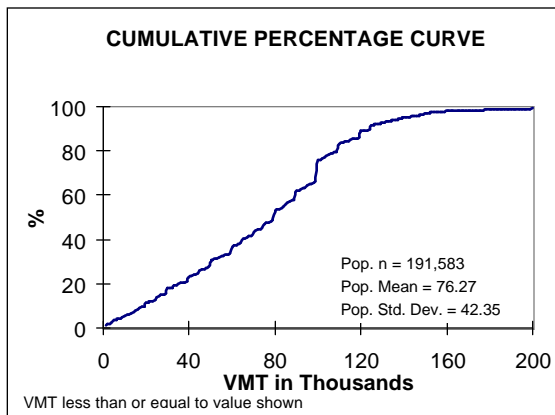
Overall Length



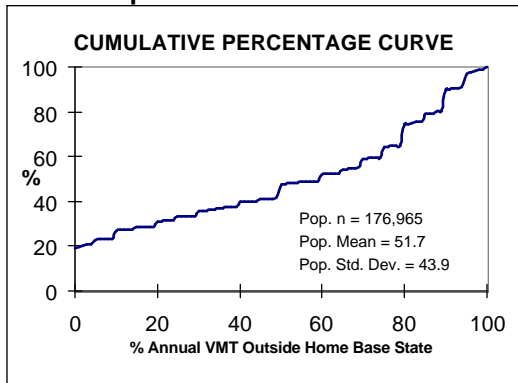
Maximum Gross Weight



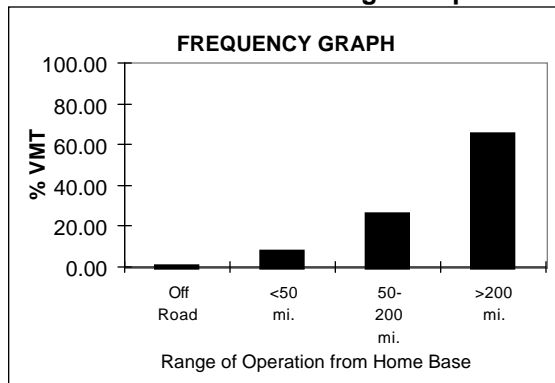
Annual VMT



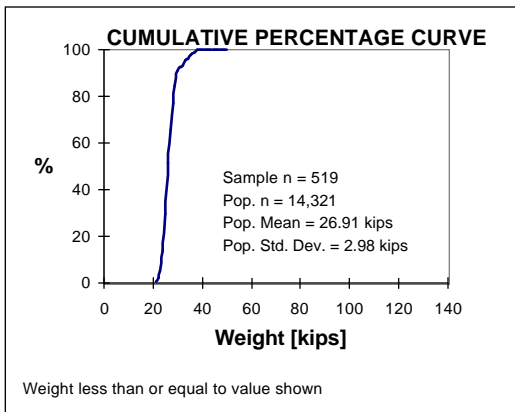
Base of Operation



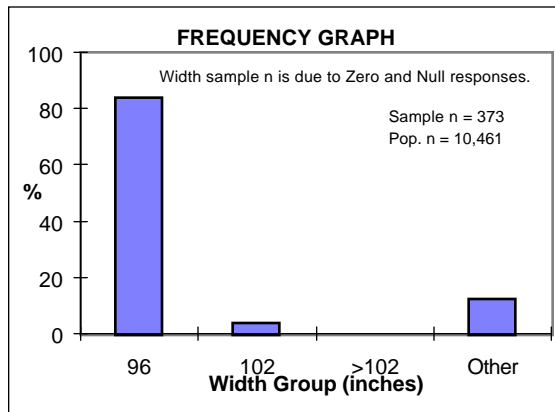
Range of Operation



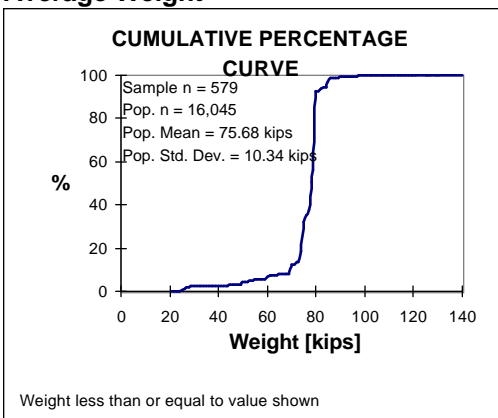
Empty Weight



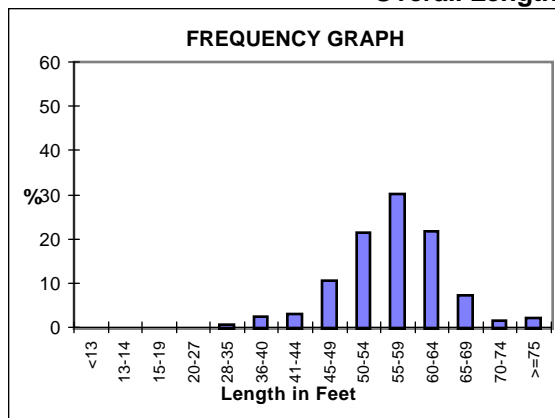
External Trailer Width



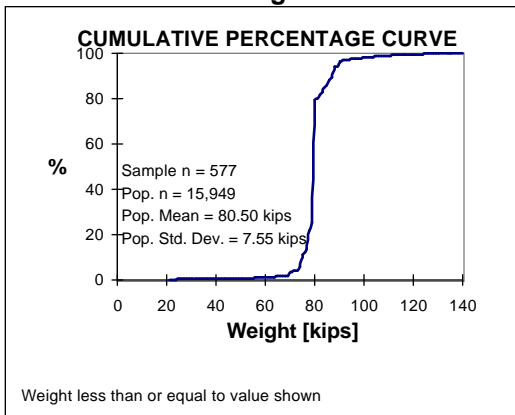
Average Weight



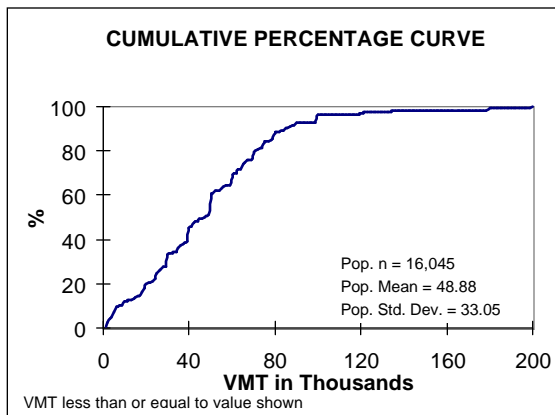
Overall Length



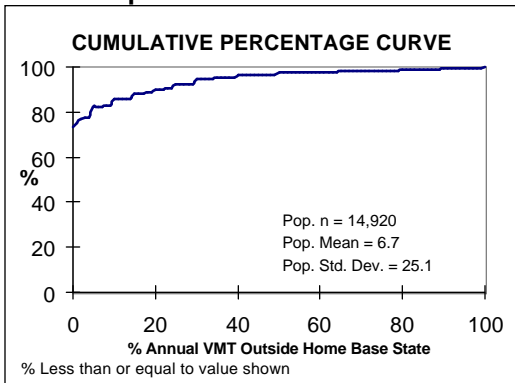
Maximum Gross Weight



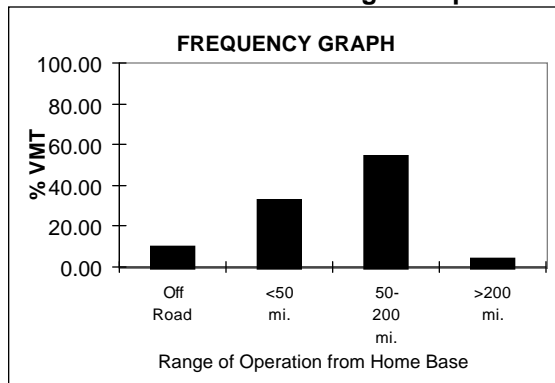
Annual VMT



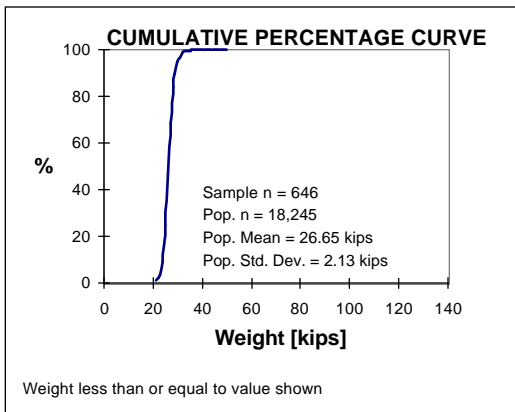
Base of Operation



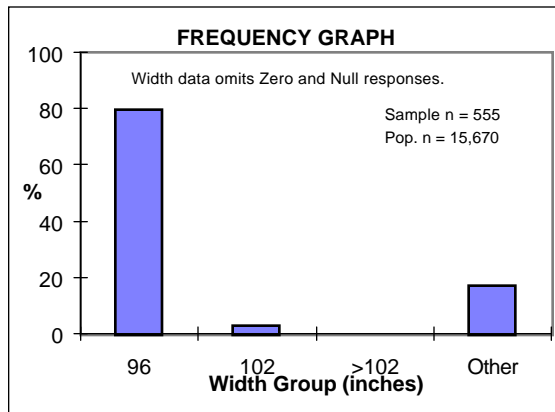
Range of Operation



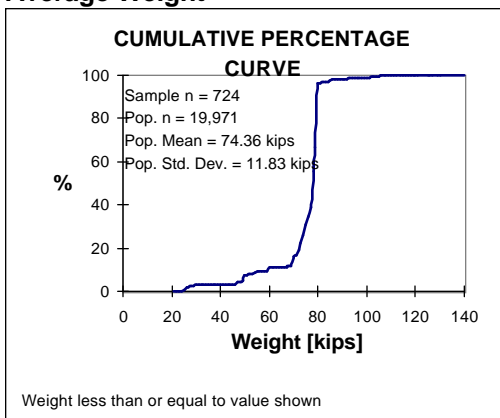
Empty Weight



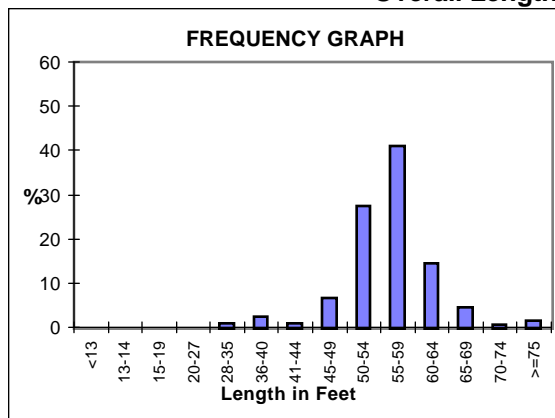
External Trailer Width



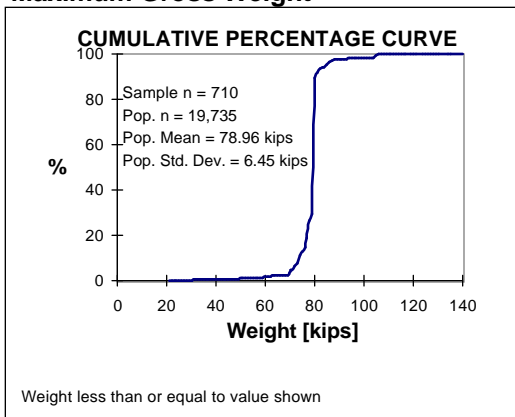
Average Weight



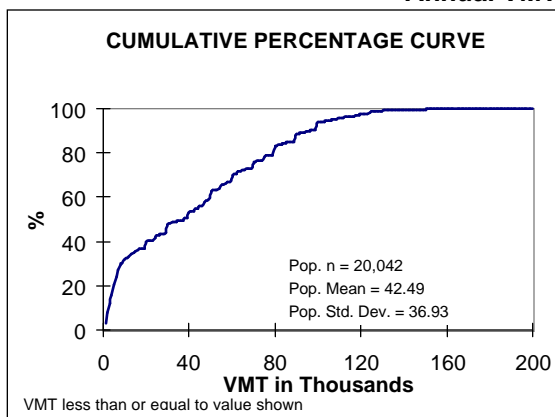
Overall Length



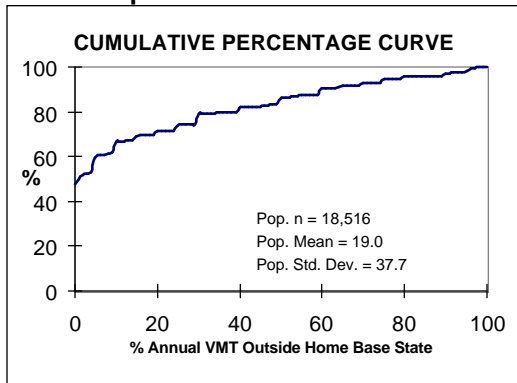
Maximum Gross Weight



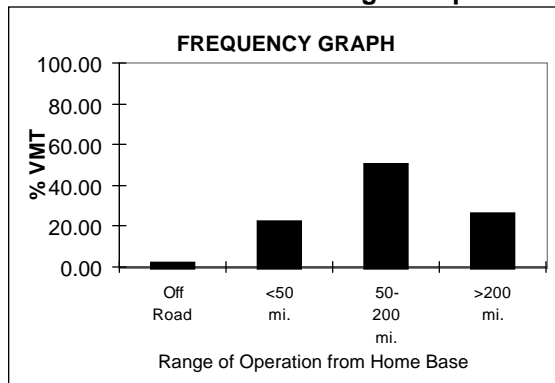
Annual VMT



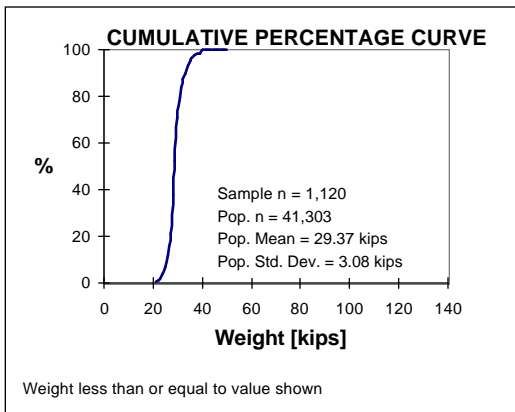
Base of Operation



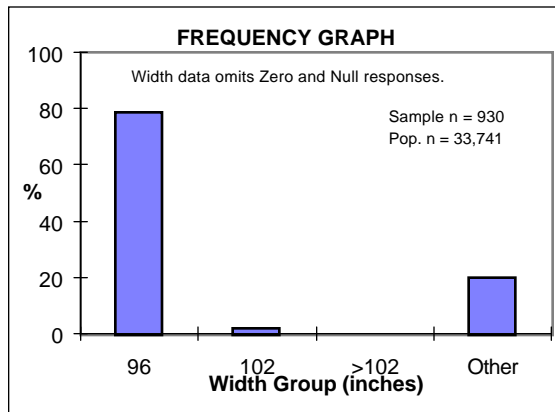
Range of Operation



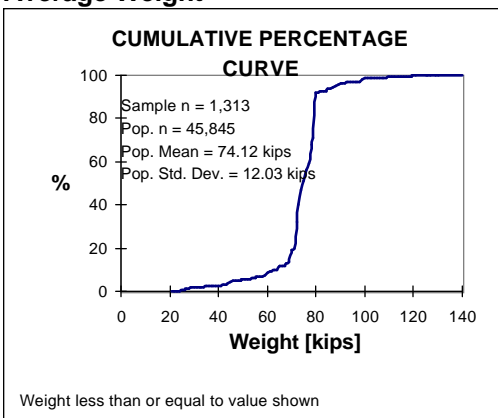
Empty Weight



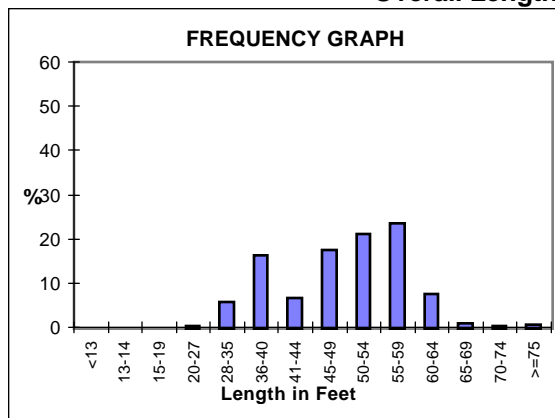
External Trailer Width



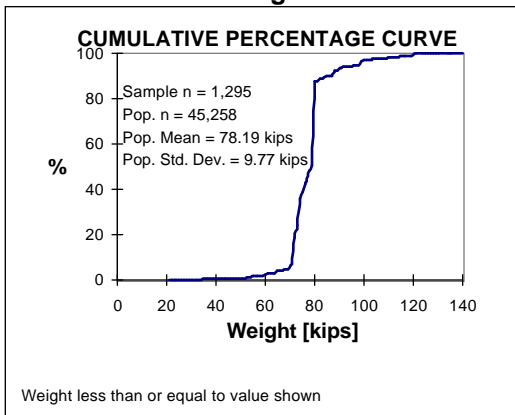
Average Weight



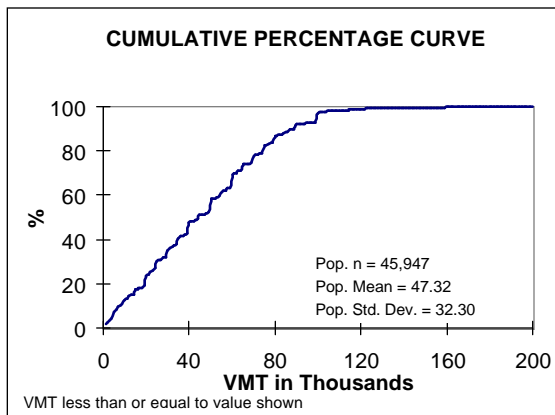
Overall Length



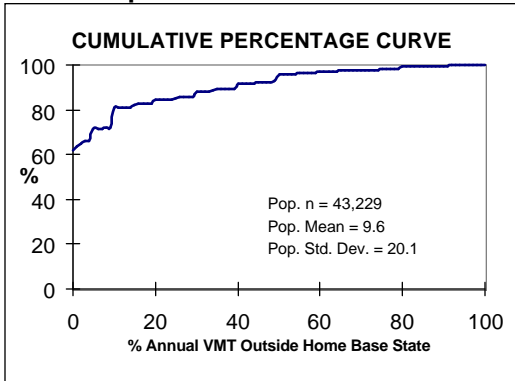
Maximum Gross Weight



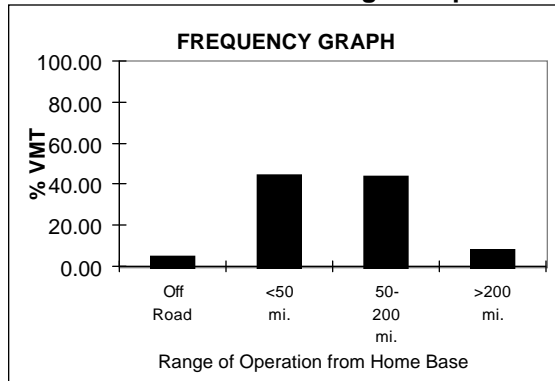
Annual VMT



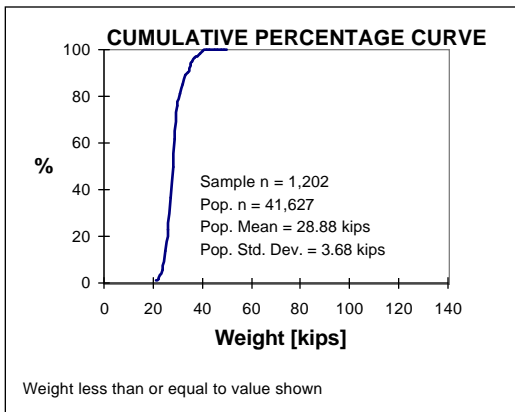
Base of Operation



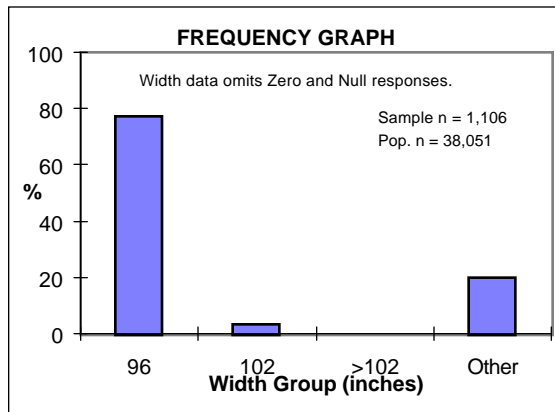
Range of Operation



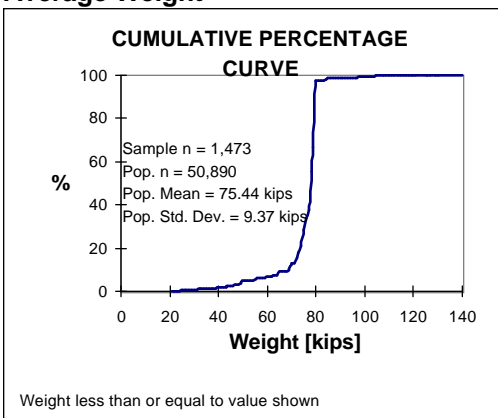
Empty Weight



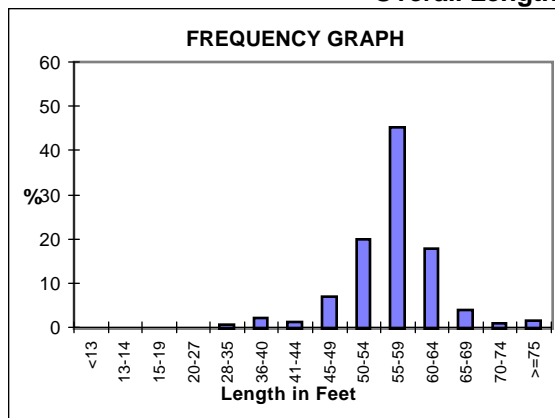
External Trailer Width



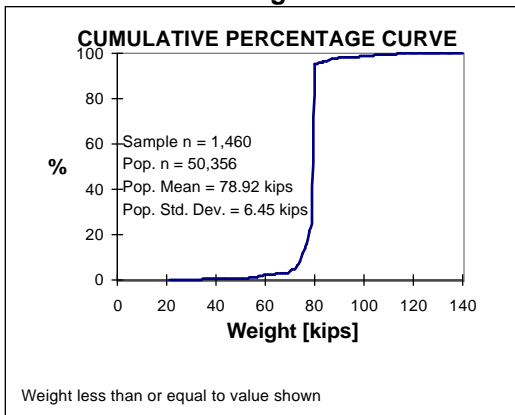
Average Weight



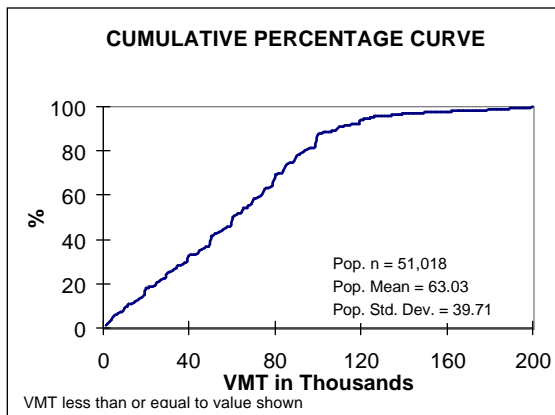
Overall Length



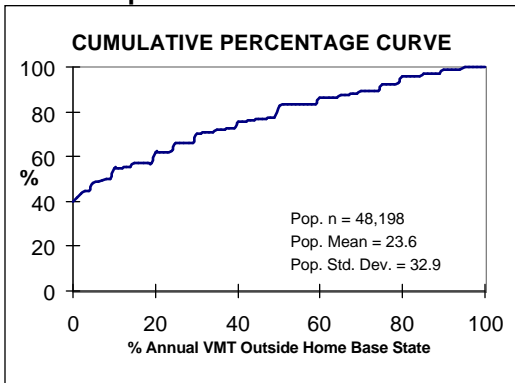
Maximum Gross Weight



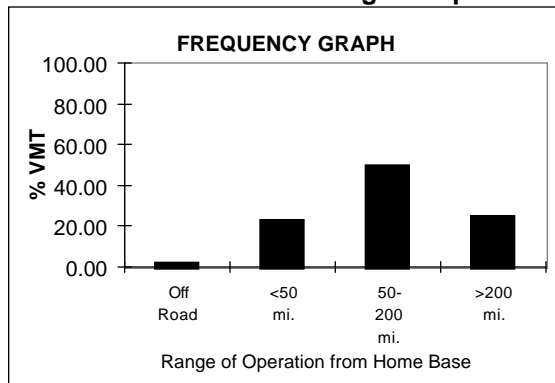
Annual VMT



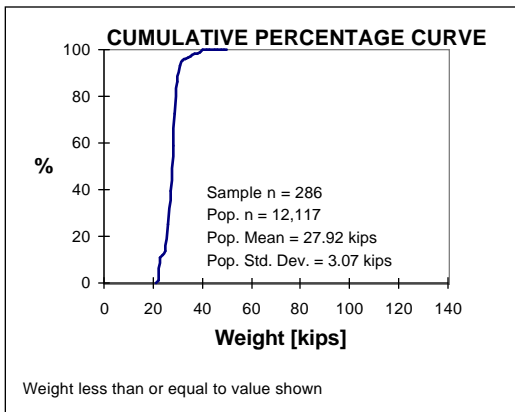
Base of Operation



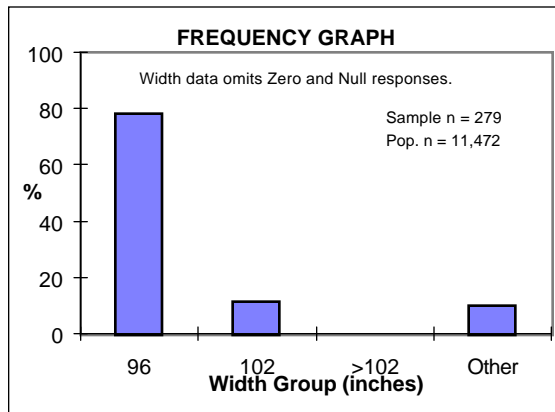
Range of Operation



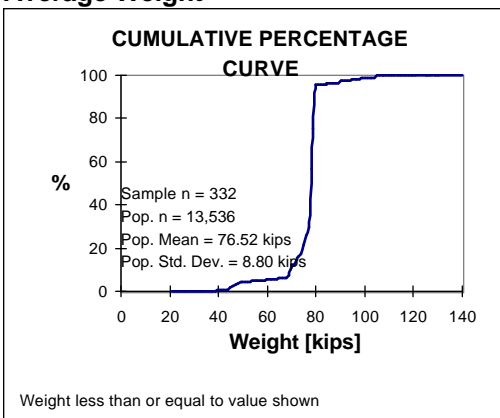
Empty Weight



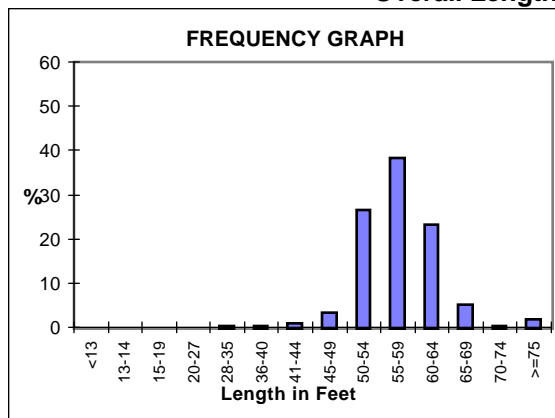
External Trailer Width



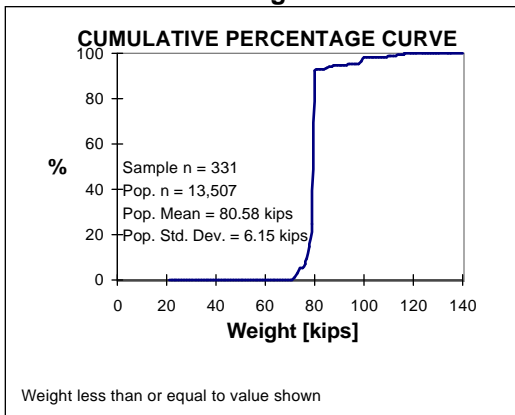
Average Weight



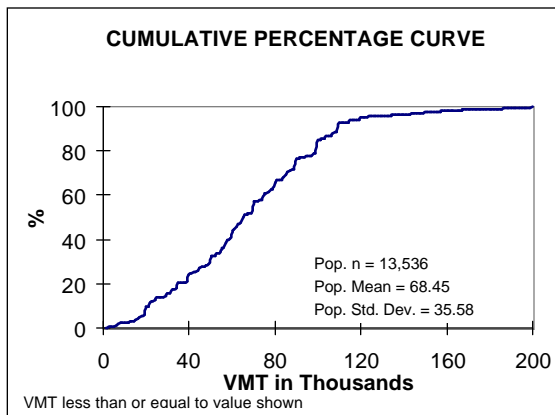
Overall Length



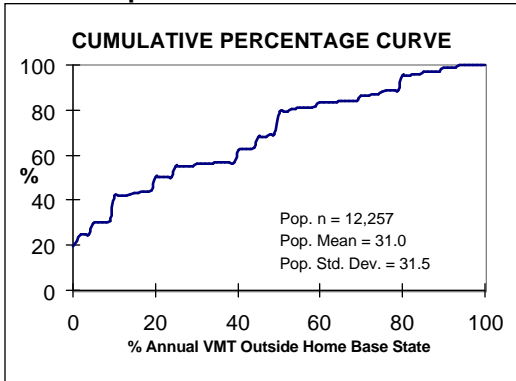
Maximum Gross Weight



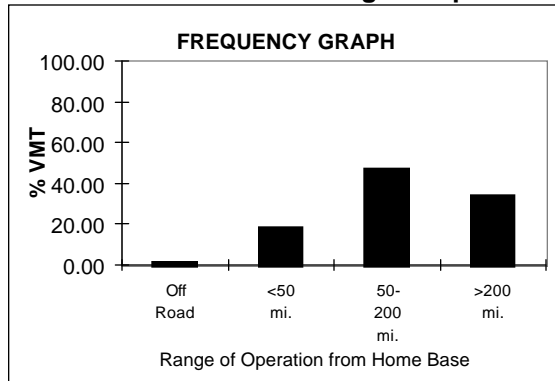
Annual VMT



Base of Operation



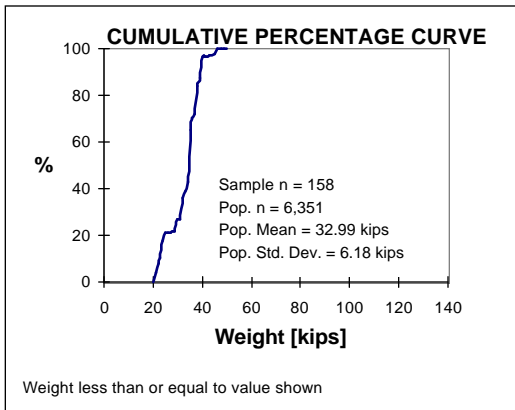
Range of Operation



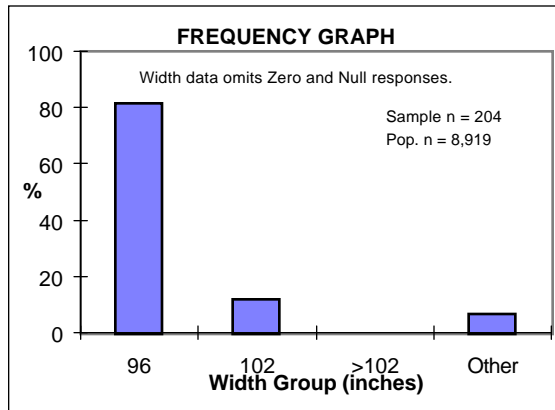
Body Type: Automobile Transport

Population Size: 9,898 Sample Size: 232

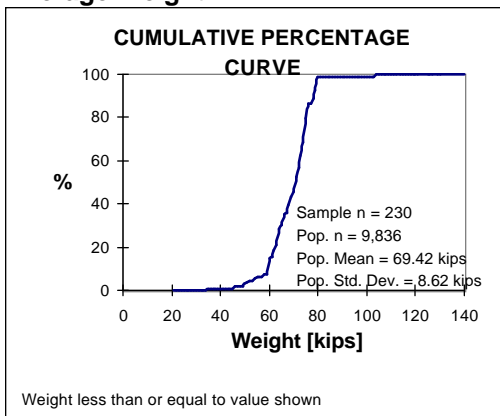
Empty Weight



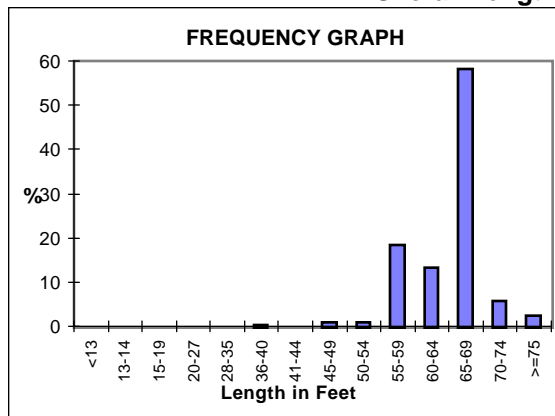
External Trailer Width



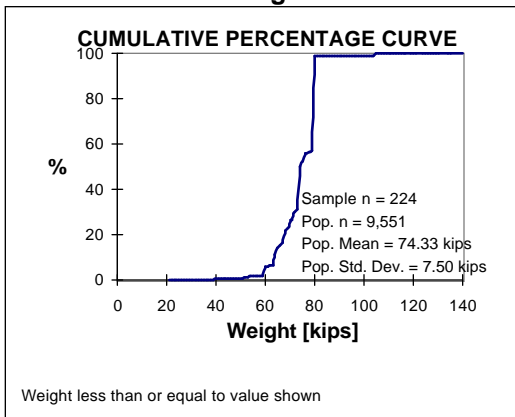
Average Weight



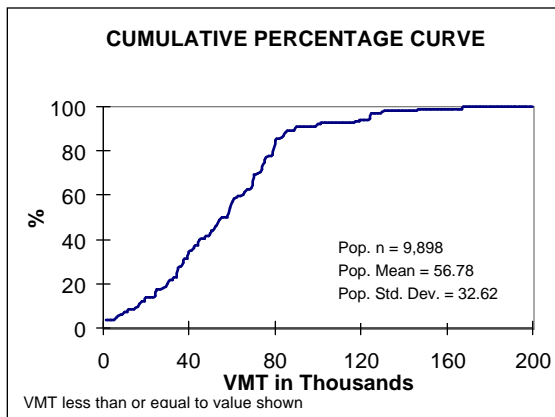
Overall Length



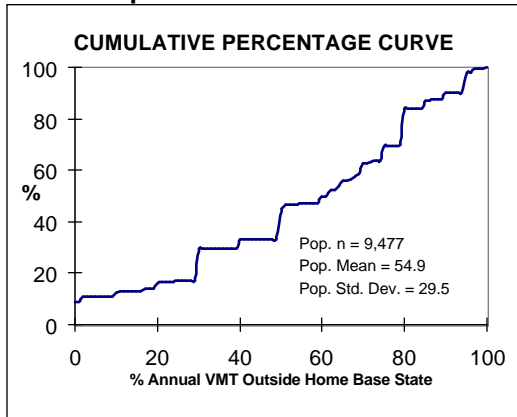
Maximum Gross Weight



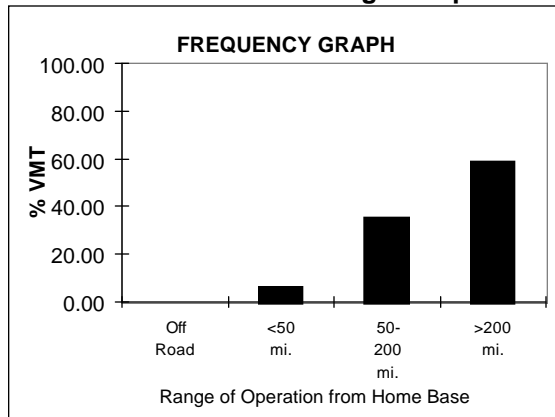
Annual VMT



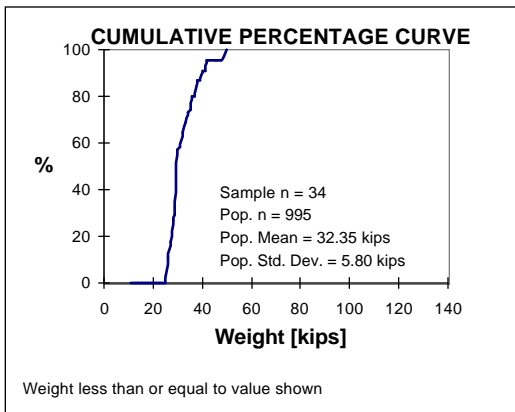
Base of Operation



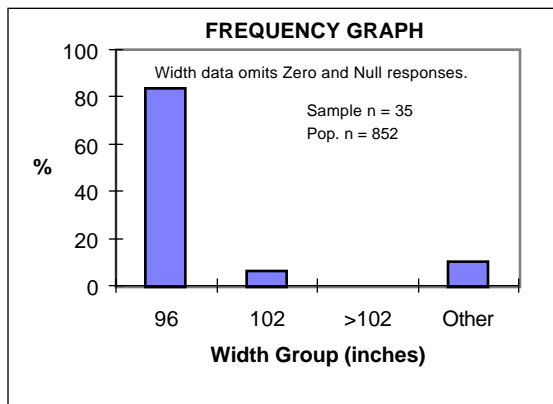
Range of Operation



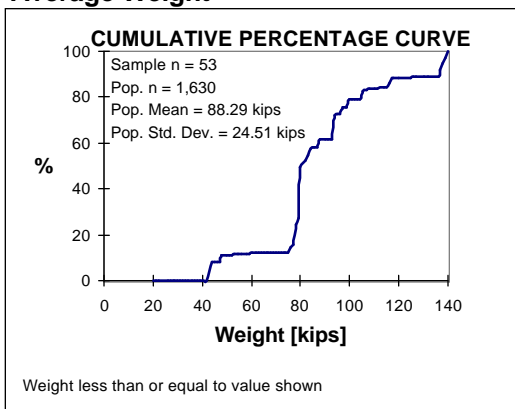
Empty Weight



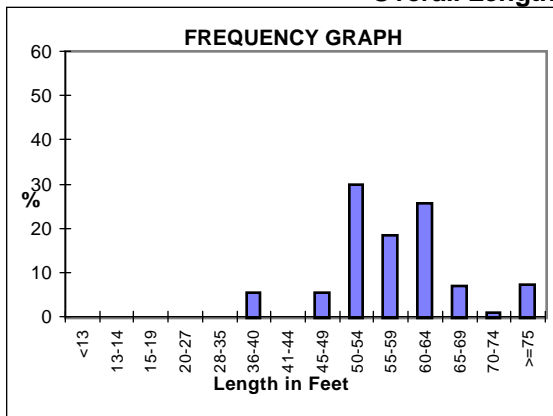
External Trailer Width



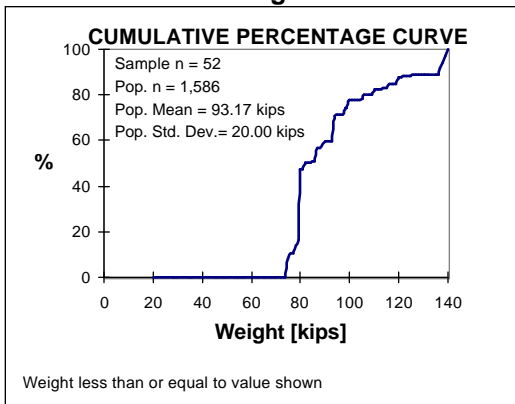
Average Weight



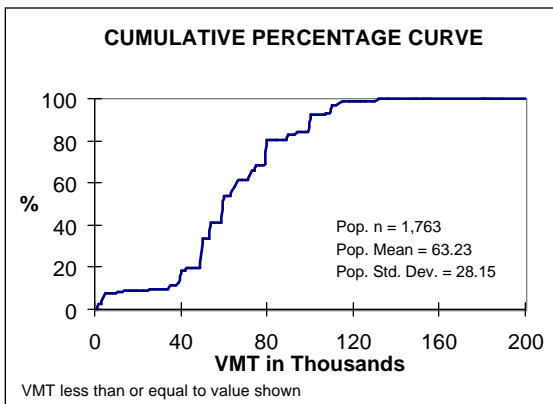
Overall Length



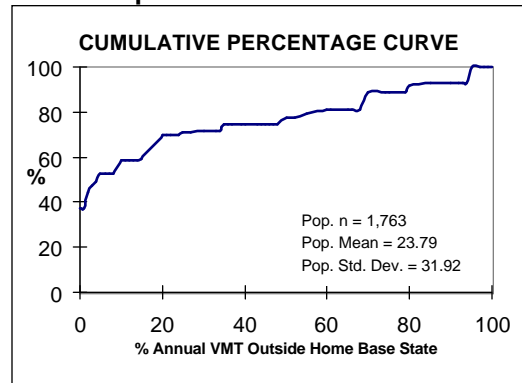
Maximum Gross Weight



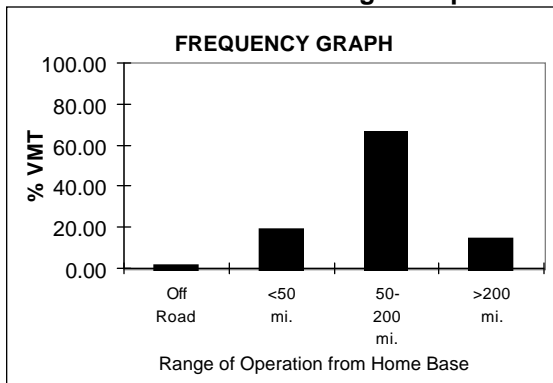
Annual VMT



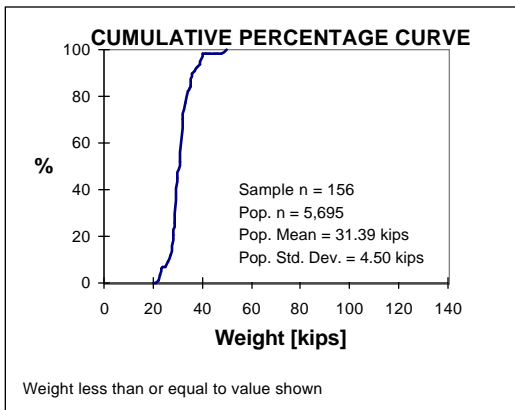
Base of Operation



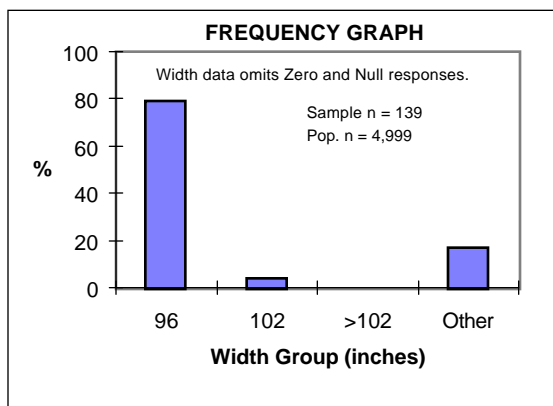
Range of Operation



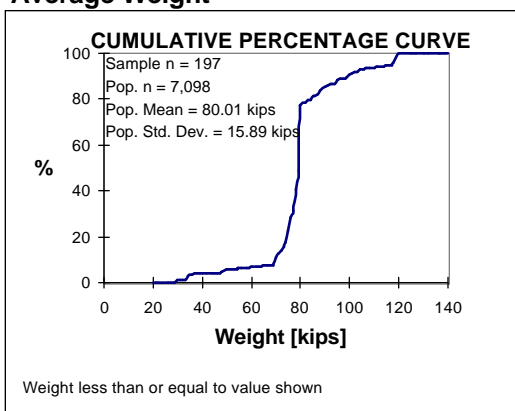
Empty Weight



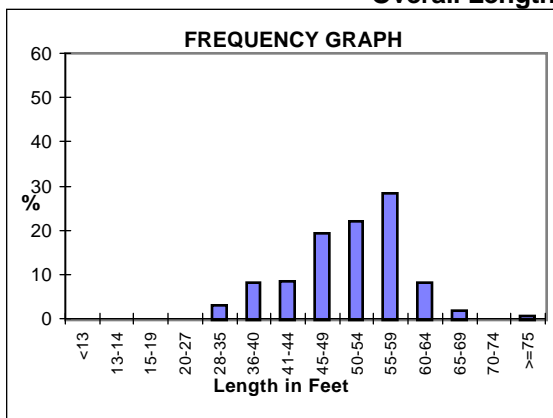
External Trailer Width



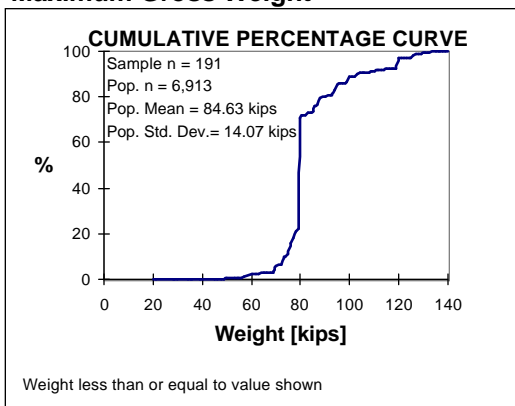
Average Weight



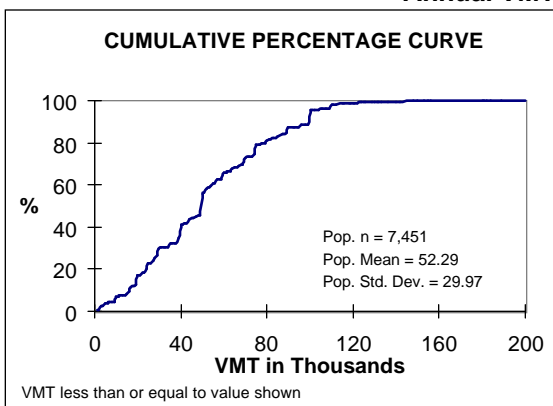
Overall Length



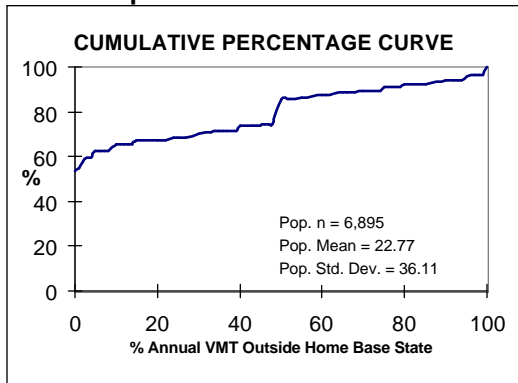
Maximum Gross Weight



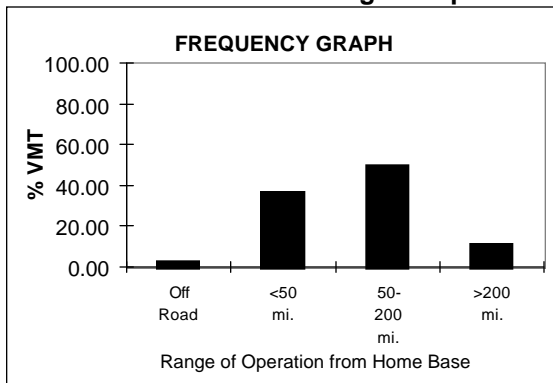
Annual VMT



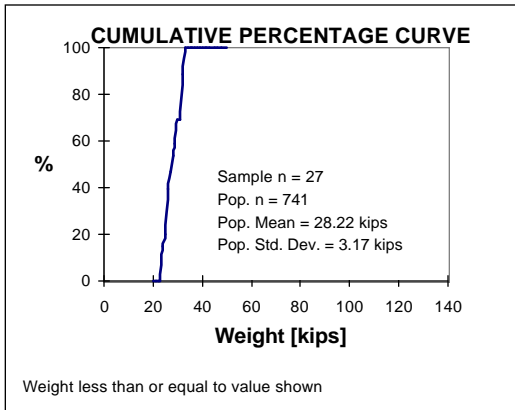
Base of Operation



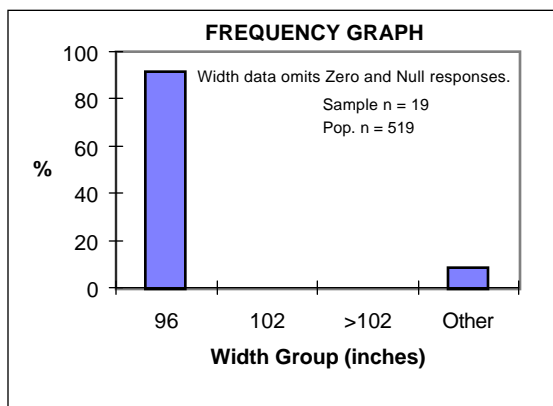
Range of Operation



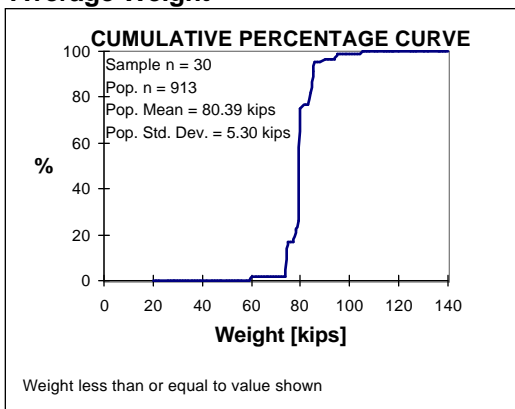
Empty Weight



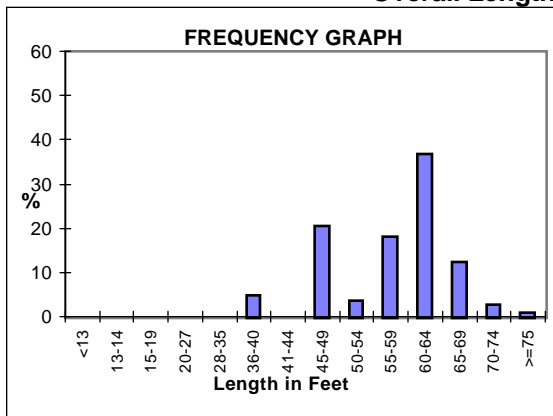
External Trailer Width



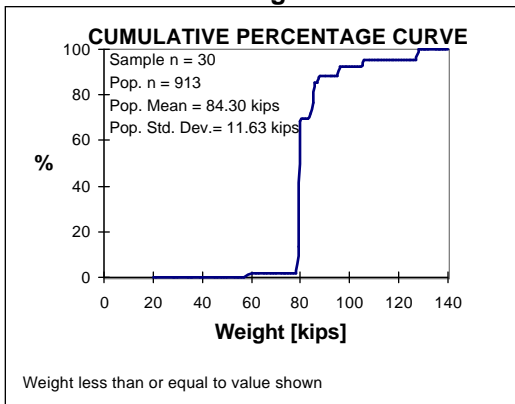
Average Weight



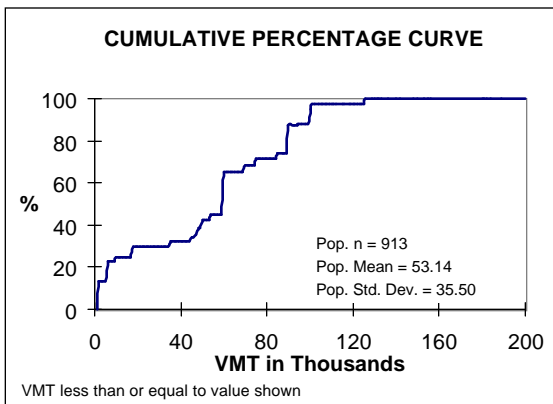
Overall Length



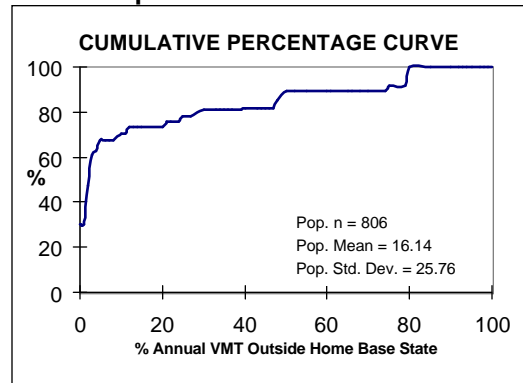
Maximum Gross Weight



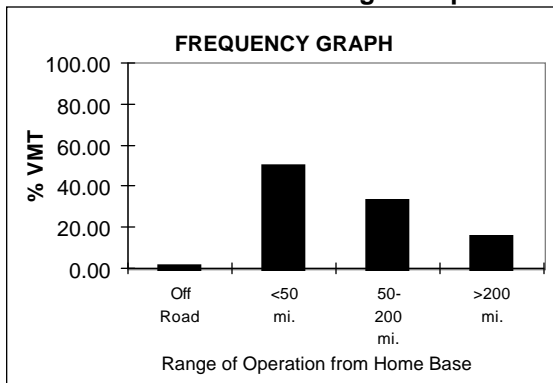
Annual VMT



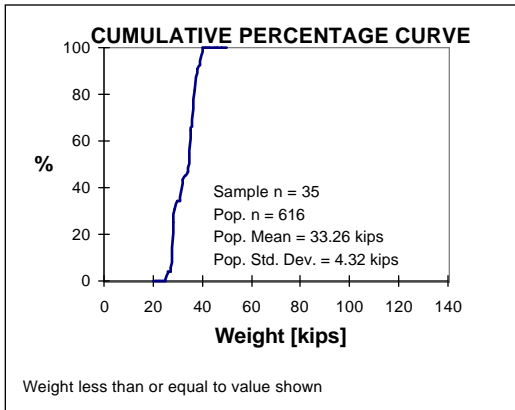
Base of Operation



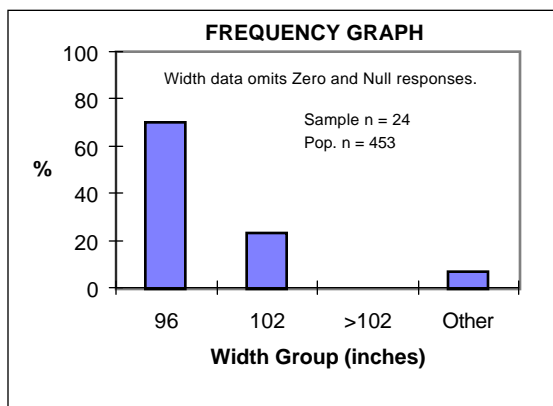
Range of Operation



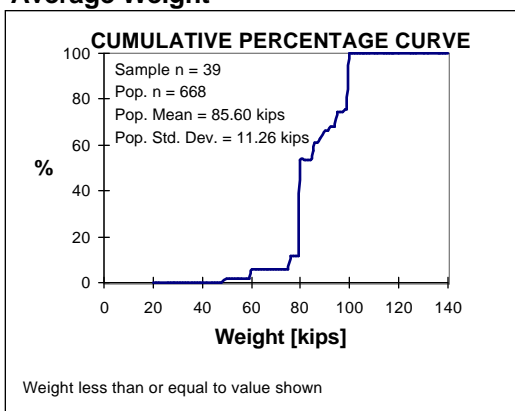
Empty Weight



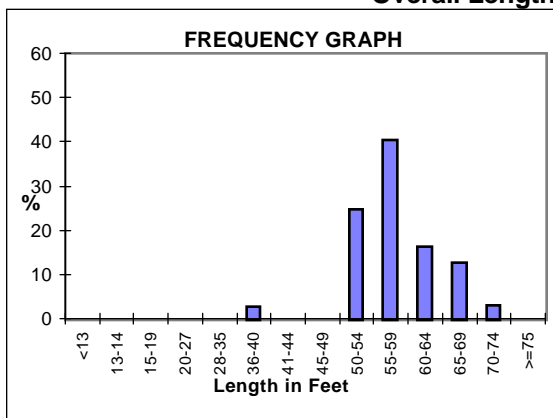
External Trailer Width



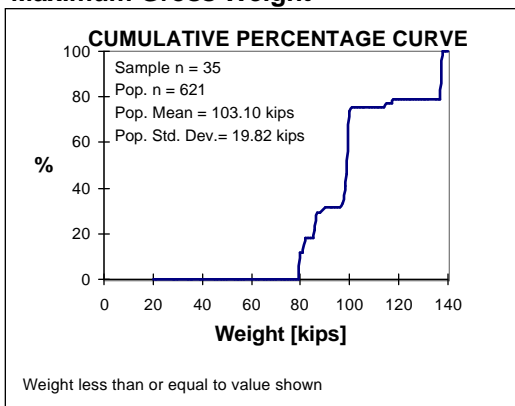
Average Weight



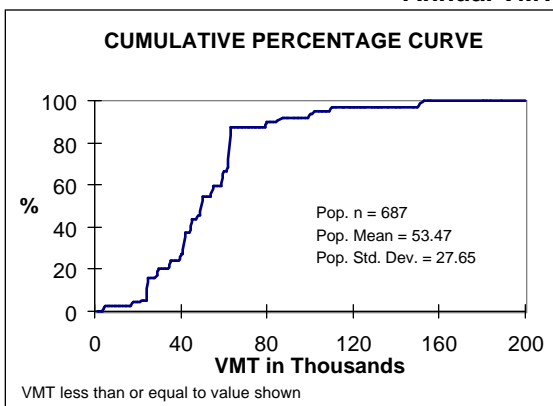
Overall Length



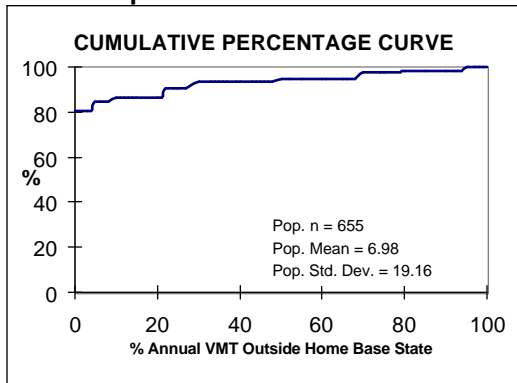
Maximum Gross Weight



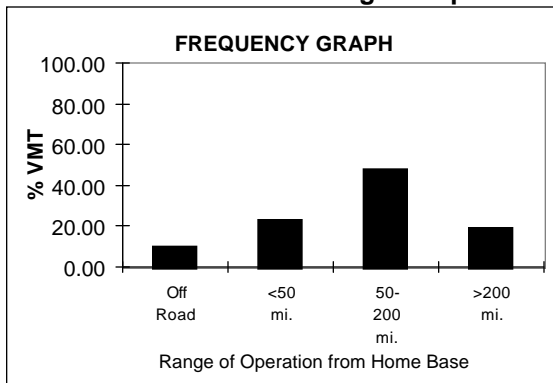
Annual VMT



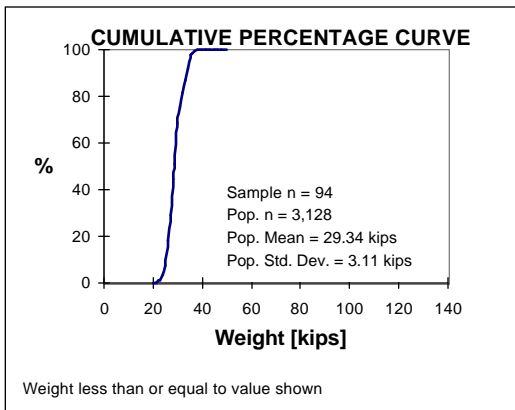
Base of Operation



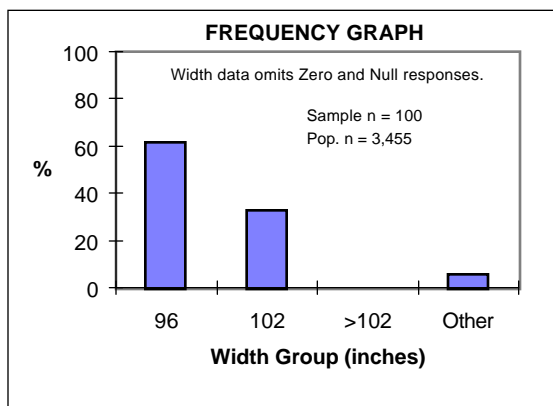
Range of Operation



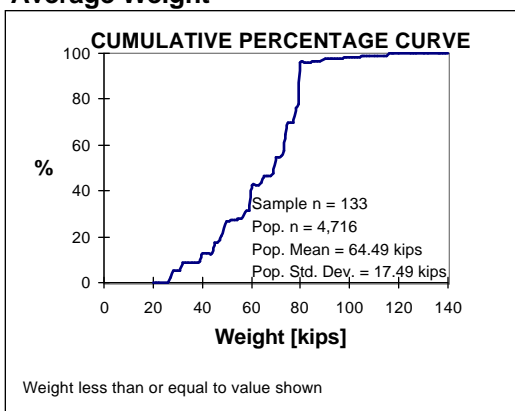
Empty Weight



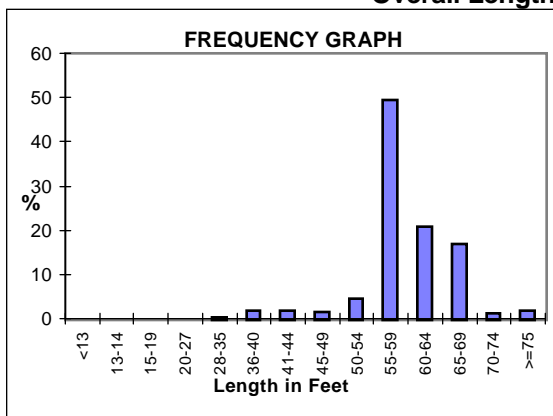
External Trailer Width



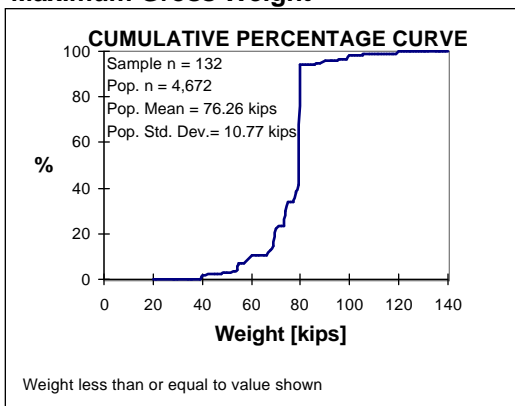
Average Weight



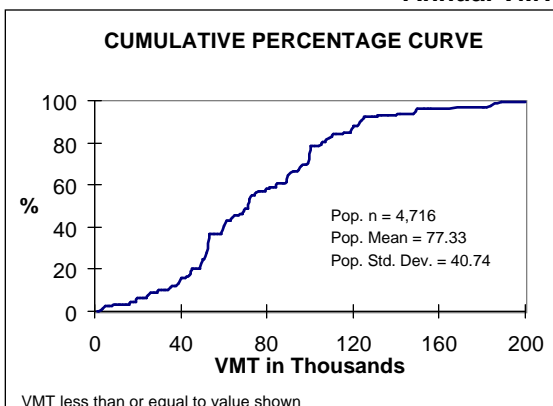
Overall Length



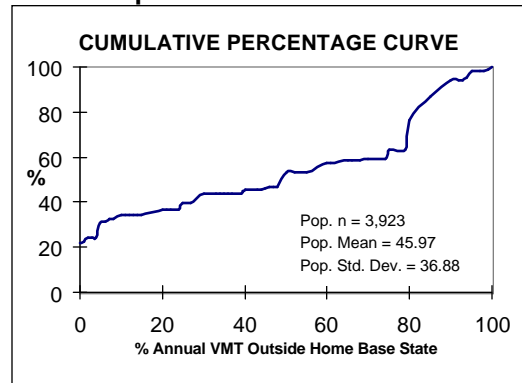
Maximum Gross Weight



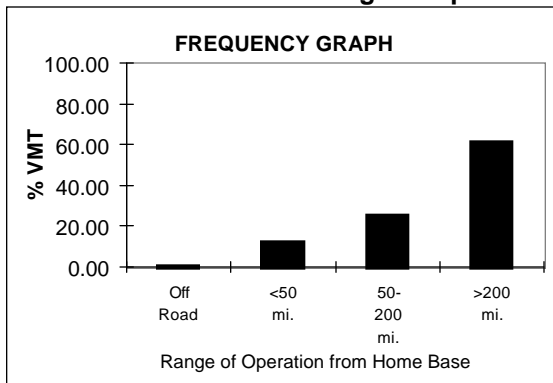
Annual VMT



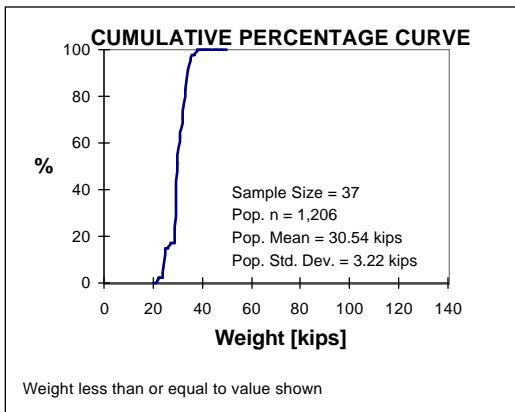
Base of Operation



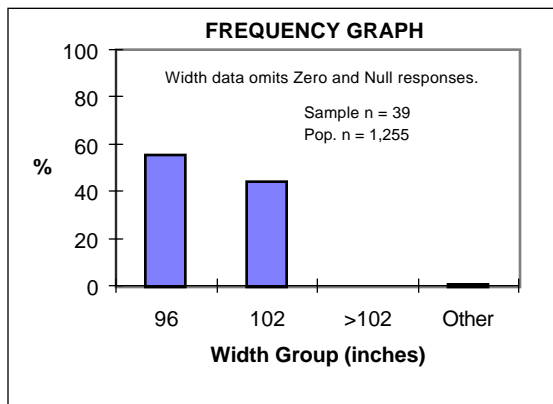
Range of Operation



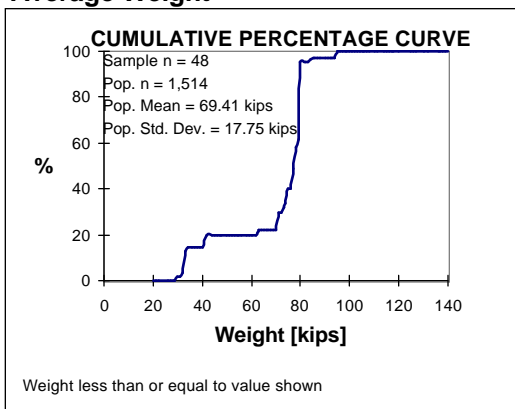
Empty Weight



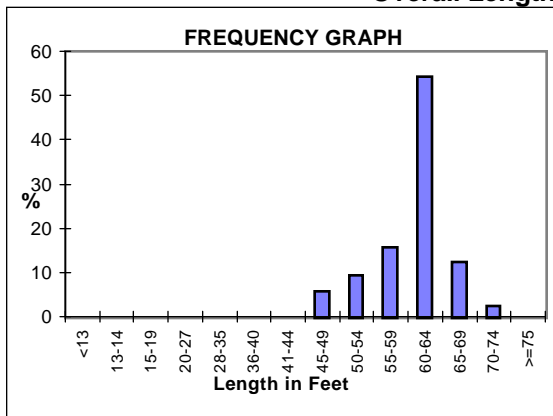
External Trailer Width



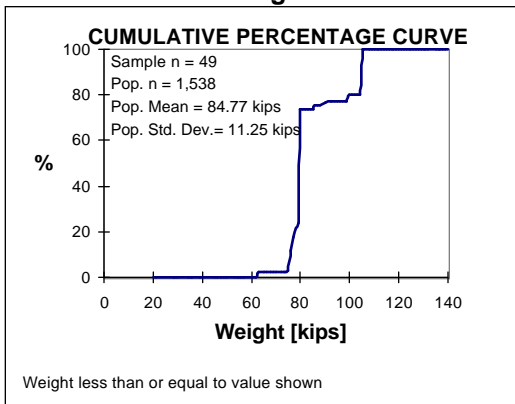
Average Weight



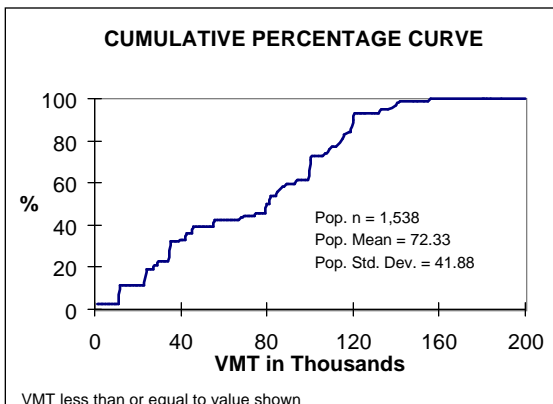
Overall Length



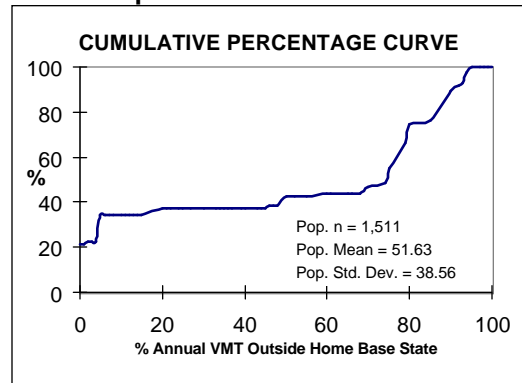
Maximum Gross Weight



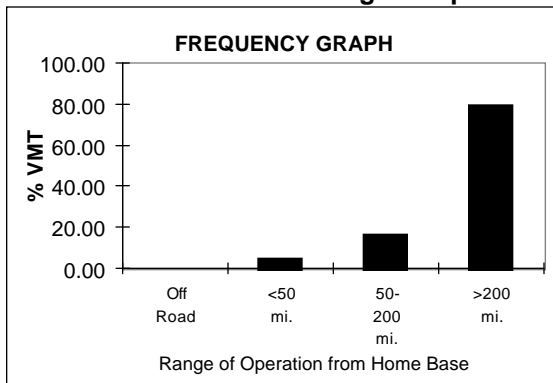
Annual VMT



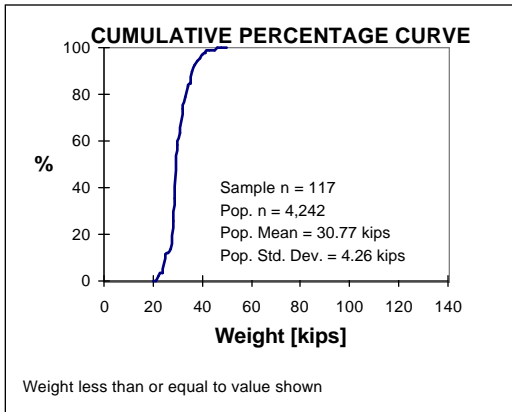
Base of Operation



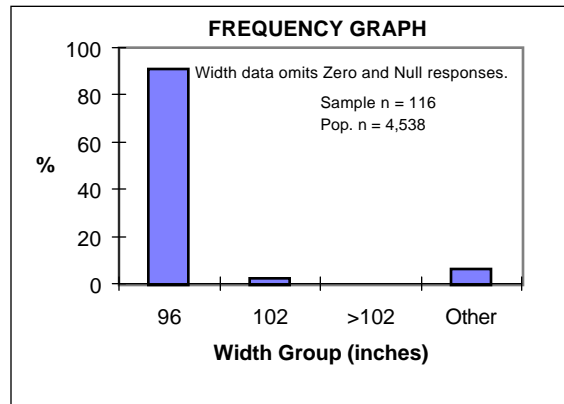
Range of Operation



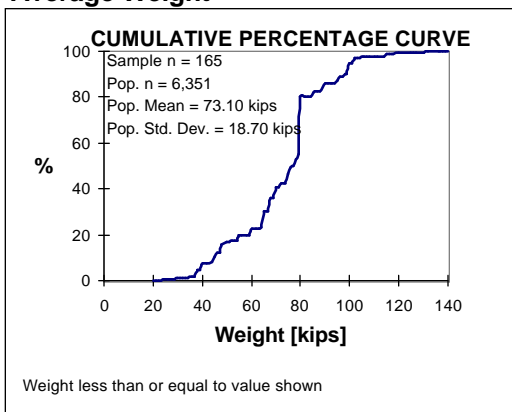
Empty Weight



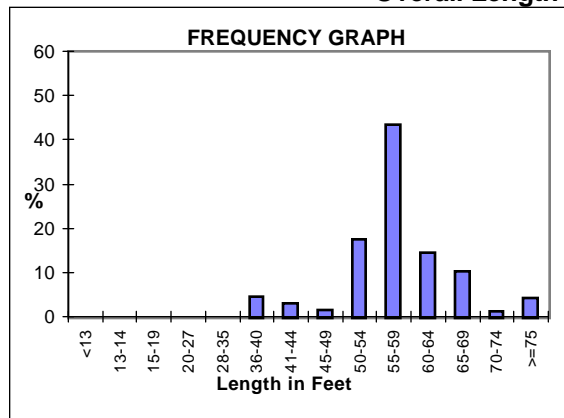
External Trailer Width



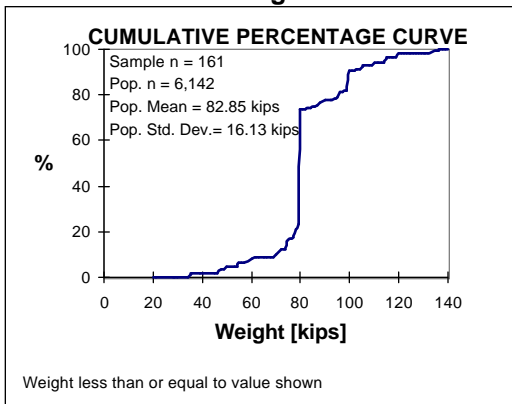
Average Weight



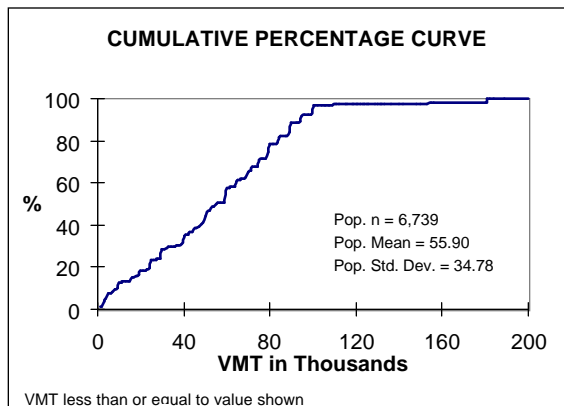
Overall Length



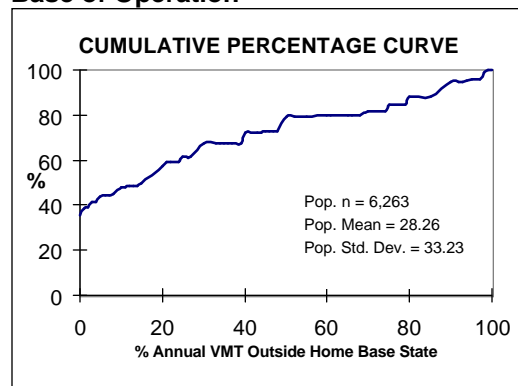
Maximum Gross Weight



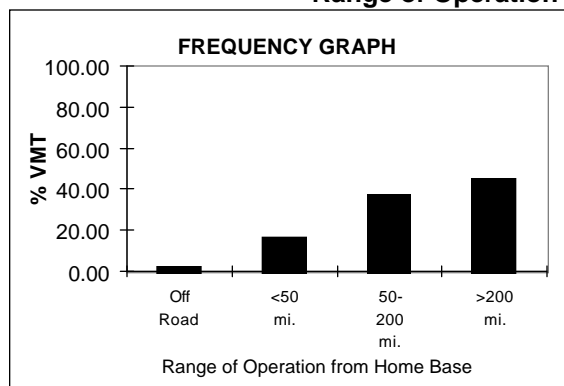
Annual VMT



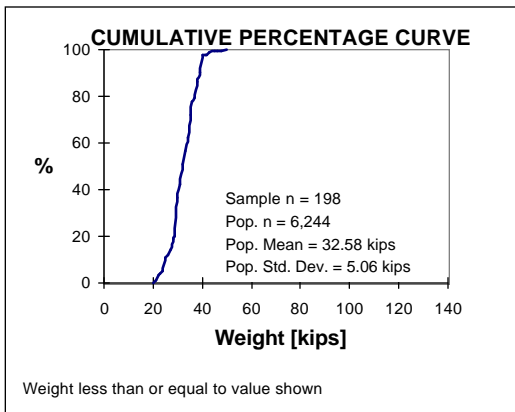
Base of Operation



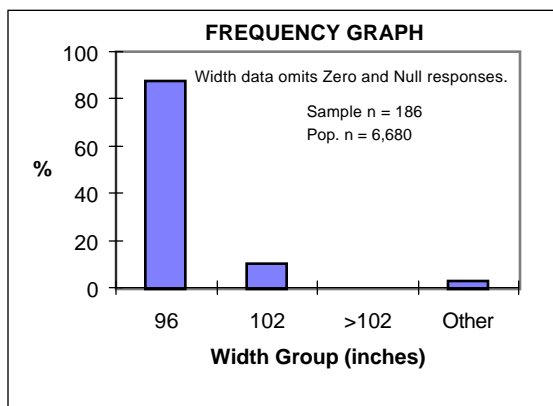
Range of Operation



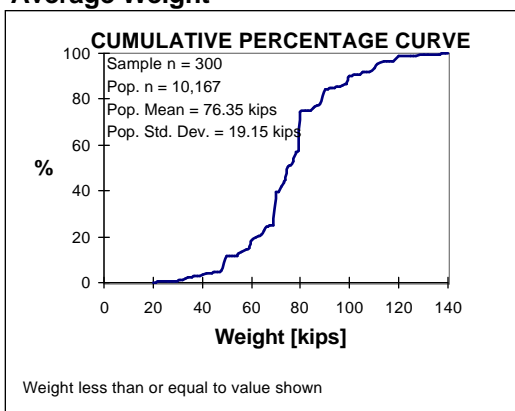
Empty Weight



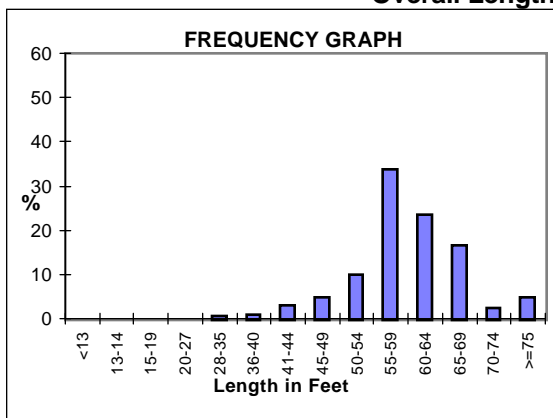
External Trailer Width



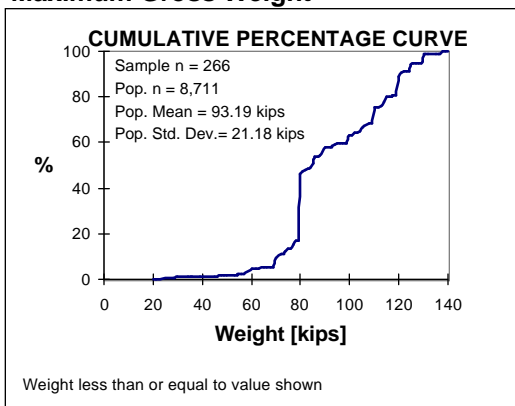
Average Weight



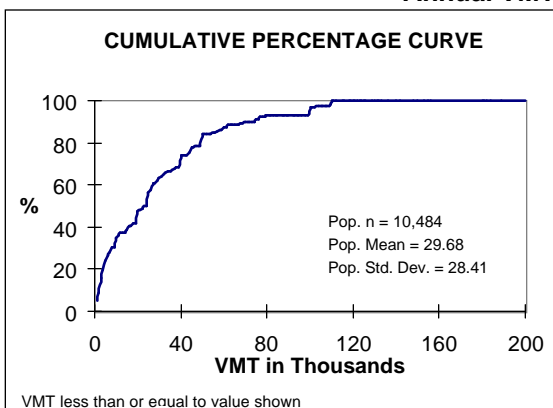
Overall Length



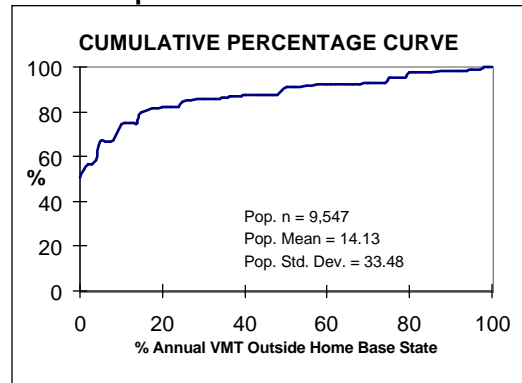
Maximum Gross Weight



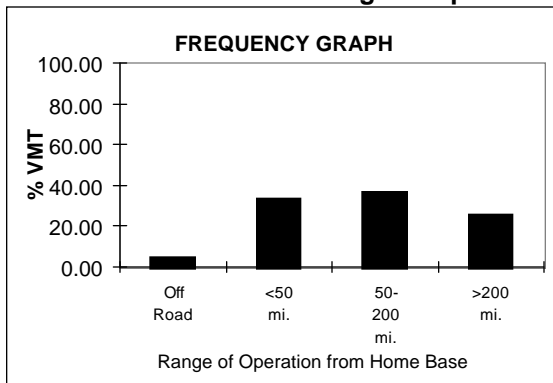
Annual VMT



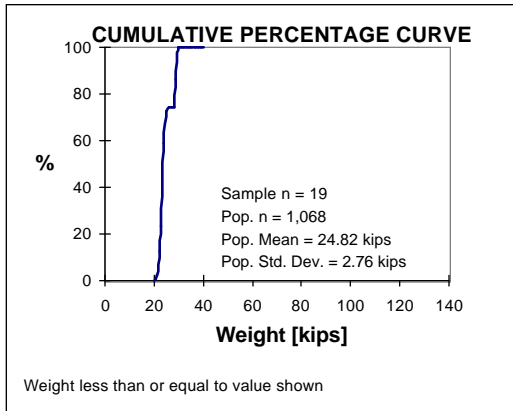
Base of Operation



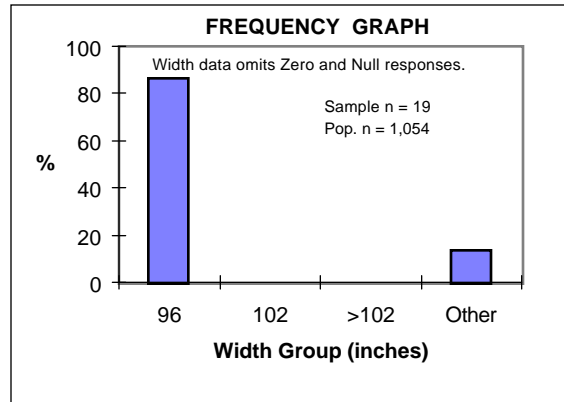
Range of Operation



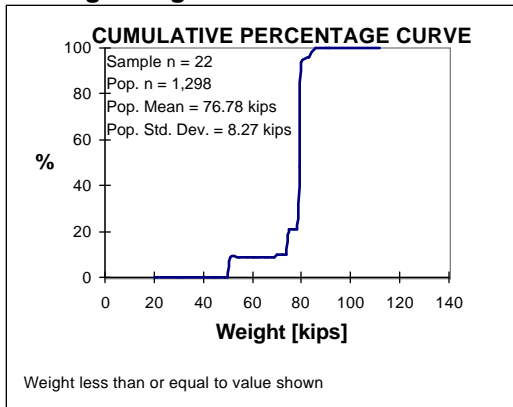
Empty Weight



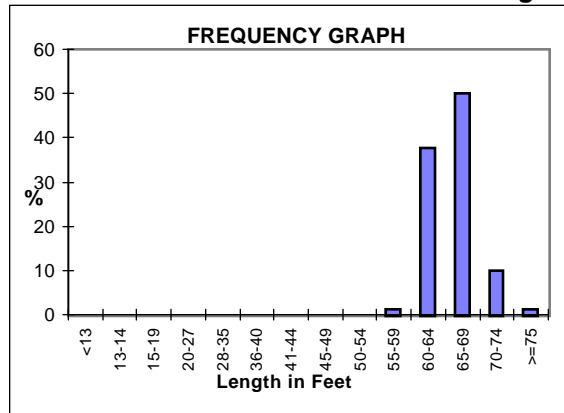
External Trailer Width



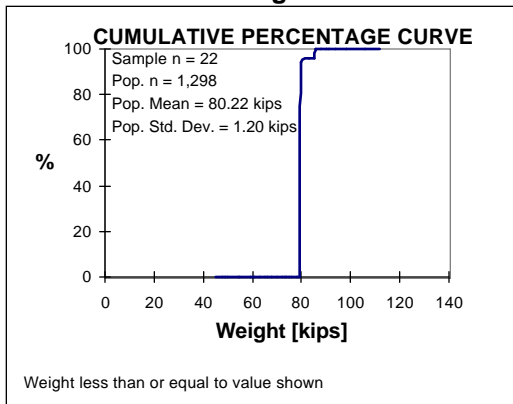
Average Weight



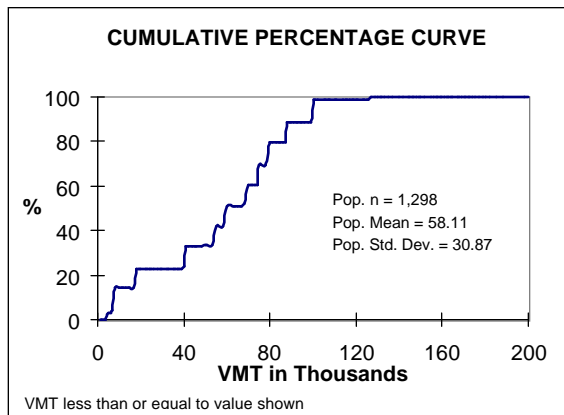
Overall Length



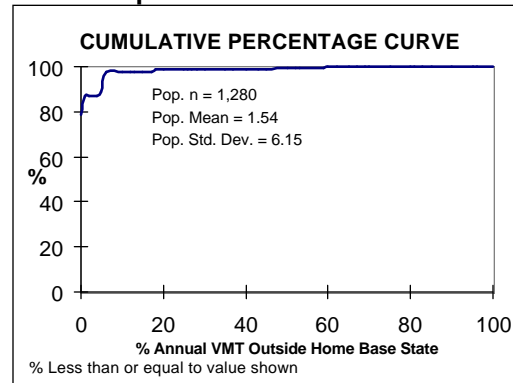
Maximum Gross Weight



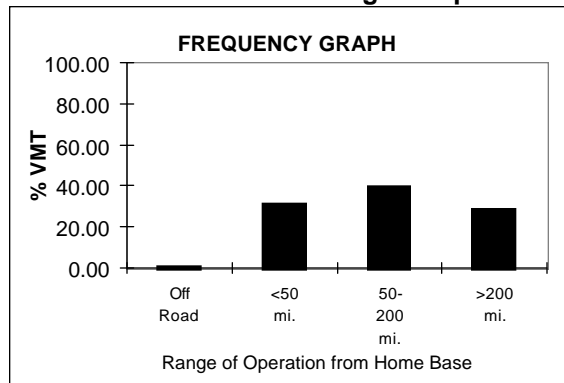
Annual VMT



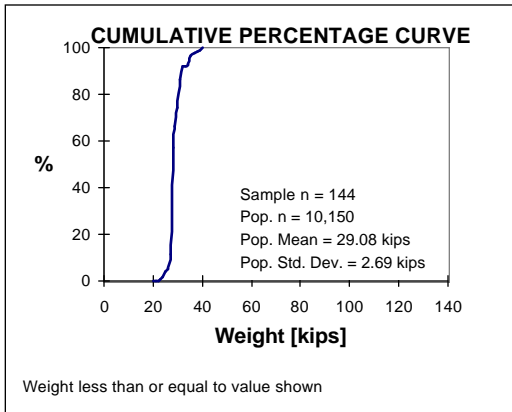
Base of Operation



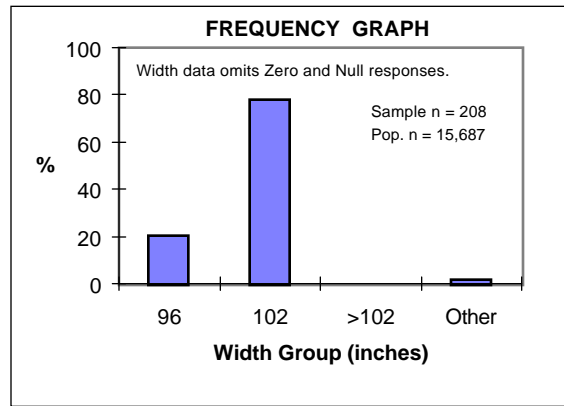
Range of Operation



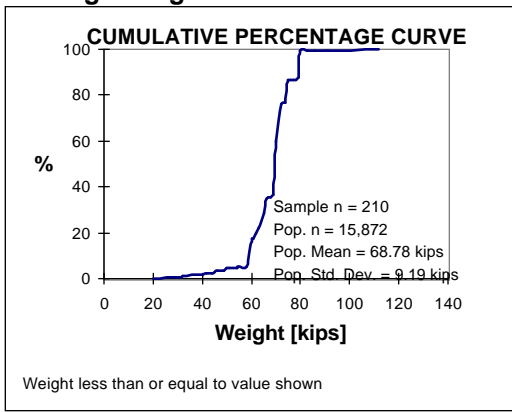
Empty Weight



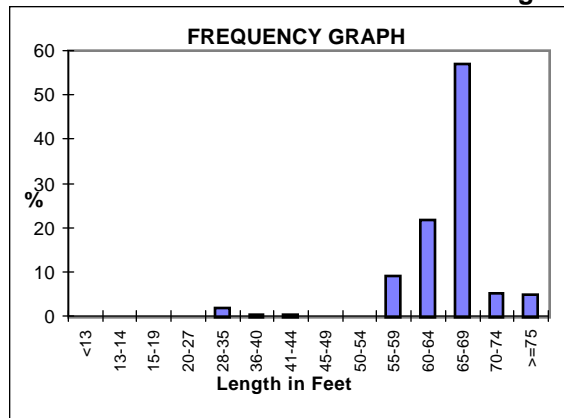
External Trailer Width



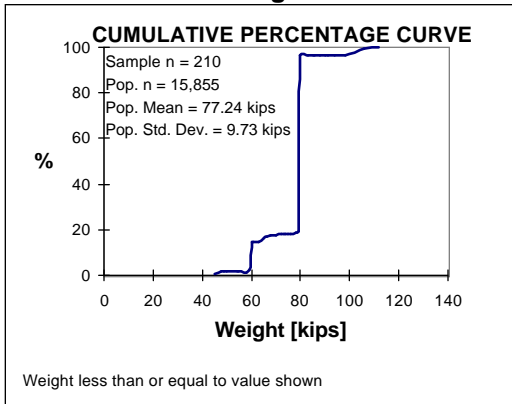
Average Weight



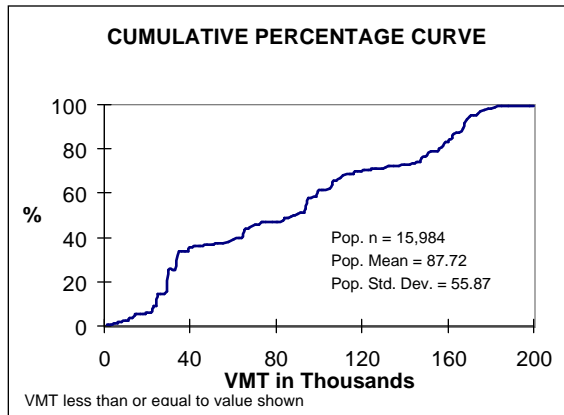
Overall Length



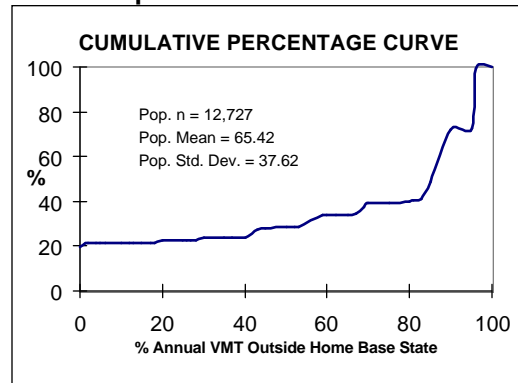
Maximum Gross Weight



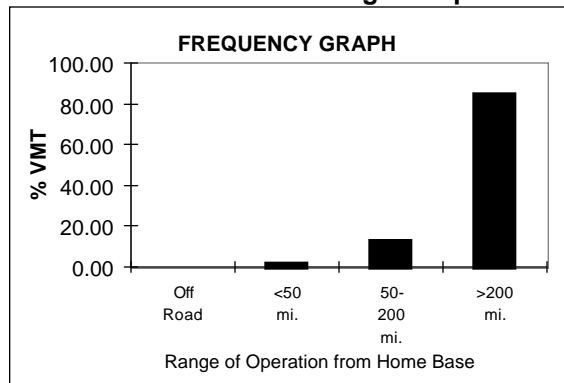
Annual VMT



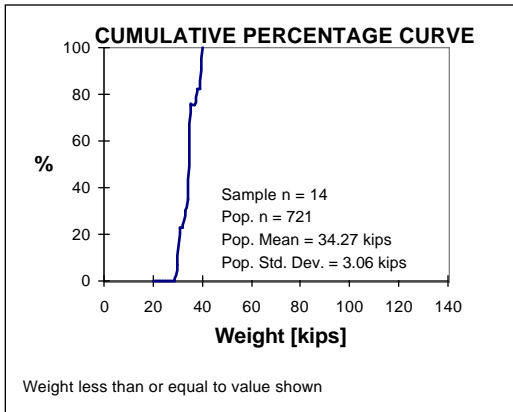
Base of Operation



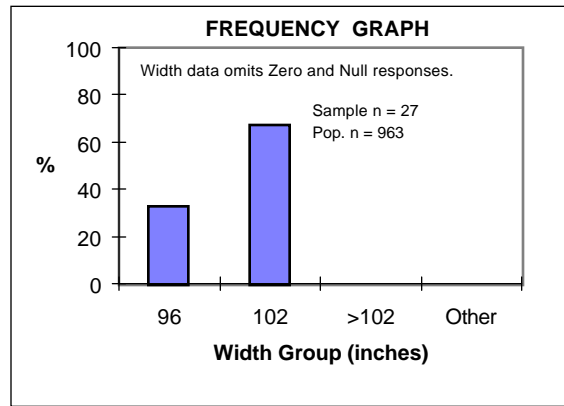
Range of Operation



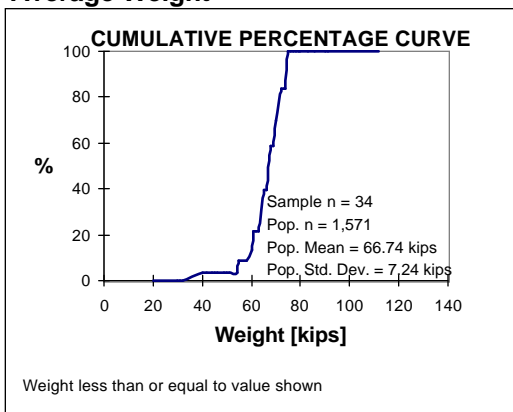
Empty Weight



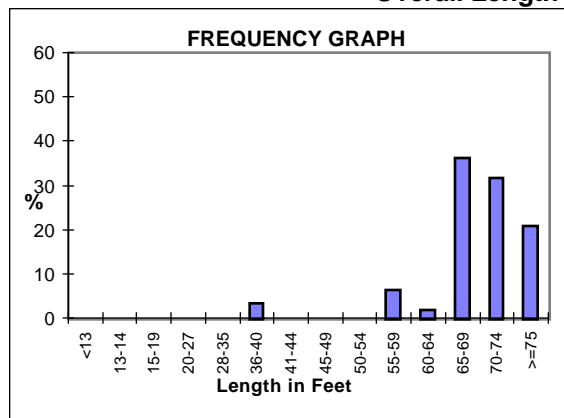
External Trailer Width



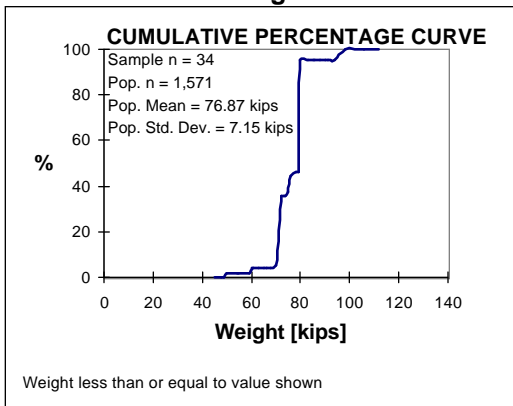
Average Weight



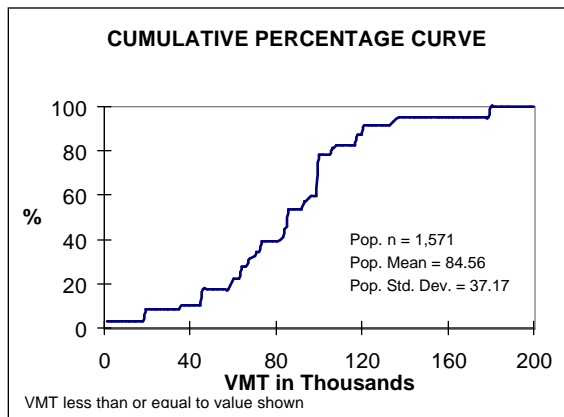
Overall Length



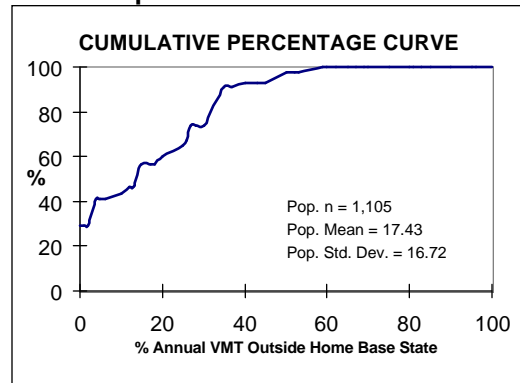
Maximum Gross Weight



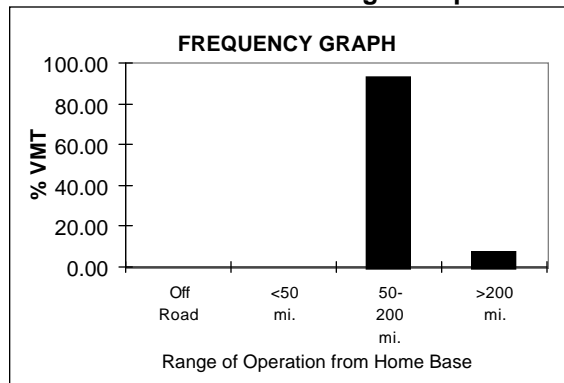
Annual VMT



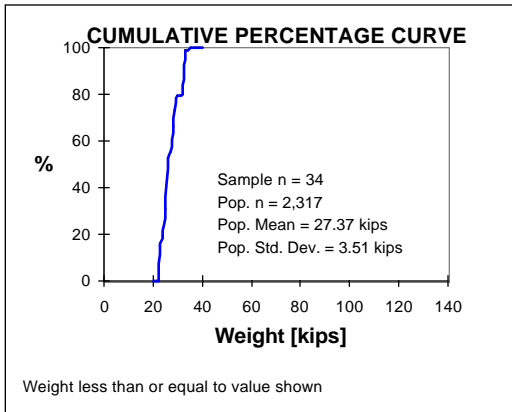
Base of Operation



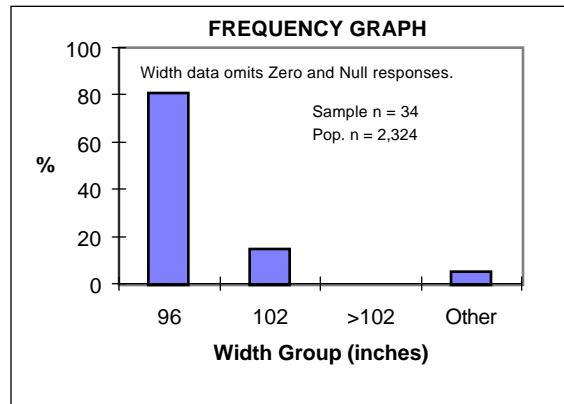
Range of Operation



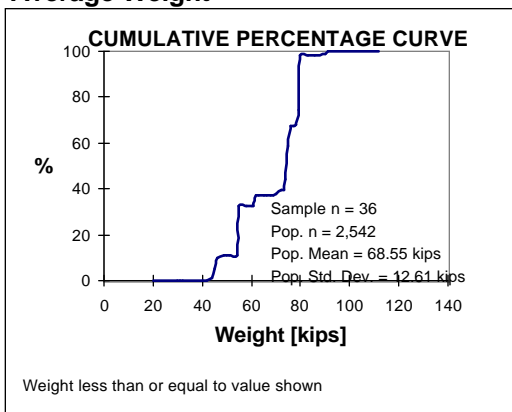
Empty Weight



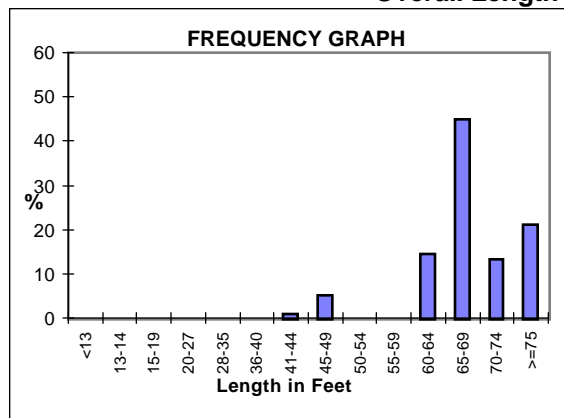
External Trailer Width



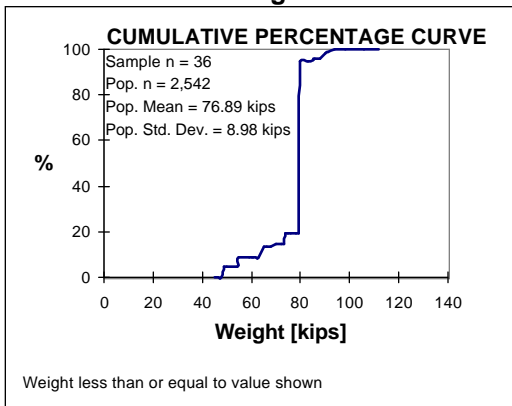
Average Weight



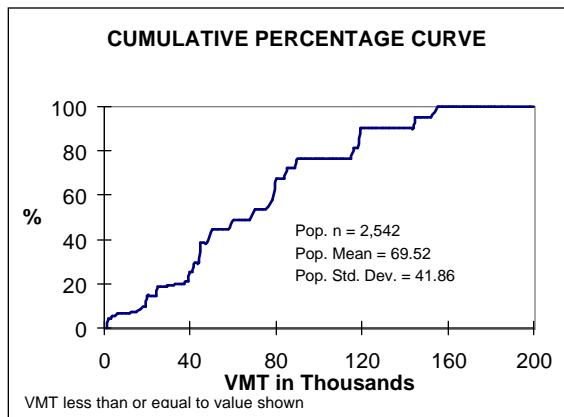
Overall Length



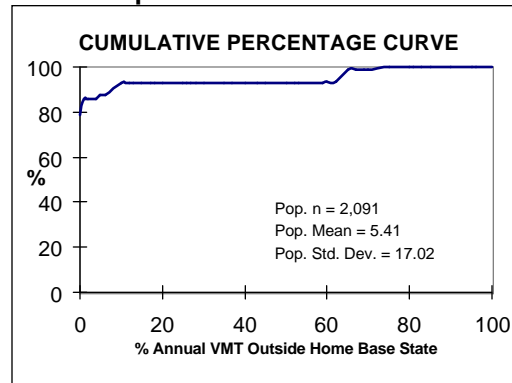
Maximum Gross Weight



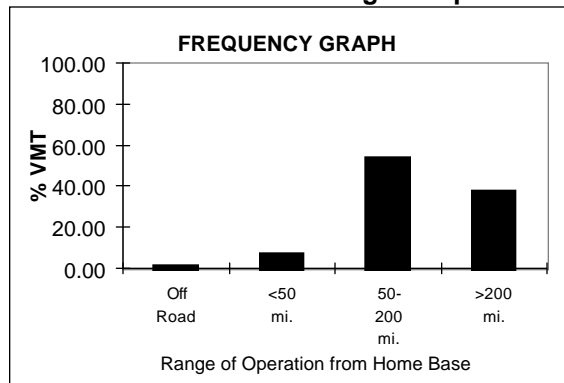
Annual VMT



Base of Operation



Range of Operation

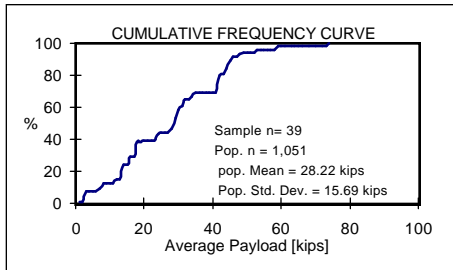


Appendix F

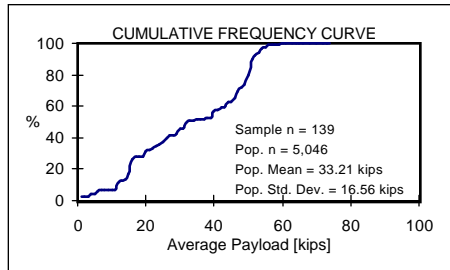
Average Payload Weights and Maximum Payload Weights For the 5-Axles or More Truck Fleet

**VEHICLE TYPE: 3+2
AVERAGE PAYLOAD**

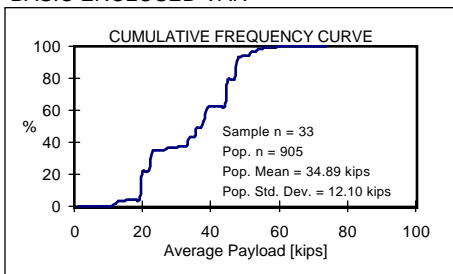
LOW BOY PLATFORM



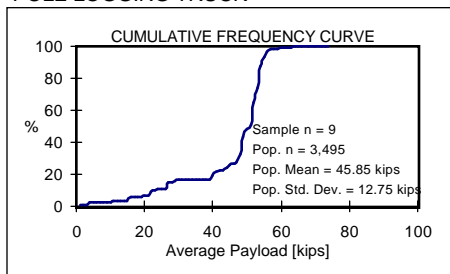
BASIC PLATFORM



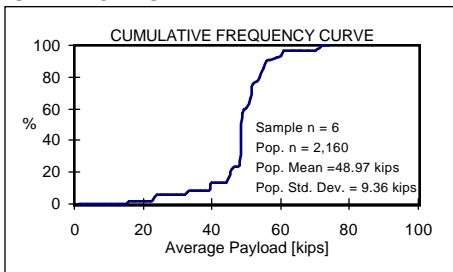
BASIC ENCLOSED VAN



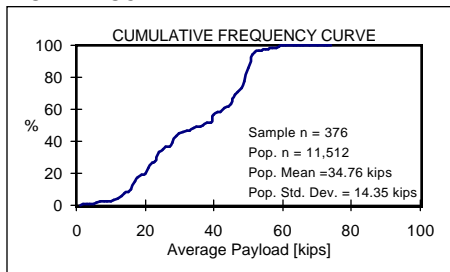
POLE LOGGING TRUCK



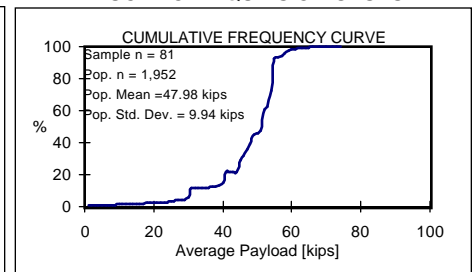
GRAIN BODIES



DUMP TRUCK

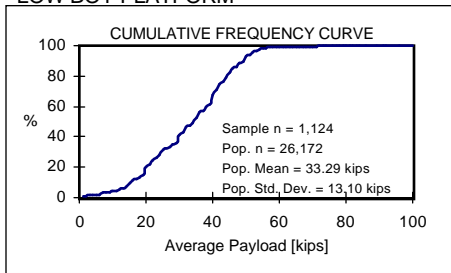


TANK TRUCK FOR LIQUIDS OR GASES

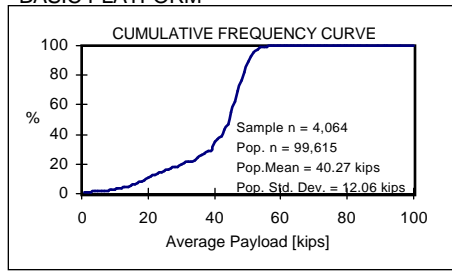


**VEHICLE TYPE: 3-S2
AVERAGE PAYLOAD**

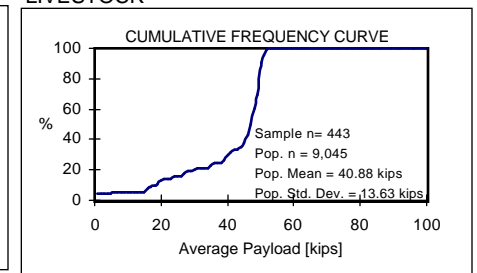
LOW BOY PLATFORM



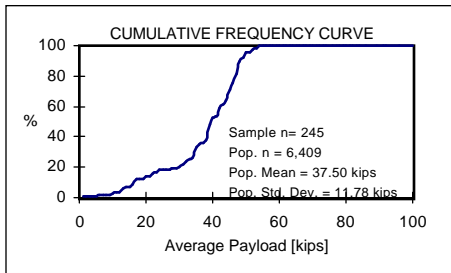
BASIC PLATFORM



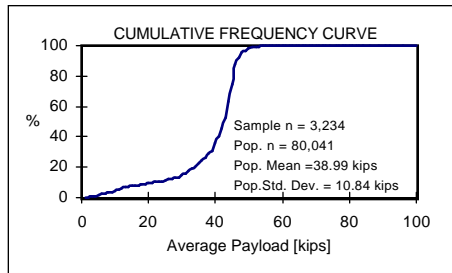
LIVESTOCK



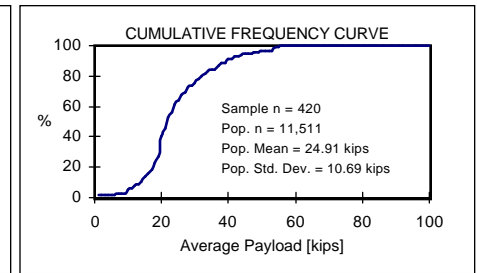
INSULATED NON-REFRIGERATED



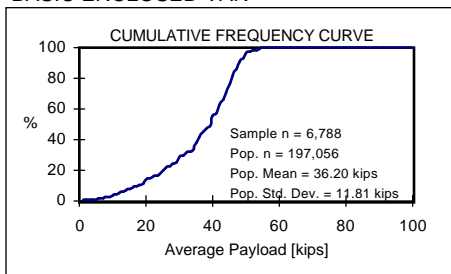
INSULATED REFRIGERATED



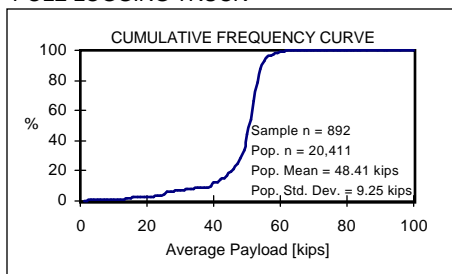
DROP FRAME VAN



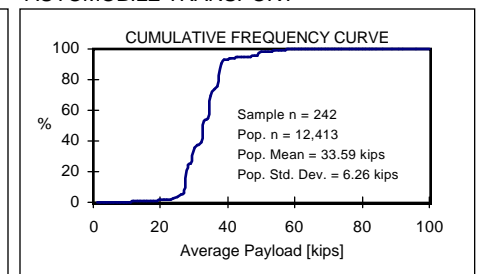
BASIC ENCLOSED VAN



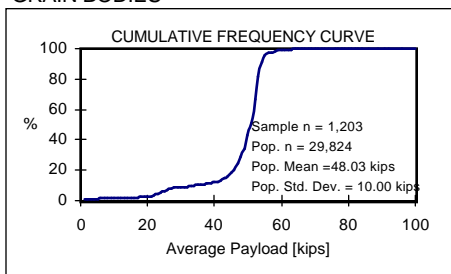
POLE LOGGING TRUCK



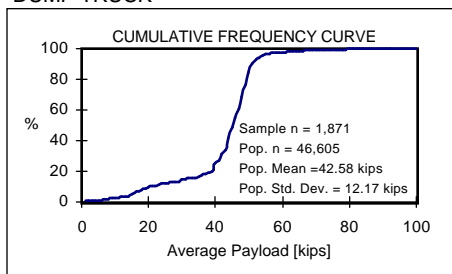
AUTOMOBILE TRANSPORT



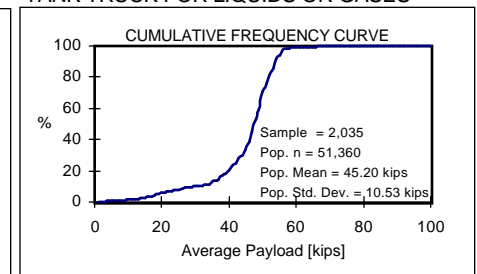
GRAIN BODIES



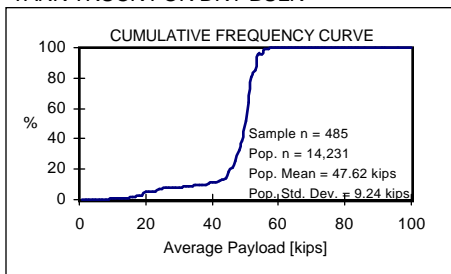
DUMP TRUCK



TANK TRUCK FOR LIQUIDS OR GASES

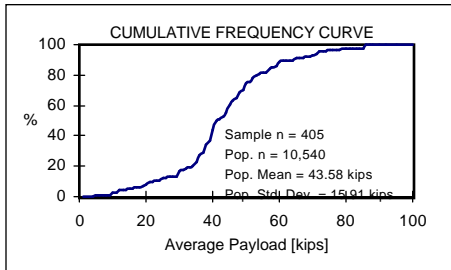


TANK TRUCK FOR DRY BULK

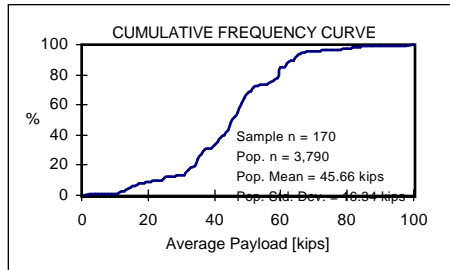


**VEHICLE TYPE: 3-S3
AVERAGE PAYLOAD**

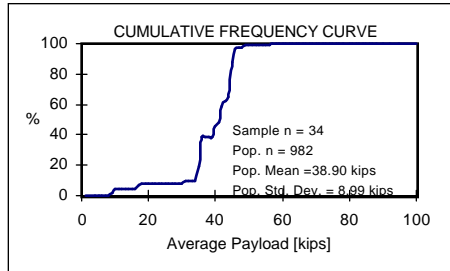
LOW BOY PLATFORM



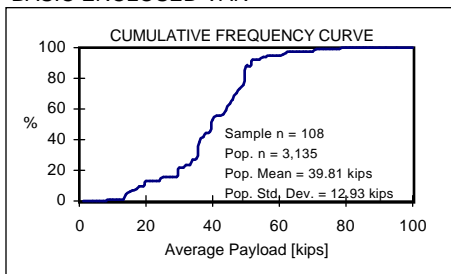
BASIC PLATFORM



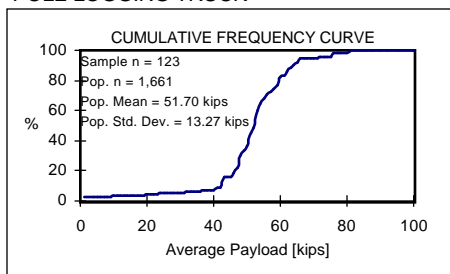
INSULATED REFRIGERATED



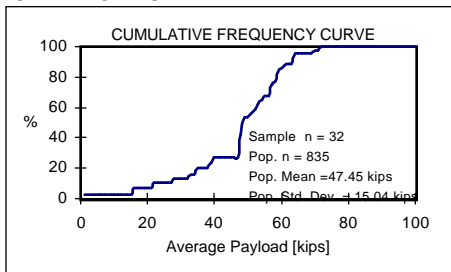
BASIC ENCLOSED VAN



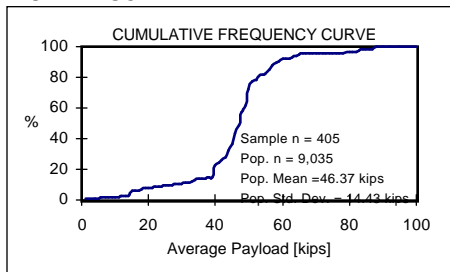
POLE LOGGING TRUCK



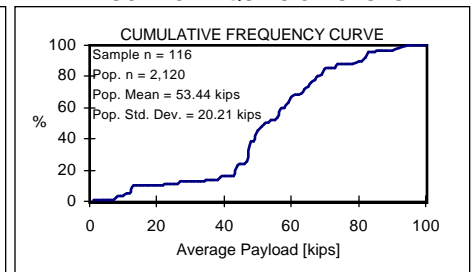
GRAIN BODIES



DUMP TRUCK

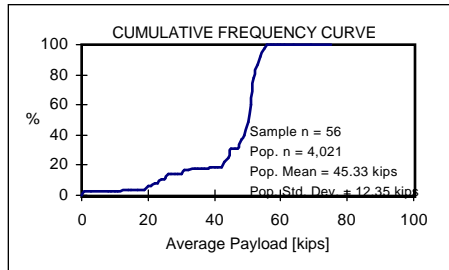


TANK TRUCK FOR LIQUIDS OR GASES

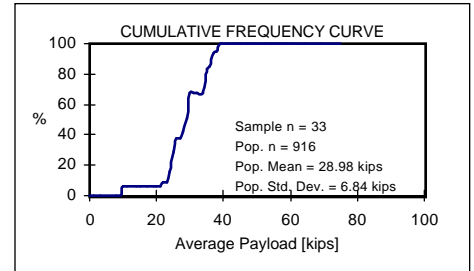


**VEHICLE TYPE: STAA (2-S1-2)
AVERAGE PAYLOAD**

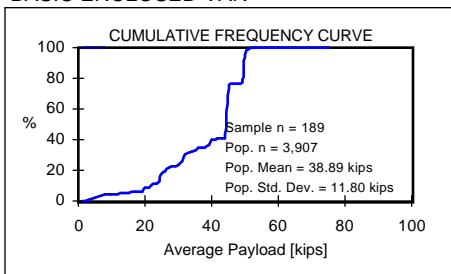
BASIC PLATFORM



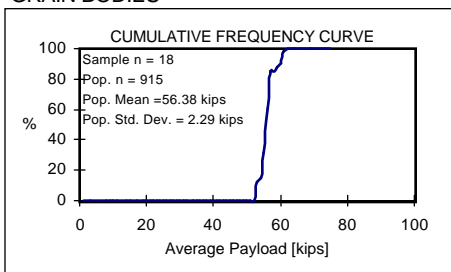
DROP FRAME VAN



BASIC ENCLOSED VAN

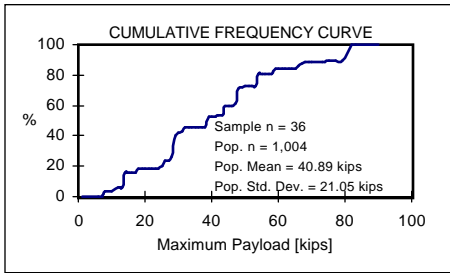


GRAIN BODIES

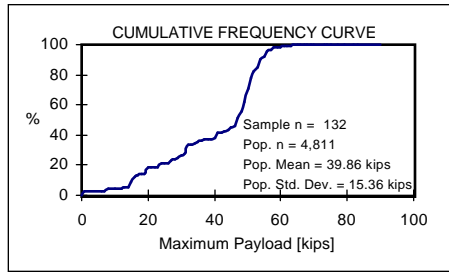


**VEHICLE TYPE: 3+2
MAXIMUM PAYLOAD**

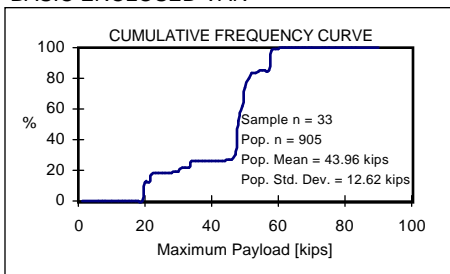
LOW BOY PLATFORM



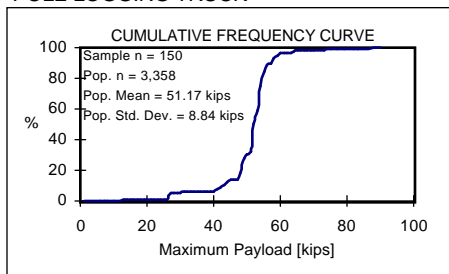
BASIC PLATFORM



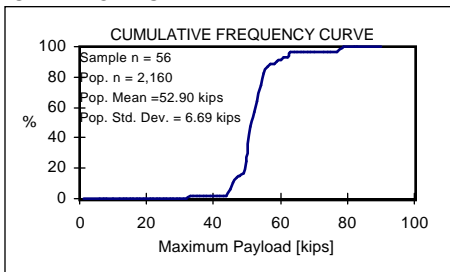
BASIC ENCLOSED VAN



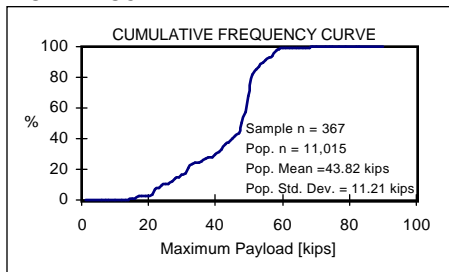
POLE LOGGING TRUCK



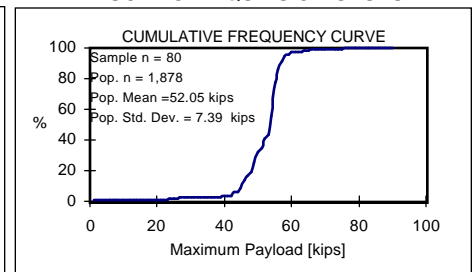
GRAIN BODIES



DUMP TRUCK

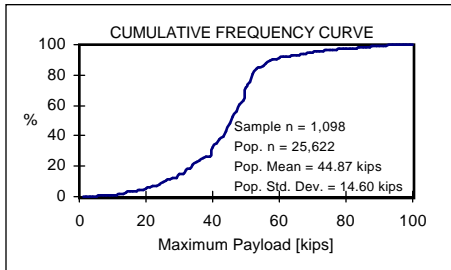


TANK TRUCK FOR LIQUIDS OR GASES

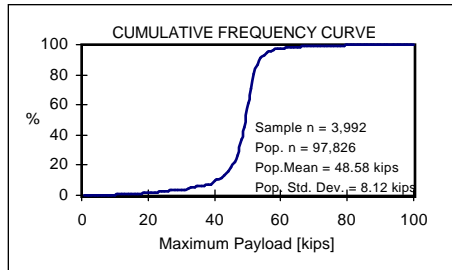


**VEHICLE TYPE: 3-S2
MAXIMUM PAYLOAD**

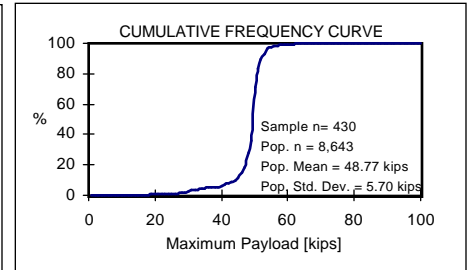
LOW BOY PLATFORM



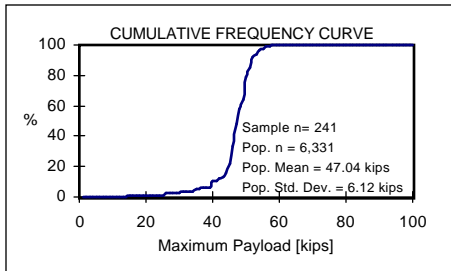
BASIC PLATFORM



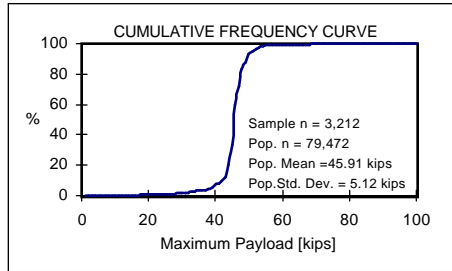
LIVESTOCK



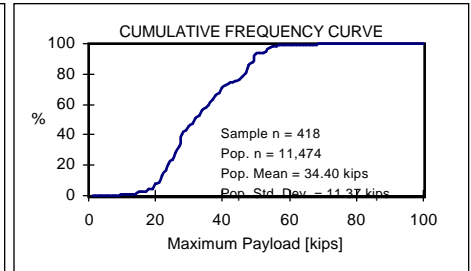
INSULATED NON-REFRIGERATED



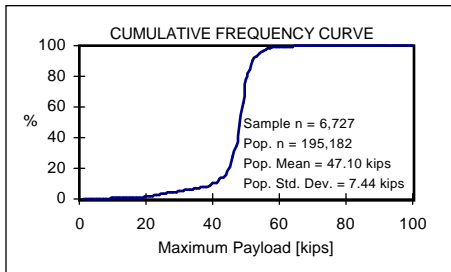
INSULATED REFRIGERATED



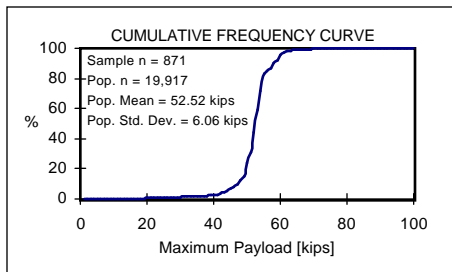
DROP FRAME VAN



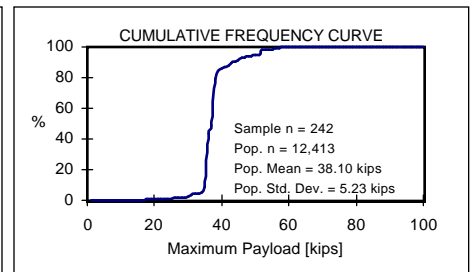
BASIC ENCLOSED VAN



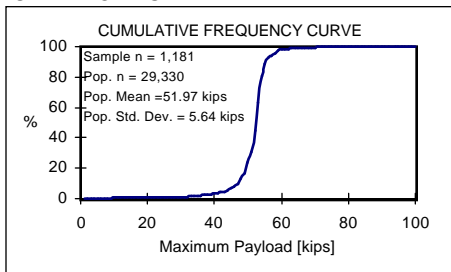
POLE LOGGING TRUCK



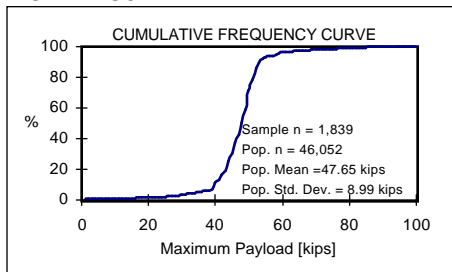
AUTOMOBILE TRANSPORT



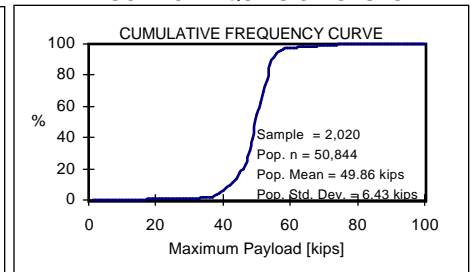
GRAIN BODIES



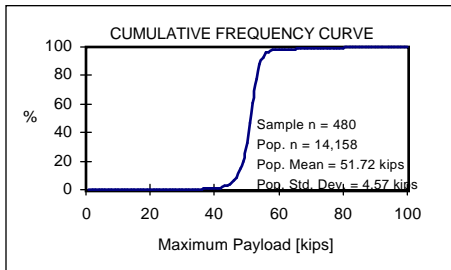
DUMP TRUCK



TANK TRUCK FOR LIQUIDS OR GASES

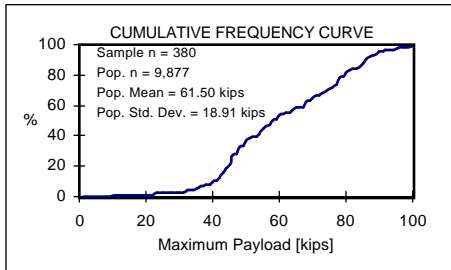


TANK TRUCK FOR DRY BULK

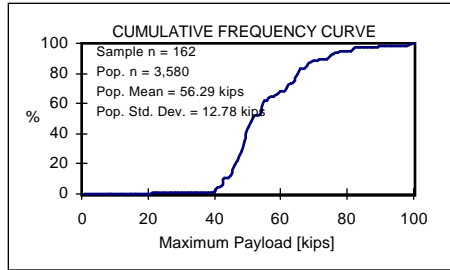


**VEHICLE TYPE: 3-S3
MAXIMUM PAYLOAD**

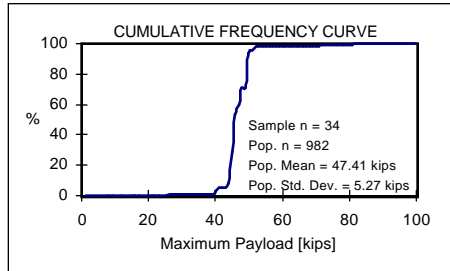
LOW BOY PLATFORM



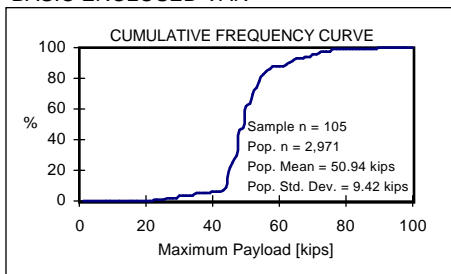
BASIC PLATFORM



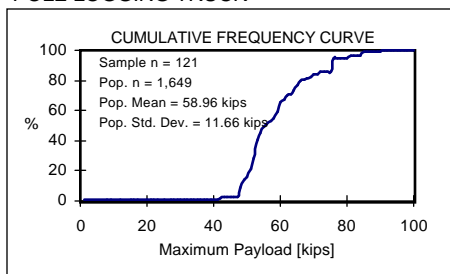
INSULATED REFRIGERATED



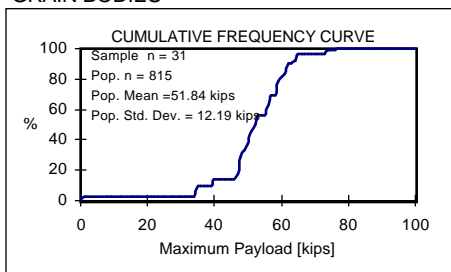
BASIC ENCLOSED VAN



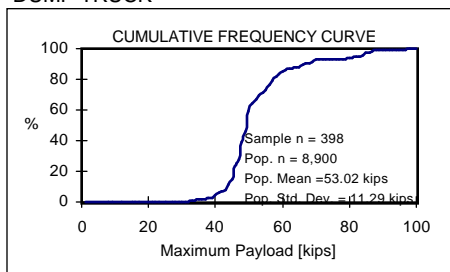
POLE LOGGING TRUCK



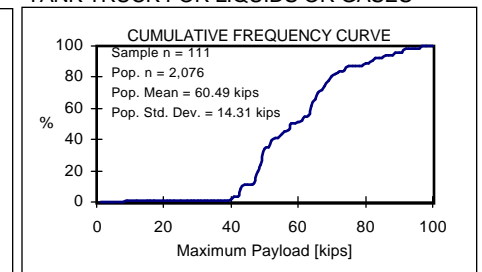
GRAIN BODIES



DUMP TRUCK

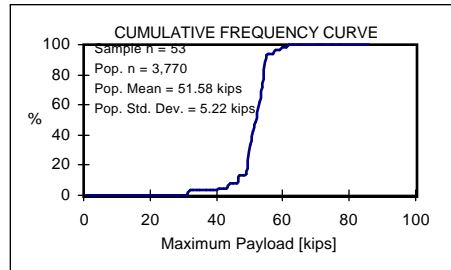


TANK TRUCK FOR LIQUIDS OR GASES

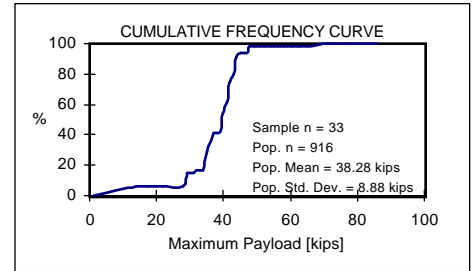


**VEHICLE TYPE: STAA (2-S1-2)
MAXIMUM PAYLOAD**

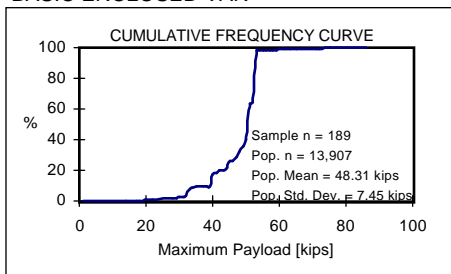
BASIC PLATFORM



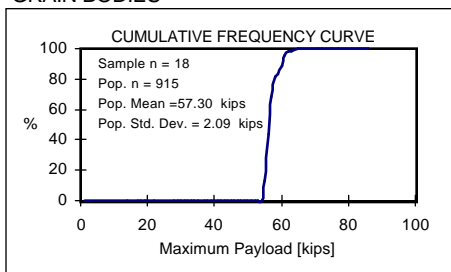
DROP FRAME VAN



BASIC ENCLOSED VAN

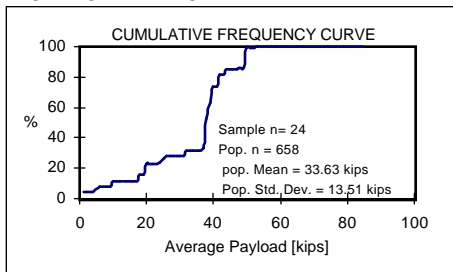


GRAIN BODIES

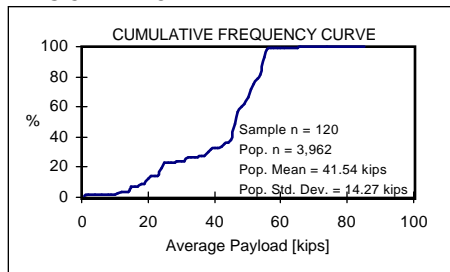


**VEHICLE TYPE: 3+2
AVERAGE PAYLOAD**

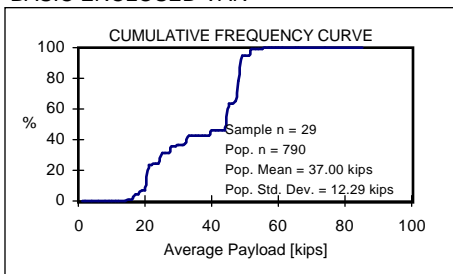
LOW BOY PLATFORM



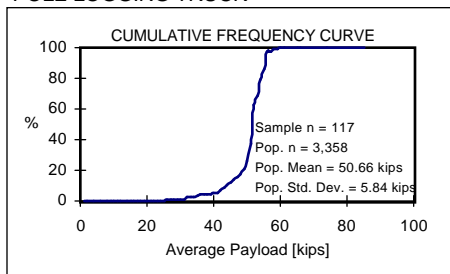
BASIC PLATFORM



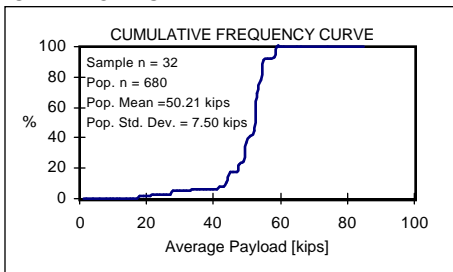
BASIC ENCLOSED VAN



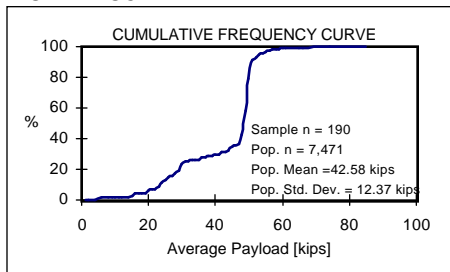
POLE LOGGING TRUCK



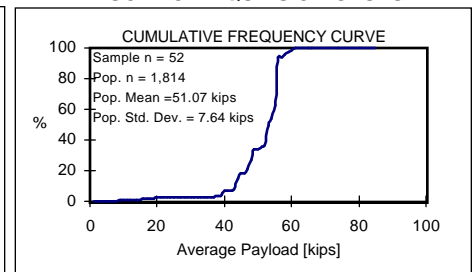
GRAIN BODIES



DUMP TRUCK

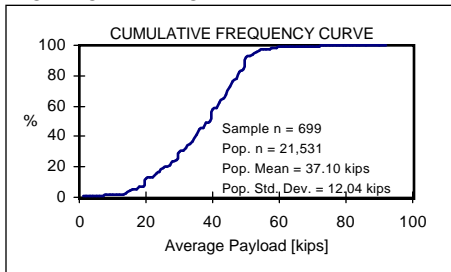


TANK TRUCK FOR LIQUIDS OR GASES

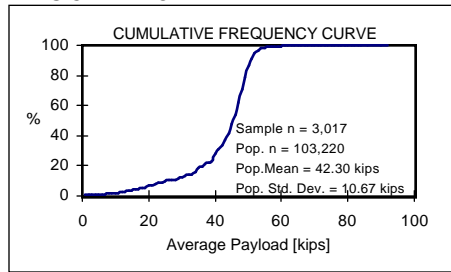


**VEHICLE TYPE: 3-S2
AVERAGE PAYLOAD**

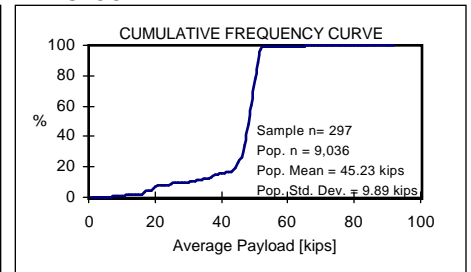
LOW BOY PLATFORM



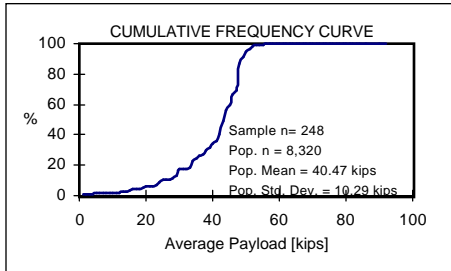
BASIC PLATFORM



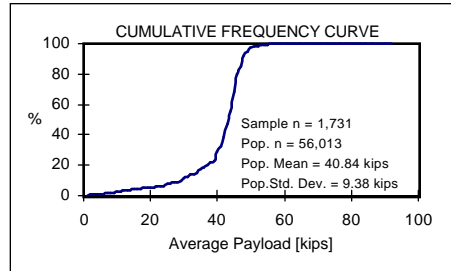
LIVESTOCK



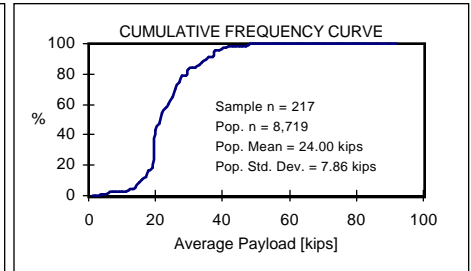
INSULATED NON-REFRIGERATED



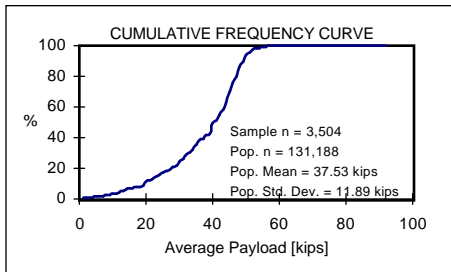
INSULATED REFRIGERATED



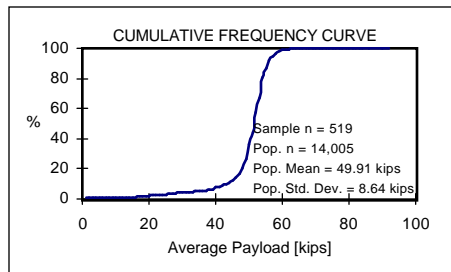
DROP FRAME VAN



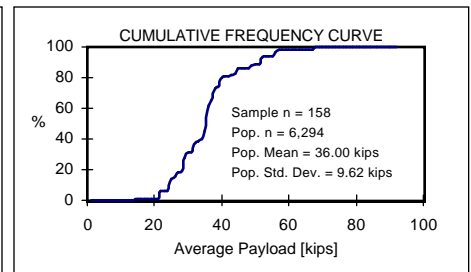
BASIC ENCLOSED VAN



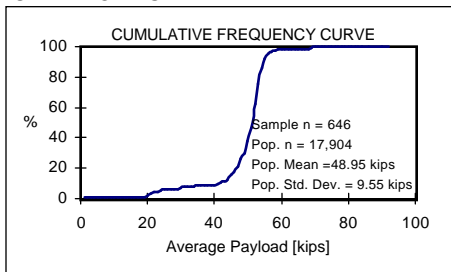
POLE LOGGING TRUCK



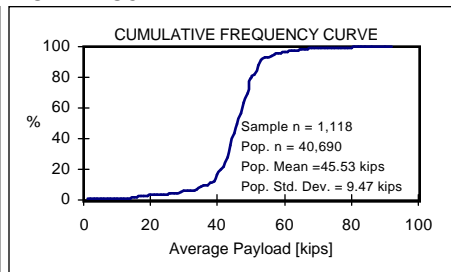
AUTOMOBILE TRANSPORT



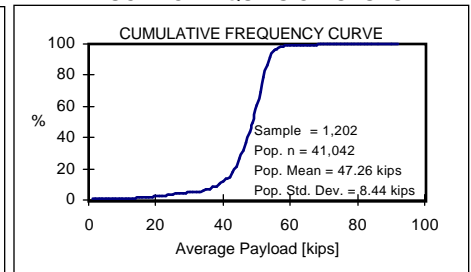
GRAIN BODIES



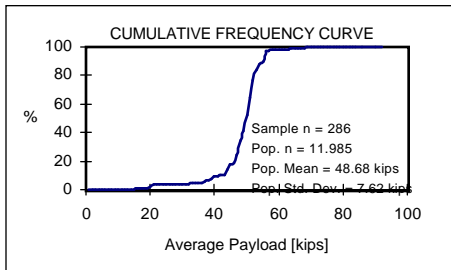
DUMP TRUCK



TANK TRUCK FOR LIQUIDS OR GASES

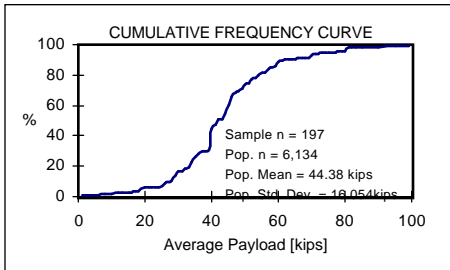


TANK TRUCK FOR DRY BULK

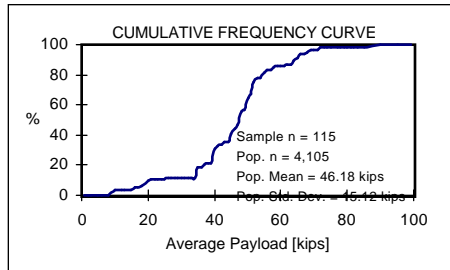


**VEHICLE TYPE: 3-S3
AVERAGE PAYLOAD**

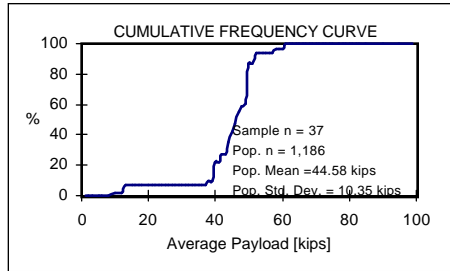
LOW BOY PLATFORM



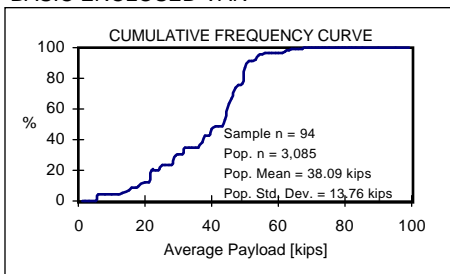
BASIC PLATFORM



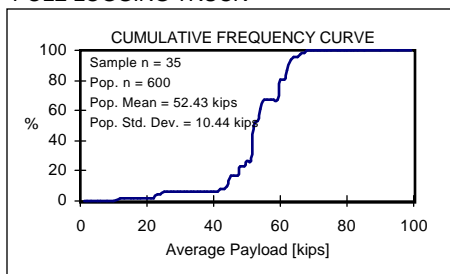
INSULATED REFRIGERATED



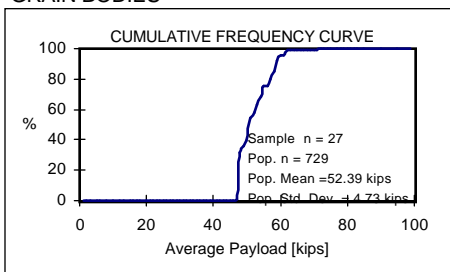
BASIC ENCLOSED VAN



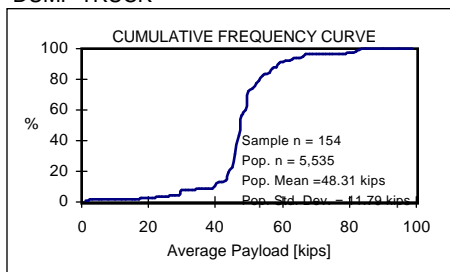
POLE LOGGING TRUCK



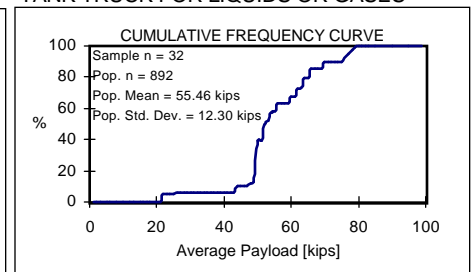
GRAIN BODIES



DUMP TRUCK

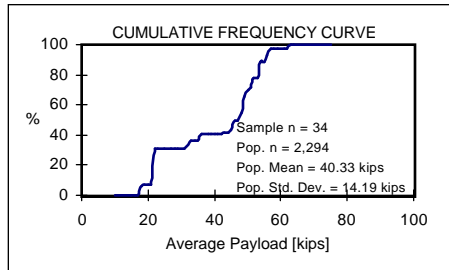


TANK TRUCK FOR LIQUIDS OR GASES

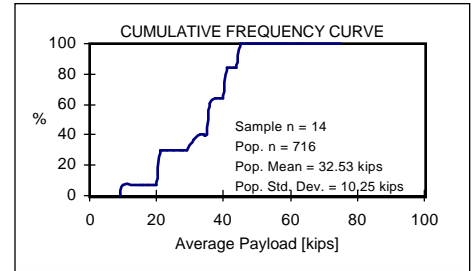


**VEHICLE TYPE: STAA (2-S1-2)
AVERAGE PAYLOAD**

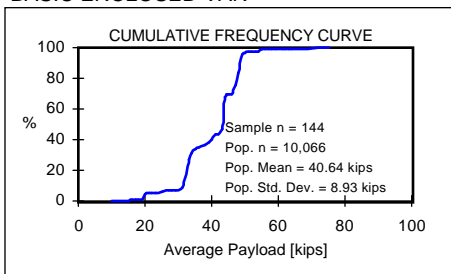
BASIC PLATFORM



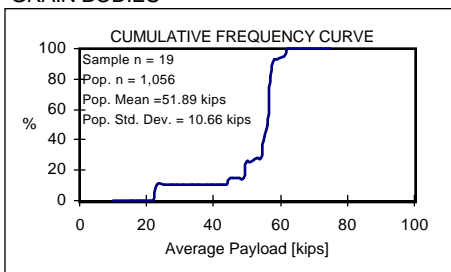
DROP FRAME VAN



BASIC ENCLOSED VAN

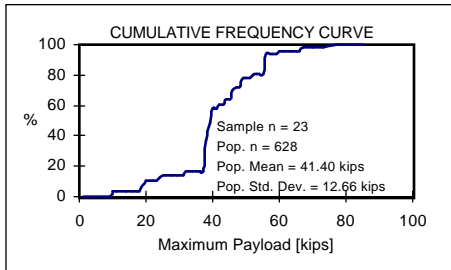


GRAIN BODIES

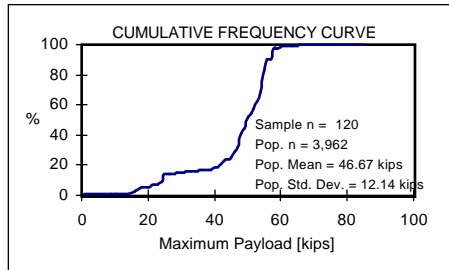


**VEHICLE TYPE: 3+2
MAXIMUM PAYLOAD**

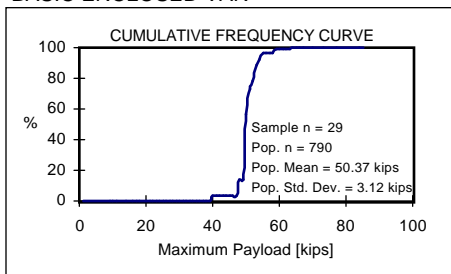
LOW BOY PLATFORM



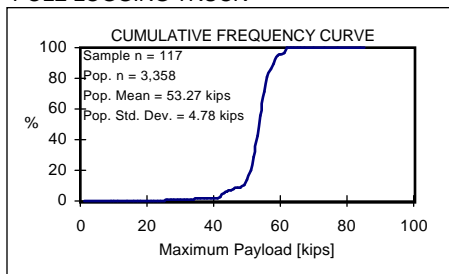
BASIC PLATFORM



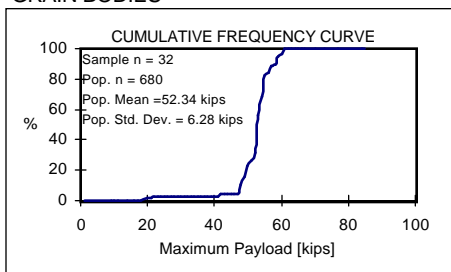
BASIC ENCLOSED VAN



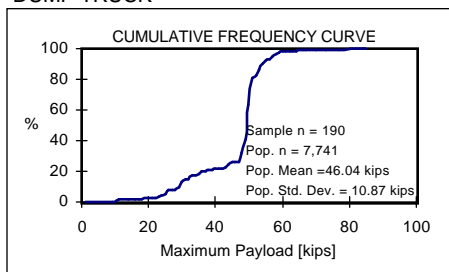
POLE LOGGING TRUCK



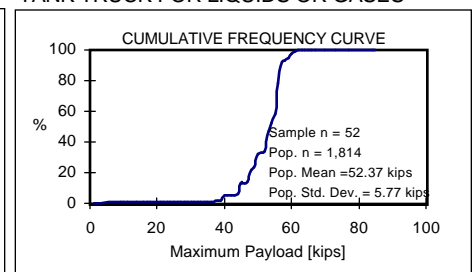
GRAIN BODIES



DUMP TRUCK

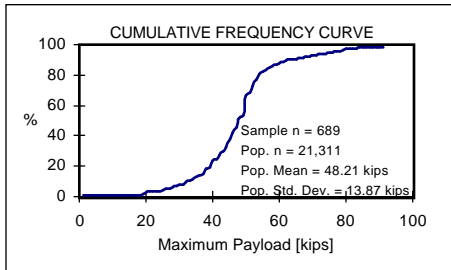


TANK TRUCK FOR LIQUIDS OR GASES

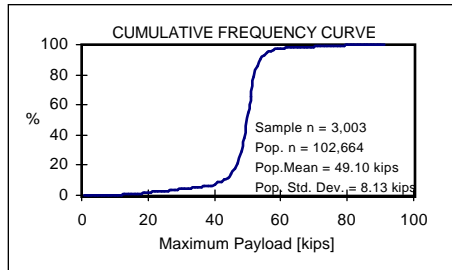


**VEHICLE TYPE: 3-S2
MAXIMUM PAYLOAD**

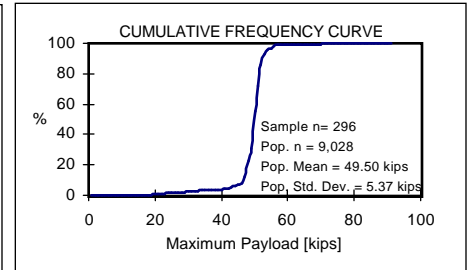
LOW BOY PLATFORM



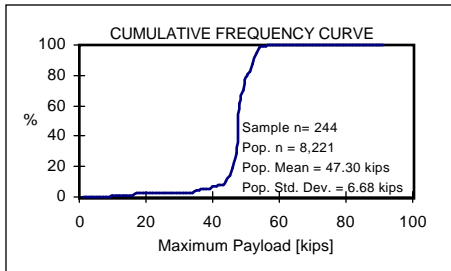
BASIC PLATFORM



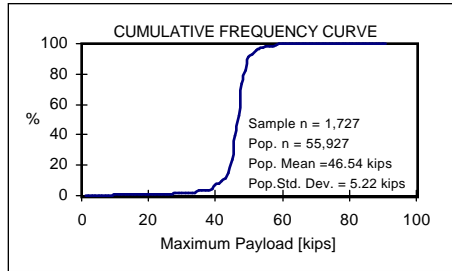
LIVESTOCK



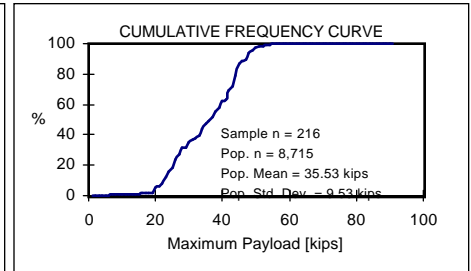
INSULATED NON-REFRIGERATED



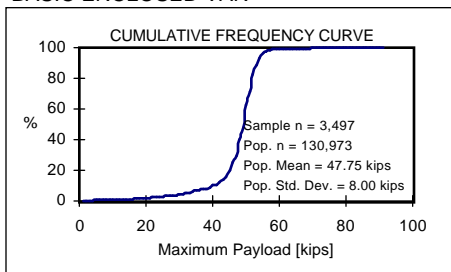
INSULATED REFRIGERATED



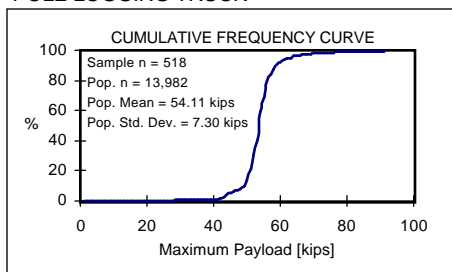
DROP FRAME VAN



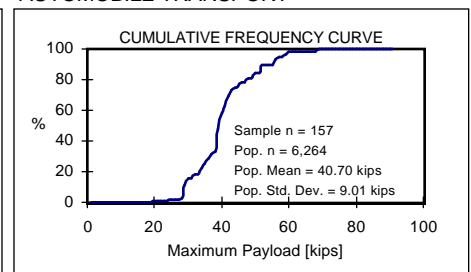
BASIC ENCLOSED VAN



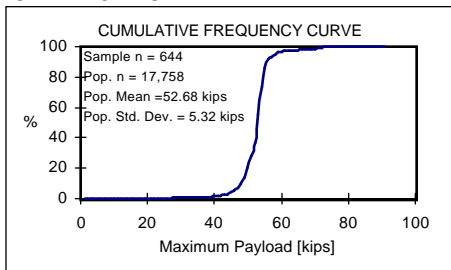
POLE LOGGING TRUCK



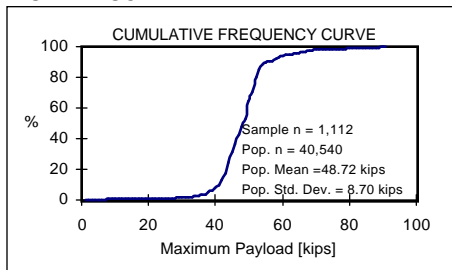
AUTOMOBILE TRANSPORT



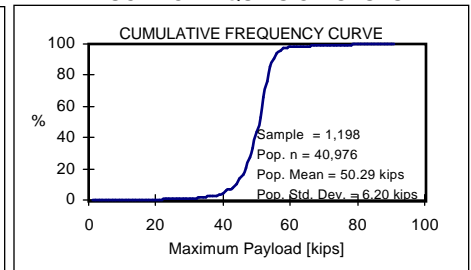
GRAIN BODIES



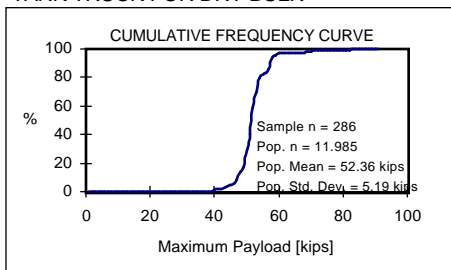
DUMP TRUCK



TANK TRUCK FOR LIQUIDS OR GASES

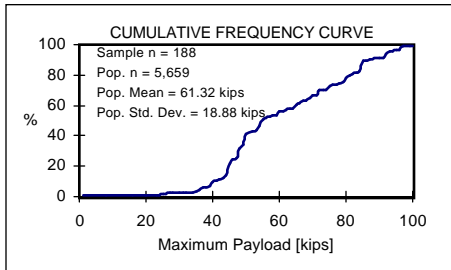


TANK TRUCK FOR DRY BULK

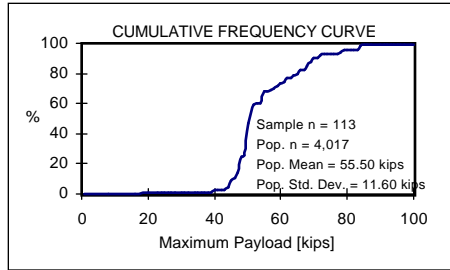


**VEHICLE TYPE: 3-S3
MAXIMUM PAYLOAD**

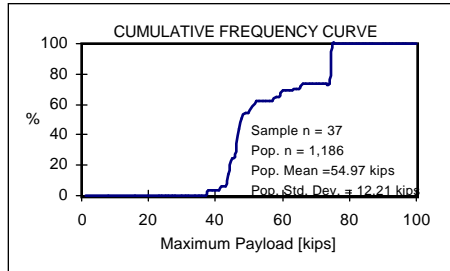
LOW BOY PLATFORM



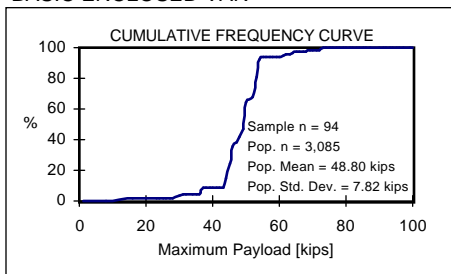
BASIC PLATFORM



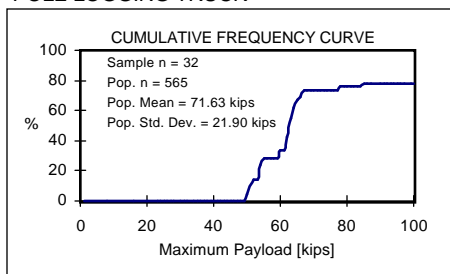
INSULATED REFRIGERATED



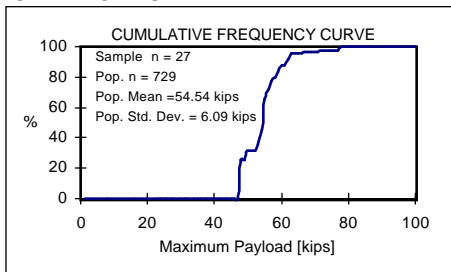
BASIC ENCLOSED VAN



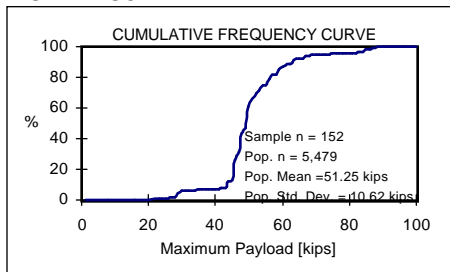
POLE LOGGING TRUCK



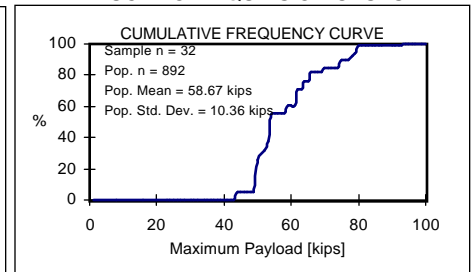
GRAIN BODIES



DUMP TRUCK

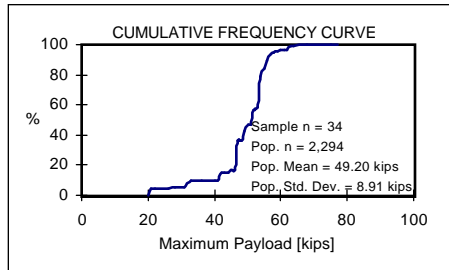


TANK TRUCK FOR LIQUIDS OR GASES

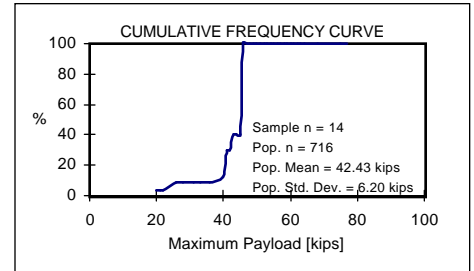


**VEHICLE TYPE: STAA (2-S1-2)
MAXIMUM PAYLOAD**

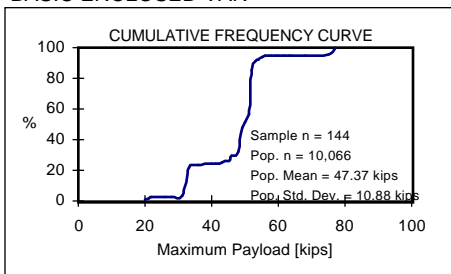
BASIC PLATFORM



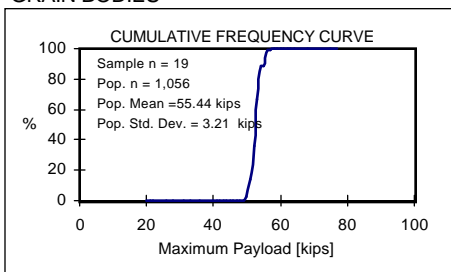
DROP FRAME VAN



BASIC ENCLOSED VAN



GRAIN BODIES



Appendix G

Regional Distributions of Weights, Dimensions, and Operating Characteristics

**Regional Comparison of Mean Tare (Empty) Weights
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	18,738	31,023	17,544	25,377	19,278	28,952	21,866	28,790	18,598	32,534
3+2 Basic Platform	21,126	26,588	12,412	39,552	23,764	27,521	20,629	29,429	20,705	28,033
3+2 Basic Enclosed	21,398	31,789	18,000	27,783	20,849	29,718	23,231	32,229	15,835	26,374
3+2 Pole Logging	29,516	33,913	4,000	40,677	24,047	27,466	23,732	26,601	24,027	26,637
3+2 Grain Bodies	16,912	25,385		30,400		28,000	27,618	26,220	26,648	28,355
3+2 Dump Truck	25,023	28,690	22,501	26,463	18,363	23,025	24,793	27,608	26,373	29,120
3+2 Tank-Liquid	25,424	30,697	22,056	33,432		27,794	27,901	26,750	24,868	27,694
3-S2 Low Boy	24,378	29,802	24,218	31,316	24,559	30,779	23,417	30,438	26,647	31,104
3-S2 Basic Platform	25,942	29,832	26,656	30,457	24,079	29,940	26,378	30,557	25,182	29,077
3-S2 Livestock	27,441	29,933	29,149	30,876	28,246	33,474	26,985	30,261	26,612	30,817
3-S2 Ins. Non-ref	26,744	32,081	24,853	30,815	20,933	32,143	26,638	31,967	29,121	29,933
3-S2 Ins. Ref	28,834	33,336	29,274	33,284	28,389	33,336	30,147	33,452	27,729	32,903
3-S2 Drop Frame	26,243	35,243	27,772	33,279	23,280	33,334	27,482	35,264	31,360	33,967
3-S2 Basic Enclosed	24,013	30,804	24,068	30,110	24,223	30,084	26,023	30,517	24,057	30,068
3-S2 Pole Logging	27,527	29,804	26,837	30,158	26,918	27,816	26,404	27,329	25,180	26,693
3-S2 Auto Transport	19,770	42,763	26,259	36,389	25,592	33,825	29,645	38,644	24,003	35,616
3-S2 Grain Bodies	25,025	27,114	27,335	29,598	24,018	28,779	25,889	27,922	25,709	27,897
3-S2 Dump Truck	27,266	29,636	28,045	31,096	27,003	29,616	27,512	30,058	27,647	31,313
3-S2 Tank-Liquid	25,501	29,853	24,940	30,025	25,484	29,356	26,599	30,765	26,015	30,619
3-S2 Tank-Dry	27,105	27,985	25,233	28,816	25,756	29,299	27,060	28,646	26,554	28,639
3-S3 Low Boy	26,273	34,559	20,016	38,663	23,307	38,451	17,422	36,575	27,804	36,440
3-S3 Basic Platform	24,863	36,212	25,259	33,813	14,664	29,893	20,874	29,211	26,271	32,772
3-S3 Ins. Ref	23,807	34,775	31,444	34,875	29,057	31,354	32,686	31,402	26,222	34,464
3-S3 Basic Enclosed	18,934	32,881	26,677	32,727	26,098	30,637	25,030	30,791	23,249	29,124
3-S3 Pole Logging	15,750	33,499	34,835	38,006		29,689	27,329	28,146	23,390	27,981
3-S3 Grain Bodies	26,220	31,338	33,000		19,500	24,000	26,000	27,364	13,944	30,197
3-S3 Dump Truck	24,902	32,316	24,925	33,726	28,068	32,870	27,157	32,598	31,831	31,773
3-S3 Tank-Liquid	23,459	35,587	13,116	32,457	23,996	29,844	3,894	30,162	25,846	33,102
2-S1-2 Basic Platform	26,106	20,600		32,150			25,500		25,936	27,500
2-S1-2 Drop Frame	32,219	31,652		32,829	13,379	35,964	4,300	35,357	32,444	39,022
2-S1-2 Basic Enclosed	26,506	27,995	27,848	27,780	27,299	30,287	22,473	31,282	21,072	30,324
2-S1-2 Grain Bodies	24,200	25,194							22,114	23,606

Note: Some cells are based on a very sample of data. Accompanying table gives cell sample sizes.

**Sample Size in Regional Comparison of Mean Tare (Empty) Weights
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	7	8	6	3	18	5	14	10	8	13
3+2 Basic Platform	27	12	15	10	13	9	39	30	94	78
3+2 Basic Enclosed	15	4	1	4	2	6	14	14	10	5
3+2 Pole Logging	2	10	1	4	13	9	20	39	105	96
3+2 Grain Bodies	18	22	.	1	.	1	5	16	16	16
3+2 Dump Truck	41	49	30	60	16	8	28	29	138	230
3+2 Tank-Liquid	14	6	3	9	.	6	7	2	41	58
3-S2 Low Boy	235	260	200	225	187	207	140	148	234	286
3-S2 Basic Platform	1,020	1,004	555	548	595	637	684	750	841	1,125
3-S2 Livestock	170	200	7	13	18	33	59	49	78	148
3-S2 Ins. Non-ref	132	98	36	39	48	43	40	31	66	34
3-S2 Ins. Ref	848	1,130	214	403	329	487	333	404	363	810
3-S2 Drop Frame	150	154	60	87	39	47	42	55	30	77
3-S2 Basic Enclosed	1,522	2,402	845	1,279	866	1,249	1,143	1,260	451	598
3-S2 Pole Logging	13	46	25	39	116	242	128	247	297	318
3-S2 Auto Transport	73	118	30	20	66	27	40	44	23	33
3-S2 Grain Bodies	418	707	13	19	25	76	137	223	133	178
3-S2 Dump Truck	215	295	225	322	193	287	271	337	416	631
3-S2 Tank-Liquid	397	500	284	462	272	338	299	426	228	310
3-S2 Tank-Dry	85	134	54	71	82	120	59	102	52	58
3-S3 Low Boy	99	108	44	55	44	45	61	88	60	112
3-S3 Basic Platform	68	66	27	62	18	16	27	11	34	22
3-S3 Ins. Ref	12	9	6	4	9	5	3	7	19	9
3-S3 Basic Enclosed	29	33	19	21	26	22	31	13	28	19
3-S3 Pole Logging	2	10	32	82	.	8	3	5	3	19
3-S3 Grain Bodies	18	20	1	.	1	2	1	2	9	8
3-S3 Dump Truck	79	167	37	64	29	67	36	60	23	48
3-S3 Tank-Liquid	22	22	7	28	8	6	2	15	17	45
2-S1-2 Basic Platform	2	2	.	1	.	.	1	.	33	53
2-S1-2 Drop Frame	10	7	.	6	.	10	1	3	4	7
2-S1-2 Basic Enclosed	76	61	17	14	12	22	25	37	81	55
2-S1-2 Grain Bodies	3	7	.	.	.	.	.	.	19	11

Regional Comparison of Mean Average Loaded Weights by Vehicle Class/Body Type Combinations

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	51,467	50,852	60,776	68,047	60,430	53,918	46,989	55,527	40,744	64,365
3+2 Basic Platform	45,714	54,474	40,394	69,155	53,951	49,337	55,354	60,762	63,163	58,634
3+2 Basic Enclosed	59,905	70,396	80,000	68,272	64,971	66,234	60,931	67,134	48,360	45,328
3+2 Pole Logging	84,671	73,681	24,000	87,696	73,661	57,108	76,846	66,225	75,570	75,929
3+2 Grain Bodies	52,973	61,243		86,000		60,000	78,763	64,503	77,256	71,342
3+2 Dump Truck	62,091	55,796	48,462	52,601	41,721	42,985	66,291	63,320	69,460	63,919
3+2 Tank-Liquid	59,970	63,269	55,285	66,559		57,217	73,766	76,335	79,123	75,188
3-S2 Low Boy	62,148	60,392	67,957	67,181	62,345	61,599	66,411	60,190	66,557	64,295
3-S2 Basic Platform	69,956	69,706	71,279	68,355	68,625	68,685	70,022	69,682	69,238	65,617
3-S2 Livestock	71,718	69,452	77,091	71,856	73,097	73,515	72,617	69,827	72,222	73,016
3-S2 Ins. Non-ref	68,687	69,961	65,565	67,801	70,494	69,119	63,149	63,722	73,128	72,499
3-S2 Ins. Ref	73,319	72,045	69,814	69,678	71,889	71,541	72,201	71,108	71,468	71,119
3-S2 Drop Frame	57,883	57,411	58,917	57,861	57,462	55,056	55,808	58,183	58,843	58,894
3-S2 Basic Enclosed	65,860	65,278	65,187	65,235	64,620	66,563	64,732	66,172	64,320	64,508
3-S2 Pole Logging	77,967	73,336	75,970	72,539	72,804	74,160	76,943	75,211	76,210	76,783
3-S2 Auto Transport	70,374	73,684	67,662	65,801	67,746	71,169	66,786	71,031	69,455	73,786
3-S2 Grain Bodies	74,822	74,769	71,548	74,697	70,777	75,232	71,196	73,296	77,976	75,426
3-S2 Dump Truck	72,243	70,447	77,043	73,072	72,029	70,654	76,326	76,250	72,749	71,123
3-S2 Tank-Liquid	75,069	74,319	76,620	74,373	74,899	74,239	74,911	73,803	75,261	73,873
3-S2 Tank-Dry	75,662	76,253	77,150	73,479	74,833	74,699	77,252	72,137	82,847	77,833
3-S3 Low Boy	72,300	77,861	95,585	81,360	75,823	75,110	80,742	77,360	76,648	80,975
3-S3 Basic Platform	79,680	77,750	77,664	79,750	62,414	63,911	61,438	59,774	75,066	74,418
3-S3 Ins. Ref	62,291	76,342	64,887	55,506	75,291	75,399	78,628	71,169	71,662	74,755
3-S3 Basic Enclosed	60,996	63,023	70,065	62,435	70,610	65,852	60,753	68,019	64,491	64,450
3-S3 Pole Logging	82,500	86,989	92,467	91,447		79,056	79,148	73,302	82,450	81,562
3-S3 Grain Bodies	79,925	75,689	80,000	76,278	60,000	72,000	75,000	74,338	83,648	93,568
3-S3 Dump Truck	85,522	76,868	83,201	79,687	78,299	73,548	83,125	82,239	74,506	74,416
3-S3 Tank-Liquid	98,821	89,818	80,511	84,954	67,549	71,108	90,815	75,750	91,353	86,863
2-S1-2 Basic Platform	74,414	75,000		58,435			43,500		68,421	72,452
2-S1-2 Drop Frame	65,124	53,265		65,304	68,469	63,285	63,735	49,906	72,588	71,529
2-S1-2 Basic Enclosed	70,064	66,928	73,475	62,759	62,432	67,460	66,228	65,699	67,457	71,988
2-S1-2 Grain Bodies	85,500	83,179							76,388	79,385

Note: Some cells are based on a very sample of data. Accompanying table gives cell sample sizes.

**Sample Size in Regional Comparison of Mean Average Loaded Weights
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	7	12	6	5	18	10	14	12	8	20
3+2 Basic Platform	27	18	15	15	13	13	39	42	94	98
3+2 Basic Enclosed	15	5	1	5	2	8	14	19	10	8
3+2 Pole Logging	2	13	1	4	13	11	20	46	105	103
3+2 Grain Bodies	18	35	.	1	.	1	5	22	16	19
3+2 Dump Truck	41	66	30	79	16	25	28	41	138	264
3+2 Tank-Liquid	14	8	3	10	.	7	7	4	41	71
3-S2 Low Boy	235	348	200	290	187	269	140	207	234	348
3-S2 Basic Platform	1,020	1,176	555	700	595	759	684	887	841	1,306
3-S2 Livestock	170	213	7	13	19	33	59	57	78	163
3-S2 Ins. Non-ref	132	112	36	47	48	47	40	58	66	180
3-S2 Ins. Ref	848	1,269	214	475	329	565	333	469	363	1,033
3-S2 Drop Frame	150	190	62	105	39	58	42	72	30	88
3-S2 Basic Enclosed	1,522	2,907	845	1,680	866	1,585	1,143	1,675	451	813
3-S2 Pole Logging	13	49	25	42	116	270	128	271	297	326
3-S2 Auto Transport	73	127	30	21	66	30	40	47	23	37
3-S2 Grain Bodies	418	750	13	20	25	81	137	248	133	199
3-S2 Dump Truck	215	310	225	354	193	311	271	359	416	715
3-S2 Tank-Liquid	397	566	284	515	272	390	299	511	228	358
3-S2 Tank-Dry	85	149	54	76	82	125	59	119	52	65
3-S3 Low Boy	100	128	44	73	44	54	61	120	60	141
3-S3 Basic Platform	68	72	27	73	18	19	27	20	34	44
3-S3 Ins. Ref	12	17	6	8	9	7	3	8	19	27
3-S3 Basic Enclosed	29	47	19	40	26	36	31	27	28	49
3-S3 Pole Logging	2	10	32	88	.	10	3	7	3	22
3-S3 Grain Bodies	18	24	1	.	1	2	1	3	9	8
3-S3 Dump Truck	80	179	37	75	29	74	36	72	23	69
3-S3 Tank-Liquid	22	33	7	31	8	7	2	26	17	54
2-S1-2 Basic Platform	2	2	.	6	.	.	1	.	33	56
2-S1-2 Drop Frame	10	12	.	9	11	10	9	8	4	9
2-S1-2 Basic Enclosed	76	71	17	44	12	30	25	58	81	114
2-S1-2 Grain Bodies	3	8	.	.	.	.	.	.	19	11

**Regional Comparison of Percent of Trucks
Whose Overall Length is 65 Feet or More
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	0.00	20.17	0.00	80.07	0.00	0.00	0.00	17.45	9.25	5.56
3+2 Basic Platform	0.00	0.00	4.33	0.77	0.00	0.00	17.29	16.17	24.89	18.54
3+2 Basic Enclosed	41.65	0.00	0.00	42.27	0.00	20.86	24.64	40.69	4.72	23.35
3+2 Pole Logging	0.00	0.00	0.00	0.00	0.00	0.00	1.38	4.52	16.15	19.14
3+2 Grain Bodies	0.00	5.63		0.00		0.00	0.00	0.00	12.48	24.06
3+2 Dump Truck	4.47	0.28	0.00	0.25	0.00	0.00	15.54	4.81	5.20	5.29
3+2 Tank-Liquid	14.14	0.00	0.00	0.00		20.50	0.00	0.00	42.26	30.74
3-S2 Low Boy	6.49	22.53	4.24	8.51	8.22	10.96	12.58	12.72	21.07	16.54
3-S2 Basic Platform	14.04	24.98	7.41	13.53	6.33	10.26	15.71	23.84	20.07	21.57
3-S2 Basic Enclosed	21.11	37.06	9.06	14.69	7.65	22.83	19.32	28.84	29.07	23.99
3-S2 Livestock	14.60	25.07	27.48	22.25	11.67	14.83	37.04	38.90	27.45	23.00
3-S2 Ins. Non-ref	25.45	37.33	2.95	10.00	1.83	19.89	24.60	31.04	56.33	79.22
3-S2 Ins. Ref	29.15	38.60	9.23	23.31	15.13	30.80	19.21	39.25	28.14	39.04
3-S2 Drop Frame	17.60	31.79	22.77	13.37	26.20	31.23	23.74	26.90	27.62	41.44
3-S2 Basic Enclosed	1.55	0.00	1.58	9.39	5.65	6.84	8.09	9.65	16.78	7.95
3-S2 Pole Logging	1.55	0.00	1.58	9.39	5.65	6.84	8.09	9.65	16.78	7.95
3-S2 Auto Transport	79.77	94.32	16.80	63.09	28.72	79.64	79.72	93.23	92.57	93.10
3-S2 Grain Bodies	4.78	5.86	0.00	1.30	3.07	4.33	2.77	8.40	28.84	19.35
3-S2 Dump Truck	0.24	3.23	0.10	1.42	0.91	3.69	0.19	3.05	8.13	7.47
3-S2 Tank-Liquid	2.65	5.87	2.54	4.22	0.84	4.55	6.80	10.58	31.63	9.84
3-S2 Tank-Dry	8.05	7.51	0.22	6.69	0.00	6.53	8.10	9.69	32.97	6.31
3-S3 Low Boy	18.13	27.11	39.90	41.13	12.70	30.48	28.18	40.58	30.07	53.05
3-S3 Basic Platform	15.08	22.12	15.63	12.51	17.05	16.89	0.00	24.37	41.71	38.51
3-S3 Ins. Ref	9.61	76.73	37.16	23.07	10.77	10.29	68.59	40.20	0.90	34.12
3-S3 Basic Enclosed	27.70	45.26	21.72	40.72	10.98	15.53	5.67	21.44	35.92	32.34
3-S3 Pole Logging	0.00	8.04	20.75	17.97		4.28	0.00	5.11	40.83	58.31
3-S3 Grain Bodies	12.21	8.13	0.00	0.00	0.00	34.68	0.00	0.00	30.90	50.25
3-S3 Dump Truck	2.39	2.02	0.00	5.68	4.51	12.08	2.54	4.61	17.17	20.50
3-S3 Tank-Liquid	4.94	13.12		4.65	0.00	0.00	0.00	13.54	77.04	61.31
2-S1-2 Basic Platform	16.88	0.00		100.00			0.00		84.49	56.93
2-S1-2 Drop Frame	70.54	90.69		100.00	100.00	100.00	100.00	100.00	100.00	49.68
2-S1-2 Basic Enclosed	78.29	65.75	88.17	93.16	78.79	95.76	43.45	92.91	57.01	99.54
2-S1-2 Grain Bodies	66.67	22.43							60.84	35.07

Note: Some cells are based on a very sample of data. Accompanying table gives cell sample sizes.

**Sample Size in Regional Comparison of Percent of Trucks
Whose Overall Length is 65 Feet or More
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	7	12	6	5	18	11	14	12	8	20
3+2 Basic Platform	27	19	15	18	.	14	5	44	94	102
3+2 Basic Enclosed	15	5	1	6	2	8	14	20	10	10
3+2 Pole Logging	2	13	1	4	13	11	20	46	105	103
3+2 Grain Bodies	18	35	.	1	.	1	5	22	16	19
3+2 Dump Truck	41	67	30	79	16	26	28	41	138	266
3+2 Tank-Liquid	14	8	3	10	.	7	7	4	41	71
3-S2 Low Boy	235	351	200	291	187	273	140	211	234	353
3-S2 Basic Platform	1020	1181	555	701	595	762	684	892	841	1317
3-S2 Livestock	170	213	7	13	19	33	59	58	78	163
3-S2 Ins. Non-ref	132	112	36	47	48	47	40	60	66	180
3-S2 Ins. Ref	848	1273	214	476	329	568	333	470	363	1036
3-S2 Drop Frame	150	190	62	105	39	58	42	72	30	88
3-S2 Basic Enclosed	1522	2912	845	1689	866	1596	1143	1688	451	821
3-S2 Pole Logging	13	49	25	42	116	272	128	272	297	326
3-S2 Auto Transport	73	127	30	21	66	30	40	47	23	37
3-S2 Grain Bodies	418	752	13	20	25	81	137	251	133	200
3-S2 Dump Truck	215	310	225	354	193	313	271	361	416	721
3-S2 Tank-Liquid	397	569	284	516	272	392	299	512	228	361
3-S2 Tank-Dry	85	149	54	76	82	125	59	119	52	65
3-S3 Low Boy	100	128	44	73	44	55	61	121	60	150
3-S3 Basic Platform	68	81	27	73	18	19	27	20	34	44
3-S3 Ins. Ref	12	17	6	.	9	7	3	8	19	28
3-S3 Basic Enclosed	29	47	19	41	26	37	31	27	28	49
3-S3 Pole Logging	2	11	32	88	.	10	3	7	3	22
3-S3 Grain Bodies	18	24	1	3	1	3	1	3	9	8
3-S3 Dump Truck	80	180	37	75	11	74	9	72	4	69
3-S3 Tank-Liquid	22	36	7	31	8	7	2	27	17	57
2-S1-2 Basic Platform	2	2	.	6	.	.	1	.	33	58
2-S1-2 Drop Frame	10	12	.	9	11	10	9	8	4	9
2-S1-2 Basic Enclosed	76	71	17	44	12	30	25	58	81	114
2-S1-2 Grain Bodies	3	8	.	.	.	.	.	.	19	11

**Regional Comparison of Percent of Trucks
Whose Trailer Width is 102 inches or More
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	0.00	27.99	0.00	14.18	0.00	0.00	25.69	0.00	14.07	32.10
3+2 Basic Platform	13.75	2.69	8.09	8.76	13.52	3.71	10.34	9.64	0.23	8.12
3+2 Basic Enclosed	69.56	31.94	0.00	50.89	0.00	22.72	24.65	69.89	10.40	56.91
3+2 Pole Logging	0.00	40.75		0.00	0.00	10.23	0.00	31.59	0.00	31.27
3+2 Grain Bodies	0.00	25.68		0.00			0.00	16.12	0.00	15.24
3+2 Dump Truck	0.00	15.03	0.00	13.62	0.00	0.00	0.00	17.72	0.51	2.64
3+2 Tank-Liquid	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	1.20
3-S2 Low Boy	3.73	17.65	10.67	22.74	11.37	20.14	10.55	14.67	13.96	22.69
3-S2 Basic Platform	10.41	23.54	7.84	13.83	9.15	14.83	7.32	13.90	12.12	16.05
3-S2 Livestock	14.87	37.91	0.00	20.45	0.00	0.00	37.44	55.63	6.90	30.52
3-S2 Ins. Non-ref	48.24	58.60	3.57	21.72	30.04	27.07	60.30	66.02	54.47	73.69
3-S2 Ins. Ref	44.51	62.42	12.22	40.78	26.46	51.57	34.64	55.87	31.06	56.55
3-S2 Drop Frame	55.42	72.50	41.87	65.77	46.58	46.39	35.42	65.81	25.75	47.49
3-S2 Basic Enclosed	51.78	76.50	22.37	40.78	31.16	52.37	36.38	64.30	27.00	47.09
3-S2 Pole Logging	0.00	9.40	7.08	10.65	2.32	8.00	2.33	5.29	5.80	9.97
3-S2 Auto Transport	17.98	84.43	14.40	33.40	7.38	53.31	2.71	44.33	0.70	61.46
3-S2 Grain Bodies	1.14	7.16	0.00	1.30	4.88	3.08	10.41	17.21	0.79	5.96
3-S2 Dump Truck	0.90	12.04	1.35	6.76	0.57	2.92	1.83	20.54	4.41	14.65
3-S2 Tank-Liquid	2.58	9.52	1.59	3.96	5.19	8.48	3.56	10.44	3.43	5.70
3-S2 Tank-Dry	1.28	8.56	0.00	1.61	36.20	4.82	14.62	8.19	0.00	11.85
3-S3 Low Boy	5.85	41.39	18.15	49.39	1.80	43.19	16.04	32.63	13.51	32.23
3-S3 Basic Platform	0.00	21.41	11.06	19.33	17.53	6.33	0.87	39.69	5.81	29.67
3-S3 Ins. Ref	6.54	86.11	0.00	0.00	73.61	29.60	100.00	74.84	73.95	15.85
3-S3 Basic Enclosed	28.96	77.78	58.53	28.91	41.02	37.24	17.58	63.31	37.62	44.06
3-S3 Pole Logging	50.00	34.03	31.53	45.04		36.21	0.00	49.39	0.00	38.62
3-S3 Grain Bodies	0.00	2.87	0.00		0.00	0.00		0.00	0.00	10.12
3-S3 Dump Truck	0.00	9.88	4.36	7.71	0.00	38.07	18.04	13.48	6.71	8.84
3-S3 Tank-Liquid	11.83	11.62	0.00	23.40	0.00	0.00	0.00	8.68	4.33	5.99
2-S1-2 Basic Platform	0.00	100.00		82.26			0.00		15.78	13.43
2-S1-2 Drop Frame	48.91	63.01		100.00	50.07	100.00	100.00	78.16	100.00	67.80
2-S1-2 Basic Enclosed	78.68	92.30	100.00	59.41	100.00	92.65	82.59	75.63	72.79	92.88
2-S1-2 Grain Bodies	0.00	0.00							0.00	15.22

Note: Some cells are based on a very sample of data. Accompanying table gives cell sample sizes.

**Sample Size in Regional Comparison of Percent of Trucks
Whose Trailer Width is 102 inches or More
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	4	11	3	4	10	9	8	11	5	19
3+2 Basic Platform	13	16	6	13	9	12	19	36	62	91
3+2 Basic Enclosed	7	4	1	6	.	8	5	17	6	8
3+2 Pole Logging	1	11	.	4	5	8	13	34	59	94
3+2 Grain Bodies	9	32	.	1	.	.	2	19	12	19
3+2 Dump Truck	25	57	17	62	6	20	15	31	84	250
3+2 Tank-Liquid	13	7	2	9	.	6	4	2	34	64
3-S2 Low Boy	162	322	120	279	110	251	88	184	153	324
3-S2 Basic Platform	829	1104	447	646	462	697	528	813	668	1248
3-S2 Livestock	138	199	6	13	17	33	47	54	67	152
3-S2 Ins. Non-ref	112	106	33	46	41	43	38	58	61	179
3-S2 Ins. Ref	763	1213	189	459	296	541	298	445	324	989
3-S2 Drop Frame	138	168	52	98	26	54	38	69	29	83
3-S2 Basic Enclosed	1304	2816	684	1587	724	1501	1002	1510	333	775
3-S2 Pole Logging	10	45	13	40	63	238	79	228	208	298
3-S2 Auto Transport	66	125	27	21	61	28	34	47	16	34
3-S2 Grain Bodies	329	671	11	20	19	78	98	220	98	176
3-S2 Dump Truck	165	288	157	326	141	286	185	318	282	671
3-S2 Tank-Liquid	315	525	204	488	185	357	219	436	183	332
3-S2 Tank-Dry	72	137	46	72	69	121	51	109	41	50
3-S3 Low Boy	61	121	21	66	26	48	41	105	37	138
3-S3 Basic Platform	54	77	13	68	12	13	13	11	24	42
3-S3 Ins. Ref	9	17	4	7	6	7	2	8	18	22
3-S3 Basic Enclosed	20	40	11	.	21	33	26	16	22	42
3-S3 Pole Logging	2	11	20	84	.	7	1	5	1	21
3-S3 Grain Bodies	10	21	1	.	1	3	.	2	7	7
3-S3 Dump Truck	56	167	26	69	23	69	20	57	14	45
3-S3 Tank-Liquid	10	34	6	27	11	5	9	22	4	54
2-S1-2 Basic Platform	2	2	.	6	.	.	1	.	31	56
2-S1-2 Drop Frame	4	12	.	9	11	10	9	8	3	9
2-S1-2 Basic Enclosed	74	70	17	44	12	29	25	50	80	114
2-S1-2 Grain Bodies	2	8	.	.	.	.	.	.	17	11

**Regional Comparison of the Mean Annual VMT
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	4,828	6,481	7,505	52,093	12,993	4,702	19,895	20,193	17,771	14,664
3+2 Basic Platform	19,367	13,071	15,676	10,117	37,821	24,389	28,176	44,029	32,257	36,098
3+2 Basic Enclosed	82,491	68,377	62,608	61,207	83,333	57,078	44,605	63,650	38,141	50,940
3+2 Pole Logging	40,311	51,507	350	49,181	46,587	40,371	41,524	45,371	46,052	45,994
3+2 Grain Bodies	19,987	9,338	.	20,000	.	6,000	12,989	12,734	7,588	13,542
3+2 Dump Truck	31,039	25,575	13,243	17,272	10,983	9,409	49,452	38,542	36,672	31,325
3+2 Tank-Liquid	45,367	34,659	28,668	62,135	.	42,013	41,867	80,210	90,429	59,493
3-S2 Low Boy	24,599	31,240	20,080	16,116	21,833	21,505	28,496	17,164	24,267	19,655
3-S2 Basic Platform	62,413	68,440	55,656	49,824	57,937	55,532	61,754	64,641	55,584	50,217
3-S2 Livestock	74,320	68,557	79,219	80,135	70,187	46,970	83,617	73,779	33,435	51,476
3-S2 Ins. Non-ref	79,261	92,493	52,935	80,680	73,412	80,425	60,727	89,443	95,113	98,182
3-S2 Ins. Ref	91,777	99,828	67,162	82,287	90,298	89,536	93,836	96,574	77,479	87,478
3-S2 Drop Frame	65,976	65,090	52,478	62,318	62,833	66,636	61,290	69,102	61,878	74,311
3-S2 Basic Enclosed	79,059	87,813	64,223	65,520	75,946	76,715	83,834	83,977	65,409	60,128
3-S2 Pole Logging	40,804	44,195	44,294	43,664	46,214	55,546	52,494	53,323	48,874	44,341
3-S2 Auto Transport	53,690	54,750	46,072	70,364	62,202	63,803	59,145	49,442	68,561	66,676
3-S2 Grain Bodies	41,905	40,157	52,428	28,248	40,560	39,250	48,171	39,133	34,308	34,118
3-S2 Dump Truck	47,639	43,520	44,467	46,668	48,836	55,950	53,279	53,869	39,358	29,878
3-S2 Tank-Liquid	66,415	73,046	54,917	63,690	66,061	76,244	64,079	72,460	57,862	68,918
3-S2 Tank-Dry	73,279	74,372	63,051	66,455	65,828	65,491	60,775	71,183	82,978	49,613
3-S3 Low Boy	26,584	30,052	25,909	24,047	38,667	31,387	33,470	31,530	23,339	27,579
3-S3 Basic Platform	61,765	43,686	50,040	52,510	43,027	65,601	46,211	35,144	55,965	61,061
3-S3 Ins. Ref	53,534	101,163	89,893	85,180	49,130	84,450	120,000	116,641	85,372	64,006
3-S3 Basic Enclosed	68,941	61,730	82,628	67,385	86,653	92,015	77,340	91,539	76,049	51,023
3-S3 Pole Logging	34,605	50,590	50,240	52,237	.	57,828	57,013	40,558	82,462	53,198
3-S3 Grain Bodies	46,621	35,145	100,000	52,970	10,000	80,421	2,000	32,194	78,576	53,718
3-S3 Dump Truck	45,191	45,845	59,308	63,370	53,369	50,249	66,482	56,812	41,469	23,756
3-S3 Tank-Liquid	59,860	63,329	72,692	80,592	77,437	105,513	54,759	53,991	70,867	65,732
2-S1-2 Basic Platform	130,904	124,500	.	110,909	.	.	12,094	.	66,067	47,586
2-S1-2 Drop Frame	99,376	91,054	.	52,705	81,975	71,958	72,492	111,306	59,416	71,145
2-S1-2 Basic Enclosed	66,880	147,038	55,430	61,096	46,598	80,995	128,861	79,528	108,444	62,655
2-S1-2 Grain Bodies	102,187	52,178	.	.	.	.	.	.	56,139	61,353

Note: Some cells are based on a very sample of data. Accompanying table gives cell sample sizes.

**Sample Size in Regional Comparison of the Mean Annual VMT
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	7	12	6	5	18	11	14	12	8	20
3+2 Basic Platform	27	19	15	18	13	14	39	44	93	102
3+2 Basic Enclosed	15	5	1	6	2	8	14	20	10	10
3+2 Pole Logging	2	13	1	4	13	11	20	46	105	103
3+2 Grain Bodies	18	35	.	1	.	1	5	22	16	19
3+2 Dump Truck	41	67	30	79	16	26	28	41	138	266
3+2 Tank-Liquid	14	8	3	10	.	7	7	4	41	71
3-S2 Low Boy	235	351	200	291	187	273	140	211	234	353
3-S2 Basic Platform	1,020	1,181	555	701	595	762	684	892	841	1,317
3-S2 Livestock	170	213	7	13	19	33	59	58	78	163
3-S2 Ins. Non-ref	132	112	36	47	48	47	40	60	66	180
3-S2 Ins. Ref	848	1,273	214	476	329	568	333	470	363	1,036
3-S2 Drop Frame	150	190	62	105	39	58	42	72	30	88
3-S2 Basic Enclosed	1,522	2,912	845	1,689	866	1,596	1,142	1,688	451	821
3-S2 Pole Logging	13	49	25	42	116	272	128	272	297	326
3-S2 Auto Transport	73	127	30	21	66	30	40	47	23	37
3-S2 Grain Bodies	418	752	13	20	25	81	137	251	133	200
3-S2 Dump Truck	215	310	225	354	193	313	271	361	416	721
3-S2 Tank-Liquid	397	569	284	516	272	392	299	512	228	361
3-S2 Tank-Dry	85	149	54	76	82	125	59	119	52	65
3-S3 Low Boy	100	128	44	73	44	55	61	121	60	150
3-S3 Basic Platform	68	81	27	73	18	19	27	20	34	44
3-S3 Ins. Ref	12	17	6	8	9	7	3	8	19	28
3-S3 Basic Enclosed	29	47	19	41	26	37	31	27	28	49
3-S3 Pole Logging	2	11	32	88	.	10	3	7	3	22
3-S3 Grain Bodies	18	24	1	.	1	3	1	3	9	8
3-S3 Dump Truck	80	180	37	75	29	74	36	72	23	69
3-S3 Tank-Liquid	22	36	7	31	8	7	2	27	17	57
2-S1-2 Basic Platform	2	2	.	6	.	.	1	.	33	58
2-S1-2 Drop Frame	10	12	.	9	11	10	9	8	4	9
2-S1-2 Basic Enclosed	76	71	17	44	12	30	25	58	81	114
2-S1-2 Grain Bodies	3	8	.	.	.	.	.	.	19	11

**Regional Comparison of the Percent of VMT Driven on Trips
Whose Length are 200 Miles or More
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	0.00	0.00	0.48	92.22	26.96	0.00	17.00	19.44	5.44	3.27
3+2 Basic Platform	10.41	31.67	39.88	6.99	39.67	14.34	27.25	38.43	43.89	47.85
3+2 Basic Enclosed	86.29	89.78	25.00	57.85	0.00	15.74	53.32	53.01	25.89	65.08
3+2 Pole Logging	0.00	2.58	0.00	0.00	9.43	0.00	8.07	3.27	7.78	1.39
3+2 Grain Bodies	59.15	27.25	.	0.00	.	0.00	12.29	1.15	15.88	5.72
3+2 Dump Truck	1.91	0.27	0.18	2.58	2.02	0.00	5.17	0.00	1.52	0.85
3+2 Tank-Liquid	6.60	0.00	3.39	27.96	.	15.27	11.12	37.82	20.33	6.96
3-S2 Low Boy	42.37	63.32	20.02	22.67	12.36	17.94	54.42	25.74	21.43	17.06
3-S2 Basic Platform	69.35	73.84	40.96	52.33	45.05	49.76	64.48	65.91	55.80	59.43
3-S2 Livestock	45.97	55.37	67.77	69.45	55.91	37.67	56.95	66.01	48.39	59.13
3-S2 Ins. Non-ref	76.98	66.67	43.16	62.31	60.08	77.57	72.81	73.74	79.77	80.38
3-S2 Ins. Ref	81.50	85.64	56.89	67.98	76.05	80.71	76.53	85.51	67.12	77.50
3-S2 Drop Frame	90.36	88.60	72.99	75.48	68.21	73.71	91.12	78.49	93.73	85.05
3-S2 Basic Enclosed	71.02	79.43	51.56	55.07	62.19	67.07	67.31	75.54	56.67	52.33
3-S2 Pole Logging	23.98	10.97	4.42	19.40	1.39	2.45	3.54	7.67	3.53	2.75
3-S2 Auto Transport	65.98	53.20	27.93	81.08	56.26	72.14	74.19	67.80	51.65	49.57
3-S2 Grain Bodies	22.65	27.96	42.81	6.26	16.29	9.97	36.02	31.46	30.69	33.15
3-S2 Dump Truck	8.93	13.29	7.68	27.46	6.79	11.84	7.58	11.11	4.66	6.79
3-S2 Tank-Liquid	29.70	42.63	17.80	30.32	26.59	36.35	21.04	32.53	24.50	27.76
3-S2 Tank-Dry	35.52	31.60	34.93	26.55	39.95	14.84	24.13	38.72	27.19	33.77
3-S3 Low Boy	28.68	29.51	7.46	24.38	42.43	23.49	20.76	26.43	11.42	24.25
3-S3 Basic Platform	51.61	33.45	27.92	45.76	7.64	20.74	36.25	48.64	46.58	53.81
3-S3 Ins. Ref	58.79	92.22	65.08	98.21	86.94	98.00	94.45	100.00	92.92	66.07
3-S3 Basic Enclosed	70.57	59.47	63.10	70.18	62.68	79.31	59.54	77.80	50.05	70.74
3-S3 Pole Logging	27.67	38.53	3.69	20.99	.	0.00	20.80	0.00	75.58	9.22
3-S3 Grain Bodies	12.20	29.45	75.00	4.51	0.00	29.57	0.00	21.85	20.60	20.92
3-S3 Dump Truck	12.25	21.07	17.47	19.98	11.20	1.66	3.76	6.41	4.49	1.54
3-S3 Tank-Liquid	11.47	13.56	9.02	19.88	28.67	28.96	0.28	51.15	24.01	43.86
2-S1-2 Basic Platform	0.00	37.15	.	91.84	.	.	0.00	.	42.42	37.38
2-S1-2 Drop Frame	0.94	75.68	.	58.48	6.61	100.00	17.67	18.78	23.68	24.46
2-S1-2 Basic Enclosed	74.32	79.62	95.09	60.25	77.07	77.01	94.46	62.26	89.68	48.40
2-S1-2 Grain Bodies	17.17	35.83	.	.	.	.	.	.	29.74	17.01

Note: Some cells are based on a very sample of data. Accompanying table gives cell sample sizes.

**Sample Size in Regional Comparison of the Percent of VMT Driven on Trips
Whose Length are 200 Miles or More
by Vehicle Class/Body Type Combinations**

Config. Body Type	North Central		North East		South Atlantic		South Gulf		West	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
3+2 Low Boy	6	12	6	5	18	11	13	12	8	20
3+2 Basic Platform	27	19	14	18	13	14	39	44	92	102
3+2 Basic Enclosed	15	5	1	6	.	8	5	20	10	10
3+2 Pole Logging	2	13	1	4	12	11	20	46	105	103
3+2 Grain Bodies	18	35	.	1	.	1	5	22	16	19
3+2 Dump Truck	41	67	30	79	16	26	28	41	137	266
3+2 Tank-Liquid	14	8	2	10	.	7	7	4	41	71
3-S2 Low Boy	232	351	199	291	184	273	137	211	232	353
3-S2 Basic Platform	1,016	1,181	551	701	589	762	680	892	827	1,317
3-S2 Livestock	170	213	7	13	19	33	59	58	78	163
3-S2 Ins. Non-ref	132	112	36	47	48	47	40	60	66	180
3-S2 Ins. Ref	846	1,273	214	476	327	568	331	470	363	1,036
3-S2 Drop Frame	150	190	61	105	38	58	42	72	30	88
3-S2 Basic Enclosed	1,515	2,912	833	1,689	854	1,596	1,134	1,688	447	821
3-S2 Pole Logging	13	49	25	42	116	272	127	272	296	326
3-S2 Auto Transport	71	127	30	21	66	30	39	47	23	37
3-S2 Grain Bodies	415	752	13	20	25	81	135	251	133	200
3-S2 Dump Truck	215	310	224	354	190	313	270	361	413	721
3-S2 Tank-Liquid	396	569	283	516	267	392	297	512	227	361
3-S2 Tank-Dry	85	149	54	76	82	125	59	119	52	65
3-S3 Low Boy	99	128	44	73	44	55	61	121	59	150
3-S3 Basic Platform	68	81	27	73	18	19	26	20	34	44
3-S3 Ins. Ref	12	17	6	8	8	7	3	8	19	28
3-S3 Basic Enclosed	29	47	19	.	26	37	31	27	28	49
3-S3 Pole Logging	2	11	32	88	.	10	3	7	3	22
3-S3 Grain Bodies	18	24	1	3	1	3	1	3	9	8
3-S3 Dump Truck	80	180	37	75	29	74	36	72	23	69
3-S3 Tank-Liquid	22	36	7	31	11	7	9	27	4	57
2-S1-2 Basic Platform	2	2	.	6	.	.	1	.	33	58
2-S1-2 Drop Frame	10	12	.	9	11	10	9	8	4	9
2-S1-2 Basic Enclosed	76	71	17	44	12	30	25	58	80	114
2-S1-2 Grain Bodies	3	8	.	.	.	.	.	.	18	11

Appendix H

Data Analysis Methodology

Appendix H

Data Analysis Methodology

Creating External Subset Databases

Because the original TIUS data sets, *tius87.dat* and *ti92mdf.dat*, contained vehicles that were not of interest to this study, new databases containing a subset of the original TIUS data sets were created for analysis. For each year, two databases were created. One, which was called *bigtruck.dat*, that contained the *total fleet* of large vehicles as defined in the report, and another, which was called *vehgrp.dat*, that contained only the *5-axles or more truck fleet*.

Total Fleet Database BIGTRUCK.DAT

The total fleet database was subsets of the original TIUS data sets; however, it excluded vehicles with 2-axles and 4-tires (i.e., TIUS variable NAXLE=1), or vehicles with the following body types: pickup (BODTYP=1), sport utility (BODTYP=24), station wagon (BODTYP=25), and mini-van (BODTYP=26). Straight trucks pulling a 1-axle utility trailer or 1-axle trailer are contained in this database, but were excluded during analysis and the reporting process.

In distributing the total truck fleet into various configuration classes, the TIUS axle recode variable, AXLRE, was used to determine the class a vehicle should be placed in. The AXLRE variable was a variable created by the Bureau of the Census, based on survey data, to identify the configuration in which a vehicle travels most often in.

Configuration Classes and their Associated AXLRE Levels

<u>Configuration</u>	<u>AXLRE Code 1992</u>	<u>AXLRE Code 1987</u>
<i>Truck</i>		
2-axle	02	01
3-axle	03	02
4-axle	04	03
<i>Truck + Trailer</i>		
2+2	09, 20	4, 47, 53
2+*3	10, 21	5, 8, 48, 54
3+2	12, 23	6, 50, 56
3+*3	13, 24, 25	7, 9, 51, 57
*4+2	15, 26	10, 59
*4+*3	16, 27, 28	11, 12, 60
<i>Tractor - Semitrailer</i>		
2-S1	32	13
2-S2	33	14
2-*S3	34	18
3-S1	35	15
3-S2	36	16
3-*S3	37	19
4-S1	38	17
4-S2	39	20

<u>Configuration</u>	<u>AXLRE Code 1992</u>	<u>AXLRE Code 1987</u>
4-*S3	40	21
<i>Tractor - Doubles</i>		
2-S1-2	45	22
3-S1-2	49	24
2-S2-2	46	23
3-S2-2	50	27
Other @ *7-axle	47, 53	25, 26, 30
3-2S-3	51	28
Other @ *8-axle	48, 54	26, 28, 31
3-S2-4	52	29
Other @ *9-axle	55	32
Other @ *10-axle	56	33
<i>Tractor - Triples</i>		
2-S1-2-2	61	34
3-S1-2-2	65	38
Other	62-64, 66-72	35-37, 39-45

Notes: Configuration names: The first number indicates the number of axles on the straight truck or tractor truck. The second number indicates the number of axles on first trailer, while the third and fourth numbers represent number of axles on second and third trailers respectively.

The * next to a number indicates that the number of axles is equal to or greater than this number (e.g., *4+2 is the group for 4-axles or more straight trucks pulling one trailer with 2 axles.)

5-Axles or More Fleet Database VEHGRP.DAT

The 5-axles or more fleet database was a subset of the total fleet data set; however, they excluded vehicles whose total number of axles were less than 5 and straight trucks which hauled 1-axle utility trailers or 1-axle trailers (i.e., *4+1). In creating this database, a new variable, VEHGRP, was added to the variable list. VEHGRP defines the vehicle group that a registered vehicle belongs in. We defined eight vehicle groups: (1) Truck + Trailer at 5-axles, (2) Truck + Trailer at 6-axles, (3) 3-S2, (4) Tridem axle Semitrailer, (5) 4S1/S2, (6) STAA (2-S1-2), (7) Doubles at 6-axles or more, (8) Triples.

Vehicle Groups and their Associated AXLRE

<u>Vehicle Groups</u>	<u>AXLRE Code 1992</u>	<u>AXLRE Code 1987</u>
Truck + Trailer with 5-axles	10, 12, 21, 23	5, 6, 48, 50, 54, 56
Truck + Trailer with 6-axles or more	24-28, 13, 15, 16, 22	7-12, 51, 57, 59, 60
3-S2	36	16
Tractor-Semitrailer with Tridem Axles	34, 37, 40	18, 19, 21
4-S1/S2	38, 39	17, 20
STAA (2-S1-2)	45	22
Doubles @ 6-axles or more	46-56	23-33
Tractor - Triples	61-72	34-45

TIUS Variables of Interest

Vehicle Body Type

Each surveyed truck identified the body type that they traveled most often in. This is question 9 on the 1992 TIUS survey Form 9502 and question 8 on the 1987 TIUS survey Form 9502 . There were 27 body types to choose from.

<u>Code #</u>	<u>Body Type Description</u>
02	- van other than mini-van
03	- multi-stop or step van (including hi-cube or cutaway)
04	- platform with devices permanently mounted on bed of truck
05	- low boy (goose neck)—platform with depressed center
06	- basic platform—including flatbed, stake, etc.
07	- livestock truck (including livestock drop frame)
08	- insulated, non-refrigerated van
09	- insulated, refrigerated van
10	- drop frame van (including furniture van, etc.)
11	- open top van (including fruit)
12	- basic enclosed van (dry cargo)
13	- beverage truck
14	- utility truck—used in public utility operations
15	- winch or crane truck—lifting equipment (including roll-on, roll-off)
16	- wrecker—for motor vehicle towing or lifting
17	- pole, logging, pulpwood or pipe truck
18	- automobile transport
22	- service truck or craftsman's vehicle
23	- yard tractor—cab and chassis only used to spot trailers
27	- oilfield truck—service equipment permanently mounted on vehicle
29	- grain bodies (including low-side grain and hoppers, etc.)
30	- garbage truck
40	- dump truck (including belly or bottom dump)
50	- tank truck for liquids or gases
60	- tank truck for dry bulk
70	- concrete mixer
80	- other (trucks whose body type was not one of the previous types)

Major Body Type Groups and their Associated Body Types

In our analysis, we grouped the 27 body types into 11 major body type groups. The reason in part was due to the small sample of data available on vehicles with certain body types. The other category contains mostly body types which have small sample sizes.

Major Body Type**BODTYP Code 1992 and 1987**

Platform	05, 06
Van	03, 08-12
Auto Transport	18
Dump Truck	40
Grain Bodies	29
Garbage Truck	30
Livestock Truck	07
Pole, Logging Truck	17
Tank Truck for Dry Bulk	60
Tank Truck for Liquid or Gases	50
Other	04, 13-16, 22, 23, 27, 70, 80

Note: BODTYP=02 which is a van other than mini-van did not appear in the 5-axles or more fleet, so this body type was not placed into a major body type group.

Traffic Regions and Their Associated FIPST States

Because the number of records for the various configuration classes at the state level tends to be very small for most vehicle configuration, our report focused primarily on the regional level. The TIUS database did not contain a region variable, so in our analysis we had to create this variable based on the registration state (TIUS variable FIPST) given on the survey.

North Central		North East		South Atlantic		South Gulf		West	
STATE	FIPST								
Illinois	17	Connecticut	09	Delaware	10	Alabama	01	Alaska	02
Indiana	18	Maine	23	Dist. of Columbia	11	Arkansas	05	Arizona	04
Iowa	19	Massachusetts	25	Florida	12	Kentucky	21	California	06
Kansas	20	New Hampshire	33	Georgia	13	Louisiana	22	Hawaii	15
Michigan	26	Rhode Island	44	Maryland	24	Mississippi	28	Montana	30
Minnesota	27	Vermont	50	North Carolina	37	Oklahoma	40	Nevada	32
Missouri	29	New Jersey	34	South Carolina	45	Tennessee	47	Utah	49
Nebraska	31	New York	36	Virginia	51	Texas	48	Washington	53
North Dakota	38	Pennsylvania	42	West Virginia	54			Wyoming	56
Ohio	39							Idaho	16
South Dakota	46							New Mexico	35
Wisconsin	55							Oregon	41
								Colorado	08

Annual Vehicle Miles Traveled (VMT)

Each surveyed truck indicated their estimated annual vehicle miles traveled (i.e., VMT) for the year. This is question 15 on the 1992 TIUS survey Form 9502 and question 15 on the 1987 TIUS survey Form 9502. Its variable name in the TIUS database was ANNMIL for both 1992 and 1987.

Trailer Width

Each combination vehicle was asked to report the width of the trailer most often attached to it. This is question 12c on the 1992 TIUS survey Form 9502 and question 11b on the 1987 TIUS survey Form 9502. For 1992, the respondents had 4 width categories to choose from. The 1992 WIDTH variable levels were (1) 96 inches, (2) 102 inches, (3) More than 102 inches, or (4) Other. For 1987, the respondents were to give an estimate in inches of the width of their trailer. The 1987 width variable was called WTHTRL.

Some problems were noticed with the 1987 width data because estimates were given and because error correction was not performed on this variable by the Bureau of the Census. The first issue was that a number of combination vehicles reported a width of 0 inches. In our analysis, we omitted these widths; however, we footnote their absences. Another issue was that many respondents gave non-standard widths, for example 43, 95, or 97 inches. Based on our observations of the data, it appeared that a number of respondents who gave non-standard responses tended to be within two inches of a standard width (96 inches or 102 inches).

To compare the 1987 data with the 1992 data, the 1987 widths had to be categorized into the four groups. It was decided to only place values of 96 inches into the 96 inch group, of 102 inches into the 102 inch group, of more than 102 inches into the more than 102 inch group, and any other values, except zero values which was excluded from the analysis, into an other category.

Vehicle Length

Each vehicle was asked to report the overall length of their vehicle as it was most often operated. This is question 12a on the 1992 TIUS survey Form 9502 and question 11a on the 1987 TIUS survey Form 9502. For 1992, the respondents had 14 length categories from which to choose. This variable is called TOTLEN in the 1992 database. For 1987, respondents gave estimates in feet of the overall length of their vehicle. The variable was called LENGTH in the 1987 database. To compare the 1987 data with the 1992 data, the 1987 length values were grouped under the same categories headings that were presented on the 1992 survey. Unlike the width variable, we did not see many problems with categorizing the length data because the length category groupings specified a range of values not a specific length value.

% of VMT Outside Home Base State

Each vehicle was asked to report the percent of the year's mileage that was driven outside of the home base state where home base state refers to the state where the vehicle was usually parked when it was not on the road. (Note: Home base state and state of registration are not always the same.) This is question 18 on the 1992 TIUS survey Form 9502 and question 19 on the 1987 TIUS survey Form 9502.. In the database, this variable was called POBAST for both 1992 and 1987.

In our analysis, we were primarily interested in the number of vehicles who reported that all of their VMT was driven inside the home base state. Therefore, the home base graphs referred to in section 7 of the report and presented in Appendix E are counts of the number of vehicles at different levels of % of VMT outside of home base state. The most important information on these plots is the number of vehicles who report all their VMT is driven within their home base state. This is obtained by looking at the value plotted at 0% of VMT outside of home base state.

Range of Operation

Each vehicle was asked to report the percent of the year's mileage that was driven on various lengths of trips. This is question 19 on the 1992 TIUS survey Form 9502, and question 20 on the 1987 TIUS survey Form 9502. In 1992, there were 6 trip range levels identified; however, in 1987 only 4 ranges were identified. The following table gives the ranges, and the TIUS variable associated with each range.

Range	Off Road	0-50 Miles	50-100 Miles	100-200 Miles	200-500 Miles	> 500 Miles
1987	POFFRD	PLOCAL	PSHORT		PLONG	
1992	POFFRD	PLOCAL	PSHORT	PSMED	PLMED	PLONG

Before analyzing the data, we insured that the total% of VMT distributed across the various range levels totaled to 100% for each record. Data that totaled to 0 were ignored in the analysis. No correction was necessary for the 1992 because the Bureau had already done corrections to the records such that they totaled to 100%. For 1987, we had to correct records that did not total to 100%. For a 1987 record, the correction method first involved summing the% of VMT traveled across all 4 trip range groups. (Note: In SAS, we set a blank entry value to 0 before performing the summation.) If this sum did not equal 100, then each of the 4 range group values were divided by the total sum of all the trips in order to get a proportion of the VMT that each trip accounted for. To convert proportion to percentage, we multiplied these proportion by 100.

Since our analysis was interested in the distribution of a vehicle group's VMT across the various trip range levels, we had to convert the% of VMT units to VMT. This process involved dividing the% of VMT for a range by 100 to get a proportion of the VMT accounted for by this type of trip, then multiplying this value by annual miles traveled (e.g., for a given record, the VMT spent on a local trip would be calculated by the following formula:

$VMT(local)=PLOCAL*ANNMIL/100$).

Vehicle Weight

In our analysis, we calculated the mean empty, average, and maximum weight for various vehicle configurations. In deriving the means, some weight data was excluded from the analysis because it was felt to be invalid data based on our knowledge of general operational characteristics of the commercial vehicles. The restrictions are mentioned below.

TIUS Weight Variables. This is question 13 on the 1992 TIUS survey Form 9502 and question 12, 13, and 14 on the 1987 TIUS survey Form 9502.

Weight Variable	Variable Name 1992	Variable Name 1987
Empty (tare) Weight	EMPWT	EMPWGT
Average Weight	AVGWT	AVGWGT
Maximum Weight	MAXWT	MAXWGT

Restrictions on Weight Variables:

Weight Variable	Lower limit	Upper limit
Empty (tare) Weight	Exclude 20,000 and below	Exclude greater than 50,000
Average Weight	Exclude 20,000 and below	Exclude greater than 140,000
Maximum Weight	Exclude 20,000 and below	Exclude greater than 140,000

Payload Weight

In addition to the evaluation of the overall weight of a vehicle, we were interested in the weight of the load carried by a vehicle configuration. Since there was no question on the survey that directly addressed this issue, we derived an estimate of the average payload weight by subtracting the empty weight of the vehicle from its average weight. In addition, maximum payload weight was derived by subtracting the empty weight of the vehicle from its maximum weight. The previously mentioned restrictions on the weight variables applied in this analysis with an added condition that the reported empty weight had to be less than the reported average or maximum weight.

Commodities Hauled

Each respondent on the survey indicated the percent of their VMT that a particular commodity was hauled or that no commodities were hauled. This is question 28 on the 1992 TIUS survey Form 9502. The sum of the commodities should total to 100%. To evaluate the commodity data, the analysis has to be based on the actual VMT because % of VMT is not a valid unit of measure for analysis (i.e., 1% of VMT is not a common unit because each vehicle has a different annual VMT. For example, one vehicle's annual VMT may be 100,000 miles which means 1% of their VMT is 1,000 miles, while another vehicle's annual VMT is 30,000 miles which means 1% of their VMT is 300 miles).

In this report, only the commodity information from 1992 was evaluated. No comparison was done with the 1987 data because of differences in the formatting and wording of the question. The most noticeable difference was that no load was not included with the list of commodities.

Commodity Description	Variable 1992
No load — vehicle empty	PNOLOD
Live animals	LVANML
Fresh farm products	FARMPD
Processed foods and tobacco products	PRFOOD
Animal feed	ANFEED
Mining products	MINPRO
Building materials (gravel, sand, concrete, flat glass, etc.—except cut lumber)	BLDGMA
Logs and other forest products	LOGPRO
Lumber and fabricated wood products—except furniture	LUMBER
Paper and paper products	PAPER
Chemicals and/or drugs (including fertilizers, pesticides, cosmetics, paints, etc.)	CHEM
Petroleum and petroleum products (including paving and roofing materials)	PETROL
Plastics and/or and rubber products	PLASTK
Primary metal products—pipes, ingots, billets, sheets, etc.	PRIMTL
Fabricated metal products	FABMTL
Machinery—electrical or non-electrical and electronic	MACHNE
Transportation equipment (including complete vehicles) and parts	TEQUIP
Furniture (wood and non-wood) and/or hardware—not involved in household moving	FURN
Glass products	GLASS
Textiles and apparels—fibers, leather goods, carpets, clothing, etc.	TEXTIL
Miscellaneous products of manufacturing	MSCMFG
Moving of household and office furniture	MOVING
Craftsman's equipment - miscellaneous tools and/or parts for specialized use	TOOLS
Mixed cargo (including the delivery of small packages)	MXDCAR
Scrap (not for recycling), garbage, trash, septic tank waste	REFUSE
Industrial "waste" water	INDWTR
Hazardous waste (EPA manifest)	HAZEPA
Hazardous waste (non-EPA manifest)	HAXNEPA
Recyclable products	RECYCLE
Other	OTHPROD

Principal Product Hauled

Since no question on the survey directly asked the respondent what their principal product was that they hauled, the Bureau of the Census derived a truck's principal product (TIUS variable PRNPRO) from the commodities data. For each surveyed truck, they identified the commodity that was hauled the most in comparison to the other commodities, then they defined this commodity as the truck's principal product.

When using the principal product variable, there are some issues that one should be aware of. One can not assume that the identified principal product accounts for a majority (over 50%) of the vehicle's VMT. If a truck hauls a number of commodities, the principal product identified with it may be hauled for only 30% of the vehicle's VMT. Another issue has to do with the decision rule that the Bureau decided on to determine the principal product when a tie existed between a number of commodities. For example, if there was a tie between Processed Foods and Mixed Cargo, their rule may state that Processed Foods will be listed as the principal product. Depending on how these ties are decided upon, you can get very different results in your final analyses. For this reason, it is discouraged to use this variable except for possibly a preliminary examination of the commodity data.

Data Analysis of the 1987 TIUS

Creating External Subset Databases

Because the original TIUS data set, *tius87.dat*, contained vehicles that were not of interest to this study, a new database containing a subset of the original TIUS data was created for analysis. Two databases were created. One that contained the *total fleet* of large vehicles (which was called *bigtruck.dat*) as defined in the report (Section I), and another that contained only the *5-axles or more truck fleet* which was called *vehgrp.dat* (Section II).

Loading the External Databases

The information in the TIUS database is in ASCII format. The variables are column defined. The Data Dictionary that was provided with the TIUS documentation defines which variables are associated with which columns. This information is used to write the data input format statement used by SAS to read in the data.

Section III, IV, and V give the SAS code used to read in the different databases. Note that the computer pathnames will differ depending on where the files are located on your PC. After reading in a database, this database is stored in the working memory of the computer. Various procedures can be performed on this data set such as creating temporary subsets of the data for analysis, creating or redefining a variable, or generating statistics on the data.

Creating SAS Internal Subsets

During the analysis, temporary subsets of the data were created. Examples of temporary data sets included: a data set which defined the region that a vehicle was registered in (Section VI), or a data set containing only information on 3-S2s. By creating temporary data sets, you insure that nonrelevant data are not included. It simplifies the SAS procedure statements which are written to perform different analyzes. In addition, if you are running SAS for the PC, creating subsets will increase your processing time.

Expansion Factor

The TIUS database is just a statistical sample of the entire truck population. This small sample tries to characterize the larger population; however, it should be remembered that all statistics based on this sample are just estimates of the larger population characteristics. In order to make conclusions about the entire truck population based on this sample, each surveyed truck in the sample is associated with n -number of vehicles in the population. This is called the weighting factor or expansion factor, EXPFAC, for a record. This EXPFAC is not a constant number. The EXPFAC differs by state and vehicle type.

Simple Statistics

In this analysis, our focus was on determining the number of vehicles in a particular category of characteristics and on obtaining means of such characteristics as weight and VMT. Frequency tables were generated to indicate the number of vehicles in a category. Some of these frequency tables were imported into Microsoft's Excel program, and the data was plotted.

I. SAS Program to Create Subset Database of Large Vehicles Only (Referred to in the paper as the 1987 Total Fleet)

Data _null_;

* Comment - This program creates an external subset database, *bigtruck.dat*, from the original 1987 TIUS database, *tius87.dat*. This subset database excludes 2-axle 4-tire vehicles (NAXLES=1), and vehicles with the following body types: pick-up (BODTYP=1), sport utility (BODTYP=24), station wagon (BODTYP=25), and mini-van (BODTYP=26),. ;

* Comment - The decimal specifications for the variables EXPFAC and MPG were removed in the formatting information for copying purposes only. ;

Infile 'd:\tius87\tius87.dat' lrecl=424;

Input

LINKID 11. FIPST 2. SAMTYP 1. EXPFAC 6. MAKE 2. MDLYR 2. WHNACQ 2. OBTAIN 1. HOWLEA 1. HWLONG 1. TYPLEA1 1. TYPLEA2 1. TYPLEA3 1. TYPLEA4 1. TYPLEA5 1. TYPLEA6 1. TYPLEA7 1. STLOWN 1. OWNLES 1. DISPOZ 4. HOWRID 1. LEAOUT 1. HLSOUT 1. LLEOUT 1. TLSOUT1 1. TLSOUT2 1. TLSOUT3 1. TLSOUT4 1. TLSOUT5 1. TLSOUT6 1. TLSOUT7 1. BODTYP 2. LENGTH 3. EMPWGT 5. AVGWGT 6. MAXWGT 6. PCARSZ 3. PCARWT 3. NAXLES 1. LIFTAX 1. DRAXLS 1. VEHTYP 1. TRLATT 1. PCTPUL 3. AXONTU 1. LOADWT 5. LAXTRL 1. WTHTRL 3. SINGLE 1. DOUBLE 1. TRIPLE 1. STTRFT 1. UTLTRL 1. OTHTRL 1. PCNTNR 3. PPGIGY 3. CABTYP 1. ENGTYP 1. ENGSZE 1. HRSPWR 2. CID 2. BRAKES 1. AERODN 1. AXLRAT 1. ECOENG 1. REFLCT 1. RADIAL 1. GOVNOR 1. VARFAN 1. OTHFUL 1. PWRSTR 1. AIRCON 1. ENGRET 1. EVMS 1. EVIS 1. RECRDR 1. NAVSYS 1. FRNWH 1. GMSSELF 1. GMCOMP 1. GMDEAL 1. GMLEAS 1. GMGARG 1. GMDIST 1. GMNONE 1. GMOTHR 1. OVSELF 1. OVCOMP 1. OVDEAL 1. OVLEAS 1. OVGARG 1. OVDIST 1. OVNONE 1. OVOTHR 1. ANNMIL 6. LTMIL 7. MPG 3. BASTAT \$char2. MSAIO 1. POBAST 3. POFFRD 3. PLOCAL 3. PSHORT 3. PLONG 3. OPCLAS 1. PPTRAN 3. PBUS 3. PFORHR 3. ICCREG 1. OPTYP 1. PMOCAR 3. PINDEP 3. PLEASE 3. JURISD 1. PINTER 3. PINTRA 3. PLCAL 3. TYPCAR 1. PCONTR 3. PCOMON 3. PEXEMT 3. MAJUSE 2. HAZMAT 1. FLAMLQ 1. COMBLQ 1. CORRLQ 1. POISNBS 1. POISNBL 1. FLAMS 1. OXIDZS 1. FLMGAS 1. NFLGAS 1. POISNA 1. CORRSL 1. EXPLSV 1. BLSAGT 1. RADMAT 1. ORMABC 1. ORME 1. HMOTHR 1. PHAZMAT 1. LVANML 3. FARMPD 3. PRFOOD 3. MINPRO 3. BLDGMA 3. LOGPRO 3. LUMBER 3. PAPER 3. CHEM 3. PETROL 3. PLASTK 3. PRIMTL 3. FABMTL 3. MACHINE 3. TEQUIP 3. FURN 3. GLASS 3. TEXTIL 3. MSCMFG 3. MOVING 3. TOOLS 3. MXDCAR 3. REFUSE 3. INDWTR 3. HWASTE 3. OTHER 3. PNOLOD 3. PPSTRN 3. NONUSE 3. ACCDNT 1. NFATAL 1. BODINJ 1. PRPDAM 1. FLTSZE 1. AXLRE 2. PRNPRO 2. AREAOP 1. TIUGVW 2. VEHSZE 1. RI110 \$char1. RI111 \$char1. RI112 \$char1. RI113 \$char1. RI206 \$char1. RI207 \$char1. RI208 \$char1. RI209 \$char1. RI210 \$char1. RI211 \$char1. RI213 \$char1. RI311 \$char1. RI325 \$char1. RI326 \$char1. RI327 \$char1. RI334 \$char1. RI300 \$char1. RI307 \$char1. RI308 \$char1. RI309 \$char1. RI305 \$char1. RI304 \$char1. RI345 \$char1. RI341 \$char1. RI342 \$char1. RI400 \$char1. RI401 \$char1. RI402 \$char1. RI406 \$char1. RI408 \$char1. RI409 \$char1. RI410 \$char1. RI411 \$char1. RI412 \$char1. RI501 \$char1. RI506 \$char1. RI507 \$char1. RI508 \$char1. RI509 \$char1. RI510 \$char1. RI511 \$char1. RI512 \$char1. RI513 \$char1. RI514 \$char1. RI525 \$char1. RI552 \$char1. RI570 \$char1. RI526 \$char1. RI527 \$char1. RI528 \$char1. RI529 \$char1. RI530 \$char1. RI531 \$char1. RI532 \$char1. RI533 \$char1. RI534 \$char1. RI535 \$char1. RI536 \$char1. RI537 \$char1. RI538 \$char1. RI539 \$char1. RI540 \$char1. RI541 \$char1. RI542 \$char1. RI543 \$char1. RI544 \$char1. RI545 \$char1. RI546 \$char1. RI547 \$char1. RI548 \$char1. RI549 \$char1. RI550 \$char1. RI551 \$char1. RI328 \$char1. SPACES 3.;

File 'd:\tius87\bigtruck.dat' lrecl=424;

If naxles>1 and Bodtyp NE 1 and Bodtyp NE 24 and Bodtyp NE 25 and Bodtyp NE 26 then

put

LINKID 11. FIPST 2. SAMTYP 1. EXPFAC 6. MAKE 2. MDLYR 2. WHNACQ 2. OBTAIN 1. HOWLEA 1.
HWLONG 1. TYPLEA1 1. TYPLEA2 1. TYPLEA3 1. TYPLEA4 1. TYPLEA5 1. TYPLEA6 1. TYPLEA7 1.
STLOWN 1. OWNLES 1. DISPOZ 4. HOWRID 1. LEAOUT 1. HLSOUT 1. LLEOUT 1. TLSOUT1 1.
TLSOUT2 1. TLSOUT3 1. TLSOUT4 1. TLSOUT5 1. TLSOUT6 1. TLSOUT7 1. BODTYP 2. LENGTH 3.
EMPWGT 5. AVGWGT 6. MAXWGT 6. PCARSZ 3. PCARWT 3. NAXLES 1. LIFTAX 1. DRAXLS 1.
VEHTYP 1. TRLATT 1. PCTPUL 3. AXONTU 1. LOADWT 5. LAXTRL 1. WTHTRL 3. SINGLE 1.
DOUBLE 1. TRIPLE 1. STTRFT 1. UTLTRL 1. OTHTRL 1. PCNTNR 3. PPGIGY 3. CABTYP 1. ENGTYP 1.
ENGsze 1. HRSPWR 2. CID 2. BRAKES 1. AERODN 1. AXLRAT 1. ECOENG 1. REFLCT 1. RADIAL 1.
GOVNOR 1. VARFAN 1. OTHFUL 1. PWRSTR 1. AIRCON 1. ENGRET 1. EVMS 1. EVIS 1. RECRDR 1.
NAVSYS 1. FRNWH 1. GMSELF 1. GMCOMP 1. GMDEAL 1. GMLEAS 1. GMGARG 1. GMDIST 1.
GMNONE 1. GMOTHR 1. OVSELF 1. OVCOMP 1. OVDEAL 1. OVLEAS 1. OVGARG 1.
OVDIST 1. OVNONE 1. OVOTHR 1. ANNMIL 6. LTMIL 7. MPG 3. BASTAT \$char2. MSAIO 1. POBAST
3. POFFRD 3. PLOCAL 3. PSHORT 3. PLONG 3. OPCLAS 1. PPTRAN 3. PBUS 3. PFORHR 3. ICCREG 1.
OPTYP 1. PMOCAR 3. PINDEP 3. PLEASE 3. JURISD 1. PINTER 3. PINTRA 3. PLCAL 3. TYPCAR 1.
PCONTR 3. PCOMON 3. PEXEMT 3. MAJUSE 2. HAZMAT 1. FLAMLQ 1. COMBLQ 1. CORRLQ 1.
POISNBS 1. POISNBL 1. FLAMS 1. OXIDZS 1. FLMGAS 1. NFLGAS 1. POISNA 1.
CORRSL 1. EXPLSV 1. BLSAGT 1. RADMAT 1. ORMABC 1. ORME 1. HMOTHR 1. PHAZMAT 1.
LVANML 3. FARMPD 3. PRFOOD 3. MINPRO 3. BLDGMA 3. LOGPRO 3. LUMBER 3. PAPER 3. CHEM
3. PETROL 3. PLASTK 3. PRIMTL 3. FABMTL 3. MACHINE 3. TEQUIP 3. FURN 3. GLASS 3. TEXTIL 3.
MSCMFG 3. MOVING 3. TOOLS 3. MXDCAR 3. REFUSE 3. INDWTR 3. HWASTE 3. OTHER 3. PNOLOD
3. PPSTRN 3. NONUSE 3. ACCDNT 1. NFATAL 1. BODINJ 1. PRPDAM 1. FLTSZE 1. AXLRE 2. PRNPRO
2. AREAOP 1. TIUGVW 2. VEHSZE 1.;

Run;

II. SAS Program to Create Subset Database of the 1987 5-Axles or More Truck Fleet

Data _null_;

* Comment - This program creates an external subset database, *vehgrp.dat*, from the total fleet database, *bigtruck.dat*. This subset database excludes truck (or tractor) and/or trailer combinations whose total number of axles is less than 5 in addition to truck-trailer combinations where the trailer has 1-axle. ;

Infile 'd:\tius87\bigtruck.dat' lrecl=424;

Input

LINKID 11. FIPST 2. SAMTYP 1. EXPFAC 6. MAKE 2. MDLYR 2. WHNACQ 2. OBTAIN 1. HOWLEA 1. HWLONG 1. TYPLEA1 1. TYPLEA2 1. TYPLEA3 1. TYPLEA4 1. TYPLEA5 1. TYPLEA6 1. TYPLEA7 1. STLOWN 1. OWNLES 1. DISPOZ 4. HOWRID 1. LEAOUT 1. HLSOUT 1. LLEOUT 1. TLSOUT1 1. TLSOUT2 1. TLSOUT3 1. TLSOUT4 1. TLSOUT5 1. TLSOUT6 1. TLSOUT7 1. BODTYP 2. LENGTH 3. EMPWGT 5. AVGWGT 6. MAXWGT 6. PCARSZ 3. PCARWT 3. NAXLES 1. LIFTAX 1. DRAXLS 1. VEHTYP 1. TRLATT 1. PCTPUL 3. AXONTU 1. LOADWT 5. LAXTRL 1. WTHTRL 3. SINGLE 1. DOUBLE 1. TRIPLE 1. STTRFT 1. UTLTRL 1. OTHTRL 1. PCNTNR 3. PPGIGY 3. CABTYP 1. ENGTYP 1. ENGSZE 1. HRSPWR 2. CID 2. BRAKES 1. AERODN 1. AXLRAT 1. ECOENG 1. REFLCT 1. RADIAL 1. GOVNOR 1. VARFAN 1. OTHFUL 1. PWRSTR 1. AIRCON 1. ENGRET 1. EVMS 1. EVIS 1. RECRDR 1. NAVSYS 1. FRNWH 1. GMSELF 1. GMCOMP 1. GMDEAL 1. GMLEAS 1. GMGARG 1. GMDIST 1. GMNONE 1. GMOTHR 1. OVSELF 1. OVCOMP 1. OVDEAL 1. OVLEAS 1. OVGARG 1. OVDIST 1. OVNONE 1. OVOTHR 1. ANNMIL 6. LTMIL 7. MPG 3. BASTAT \$char2. MSAIO 1. POBAST 3. POFFRD 3. PLOCAL 3. PSHORT 3. PLONG 3. OPCLAS 1. PPTRAN 3. PBUS 3. PFORHR 3. ICCREG 1. OPTYP 1. PMOCAR 3. PINDEP 3. PLEASE 3. JURISD 1. PINTER 3. PINTRA 3. PLCAL 3. TYPCAR 1. PCONTR 3. PCOMON 3. PEXEMT 3. MAJUSE 2. HAZMAT 1. FLAMLQ 1. COMBLQ 1. CORRLQ 1. POISNBS 1. POISNBL 1. FLAMS 1. OXIDZS 1. FLMGAS 1. NFLGAS 1. POISNA 1. CORRSL 1. EXPLSV 1. BLSAGT 1. RADMAT 1. ORMABC 1. ORME 1. HMOTHR 1. PHAZMAT 1. LVANML 3. FARMPD 3. PRFOOD 3. MINPRO 3. BLDGMA 3. LOGPRO 3. LUMBER 3. PAPER 3. CHEM 3. PETROL 3. PLASTK 3. PRIMTL 3. FABMTL 3. MACHINE 3. TEQUIP 3. FURN 3. GLASS 3. TEXTIL 3. MSCMFG 3. MOVING 3. TOOLS 3. MXDCAR 3. REFUSE 3. INDWTR 3. HWASTE 3. OTHER 3. PNOLOD 3. PPSTRN 3. NONUSE 3. ACCDNT 1. NFATAL 1. BODINJ 1. PRPDAM 1. FLTSZE 1. AXLRE 2. PRNPRO 2. AREAOP 1. TIUGVW 2. VEHSZE 1.;

* Comment - Create a new variable, VEHGRP, to define the vehicle group that the registered vehicle belongs in. Use the AXLRE variable which defines the configuration that the vehicle travels in most often.

VEHGRP: (1) - Truck + Trailer at 5-axles, (2) - Truck + Trailer at 6-axles, (3) 3-S2, (4) Tridem axle Semitrailer, (5) 4S1/S2, (6) 2-S1-2, (7) Doubles at 6-axles or more, (8) triples. ;

If axlre=5 or axlre=6 or axlre=48 or axlre=50 or axlre=54 or axlre=56 then

VehGrp = 1;

If 6<axlre<13 or axlre=51 or axlre=57 or 58<axlre<61 then

VehGrp=2;

If axlre=16 then

VehGrp=3;

If axlre=19 or axlre=18 or axlre=21 then

VehGrp=4;

If axlre=17 or axlre=20 then

VehGrp=5;

If axlre=22 then

VehGrp=6;

If 22<axlre<34 then
VehGrp=7;
If 33<axlre<46 then
VehGrp=8;

File 'd:\tius87\vehgrp.dat' lrecl=424;

* Only copy 5-axles or more truck fleet records to the new database;

If 4<axlre<13 or axlre=48 or axlre=50 or axlre=54 or axlre=51 or 55<axlre<61 or 15<axlre<46 then

Put

LINKID 11. FIPST 2. SAMTYP 1. EXPFAC 6. MAKE 2. MDLYR 2. WHNACQ 2. OBTAIN 1. HOWLEA 1.
HWLONG 1. TYPLEA1 1. TYPLEA2 1. TYPLEA3 1. TYPLEA4 1. TYPLEA5 1. TYPLEA6 1. TYPLEA7 1.
STLOWN 1. OWNLES 1. DISPOZ 4. HOWRID 1. LEAOUT 1. HLSOUT 1. LLEOUT 1. TLSOUT1 1.
TLSOUT2 1. TLSOUT3 1. TLSOUT4 1. TLSOUT5 1. TLSOUT6 1. TLSOUT7 1. BODTYP 2. LENGTH 3.
EMPWGT 5. AVGWGT 6. MAXWGT 6. PCARSZ 3. PCARWT 3. NAXLES 1. LIFTAX 1. DRAXLS 1.
VEHTYP 1. TRLATT 1. PCTPUL 3. AXONTU 1. LOADWT 5. LAXTRL 1. WTHTRL 3. SINGLE 1.
DOUBLE 1. TRIPLE 1. STTRFT 1. UTLTRL 1. OTHTRL 1. PCNTNR 3. PPGIGY 3. CABTYP 1. ENGTYP 1.
ENGSZE 1. HRSPWR 2. CID 2. BRAKES 1. AERODN 1. AXLRAT 1. ECOENG 1. REFLCT 1. RADIAL 1.
GOVNOR 1. VARFAN 1. OTHFUL 1. PWRSTR 1. AIRCON 1. ENGRET 1. EVMS 1. EVIS 1. RECRDR 1.
NAVSYS 1. FRNWH 1. GMSELF 1. GMCOMP 1. GMDEAL 1. GMLEAS 1. GMGARG 1. GMDIST 1.
GMNONE 1. GMOTHR 1. OVSELF 1. OVCOMP 1. OVDEAL 1. OVLEAS 1. OVGARG 1.
OVDIST 1. OVNONE 1. OVOTHR 1. ANNMIL 6. LTMIL 7. MPG 3. BASTAT \$char2. MSAIO 1. POBAST
3. POFFRD 3. PLOCAL 3. PSHORT 3. PLONG 3. OPCLAS 1. PPTRAN 3. PBUS 3. PFORHR 3. ICCREG 1.
OPTYP 1. PMOCAR 3. PINDEP 3. PLEASE 3. JURISD 1. PINTER 3. PINTRA 3. PLCAL 3. TYPCAR 1.
PCONTR 3. PCOMON 3. PEXEMT 3. MAJUSE 2. HAZMAT 1. FLAMLQ 1. COMBLQ 1. CORRLQ 1.
POISNBS 1. POISNBL 1. FLAMS 1. OXIDZS 1. FLMGAS 1. NFLGAS 1. POISNA 1.
CORRSL 1. EXPLSV 1. BLSAGT 1. RADMAT 1. ORMABC 1. ORME 1. HMOTHR 1. PHAZMAT 1.
LVANML 3. FARMPD 3. PRFOOD 3. MINPRO 3. BLDGMA 3. LOGPRO 3. LUMBER 3. PAPER 3. CHEM
3. PETROL 3. PLASTK 3. PRIMTL 3. FABMTL 3. MACHINE 3. TEQUIP 3. FURN 3. GLASS 3. TEXTIL 3.
MSCMFG 3. MOVING 3. TOOLS 3. MXDCAR 3. REFUSE 3. INDWTR 3. HWASTE 3. OTHER 3. PNOLOD
3. PPSTRN 3. NONUSE 3. ACCDNT 1. NFATAL 1. BODINJ 1. PRPDAM 1. FLTSZE 1. AXLRE 2. PRNPRO
2. AREAOP 1. TIUGVW 2. VEHSZE 1. VEHGRP 2. ;

Run;

III. SAS Program to Load 1987 TIUS Database, TIUS87.DAT, for Analysis

Data TIUS;

* Comment - This program loads the database into the computer's working memory. After loading the database, different data analysis procedures can be performed on the data. ;

Infile 'd:\tius87\tius87.dat' lrecl=424;

Input

LINKID 11. FIPST 2. SAMTYP 1. EXPFAC 6.2 MAKE 2. MDLYR 2. WHNACQ 2. OBTAIN 1. HOWLEA 1. HWLONG 1. TYPLEA1 1. TYPLEA2 1. TYPLEA3 1. TYPLEA4 1. TYPLEA5 1. TYPLEA6 1. TYPLEA7 1. STLOWN 1. OWNLES 1. DISPOZ 4. HOWRID 1. LEAOUT 1. HLSOUT 1. LLEOUT 1. TLSOUT1 1. TLSOUT2 1. TLSOUT3 1. TLSOUT4 1. TLSOUT5 1. TLSOUT6 1. TLSOUT7 1. BODTYP 2. LENGTH 3. EMPWGT 5. AVGWGT 6. MAXWGT 6. PCARSZ 3. PCARWT 3. NAXLES 1. LIFTAX 1. DRAXLS 1. VEHTYP 1. TRLATT 1. PCTPUL 3. AXONTU 1. LOADWT 5. LAXTRL 1. WTHTRL 3. SINGLE 1. DOUBLE 1. TRIPLE 1. STTRFT 1. UTLTRL 1. OTHTRL 1. PCNTNR 3. PPGIGY 3. CABTYP 1. ENGTYP 1. ENGSZE 1. HRSPWR 2. CID 2. BRAKES 1. AERODN 1. AXLRAT 1. ECOENG 1. REFLCT 1. RADIAL 1. GOVNOR 1. VARFAN 1. OTHFUL 1. PWRSTR 1. AIRCON 1. ENGRET 1. EVMS 1. EVIS 1. RECRDR 1. NAVSYS 1. FRNWH 1. GMSELF 1. GMCOMP 1. GMDEAL 1. GMLEAS 1. GMGARG 1. GMDIST 1. GMNONE 1. GMOTHR 1. OVSELF 1. OVCOMP 1. OVDEAL 1. OVLEAS 1. OVGARG 1. OVDIST 1. OVNONE 1. OVOTHR 1. ANNMIL 6. LTML 7. MPG 3.1 BASTAT \$char2. MSAIO 1. POBAST 3. POFFRD 3. PLOCAL 3. PSHORT 3. PLONG 3. OPCLAS 1. PPTRAN 3. PBUS 3. PFORHR 3. ICCREG 1. OPTYP 1. PMOCAR 3. PINDEP 3. PLEASE 3. JURISD 1. PINTER 3. PINTRA 3. PLCAL 3. TYPCAR 1. PCONTR 3. PCOMON 3. PEXEMT 3. MAJUSE 2. HAZMAT 1. FLAMLQ 1. COMBLQ 1. CORRLQ 1. POISNBS 1. POISNBL 1. FLAMS 1. OXIDZS 1. FLMGAS 1. NFLGAS 1. POISNA 1. CORRSL 1. EXPLSV 1. BLSAGT 1. RADMAT 1. ORMABC 1. ORME 1. HMOTHR 1. PHAZMAT 1. LVANML 3. FARMPD 3. PRFOOD 3. MINPRO 3. BLDGMA 3. LOGPRO 3. LUMBER 3. PAPER 3. CHEM 3. PETROL 3. PLASTK 3. PRIMTL 3. FABMTL 3. MACHINE 3. TEQUIP 3. FURN 3. GLASS 3. TEXTIL 3. MSCMFG 3. MOVING 3. TOOLS 3. MXDCAR 3. REFUSE 3. INDWTR 3. HWASTE 3. OTHER 3. PNOLOD 3. PPSTRN 3. NONUSE 3. ACCDNT 1. NFATAL 1. BODINJ 1. PRPDAM 1. FLTSZE 1. AXLRE 2. PRNPRO 2. AREAOP 1. TIUGVW 2. VEHSZE 1. RI110 \$char1. RI111 \$char1. RI112 \$char1. RI113 \$char1. RI206 \$char1. RI207 \$char1. RI208 \$char1. RI209 \$char1. RI210 \$char1. RI211 \$char1. RI213 \$char1. RI311 \$char1. RI325 \$char1. RI326 \$char1. RI327 \$char1. RI334 \$char1. RI300 \$char1. RI307 \$char1. RI308 \$char1. RI309 \$char1. RI305 \$char1. RI304 \$char1. RI345 \$char1. RI341 \$char1. RI342 \$char1. RI400 \$char1. RI401 \$char1. RI402 \$char1. RI406 \$char1. RI408 \$char1. RI409 \$char1. RI410 \$char1. RI411 \$char1. RI412 \$char1. RI501 \$char1. RI506 \$char1. RI507 \$char1. RI508 \$char1. RI509 \$char1. RI510 \$char1. RI511 \$char1. RI512 \$char1. RI513 \$char1. RI514 \$char1. RI525 \$char1. RI552 \$char1. RI570 \$char1. RI526 \$char1. RI527 \$char1. RI528 \$char1. RI529 \$char1. RI530 \$char1. RI531 \$char1. RI532 \$char1. RI533 \$char1. RI534 \$char1. RI535 \$char1. RI536 \$char1. RI537 \$char1. RI538 \$char1. RI539 \$char1. RI540 \$char1. RI541 \$char1. RI542 \$char1. RI543 \$char1. RI544 \$char1. RI545 \$char1. RI546 \$char1. RI547 \$char1. RI548 \$char1. RI549 \$char1. RI550 \$char1. RI551 \$char1. RI328 \$char1. SPACES 3.;

Run;

IV. SAS Program to Load 1987 Total Fleet Database, BIGTRUCK.DAT, for Analysis

Data TIUS;

* Comment - This program loads the database into the computer's working memory. After loading the database, different data analysis procedures can be performed on the data. ;

Infile 'd:\tius87\bigtruck.dat' lrecl=424;

Input

LINKID 11. FIPST 2. SAMTYP 1. EXPFAC 6.2 MAKE 2. MDLYR 2. WHNACQ 2. OBTAIN 1. HOWLEA 1.
HWLONG 1. TYPLEA1 1. TYPLEA2 1. TYPLEA3 1. TYPLEA4 1. TYPLEA5 1. TYPLEA6 1. TYPLEA7 1.
STLOWN 1. OWNLES 1. DISPOZ 4. HOWRID 1. LEAOUT 1. HLSOUT 1. LLEOUT 1. TLSOUT1 1.
TLSOUT2 1. TLSOUT3 1. TLSOUT4 1. TLSOUT5 1. TLSOUT6 1. TLSOUT7 1. BODTYP 2. LENGTH 3.
EMPWGT 5. AVGWGT 6. MAXWGT 6. PCARSZ 3. PCARWT 3. NAXLES 1. LIFTAX 1. DRAXLS 1.
VEHTYP 1. TRLATT 1. PCTPUL 3. AXONTU 1. LOADWT 5. LAXTRL 1. WTHTRL 3. SINGLE 1.
DOUBLE 1. TRIPLE 1. STTRFT 1. UTLTRL 1. OTHTRL 1. PCNTNR 3. PPGIGY 3. CABTYP 1. ENGTYP 1.
ENGSZE 1. HRSPWR 2. CID 2. BRAKES 1. AERODN 1. AXLRAT 1. ECOENG 1. REFLCT 1. RADIAL 1.
GOVNOR 1. VARFAN 1. OTHFUL 1. PWRSTR 1. AIRCON 1. ENGRET 1. EVMS 1. EVIS 1. RECRDR 1.
NAVSYS 1. FRNWH 1. GMSELF 1. GMCOMP 1. GMDEAL 1. GMLEAS 1. GMGARG 1. GMDIST 1.
GMNONE 1. GMOTHR 1. OVSELF 1. OVCOMP 1. OVDEAL 1. OVLEAS 1. OVGARG 1.
OVDIST 1. OVNONE 1. OVOTHR 1. ANNMIL 6. LTMIL 7. MPG 3.1 BASTAT \$char2. MSAIO 1.
POBAST 3. POFFRD 3. PLOCAL 3. PSHORT 3. PLONG 3. OPCLAS 1. PPTRAN 3. PBUS 3. PFORHR 3.
ICCREG 1. OPTYP 1. PMOCAR 3. PINDEP 3. PLEASE 3. JURISD 1. PINTER 3. PINTRA 3. PLCAL 3.
TYPCAR 1. PCONTR 3. PCOMON 3. PEXEMT 3. MAJUSE 2. HAZMAT 1. FLAMLQ 1. COMBLQ 1.
CORRLQ 1. POISNBS 1. POISNBL 1. FLAMS 1. OXIDZS 1. FLMGAS 1. NFLGAS 1. POISNA 1.
CORRSL 1. EXPLSV 1. BLSAGT 1. RADMAT 1. ORMABC 1. ORME 1. HMOTHR 1. PHAZMAT 1.
LVANML 3. FARMPD 3. PRFOOD 3. MINPRO 3. BLDGMA 3. LOGPRO 3. LUMBER 3. PAPER 3. CHEM
3. PETROL 3. PLASTK 3. PRIMTL 3. FABMTL 3. MACHINE 3. TEQUIP 3. FURN 3. GLASS 3. TEXTIL 3.
MSCMFG 3. MOVING 3. TOOLS 3. MXDCAR 3. REFUSE 3. INDWTR 3. HWASTE 3. OTHER 3. PNOLOD
3. PPSTRN 3. NONUSE 3. ACCDNT 1. NFATAL 1. BODINJ 1. PRPDAM 1. FLTSZE 1. AXLRE 2. PRNPRO
2. AREAOP 1. TIUGVW 2. VEHSZE 1.;

Run;

V. SAS Program to Load 1987 5-Axles or More Truck Fleet Database, VEHGRP.DAT, for Analysis

Data TIUS;

* Comment - This program loads the database into the computer's working memory. After loading the database, different data analysis procedures can be performed on the data. ;

File 'd:\tius87\vehgrp.dat' lrecl=424;

Input

LINKID 11. FIPST 2. SAMTYP 1. EXPFAC 6.2 MAKE 2. MDLYR 2. WHNACQ 2. OBTAIN 1. HOWLEA 1. HWLONG 1. TYPLEA1 1. TYPLEA2 1. TYPLEA3 1. TYPLEA4 1. TYPLEA5 1. TYPLEA6 1. TYPLEA7 1. STLOWN 1. OWNLES 1. DISPOZ 4. HOWRID 1. LEAOUT 1. HLSOUT 1. LLEOUT 1. TLSOUT1 1. TLSOUT2 1. TLSOUT3 1. TLSOUT4 1. TLSOUT5 1. TLSOUT6 1. TLSOUT7 1. BODTYP 2. LENGTH 3. EMPWGT 5. AVGWGT 6. MAXWGT 6. PCARSZ 3. PCARWT 3. NAXLES 1. LIFTAX 1. DRAXLS 1. VEHTYP 1. TRLATT 1. PCTPUL 3. AXONTU 1. LOADWT 5. LAXTRL 1. WTHTRL 3. SINGLE 1. DOUBLE 1. TRIPLE 1. STTRFT 1. UTLTRL 1. OTHTRL 1. PCNTNR 3. PPGIGY 3. CABTYP 1. ENGTYP 1. ENGSZE 1. HRSPPWR 2. CID 2. BRAKES 1. AERODN 1. AXLRAT 1. ECOENG 1. REFLCT 1. RADIAL 1. GOVNOR 1. VARFAN 1. OTHFUL 1. PWRSTR 1. AIRCON 1. ENGRET 1. EVMS 1. EVIS 1. RECRDR 1. NAVSYS 1. FRNWH 1. GMSELF 1. GMCOMP 1. GMDEAL 1. GMLEAS 1. GMGARG 1. GMDIST 1. GMNONE 1. GMOTHR 1. OVSELF 1. OVCOMP 1. OVDEAL 1. OVLEAS 1. OVGARG 1. OVDIST 1. OVNONE 1. OVOTHR 1. ANNMIL 6. LTMIL 7. MPG 3.1 BASTAT \$char2. MSAIO 1. POBAST 3. POFPRD 3. PLOCAL 3. PSHORT 3. PLONG 3. OPCLAS 1. PPTRAN 3. PBUS 3. PFORHR 3. ICCREG 1. OPTYP 1. PMOCAR 3. PINDEP 3. PLEASE 3. JURISD 1. PINTER 3. PINTRA 3. PLCAL 3. TYPCAR 1. PCONTR 3. PCOMON 3. PEXEMT 3. MAJUSE 2. HAZMAT 1. FLAMLQ 1. COMBLQ 1. CORRLQ 1. POISNBS 1. POISNBL 1. FLAMS 1. OXIDZS 1. FLMGAS 1. NFLGAS 1. POISNA 1. CORRSL 1. EXPLSV 1. BLSAGT 1. RADMAT 1. ORMABC 1. ORME 1. HMOTHR 1. PHAZMAT 1. LVANML 3. FARMPD 3. PRFOOD 3. MINPRO 3. BLDGMA 3. LOGPRO 3. LUMBER 3. PAPER 3. CHEM 3. PETROL 3. PLASTK 3. PRIMTL 3. FABMTL 3. MACHINE 3. TEQUIP 3. FURN 3. GLASS 3. TEXTIL 3. MSCMFG 3. MOVING 3. TOOLS 3. MXDCAR 3. REFUSE 3. INDWTR 3. HWASTE 3. OTHER 3. PNOLOD 3. PPSTRN 3. NONUSE 3. ACCDNT 1. NFATAL 1. BODINJ 1. PRPDAM 1. FLTSZE 1. AXLRE 2. PRNPRO 2. AREAOP 1. TIUGVW 2. VEHSZE 1. VEHGRP 2. ;

Run;

VI. SAS Code to Create a Region Variable for Data Analysis

* Comment - Load database first;

* Create a temporary SAS dataset, *Regions*, from the *TIUS* database (where *TIUS* refers to the data set loaded into memory) that will contain the new variable *REGION* ;

Data Regions;

Set TIUS;

If 16<FIPST<21 or FIPST=26 or FIPST=27 or FIPST=29 or FIPST=31 or FIPST=38 or FIPST=39
or FIPST=46 or FIPST=55 then
REGION='NC';

Else If FIPST=9 or FIPST=23 or FIPST=25 or FIPST=33 or FIPST=44 or FIPST=50
or FIPST=34 or FIPST=36 or FIPST=42 then
REGION='NE';

Else If FIPST=10 or FIPST=11 or FIPST=12 or FIPST=13 or FIPST=24 or FIPST=37
or FIPST=45 or FIPST=51 or FIPST=54 then
REGION='SA';

Else If FIPST=1 or FIPST=5 or FIPST=21 or FIPST=22 or FIPST=28 or FIPST=40
or FIPST=47 or FIPST=48 then
REGION='SG';

Else If FIPST=2 or FIPST=4 or FIPST=6 or FIPST=8 or FIPST=15 or FIPST=30
or FIPST=32 or FIPST=49 or FIPST=53 or FIPST=56 or FIPST=16 or FIPST=35 or FIPST=41 then
REGION='W';

Run;

VII. SAS Code Used to Create Frequency Tables and to Generate Means

Frequency Tables for Population

Frequency tables were generated in our analysis to determine the number of vehicles in a particular category. For example, a table which gives the number of vehicles in the nation that are in each of the 8 vehicle groups can be generated by using the frequency procedure in SAS.

General Format

```
Proc freq data=dataset name;  
Table Variable1*Variable2*Variable3;  
Weight Variable;  
Run;
```

Example of SAS Code to Generate Table of Number of Vehicles in Each Vehicle Group for Each Region

```
Proc freq data=Regions;  
Table VEHGRP*REGION;  
Weight EXPFAC;  
Run;
```

Frequency Tables for Sample

Frequency tables were also derived to determine the number of data records available for a particular category. The SAS code is similar to the previous description; however, the 'Weight EXPFAC' statement, which indicates the number of vehicles in the population that one record represents, is removed. For example, if we wanted to know the number of records used to derive the table of the number of vehicles in the nation that are in each of the 8 vehicle groups for each region, we would generate a frequency table based on the unweighted sample data.

Example of SAS Code to Generate Table of Number of Sample Records in each Vehicle Group for Each Region

```
Proc freq data=Regions;  
Table VEHGRP*REGION;  
Run;
```

Means and Standard Deviation

In summarizing the general characteristics of a certain vehicle type in the truck population, the mean and standard deviation are useful measures. There are two procedures in SAS for generating means: the Proc Means and the Proc GLM procedures. In each procedure, the 'Freq EXPFAC' statement is added in order to weight the sample data in order to reflect the population. For example, if a record has 40,000 miles as its annual miles travelled and its EXPFAC=10, then this record states that 10 vehicles in the population have annual VMTs of 40,000 miles.

One should be aware that in both these procedures the 'Freq EXPFAC' statement will only accept integer values. If a real number is given, the procedure will only use the integer part of the number. EXPFAC is a real number with values out to the two decimal places. In our analysis, we did not want the EXPFAC to be truncated, so we multiplied the EXPFAC for every record by 100, in order to shift the information in the two decimal places over into the integer part of

the number. Then we generated the means using this new EXPFAC. In the results, the population sizes associated with the means will be off by a factor of 100. Dividing the population sizes by 100 will give the true sizes.

General Format for Proc Sort Before running the Proc Means procedure, the Proc Sort procedure may have to be used to reorganize the data for analysis.

```
Proc Sort data=dataset name;  
  By Variable list;  
Run;
```

General Format for Proc Means

```
Proc Means data=dataset name;  
  Var Variable list;  
  By Variable list;  
  Freq Variable;  
Run;
```

Example of Proc Means Procedure to Generate Mean VMT for Each Body Type Group

```
Proc Sort data=TIUS;  
  By BODTYP;  
Proc Means data=TIUS;  
  Variable ANNMIL;  
  By BODTYP;  
  Freq EXPFAC;  
Run;
```

General Format for Proc GLM

```
Proc GLM data=dataset name;  
  Class Variables;  
  Model Dependent-Variable = Independent-Variables;  
  Means Variables;  
  Freq Variable;  
Run;
```

Example of Proc GLM procedure to Generate Mean VMT for Each Body Type Group

```
Proc GLM data=TIUS;  
  Class BODTYP;  
  Model ANNMIL = BODTYP;  
  Means BODTYP;  
  Freq EXPFAC;  
Run;
```

Data Analysis of the 1992 TIUS

Creating External Subset Databases

Because the original TIUS data set, ti92mdf.dat, contained vehicles that were not of interest to this study, a new database containing a subset of the original TIUS data was created for analysis. Two databases were created. One that contained the *total fleet* of large vehicles (which was called bigtruck.dat) as defined in the report (Section I), and another that contained only the *5-axles or more truck fleet* which was called vehgrp.dat (Section II).

Loading the External Databases

The information in the TIUS database is in ASCII format. The variables are column defined. The Data Dictionary that was provided with the TIUS documentation defines which variables are associated with which columns. This information is used to write the data input format statement used by SAS to read in the data.

Section III, IV, and V give the SAS code used to read in the different databases. Note that the computer pathnames will differ depending on where the files are located on your PC. After reading in a database, this database is stored in the working memory of the computer. Various procedures can be performed on this data set such as creating temporary subsets of the data for analysis, creating or redefining a variable, or generating statistics on the data.

Creating SAS Internal Subsets

During the analysis, temporary subsets of the data were created. Examples of temporary data sets included: a data set which defined the region that a vehicle was registered in (Section VI), or a data set containing only information on 3-S2s. By creating temporary data sets, you insure that nonrelevant data are not included. It simplifies the SAS procedure statements which are written to perform different analyzes. In addition, if you are running SAS for the PC, creating subsets will increase your processing time.

Expansion Factor

The TIUS database is just a statistical sample of the entire truck population. This small sample tries to characterize the larger population; however, it should be remembered that all statistics based on this sample are just estimates of the larger population characteristics. In order to make conclusions about the entire truck population based on this sample, each surveyed truck in the sample is associated with n -number of vehicles in the population. This is called the weighting factor or expansion factor, EXPANF, for a record. This EXPANF is not a constant number. The EXPANF differs by state and vehicle type.

Simple Statistics

In this analysis, our focus was on determining the number of vehicles in a particular category of characteristics and on obtaining means of such characteristics as weight and VMT. Frequency tables were generated to indicate the number of vehicles in a category. Some of these frequency tables were imported into Microsoft's Excel program, and the data was plotted.

I. SAS Program to Create Subset Database of Large Vehicles Only (Referred to in the paper as the 1992 Total Fleet)

Data _Null_;

* Comment - This program creates an external subset database, *bigtruck.dat*, from the original 1992 TIUS database, *ti92mdf.dat*. This subset database excludes 2-axle 4-tire vehicles (NAXLES=1), and vehicles with the following body types: pick-up (BODTYP=1), sport utility (BODTYP=24), station wagon (BODTYP=25), and mini-van (BODTYP=26),. ;

* Comment - The decimal specifications for the variables EXPANF and MPG were removed in the formatting information for copying purposes only. ;

Infile 'd:\tius\tools\ti92mdf.dat' lrecl=648;

Input

LINKID 1-11 FIPST 12-13 SAMTYP 14 EXPANF 15-21 MAKE 22-23 MDLYR 24-25 ACQMON 26-27 ACQYR
28-29 OBTAIN 30 HOWLEA 31 HWLONG 32 TLFIN 33 TLFM 34 TLSPM 35 TLTAX 36 TLOLP 37 TLREC 38
TLOTH 39 STLOWN 40 OWNLES 41 DISPOZ 42 DISMON 43-44 DISYR 45-46 HOWRID 47 LEAOUT 48
HLSOUT 49 LLEOUT 50 LOFIN 51 LOFM 52 LOSPM 53 LOTAX 54 LOOLP 55 LOREC 56 LOOTH 57 BODTYP
58-59 NAXLES 60 LIFTAX 61 DRAXLS 62 VEHTYP 63 TOTLEN 64-65 TRLATT 66 TRAILST 67 TRAILTT 68-
69 TRLNGTH 70 PNOTRL 71-73 PTRLATT 74-76 PCNTNR 77-79 PPIGY 80-82 PCONVTR 83-85 FSTTRL 86
SNDTRL 87 THDTRL 88 AXONTU 89 WIDTH 90 EMPCK 91 EMPWT 92-97 AVGCK 98 AVGWT 99-104
MAXWT 105-110 CABTYP 111 ENGTYP 112 PKENGSZE 113 PKCID 114-115 REFUEL 116 BRAKES 117
ALBRAKES 118 AERODN 119 AXLRAT 120 ECOENG 121 REFLCT 122 RADIAL 123 GOVNOR 124 VARFAN
125 OTHFUEL 126 PWSTR 127 AIRCON 128 ENGRET 129 EVMS 130 EVIS 131 RECRDR 132 NAVSYS 133
FRNWH 134 VCAIDS 135 WCLIFT 136 GMSELF 137 GMCOMP 138 GMDEAL 139 GMLEAS 140 GMGARG
141 GMDIST 142 GMNONE 143 GMOTHR 144 OVSELF 145 OVCOMP 146 OVDEAL 147 OVLEAS 148
OVGARG 149 OVDIST 150 OVNONE 151 OVOTHR 152 WKSOP 153-154 ANNMIL 155-160 LTMIL 161-167
MPGBOTH 168-172 BASTATE 173-174 MSAIO 175 TYPHB 176 POBAST 177-179 POFPRD 180-182 PLOCAL
183-185 PSHORT 186-188 PSMED 189-191 PLMED 192-194 PLONG 195-197 OPCLAS 198 PBUS 199-201
PPTRAN 202-204 PFORHR 205-207 OPTYP 208 PMOCAR 209-211 PINDEP 212-214 PLEASE 215-217 PPRIV
218-220 PFHOP 221-223 JURISD 224 PINTER 225-227 PINTRA 228-230 PLOCJUR 231-233 TYPGAR 234
PCONTR 235-237 PCOMON 238-240 PEXEMT 241-243 TYPSE 244 PTKLOD 245-247 PLESTL 248-250
ICCREG 251 MAJUSE 252-253 PNOLOD 254-256 PASSEN 257-259 LVANML 260-262 FARMPD 263-265
PRFOOD 266-268 ANFEED 269-271 MINPRO 272-274 BLDGMA 275-277 LOGPRO 278-280 LUMBER 281-283
PAPER 284-286 CHEM 287-289 PETROL 290-292 PLASTK 293-295 PRIMTL 296-298 FABMTL 299-301
MACHNE 302-304 TEQUIP 305-307 FURN 308-310 GLASS 311-313 TEXTIL 314-316 MSCMFG 317-319
MOVING 320-322 TOOLS 323-325 MXDCAR 326-328 REFUSE 329-331 INDWTR 332-334 HAZEPA 335-337
HAZNEPA 338-340 RECYCLE 341-343 OTHPROD 344-346 HAZMAT 347 EXP11 348-350 EXP12 351-353
EXP13 354-356 EXP14 357-359 EXP15 360-362 EXP16 363-365 FLMGAS 366-368 NFLGAS 369-371 PSNGAS
372-374 FLAMBLE 375-377 COMBUST 378-380 FLAMSOL 381-383 SPONCBST 384-386 DANGWW 387-389
OXIDIZ 390-392 OXYGEN 393-395 ORGPER 396-398 POISON 399-401 KPFOOD 402-404 RADMAT 405-407
CORROS 408-410 CLASS9 411-413 FLTSZE 414-415 AXLRE 416-417 PRNPRO 418-419 AREAOP 420
TIUGVW 421-422 PKGVW 423 PKRWGT 424-429 VEHSZE 430;

File 'd:\tius92\bigtruck.dat' lrecl=648;

If naxles>1 and Bodtyp NE 1 and Bodtyp NE 24 and Bodtyp NE 25 and Bodtyp NE 26 then

Put

LINKID 1-11 FIPST 12-13 SAMTYP 14 EXPANF 15-21 MAKE 22-23 MDLYR 24-25 ACQMON 26-27 ACQYR 28-29 OBTAIN 30 HOWLEA 31 HWLONG 32 TLFIN 33 TLFM 34 TLSPM 35 TLTAX 36 TLOLP 37 TLREC 38 TLOTH 39 STLOWN 40 OWNLES 41 DISPOZ 42 DISMON 43-44 DISYR 45-46 HOWRID 47 LEAOUT 48 HLSOUT 49 LLEOUT 50 LOFIN 51 LOFM 52 LOSPM 53 LOTAX 54 LOOLP 55 LOREC 56 LOOTH 57 BODTYP 58-59 NAXLES 60 LIFTAX 61 DRAXLS 62 VEHTYP 63 TOTLEN 64-65 TRLATT 66 TRAILST 67 TRAILTT 68-69 TRLNGTH 70 PNOTRL 71-73 PTRLATT 74-76 PCNTNR 77-79 PPIGY 80-82 PCONVTR 83-85 FSTTRL 86 SNDTRL 87 THDTRL 88 AXONTU 89 WIDTH 90 EMPCK 91 EMPWT 92-97 AVGCK 98 AVGWT 99-104 MAXWT 105-110 CABTYP 111 ENGTYP 112 PKENGSZE 113 PKCID 114-115 REFUEL 116 BRAKES 117 ALBRAKES 118 AERODN 119 AXLRAT 120 ECOENG 121 REFLCT 122 RADIAL 123 GOVNOR 124 VARFAN 125 OTHFUEL 126 PWSTR 127 AIRCON 128 ENGRET 129 EVMS 130 EVIS 131 RECRDR 132 NAVSYS 133 FRNWH 134 VCAIDS 135 WCLIFT 136 GMSELF 137 GMCOMP 138 GMDEAL 139 GMLEAS 140 GMGARG 141 GMDIST 142 GMNONE 143 GMOTHR 144 OVSELF 145 OVCOMP 146 OVDEAL 147 OVLEAS 148 OVGARG 149 OVDIST 150 OVNONE 151 OVOTHR 152 WKSOP 153-154 ANNMIL 155-160 LTMIL 161-167 MPGBOTH 168-172 BASTATE 173-174 MSAIO 175 TYPHB 176 POBAST 177-179 POFPRD 180-182 PLOCAL 183-185 PSHORT 186-188 PSMED 189-191 PLMED 192-194 PLONG 195-197 OPCLAS 198 PBUS 199-201 PPTRAN 202-204 PFORHR 205-207 OPTYP 208 PMOCAR 209-211 PINDEP 212-214 PLEASE 215-217 PPRIV 218-220 PFHOP 221-223 JURISD 224 PINTER 225-227 PINTRA 228-230 PLOCJUR 231-233 TYPGAR 234 PCONTR 235-237 PCOMON 238-240 PEXEMT 241-243 TYPSE 244 PTKLOD 245-247 PLESTL 248-250 ICCREG 251 MAJUSE 252-253 PNOLOD 254-256 PASSEN 257-259 LVANML 260-262 FARMPD 263-265 PRFOOD 266-268 ANFEED 269-271 MINPRO 272-274 BLDGMA 275-277 LOGPRO 278-280 UMBER 281-283 PAPER 284-286 CHEM 287-289 PETROL 290-292 PLASTK 293-295 PRIMTL 296-298 FABMTL 299-301 MACHNE 302-304 TEQUIP 305-307 FURN 308-310 GLASS 311-313 TEXTIL 314-316 MSCMFG 317-319 MOVING 320-322 TOOLS 323-325 MXDCAR 326-328 REFUSE 329-331 INDWTR 332-334 HAZEPA 335-337 HAZNEPA 338-340 RECYCLE 341-343 OTHPROD 344-346 HAZMAT 347 EXP11 348-350 EXP12 351-353 EXP13 354-356 EXP14 357-359 EXP15 360-362 EXP16 363-365 FLMGAS 366-368 NFLGAS 369-371 PSNGAS 372-374 FLAMBLE 375-377 COMBUST 378-380 FLAMSOL 381-383 SPONCBST 384-386 DANGWW 387-389 OXIDIZS 390-392 OXYGEN 393-395 ORGPER 396-398 POISON 399-401 KPFOOD 402-404 RADMAT 405-407 CORROS 408-410 CLASS9 411-413 FLTSZE 414-415 AXLRE 416-417 PRNPRO 418-419 AREAOP 420 TIUGVW 421-422 PKGVW 423 PKRWGT 424-429 VEHSZE 430;

Run;

II. SAS Program to Create Subset Database of the 1992 5-Axles or More Truck Fleet

Data _null_;

* Comment - This program creates an external subset database, *vehgrp.dat*, from the total fleet database, *bigtruck.dat*. This subset database excludes truck (or tractor) and/or trailer combinations whose total number of axles is less than 5 in addition to truck-trailer combinations where the trailer has 1-axle. ;

Infile 'd:\tius92\bigtruck.dat' lrecl=648;

Input

LINKID 1-11 FIPST 12-13 SAMTYP 14 EXPANF 15-21 MAKE 22-23 MDLYR 24-25 ACQMON 26-27 ACQYR
28-29 OBTAIN 30 HOWLEA 31 HWLONG 32 TLFIN 33 TLFM 34 TLFPM 35 TLTX 36 TLOLP 37 TLREC 38
TLOTH 39 STLOWN 40 OWNLES 41 DISPOZ 42 DISMON 43-44 DISYR 45-46 HOWRID 47 LEAOUT 48
HLSOUT 49 LLEOUT 50 LOFIN 51 LOFM 52 LOSPM 53
LOTAX 54 LOOLP 55 LOREC 56 LOOTH 57 BODTYP 58-59 NAXLES 60 LIFTAX 61 DRAXLS 62 VEHTYP 63
TOTLEN 64-65 TRLATT 66 TRAILST 67 TRAILTT 68-69 TRLNGTH 70 PNOTRL 71-73
PTRLATT 74-76 PCNTNR 77-79 PPIGY 80-82 PCONVTR 83-85 FSTTRL 86 SNDTRL 87 THDTRL 88 AXONTU
89 WIDTH 90 EMPCK 91 EMPWT 92-97 AVGCK 98 AVGWT 99-104 MAXWT 105-110
CABTYP 111 ENGTYP 112 PKENGSZ 113 PKCID 114-115 REFUEL 116 BRAKES 117 ALBRAKES 118
AERODN 119 AXLRAT 120 ECOENG 121 REFLCT 122 RADIAL 123 GOVNOR 124 VARFAN 125 OTHFUEL
126 PWSTR 127 AIRCON 128 ENGRET 129 EVMS 130 EVIS 131 RECRDR 132 NAVSYS 133 FRNWH 134
VCAIDS 135 WCLIFT 136 GMSELF 137 GMCOMP 138 GMDEAL 139 GMLEAS 140 GMGARG 141 GMDIST
142 GMNONE 143 GMOTHR 144 OVSELF 145 OVCOMP 146 OVDEAL 147 OVLEAS 148 OVGARG 149
OVDIST 150 OVNONE 151 OVOTHR 152 WKSOP 153-154 ANNMIL 155-160 LTMIL 161-167 MPGBOTH 168-
172 BASTATE 173-174 MSAIO 175 TYPHB 176 POBAST 177-179 POFPRD 180-182 PLOCAL 183-185 PSHORT
186-188 PSMED 189-191 PLMED 192-194 PLONG 195-197 OPLCLAS 198 PBUS 199-201 PPTRAN 202-204
PFORHR 205-207 OPTYP 208 PMOCAR 209-211 PINDEP 212-214 PLEASE 215-217 PPRIV 218-220 PFHOP
221-223
JURISD 224 PINTER 225-227 PINTRA 228-230 PLOCJUR 231-233 TYPCAR 234 PCONTR 235-237 PCOMON
238-240 PEXEMT 241-243 TYPSE 244 PTKLOD 245-247 PLESTL 248-250 ICCREG 251 MAJUSE 252-253
PNOLOD 254-256 PASSEN 257-259 LVANML 260-262 FARMPD 263-265 PRFOOD 266-268 ANFEED 269-271
MINPRO 272-274 BLDGMA 275-277 LOGPRO 278-280 LUMBER 281-283 PAPER 284-286 CHEM 287-289
PETROL 290-292 PLASTK 293-295 PRIMTL 296-298 FABMTL 299-301 MACHNE 302-304 TEQUIP 305-307
FURN 308-310 GLASS 311-313 TEXTIL 314-316 MSCMFG 317-319 MOVING 320-322 TOOLS 323-325
MXDCAR 326-328 REFUSE 329-331 INDWTR 332-334 HAZEPA 335-337 HAZNEPA 338-340 RECYCLE 341-
343 OTHPROD 344-346 HAZMAT 347 EXP11 348-350 EXP12 351-353 EXP13 354-356 EXP14 357-359 EXP15
360-362 EXP16 363-365 FLMGAS 366-368 NFLGAS 369-371 PSNGAS 372-374 FLAMBLE 375-377 COMBUST
378-380 FLAMSOL 381-383 SPONCBST 384-386 DANGWW 387-389 OXIDIZS 390-392 OXYGEN 393-395
ORGP 396-398 POISON 399-401 KPFOOD 402-404 RADMAT 405-407 CORROS 408-410 CLASS9 411-413
FLTSZ 414-415 AXLRE 416-417 PRNPRO 418-419 AREAOP 420 TIUGVW 421-422 PKGVW 423 PKRWGT
424-429 VEHSZ 430;

* Comment - Create a new variable, VEHGRP, to define the vehicle group that the registered vehicle belongs in. Use the AXLRE variable which defines the configuration that the vehicle travels in most often.

VEHGRP: (1) - Truck + Trailer at 5-axles, (2) - Truck + Trailer at 6-axles, (3) 3-S2, (4) Tridem axle Semitrailer, (5) 4S1/S2, (6) 2-S1-2, (7) Doubles at 6-axles or more, (8) triples. ;

If axlre=10 or axlre=12 or axlre=21 or axlre=23 then

VehGrp = 1;

If 23<axlre<29 or axlre=13 or axlre=15 or axlre=16 or axlre=22 then

VehGrp=2;

```

If axlre=36 then
  VehGrp=3;
If axlre=34 or axlre=37 or axlre=40 then
  VehGrp=4;
If axlre=38 or axlre=39 then
  VehGrp=5;
If axlre=45 then
  VehGrp=6;
If 45<axlre<57 then
  VehGrp=7;
If 60<axlre<73 then
  VehGrp=8;

```

File 'd:\tius92\vehgrp.dat' lrecl=648;

* Only copy 5-axles or more truck fleet records to the new database;

```

If axlre=10 or axlre=12 or axlre=13 or axlre=15 or axlre=16 or 20<axlre<29 or axlre=34 or 35<axlre<41or
44<axlre<57 or 60<axlre<73 then

```

```

  Put
  LINKID 1-11 FIPST 12-13 SAMTYP 14 EXPANF 15-21 MAKE 22-23 MDLYR 24-25 ACQMON 26-27 ACQYR
  28-29 OBTAIN 30 HOWLEA 31 HWLONG 32 TLFIN 33 TLFM 34 TLSPM 35 TLTAX 36 TLOLP 37 TLREC 38
  TLOTH 39 STLOWN 40 OWNLES 41 DISPOZ 42 DISMON 43-44 DISYR 45-46 HOWRID 47 LEAOUT 48
  HLSOUT 49 LLEOUT 50 LOFIN 51 LOFM 52 LOSPM 53 LOTAX 54 LOOLP 55 LOREC 56 LOOTH 57 BODTYP
  58-59 NAXLES 60 LIFTAX 61 DRAXLS 62 VEHTYP 63 TOTLEN 64-65 TRLATT 66 TRAILST 67 TRAILTT 68-
  69 TRLNGTH 70 PNOTRL 71-73 PTRLATT 74-76 PCNTNR 77-79 PPIGY 80-82 PCONVTR 83-85 FSTTRL 86
  SNDTRL 87 THDTRL 88 AXONTU 89 WIDTH 90 EMPCK 91 EMPWT 92-97 AVGCK 98 AVGWT 99-104
  MAXWT 105-110
  CABTYP 111 ENGTYP 112 PKENGSZE 113 PKCID 114-115 REFUEL 116 BRAKES 117 ALBRAKES 118
  AERODN 119 AXLRAT 120 ECOENG 121 REFLCT 122 RADIAL 123 GOVNOR 124 VARFAN 125 OTHFUEL
  126 PWSTR 127 AIRCON 128 ENGRET 129 EVMS 130 EVIS 131 RECRDR 132 NAVSYS 133 FRNWH 134
  VCAIDS 135 WCLIFT 136 GMSELF 137 GMCOMP 138 GMDEAL 139 GMLEAS 140 GMGARG 141 GMDIST
  142 GMNONE 143 GMOTHR 144 OVSELF 145 OVCOMP 146 OVDEAL 147 OVLEAS 148 OVGARG 149
  OVDIST 150 OVNONE 151 OVOTHR 152 WKSOP 153-154 ANNMIL 155-160 LTMIL 161-167 MPGBOTH 168-
  172 BASTATE 173-174 MSAIO 175 TYPHB 176 POBAST 177-179 POFPRD 180-182 PLOCAL 183-185 PSHORT
  186-188 PSMED 189-191 PLMED 192-194 PLONG 195-197 OPCLAS 198 PBUS 199-201 PPTRAN 202-204
  PFORHR 205-207 OPTYP 208 PMOCAR 209-211 PINDEP 212-214 PLEASE 215-217 PPRIV 218-220 PFHOP
  221-223
  JURISD 224 PINTER 225-227 PINTRA 228-230 PLOCJUR 231-233 TYPGAR 234 PCONTR 235-237 PCOMON
  238-240 PEXEMT 241-243 TYPSE 244 PTKLOD 245-247 PLESTL 248-250 ICCREG 251 MAJUSE 252-253
  PNOLOD 254-256 PASSEN 257-259 LVANML 260-262 FARMPD 263-265 PRFOOD 266-268 ANFEED 269-271
  MINPRO 272-274 BLDGMA 275-277 LOGPRO 278-280 LUMBER 281-283 PAPER 284-286 CHEM 287-289
  PETROL 290-292 PLASTK 293-295 PRIMTL 296-298 FABMTL 299-301 MACHNE 302-304 TEQUIP 305-307
  FURN 308-310 GLASS 311-313 TEXTIL 314-316 MSCMFG 317-319 MOVING 320-322 TOOLS 323-325
  MXDCAR 326-328 REFUSE 329-331 INDWTR 332-334 HAZEPA 335-337 HAZNEPA 338-340 RECYCLE 341-
  343 OTHPROD 344-346 HAZMAT 347 EXP11 348-350 EXP12 351-353 EXP13 354-356 EXP14 357-359 EXP15
  360-362 EXP16 363-365 FLMGAS 366-368 NFLGAS 369-371 PSNGAS 372-374 FLAMBLE 375-377 COMBUST
  378-380 FLAMSOL 381-383 SPONCBST 384-386 DANGWW 387-389 OXIDIZS 390-392 OXYGEN 393-395
  ORGPER 396-398 POISON 399-401 KPFOOD 402-404 RADMAT 405-407 CORROS 408-410 CLASS9 411-413
  FLTSTZ 414-415 AXLRE 416-417 PRNPRO 418-419 AREAOP 420 TIUGVW 421-422 PKGVW 423 PKRWGT
  424-429 VEHSZE 430 VEHGRP 431-432;Run;

```

III. SAS Program to Load 1992 TIUS Database, TI92MDF.DAT, for Analysis

Data TIUS;

* Comment - This program loads the database into the computer's working memory. After loading the database, different data analysis procedures can be performed on the data. ;

Infile 'd:\tius\tools\ti92mdf.dat' lrecl=648;

Input

LINKID 1-11 FIPST 12-13 SAMTYP 14 EXPANF 15-21 MAKE 22-23 MDLYR 24-25 ACQMON 26-27 ACQYR
28-29 OBTAIN 30 HOWLEA 31 HWLONG 32 TLFIN 33 TLFM 34 TLSPM 35 TLTAX 36 TLOLP 37 TLREC 38
TLOTH 39 STLOWN 40 OWNLES 41 DISPOZ 42 DISMON 43-44 DISYR 45-46 HOWRID 47 LEAOUT 48
HLSOUT 49 LLEOUT 50 LOFIN 51 LOFM 52 LOSPM 53 LOTAX 54 LOOLP 55 LOREC 56 LOOTH 57 BODTYP
58-59 NAXLES 60 LIFTAX 61 DRAXLS 62 VEHTYP 63 TOTLEN 64-65 TRLATT 66 TRAILST 67 TRAILTT 68-
69 TRLNGTH 70 PNOTRL 71-73 PTRLATT 74-76 PCNTNR 77-79 PPIGY 80-82 PCONVTR 83-85 FSTTRL 86
SNDTRL 87 THDTRL 88 AXONTU 89 WIDTH 90 EMPCK 91 EMPWT 92-97 AVGCK 98 AVGWT 99-104
MAXWT 105-110 CABTYP 111 ENGTYP 112 PKENGSZE 113 PKCID 114-115 REFUEL 116 BRAKES 117
ALBRAKES 118 AERODN 119 AXLRAT 120 ECOENG 121 REFLCT 122 RADIAL 123 GOVNOR 124 VARFAN
125 OTHFUEL 126 PWSTR 127 AIRCON 128 ENGRET 129 EVMS 130 EVIS 131 RECRDR 132 NAVSYS 133
FRNWH 134 VCAIDS 135 WCLIFT 136 GMSELF 137 GMCOMP 138 GMDEAL 139 GMLEAS 140 GMGARG
141 GMDIST 142 GMNONE 143 GMOTHR 144 OVSELF 145 OVCOMP 146 OVDEAL 147 OVLEAS 148
OVGARG 149 OVDIST 150 OVNONE 151 OVOTHR 152 WKSOP 153-154 ANNMIL 155-160 LTMIL 161-167
MPGBOTH 168-172 BASTATE 173-174 MSAIO 175 TYPHB 176 POBAST 177-179 POFPRD 180-182 PLOCAL
183-185 PSHORT 186-188 PSMED 189-191 PLMED 192-194 PLONG 195-197 OPCLAS 198 PBUS 199-201
PPTRAN 202-204 PFORHR 205-207 OPTYP 208 PMOCAR 209-211 PINDEP 212-214 PLEASE 215-217 PPRIV
218-220 PFHOP 221-223 JURISD 224 PINTER 225-227 PINTRA 228-230 PLOCJUR 231-233 TYPGAR 234
PCONTR 235-237 PCOMON 238-240 PEXEMT 241-243 TYPSE 244 PTKLOD 245-247 PLESTL 248-250
ICCREG 251 MAJUSE 252-253 PNOLOD 254-256 PASSEN 257-259 LVANML 260-262 FARMPD 263-265
PRFOOD 266-268 ANFEED 269-271 MINPRO 272-274 BLDGMA 275-277 LOGPRO 278-280 LUMBER 281-283
PAPER 284-286 CHEM 287-289 PETROL 290-292 PLASTK 293-295 PRIMTL 296-298 FABMTL 299-301
MACHNE 302-304 TEQUIP 305-307 FURN 308-310 GLASS 311-313 TEXTIL 314-316 MSCMFG 317-319
MOVING 320-322 TOOLS 323-325 MXDCAR 326-328 REFUSE 329-331 INDWTR 332-334 HAZEPA 335-337
HAZNEPA 338-340 RECYCLE 341-343 OTHPROD 344-346 HAZMAT 347 EXP11 348-350 EXP12 351-353
EXP13 354-356 EXP14 357-359 EXP15 360-362 EXP16 363-365 FLMGAS 366-368 NFLGAS 369-371 PSNGAS
372-374 FLAMBLE 375-377 COMBUST 378-380 FLAMSOL 381-383 SPONCBST 384-386 DANGWW 387-389
OXIDIZ 390-392 OXYGEN 393-395 ORGPER 396-398 POISON 399-401 KPFOOD 402-404 RADMAT 405-407
CORROS 408-410 CLASS9 411-413 FLTSZE 414-415 AXLRE 416-417 PRNPRO 418-419 AREAOP 420
TIUGVW 421-422 PKGVW 423 PKRWGT 424-429 VEHSZE 430;

Run;

IV. SAS Program to Load 1992 Total Fleet Database, BIGTRUCK.DAT, for Analysis

Data TIUS;

* Comment - This program loads the database into the computer's working memory. After loading the database, different data analysis procedures can be performed on the data. ;

Infile 'd:\tius92\bigtruck.dat' lrecl=648;

Input

LINKID 1-11 FIPST 12-13 SAMTYP 14 EXPANF 15-21 .2 MAKE 22-23 MDLYR 24-25 ACQMON 26-27 ACQYR
28-29 OBTAIN 30 HOWLEA 31 HWLONG 32 TLFIN 33 TLFM 34 TLSM 35 TLTX 36 TLOLP 37 TLREC 38
TLOTH 39 STLOWN 40 OWNLES 41 DISPOZ 42 DISMON 43-44 DISYR 45-46 HOWRID 47 LEAOUT 48
HLSOUT 49 LLEOUT 50 LOFIN 51 LOFM 52 LOSPM 53
LOTAX 54 LOOLP 55 LOREC 56 LOOTH 57 BODTYP 58-59 NAXLES 60 LIFTAX 61 DRAXLS 62 VEHTYP 63
TOTLEN 64-65 TRLATT 66 TRAILST 67 TRAILTT 68-69 TRLNGTH 70 PNOTRL 71-73
PTRLATT 74-76 PCNTNR 77-79 PPIGY 80-82 PCONVTR 83-85 FSTTRL 86 SNDTRL 87 THDTRL 88 AXONTU
89 WIDTH 90 EMPCK 91 EMPWT 92-97 AVGCK 98 AVGWT 99-104 MAXWT 105-110
CABTYP 111 ENGTYP 112 PKENGSZ 113 PKCID 114-115 REFUEL 116 BRAKES 117 ALBRAKES 118
AERODN 119 AXLRAT 120 ECOENG 121 REFLCT 122 RADIAL 123 GOVNOR 124 VARFAN 125 OTHFUEL
126 PWSTR 127 AIRCON 128 ENGRET 129 EVMS 130 EVIS 131 RECRDR 132 NAVSYS 133 FRNWH 134
VCAIDS 135 WCLIFT 136 GMSELF 137 GMCOMP 138 GMDEAL 139 GMLEAS 140 GMGARG 141 GMDIST
142 GMNONE 143 GMOTHR 144 OVSELF 145 OVCOMP 146 OVDEAL 147 OVLEAS 148 OVGARG 149
OVDIST 150 OVNONE 151 OVOTHR 152 WKSOP 153-154 ANNMIL 155-160 LTMIL 161-167 MPGBOH 168-
172 BASTATE 173-174 MSAIO 175 TYPHB 176 POBAST 177-179 POFFRD 180-182 PLOCAL 183-185 PSHORT
186-188 PSMED 189-191 PLMED 192-194 PLONG 195-197 OPLCLAS 198 PBUS 199-201 PPTRAN 202-204
PFORHR 205-207 OPTYP 208 PMOCAR 209-211 PINDEP 212-214 PLEASE 215-217 PPRIV 218-220 PFHOP
221-223
JURISD 224 PINTER 225-227 PINTRA 228-230 PLOCJUR 231-233 TYPCAR 234 PCONTR 235-237 PCOMON
238-240 PEXEMT 241-243 TYPSE 244 PTKLOD 245-247 PLESTL 248-250 ICCREG 251 MAJUSE 252-253
PNOLOD 254-256 PASSEN 257-259 LVANML 260-262 FARMPD 263-265 PRFOOD 266-268 ANFEED 269-271
MINPRO 272-274 BLDGMA 275-277 LOGPRO 278-280 LUMBER 281-283 PAPER 284-286 CHEM 287-289
PETROL 290-292 PLASTK 293-295 PRIMTL 296-298 FABMTL 299-301 MACHNE 302-304 TEQUIP 305-307
FURN 308-310 GLASS 311-313 TEXTIL 314-316 MSCMFG 317-319 MOVING 320-322 TOOLS 323-325
MXDCAR 326-328 REFUSE 329-331 INDWTR 332-334 HAZEPA 335-337 HAZNEPA 338-340 RECYCLE 341-
343 OTHPROD 344-346 HAZMAT 347 EXP11 348-350 EXP12 351-353 EXP13 354-356 EXP14 357-359 EXP15
360-362 EXP16 363-365 FLMGAS 366-368 NFLGAS 369-371 PSNGAS 372-374 FLAMBLE 375-377 COMBUST
378-380 FLAMSOL 381-383 SPONCBST 384-386 DANGWW 387-389 OXIDIZS 390-392 OXYGEN 393-395
ORGP 396-398 POISON 399-401 KPFOOD 402-404 RADMAT 405-407 CORROS 408-410 CLASS9 411-413
FLTSZE 414-415 AXLRE 416-417 PRNPRO 418-419 AREAOP 420 TIUGVW 421-422 PKGVW 423 PKRWGT
424-429 VEHSZE 430;

Run;

V. SAS Program to Load 1992 5-Axles or More Truck Fleet Database, VEHGRP.DAT, for Analysis

Data TIUS;

* Comment - This program loads the database into the computer's working memory. After loading the database, different data analysis procedures can be performed on the data. ;

Infile 'd:\tius92\vehgrp.dat' lrecl=648;

Input

LINKID 1-11 FIPST 12-13 SAMTYP 14 EXPANF 15-21 .2 MAKE 22-23 MDLYR 24-25 ACQMON 26-27
ACQYR 28-29 OBTAIN 30 HOWLEA 31 HWLONG 32 TLFIN 33 TLFM 34 TLSPM 35 TLTAX 36 TLOLP 37
TLREC 38 TLOTH 39 STLOWN 40 OWNLES 41 DISPOZ 42 DISMON 43-44 DISYR 45-46 HOWRID 47
LEAOUT 48 HLSOUT 49 LLEOUT 50 LOFIN 51 LOFM 52 LOSPM 53
LOTAX 54 LOOLP 55 LOREC 56 LOOTH 57 BODTYP 58-59 NAXLES 60 LIFTAX 61 DRAXLS 62 VEHTYP 63
TOTLEN 64-65 TRLATT 66 TRAILST 67 TRAILTT 68-69 TRLNGTH 70 PNOTRL 71-73
PTRLATT 74-76 PCNTNR 77-79 PPIGY 80-82 PCONVTR 83-85 FSTTRL 86 SNDTRL 87 THDTRL 88 AXONTU
89 WIDTH 90 EMPCK 91 EMPWT 92-97 AVGCK 98 AVGWT 99-104 MAXWT 105-110
CABTYP 111 ENGTYP 112 PKENGSZ 113 PKCID 114-115 REFUEL 116 BRAKES 117 ALBRAKES 118
AERODN 119 AXLRAT 120 ECOENG 121 REFLCT 122 RADIAL 123 GOVNOR 124 VARFAN 125 OTHFUEL
126 PWSTR 127 AIRCON 128 ENGRET 129 EVMS 130 EVIS 131 RECRDR 132 NAVSYS 133 FRNWH 134
VCAIDS 135 WCLIFT 136 GMSELF 137 GMCOMP 138 GMDEAL 139 GMLEAS 140 GMGARG 141 GMDIST
142 GMNONE 143 GMOTHR 144 OVSELF 145 OVCOMP 146 OVDEAL 147 OVLEAS 148 OVGARG 149
OVDIST 150 OVNONE 151 OVOTHR 152
WKSOP 153-154 ANNMIL 155-160 LTMIL 161-167 MPGBOTH 168-172 BASTATE 173-174 MSAIO 175
TYPHB 176 POBAST 177-179 POFPRD 180-182 PLOCAL 183-185 PSHORT 186-188 PSMED 189-191 PLMED
192-194 PLONG 195-197 OPCLAS 198 PBUS 199-201 PPTRAN 202-204 PFORHR 205-207 OPTYP 208
PMOCAR 209-211 PINDEP 212-214 PLEASE 215-217 PPRIV 218-220 PFHOP 221-223 JURISD 224 PINTER
225-227 PINTRA 228-230 PLOCJUR 231-233 TYPCAR 234 PCONTR 235-237 PCOMON 238-240 PEXEMT 241-
243 TYPSE 244 PTKLOD 245-247 PLESTL 248-250 ICCREG 251 MAJUSE 252-253 PNOLOD 254-256
PASSEN 257-259 LVANML 260-262 FARMPD 263-265 PRFOOD 266-268 ANFEED 269-271 MINPRO 272-274
BLDGMA 275-277 LOGPRO 278-280 LUMBER 281-283 PAPER 284-286 CHEM 287-289 PETROL 290-292
PLASTK 293-295 PRIMTL 296-298 FABMTL 299-301 MACHNE 302-304 TEQUIP 305-307 FURN 308-310
GLASS 311-313 TEXTIL 314-316 MSCMFG 317-319 MOVING 320-322 TOOLS 323-325 MXDCAR 326-328
REFUSE 329-331 INDWTR 332-334 HAZEPA 335-337 HAZNEPA 338-340 RECYCLE 341-343 OTHPROD 344-
346 HAZMAT 347 EXP11 348-350 EXP12 351-353 EXP13 354-356 EXP14 357-359 EXP15 360-362 EXP16 363-
365 FLMGAS 366-368 NFLGAS 369-371 PSNGAS 372-374 FLAMBLE 375-377 COMBUST 378-380 FLAMSOL
381-383 SPONCBST 384-386 DANGWW 387-389 OXIDIZS 390-392 OXYGEN 393-395 ORGPER 396-398
POISON 399-401 KPFOOD 402-404 RADMAT 405-407 CORROS 408-410 CLASS9 411-413 FLTSZE 414-415
AXLRE 416-417 PRNPRO 418-419 AREAOP 420 TIUGVW 421-422 PKGVW 423 PKRWGT 424-429 VEHSZE
430 VEHGRP 431-432;

Run;

VI. SAS Code to Create a Region Variable for Data Analysis

* Comment - Load database first;

* Create a temporary SAS dataset, *Regions*, from the *TIUS* database (where *TIUS* refers to the data set loaded into memory) that will contain the new variable *REGION* ;

Data Regions;

Set TIUS;

If 16<FIPST<21 or FIPST=26 or FIPST=27 or FIPST=29 or FIPST=31 or FIPST=38 or FIPST=39
or FIPST=46 or FIPST=55 then
REGION='NC';

Else If FIPST=9 or FIPST=23 or FIPST=25 or FIPST=33 or FIPST=44 or FIPST=50
or FIPST=34 or FIPST=36 or FIPST=42 then
REGION='NE';

Else If FIPST=10 or FIPST=11 or FIPST=12 or FIPST=13 or FIPST=24 or FIPST=37
or FIPST=45 or FIPST=51 or FIPST=54 then
REGION='SA';

Else If FIPST=1 or FIPST=5 or FIPST=21 or FIPST=22 or FIPST=28 or FIPST=40
or FIPST=47 or FIPST=48 then
REGION='SG';

Else If FIPST=2 or FIPST=4 or FIPST=6 or FIPST=8 or FIPST=15 or FIPST=30
or FIPST=32 or FIPST=49 or FIPST=53 or FIPST=56 or FIPST=16 or FIPST=35 or FIPST=41 then
REGION='W';

Run;

VII. SAS Code Used to Create Frequency Tables and to Generate Means

Frequency Tables for Population

Frequency tables were generated in our analysis to determine the number of vehicles in a particular category. For example, a table which gives the number of vehicles in the nation that are in each of the 8 vehicle groups can be generated by using the frequency procedure in SAS.

General Format

```
Proc freq data=dataset name;  
Table Variable1*Variable2*Variable3;  
Weight Variable;  
Run;
```

Example of SAS Code to Generate Table of Number of Vehicles in Each Vehicle Group for Each Region

```
Proc freq data=Regions;  
Table VEHGRP*REGION;  
Weight EXPANF;  
Run;
```

Frequency Tables for Sample

Frequency tables were also derived to determine the number of data records available for a particular category. The SAS code is similar to the previous description; however, the 'Weight EXPANF' statement, which indicates the number of vehicles in the population that one record represents, is removed. For example, if we wanted to know the number of records used to derive the table of the number of vehicles in the nation that are in each of the 8 vehicle groups for each region, we would generate a frequency table based on the unweighted sample data.

Example of SAS Code to Generate Table of Number of Sample Records in each Vehicle Group for Each Region

```
Proc freq data=Regions;  
Table VEHGRP*REGION;  
Run;
```

Means and Standard Deviation

In summarizing the general characteristics of a certain vehicle type in the truck population, the mean and standard deviation are useful measures. There are two procedures in SAS for generating means: the Proc Means and the Proc GLM procedures. In each procedure, the 'Freq EXPANF' statement is added in order to weight the sample data in order to reflect the population. For example, if a record has 40,000 miles as its annual miles travelled and its EXPANF=10, then this record states that 10 vehicles in the population have annual VMTs of 40,000 miles.

One should be aware that in both these procedures the 'Freq EXPANF' statement will only accept integer values. If a real number is given, the procedure will only use the integer part of the number. EXPANF is a real number with values out to the two decimal places. In our analysis, we did not want the EXPANF to be truncated, so we multiplied the

EXPANF for every record by 100, in order to shift the information in the two decimal places over into the integer part of the number. Then we generated the means using this new EXPANF. In the results, the population sizes associated with the means will be off by a factor of 100. Dividing the population sizes by 100 will give the true sizes.

General Format for Proc Sort Before running the Proc Means procedure, the Proc Sort procedure may have to be used to reorganize the data for analysis.

```
Proc Sort data=dataset name;  
  By Variable list;  
Run;
```

General Format for Proc Means

```
Proc Means data=dataset name;  
  Var Variable list;  
  By Variable list;  
  Freq Variable;  
Run;
```

Example of Proc Means procedure to Generate Mean VMT for Each Body Type Group

```
Proc Sort data=TIUS;  
  By BODTYP;  
Proc Means data=TIUS;  
  Variable ANNMIL;  
  By BODTYP;  
  Freq EXPANF;  
Run;
```

General Format for Proc GLM

```
Proc GLM data=dataset name;  
  Class Variables;  
  Model Dependent-Variable = Independent-Variables;  
  Means Variables;  
  Freq Variable;  
Run;
```

Example of Proc GLM procedure to Generate Mean VMT for Each Body Type Group

```
Proc GLM data=TIUS;  
  Class BODTYP;  
  Model ANNMIL = BODTYP;  
  Means BODTYP;  
  Freq EXPANF;  
Run;
```

Appendix I
1987 and 1992 TIUS Surveys



U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

FORM
TC-9502

**1992 CENSUS OF TRANSPORTATION
TRUCK INVENTORY AND USE SURVEY**

OMB No. 0607-0730: Approval Expires 12/31/94

**DUE DATE: 30 DAYS AFTER
RECEIPT OF FORM**

Please return completed form to:
BUREAU OF THE CENSUS
1201 East Tenth Street
Jeffersonville, IN 47132-0001

CENSUS USE

TC-9502

REGISTRATION INFORMATION

Make of vehicle <small>101</small>	Year of model <small>102</small>	State <small>103</small>
License number <small>104</small>		
Vehicle Identification Number (VIN) <small>105</small>		

See Survey Coverage below if you have questions about completing this report.

(Please correct any errors in name, address, and ZIP Code)

NOTICE - Public reporting burden for this collection of information is estimated to vary from 40 to 60 minutes per response, with an average of 50 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Associate Director of Management Services, Attn: Paperwork Reduction Project 0607-0730, Room 2027, Bureau of the Census, Washington, DC 20233; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attn: Paperwork Reduction Project 0607-0730, Washington, DC 20503. **PLEASE INCLUDE FORM NAME AND NUMBER IN ALL CORRESPONDENCE.**

SURVEY COVERAGE

YOUR RESPONSE IS REQUIRED BY LAW. Title 13, United States Code, requires businesses, organizations, and residents that receive this questionnaire to answer the questions for the **vehicle identified in the registration information section** above and return the questionnaire to the Census Bureau. By the same law, **YOUR CENSUS REPORT IS CONFIDENTIAL.** It may be seen only by sworn Census Bureau employees and may be used only for statistical purposes.

The term "**Truck**" includes all pickups, panel trucks, vans, mini-vans, utility vehicles, jeeps, station wagons built on truck chassis, single-unit light, single-unit heavy, and truck tractors.

If you have questions about completing this report, please call or write the Census Bureau. In any communication be sure to refer to the 11-digit Census File Number (CFN) printed in the label above. Toll-free assistance is available, 8:00 a.m. to 8:00 p.m., Eastern Standard Time, Monday through Friday: **1-800-772-7851.**

IMPORTANT NOTICE: All questions on this form refer to the vehicle described in the registration information section and its use during calendar year 1992, **unless** the vehicle was **disposed of on or after July 1, 1991 and prior to January 1, 1992.** If the vehicle was **disposed of on or after July 1, 1991 and prior to January 1, 1992,** please complete entire questionnaire, answering each item according to the vehicle's use **during calendar year 1991.** If the vehicle was **disposed of prior to July 1, 1991,** please complete Items 1a, 1b, and 32 only.

PLEASE NOTE - There may be errors in the registration information. If there are errors in the VIN, make, and model year registration information, or if the vehicle identified never was in your possession, do not complete the questionnaire. Return it to the Census Bureau, along with a note correcting the errors in the registration information. (For statistical reasons, we cannot accept any substitution for the sampled vehicle.)

It is very important that you read the instructions as you answer the questions. If exact figures are not available for all items, carefully prepared estimates are acceptable.

PENALTY FOR FAILURE TO REPORT

CONTINUE ON PAGE 2

ITEM 1

a. Is the vehicle identified in the Registration Information section (cover page) still in your possession?

- 110 1 Yes - Are you the - 111 1 owner? } **SKIP to item 2** and continue with questionnaire
2 lessee?
2 No - Continue with item 1b

b. Did you dispose of this vehicle prior to July 1, 1991?

- 112 1 Yes - Complete item 32 and return questionnaire
2 No - Continue with items 1c, 1d, and the remainder of the questionnaire

c. When did you dispose of this vehicle? Enter figures only
(Example: If June 14, 1992 - enter 06 92)

Month	Year
113	114
	19

NOTE - If you disposed of this vehicle prior to January 1, 1992, answer each remaining item according to how the vehicle was used during calendar year 1991. If you disposed of this vehicle during calendar year 1992, answer each remaining item according to how the vehicle was used during calendar year 1992.

d. How did you dispose of this vehicle?

- 115 1 Sold, traded, or gave it away 3 Returned to leasing company
2 Junked, scrapped, or otherwise destroyed 4 Other - Please specify _____

ITEM 2

When did you obtain this vehicle? Enter figures only
(Example: If June 14, 1980 - enter 06 80)

Month	Year
116	117
	19

ITEM 3

a. How did you obtain this vehicle?

- 118 1 Purchased it **new** - **SKIP to item 4a** 3 **Leased** or **rented** it FROM someone else -
2 Purchased it **used** (or otherwise *Continue with items 3b and c*
acquired) - **SKIP to item 4a** 4 Other - Please specify _____

b. How was this vehicle leased or rented?

- 119 1 **Without** a driver
2 **With** a driver other than an owner-operator
3 With an **owner-operator as driver**

c. Was the agreement for 12 months or more?

- 120 2 No
1 Yes - **Which of the following did the leasing agreement include? Mark (X) all that apply.**
- | | |
|--|--|
| 121 <input type="checkbox"/> Financing only (Do not mark if installment sales contract.) | 124 <input type="checkbox"/> Payment of taxes |
| 122 <input type="checkbox"/> Full maintenance | 125 <input type="checkbox"/> Obtaining licenses and permits |
| 123 <input type="checkbox"/> Maintenance on specified parts only | 126 <input type="checkbox"/> Recordkeeping for leased trucks |
| | 127 <input type="checkbox"/> Other - Please specify _____ |

ITEM 4

a. Did you lease or rent this vehicle TO anyone else?

- 128 1 Yes - Continue with items 4b and c
2 No - **SKIP to item 5**

b. How was it leased or rented?

- 129 1 **Without** a driver
2 **With** a driver other than an owner-operator
3 With an **owner-operator as driver**

c. Was the agreement for 12 months or more?

- 130 2 No
1 Yes - **Which of the following did the leasing agreement include? Mark (X) all that apply.**
- | | |
|--|--|
| 131 <input type="checkbox"/> Financing only (Do not mark if installment sales contract.) | 134 <input type="checkbox"/> Payment of taxes |
| 132 <input type="checkbox"/> Full maintenance | 135 <input type="checkbox"/> Obtaining licenses and permits |
| 133 <input type="checkbox"/> Maintenance on specified parts only | 136 <input type="checkbox"/> Recordkeeping for leased trucks |
| | 137 <input type="checkbox"/> Other - Please specify _____ |

ITEM 5

How would you best describe this vehicle as it was most often operated?

NOTE – A **straight truck**, also called a *single-unit truck*, is a complete unit, cab area and body. A **truck tractor** is a cab and chassis that is usually used for pulling trailers. (If the vehicle is a pickup, compact van, mini-van, or panel truck, enter body type on the "Other" line.)

- 200 1 Straight truck **not** pulling trailer – **SKIP to item 9**
- 2 Straight truck pulling trailer – *Continue with item 6a*
- 3 Truck tractor (power unit) pulling trailer(s) – **SKIP to item 6b**
- 4 Other – *Please specify* _____

ITEM 6

a. If you indicated in item 5 that this vehicle is a straight truck pulling trailer(s), indicate below the kind of trailer(s) this vehicle MOST OFTEN PULLED. *Mark (X) ONE box only.*

Utility and other trailers less than 20 feet most often pulled by this **straight truck**.

- 201 1 One axle on trailer
- 2 Two axles on trailer
- 3 Three axles or more on trailer

One full trailer (or semi-trailer with converter dolly) most often pulled by this **straight truck**.

- 4 Two axles on trailer
- 5 Three axles on trailer
- 6 Four axles or more on trailer

b. (1) If you indicated in item 5 that this vehicle is a truck tractor (power unit) pulling trailer(s), indicate below the kind of trailer(s) this vehicle MOST OFTEN PULLED. *Mark (X) ONE box only.*

One semi-trailer most often pulled by this **truck tractor** (power unit).

- 202 01 One axle on trailer
- 02 Two axles on trailer
- 03 Three axles or more on trailer

Two trailers, one semi- and one full (or semi-trailer with converter dolly) most often pulled by this **truck tractor** (power unit).

- 04 Three axles on two trailers
- 05 Four axles on two trailers
- 06 Five axles on two trailers
- 07 Six axles or more on two trailers

Three trailers, one semi- and two full (or semi-trailers with converter dollies) most often pulled by this **truck tractor** (power unit).

- 08 Five axles on three trailers
- 09 Six axles on three trailers
- 10 Seven axles on three trailers
- 11 Eight axles or more on three trailers

12 Other – *Please describe in detail the number of trailers and the number of axles on those trailers most often pulled by this vehicle if not mentioned above.*

(2) What approximate percent of 1992 mileage was no trailer pulled by this vehicle (i.e., bobtail)?

	Percent
203	%

ITEM 7

What approximate percent of 1992 mileage was the trailer/axle configuration, identified in item 6a or b(1) above, MOST OFTEN PULLED by this vehicle?

	Percent
204	%

ITEM 8

What approximate percent of 1992 mileage pulling trailers did this vehicle haul –

- a. Railroad, maritime, or domestic containers?
- b. Piggyback trailers?
- c. Conventional trailers?

	Percent
205	%
206	%
207	%

TOTAL (a, b, and c should add to 100%) →

100%

ITEM 9

Please indicate the body type which most closely resembles this vehicle or the trailer MOST OFTEN ATTACHED to it if the power unit is a truck tractor.

If the vehicle is a straight truck, mark (X) the box that best describes the body of the truck (the area behind the cab).

Mark (X) ONE box only.

PLATFORM TYPES

- 300 05 Low boy (gooseneck) – platform with depressed center
- 06 Basic platform (including flatbed, stake, etc.)
- 04 Platform with devices permanently mounted on bed of truck – such as high lift, lift gate, hoist, etc.

VAN TYPES

- 03 Multi-stop or step van (including hi-cube or cutaway)
- 12 Basic enclosed van (dry cargo)
- 10 Drop frame van (including furniture van, etc.)
- 08 Insulated, nonrefrigerated van
- 09 Insulated, refrigerated van
- 11 Open top van (including fruit)

SPECIALIZED USE TRUCKS

- 18 Automobile transport
- 13 Beverage truck
- 70 Concrete mixer
- 40 Dump truck (including belly or bottom dump)
- 29 Grain bodies (including low-side grain and hoppers, etc.)
- 30 Garbage truck
- 07 Livestock truck (including livestock drop frame)
- 27 Oil field truck – service equipment permanently mounted on vehicle
- 17 Pole, logging, pulpwood, or pipe truck
- 22 Service truck or "craftsman's vehicle" – body equipped for mobile repair and service
- 60 Tank truck for dry bulk
- 50 Tank truck for liquids or gases
- 14 Utility truck – used in public utility operations (telephone line truck, etc.), body equipped for major repair (may have aerial lift, derrick, etc.)
- 15 Winch or crane truck – lifting equipment (including roll on, roll off) permanently mounted on vehicle
- 16 Wrecker – for motor vehicle towing or lifting
- 23 Yard tractor – cab and chassis ONLY, used to spot trailers

NOTE – *If none of the above descriptions match the body type of this vehicle, or the trailer usually attached to it, mark (X) the "Other" box below and specify body type.*

- 80 Other – Please specify _____

ITEM 10

a. What is the total number of axles on this truck or truck tractor (power unit) including front and rear axles? *Do not include axles on any trailers pulled.*

- 301 1 Two axles (each axle has 2 tires)
- 2 Two axles (front axle has 2 tires, rear axle has 4 tires)
- 3 Three axles
- 4 Four axles or more

How many, IF ANY, of this vehicle's axles are liftable?

Number
302

b. How many of the axles on this truck or truck tractor (power unit) are driving (powered) axles?

- 303 1 One driving axle
- 2 Two driving axles
- 3 Three driving axles or more

ITEM 11

What type of cab does this vehicle have?

- 307 1 Cab forward of engine
 2 Cab over engine
 3 Conventional cab
 4 Cab beside engine
 5 Other - Please specify _____

ITEM 12

a. What was the overall length of this vehicle or vehicle and trailer(s) as it was MOST OFTEN OPERATED? An estimate is acceptable.

NOTE - Report distance from front bumper to rear of vehicle or trailer(s), whichever is applicable.

Mark (X) ONE box only.

- 308 01 Less than 13.0 feet 08 45.0 to 49.9 feet
 02 13.0 to 15.9 feet 09 50.0 to 54.9 feet
 03 16.0 to 19.9 feet 10 55.0 to 59.9 feet
 04 20.0 to 27.9 feet 11 60.0 to 64.9 feet
 05 28.0 to 35.9 feet 12 65.0 to 69.9 feet
 06 36.0 to 40.9 feet 13 70.0 to 74.9 feet
 07 41.0 to 44.9 feet 14 75.0 feet or more

b. What was the exterior length of the individual trailer(s) included in the overall length above?

NOTE - If more than one trailer was most often pulled, please give the length of those trailers pulled. (Example: If double trailers, complete for 1st and 2nd trailer.)

	1st trailer	2nd trailer	3rd trailer
One trailer	309		
Two trailers	309	310	
Three trailers	309	310	311

c. If this is a combination vehicle, what was the exterior width of the trailer most often attached to the truck or power unit?

If more than one trailer was most often pulled, give the width of the widest trailer pulled. An estimate is acceptable.

Mark (X) ONE box only.

- 312 1 96 inches
 2 102 inches
 3 More than 102 inches
 4 Other - Please specify _____ inches

ITEM 13

a. What was the EMPTY weight (truck minus cargo) of this vehicle or vehicle/trailer combination as it was usually operated?

b. What was the AVERAGE weight (empty weight plus weight of cargo) of the vehicle or vehicle/trailer combination when carrying a typical payload during 1992?

c. What was the GROSS weight (maximum) at which this vehicle or vehicle/trailer combination operated during 1992?

Pounds Estimates are acceptable.	
314	
316	
317	

ITEM 14

How many weeks during 1992 was this vehicle operated? *An estimate is acceptable.*

NOTE - If vehicle was disposed of **on or after July 1, 1991**, but **prior to January 1, 1992**, check number of weeks operated during **1991**.

Mark (X) ONE box only.

- | | |
|--|--|
| 400 01 <input type="checkbox"/> 49 to 52 weeks | 08 <input type="checkbox"/> 21 to 24 weeks |
| 02 <input type="checkbox"/> 45 to 48 weeks | 09 <input type="checkbox"/> 17 to 20 weeks |
| 03 <input type="checkbox"/> 41 to 44 weeks | 10 <input type="checkbox"/> 13 to 16 weeks |
| 04 <input type="checkbox"/> 37 to 40 weeks | 11 <input type="checkbox"/> 9 to 12 weeks |
| 05 <input type="checkbox"/> 33 to 36 weeks | 12 <input type="checkbox"/> 5 to 8 weeks |
| 06 <input type="checkbox"/> 29 to 32 weeks | 13 <input type="checkbox"/> 1 to 4 weeks |
| 07 <input type="checkbox"/> 25 to 28 weeks | 14 <input type="checkbox"/> Less than 1 week |

ITEM 15

Miles

401

How many miles was this vehicle driven during 1992? *An estimate is acceptable.*

NOTE - If vehicle was **disposed of during 1992**, only enter mileage driven during **1992**. If vehicle was disposed of **on or after July 1, 1991**, but **prior to January 1, 1992**, enter mileage driven during **1991**.

ITEM 16

Miles

402

How many miles has this vehicle been driven since it was manufactured?

NOTE - If it is no longer in your possession, please estimate the total lifetime mileage at the time you last operated it. If the odometer/speedometer is **broken, please give your best estimate**. If the odometer has turned over (100,000+ miles), please enter the total figure. (Example: If a 100,000 mile odometer has turned over twice and the odometer reads 18,522, then the value is 218,522.)

ITEM 17

a. Was this vehicle or vehicle/trailer(s) combination used ONLY for consumer one-way truck rental or as an over-the-road truck tractor that DOES NOT operate from a home base location?

NOTE - "Home base" refers to the location where the vehicle was usually parked when it was not on the road.

- 403 1 Yes - **SKIP to item 19**
 2 No - Continue with items 17b and c

b. Where was the home base of this vehicle on July 1, 1992?

NOTE - "Home base" refers to the location where the vehicle was usually parked when it was not on the road. If this vehicle was put into service after July 1, 1992, enter current home base.

City 404		
County 405	State 406	ZIP Code 407

c. What was the type of home base?

Mark (X) ONE box only.

- 408 1 Residential or farm - Location is a private residence.
- 2 Terminal and administrative location - Private, business or commercial trucking operations and administrative duties and functions (i.e. accounting, payroll, etc.) are conducted at this location.
- 3 Terminal and maintenance facilities for business, private, or commercial freight transportation - Location is engaged in the usual business operations of terminal facilities used by highway-type property carrying vehicles. Administrative duties and functions (i.e. accounting, payroll, etc.) are not conducted at this location.
- 4 Corporate headquarters - Location conducts administrative duties and functions ONLY. This location does not conduct usual business, private or commercial trucking operations, or related activities of that business.
- 5 Other - Please specify _____

ITEM 18	Percent
What percent of 1992 mileage was driven OUTSIDE the home base State? <i>An estimate is acceptable. (If none, enter zero.)</i>	409 %
NOTE – "Home base State" refers to the state where the vehicle was usually parked when it was not on the road.	

ITEM 19	
What approximate PERCENT of this vehicle's 1992 mileage was accounted for by the type of trips listed below? <i>If all trips were within one range, enter 100%. If more than one range is applicable, be sure that percents total 100%.</i>	
NOTE – If this vehicle is used for consumer one-way truck rental or is a long-haul truck tractor that does not operate from a home base, report average range of operation.	
Trips off-the-road , little travel on public roads	410 %
Trips less than 50 miles from vehicle's home base	411 %
Trips between 50 and 100 miles from vehicle's home base	412 %
Trips between 100 and 200 miles from vehicle's home base	413 %
Trips between 200 and 500 miles from vehicle's home base	414 %
Trips beyond 500 miles of vehicle's home base	415 %
TOTAL →	100%

ITEM 20	Miles	Tenths
How many miles-per-gallon (MPG) did this vehicle average during 1992? <i>Provide tenths, if available. An estimate is acceptable.</i>	416	.

ITEM 21	
What kind of fuel does this vehicle use? <i>Mark (X) ONE box only.</i>	
418 1 <input type="checkbox"/> Leaded Gasoline 2 <input type="checkbox"/> Unleaded Gasoline 3 <input type="checkbox"/> Diesel 4 <input type="checkbox"/> Liquefied Gas (Petroleum (LPG) or Natural (LNG)) 5 <input type="checkbox"/> Other – Please specify _____	

ITEM 22	
Where was this vehicle primarily refueled during 1992? <i>Mark (X) ONE box only.</i>	
419 1 <input type="checkbox"/> Central company-owned fueling facility 2 <input type="checkbox"/> Single contract fueling facility located off-site 3 <input type="checkbox"/> Public fueling stations 4 <input type="checkbox"/> Other – Please specify _____	

ITEM 23	
What type of brakes does this truck or truck tractor (power unit) have?	
420 1 <input type="checkbox"/> Hydraulic (standard) 2 <input type="checkbox"/> Hydraulic with power assist 3 <input type="checkbox"/> Air 4 <input type="checkbox"/> Other – Please specify _____	

b. If this vehicle was FOR-HIRE, indicate below the type of for-hire operation.
 Enter percent of 1992 mileage for each category. An estimate is acceptable.

(1) Operation type

MOTOR CARRIER – Operated by a company whose primary business is to provide transportation services, carrying freight belonging to others, for a fee

OWNER OPERATOR – Operated by an independent trucker who drives vehicle for himself or on lease to a company –
 as an independent
 leased to a company

PRIVATE FLEET – Operated by and for a private business to transport company-owned freight, which also maintains for-hire authority (i.e., backhauls, trip leasing) –
 as private carrier
 as for-hire operator

Percent	
504	%
505	%
506	%
507	%
508	%
TOTAL →	
100%	

(2) Jurisdiction served (Private Fleet Operation – SKIP to item 27)

INTERSTATE – Operating in more than one State, usually under Interstate Commerce Commission (ICC) authority

INTRASTATE – Operating within one State

LOCAL – In a single municipality, contiguous municipalities and its suburban area

509	%
510	%
511	%
TOTAL →	
100%	

(3) Kinds of carrier

CONTRACT – Offered transportation service to certain shippers under specific contracts . . .

COMMON – Offered transportation service to general public over regular and irregular routes

EXEMPT – Transported commodities or provided types of service that were exempt from Federal regulations, or operated within commercial zones

512	%
513	%
514	%
TOTAL →	
100%	

(4) Kinds of service

TRUCKLOAD – Usually defined as cargo of a single shipper carried on an individual trip . . .

LESS-THAN-TRUCKLOAD – Usually defined as cargo of multiple shippers carried on an individual trip

515	%
516	%
TOTAL →	
100%	

(5) Was this vehicle operated under ICC authority during 1992? 517 1 Yes 2 No

ITEM 27

Which of the following best describes your business (or the part of your business in which the vehicle was used)? If vehicle was leased, indicate business of lessee.
 Mark (X) ONE box only.

- 518 01 AGRICULTURAL OR FARMING ACTIVITIES (including fisheries)
- 02 FORESTRY OR LUMBERING ACTIVITIES
- 03 CONSTRUCTION WORK – buildings, homes, roads, structures, etc.
- 04 CONTRACTOR ACTIVITIES OR SPECIAL TRADES – painting, plumbing, electrical work, masonry, carpentry, etc.
- 05 MANUFACTURING, REFINING, OR PROCESSING ACTIVITIES
- 06 WHOLESALE TRADE
- 07 RETAIL TRADE
- 08 BUSINESS AND PERSONAL SERVICES – used to assist in such services as lodging operations, landscaping, repair (except plumbing, electrical work, etc. – See "Contractor Activities"), laundry, advertising, entertainment, etc.
- 09 UTILITIES – Used to assist in operation or service of public utilities (telephone, gas, electric, cable television, etc.)
- 10 MINING OR QUARRY ACTIVITIES (includes well drilling) – used to assist in the extraction of natural resources or in hauling to processors
- 11 DAILY RENTAL – rented out, without a driver, to someone else on a daily or short-term basis
- 16 ONE-WAY RENTAL
- 13 NOT IN USE – vehicle idle, wrecked, awaiting repair, etc., for more than 6 months
- 14 FOR-HIRE TRANSPORTATION – including small package delivery
- 15 OTHER – Please describe in detail. _____

ITEM 28

From the following list of products, materials, and equipment, indicate which item or items this vehicle carried. Write in the approximate percent of the vehicle's 1992 mileage that was accounted for while carrying loads and while empty including backhauls, trip leasing, etc. Be sure percents total 100%.

NOTE – If you carried only one product, type of equipment, etc., during 1992, enter the percent of mileage while carrying this item.

If you carried more than one product, enter the percents beside the appropriate items. You can use round figures (10%, 25%, etc.). You **DO NOT** need to account for every single item the vehicle carried during 1992, just include those that accounted for at least 5% of the mileage.

If the vehicle is involved in some kind of business use, but does not carry any products or equipment, enter 100% in **NO LOAD**, item 28a.

Please be sure to account for miles driven **empty** in item 28a below.

a. **NO LOAD** – Vehicle empty

b. **PRODUCTS, EQUIPMENT, MATERIALS, ETC.**

(1) **AGRICULTURAL AND FOOD PRODUCTS**

(a) Live animals – cattle, horses, poultry, hogs, live seafood, insects, etc.

(b) Fresh farm products – grain, crops, eggs, flowers, nursery stock, raw milk, raw tobacco, etc.

(c) Processed foods and tobacco products – canned goods, prepared meats, frozen foods, beverages, bottled water, dairy products, cigarettes, etc.

(d) Animal feed – prepared feed and feed ingredients for animals

(2) **MINING PRODUCTS** – crude oil, coal, metal ores

(3) **BUILDING MATERIALS** – gravel, sand, concrete, flat glass, etc. (except cut lumber – See "Lumber")

(4) **FORESTRY, WOOD, AND PAPER PRODUCTS**

(a) Logs and forest products – except cut lumber and fabricated wood products (*See below.*)

(b) Lumber and fabricated wood products – except furniture (*See (7) below.*)

(c) Paper and paper products

(5) **CHEMICALS, PETROLEUM, AND ALLIED PRODUCTS** (*Placard carriers – also complete item 29a*)

(a) Chemicals and/or drugs (including fertilizers, pesticides, cosmetics, paints, etc.)

(b) Petroleum and petroleum products (including paving and roofing materials)

(c) Plastics and/or rubber products

(6) **METALS AND METAL PRODUCTS**

(a) Primary metal products – pipes, ingots, billets, sheets, etc.

(b) Fabricated metal products – except machinery or transportation equipment (*See below.*)

(c) Machinery – electrical or non-electrical and electronic

(d) Transportation equipment (including complete vehicles) and parts

(7) **OTHER MANUFACTURED PRODUCTS**

(a) Furniture (wood and non-wood) and/or hardware – not involved in household moving

(b) Glass products

(c) Textiles and apparel – fibers, leather goods, carpets, clothing, etc.

(d) Miscellaneous products of manufacturing – including photographic goods, watches, clocks, jewelry, and toys

(8) **MISCELLANEOUS AND MIXED CARGO**

(a) Moving of household and office furniture – from home, offices, etc., under contract

(b) Miscellaneous tools and/or parts for specialized use, as in a craftsman's vehicle – traveling workshop for plumbers, carpenters, road service crews, etc.

(c) Mixed cargo (including the delivery of small packages)

(d) Scrap (not for recycling), garbage, trash, septic tank waste

(e) Industrial "waste" water

(f) Hazardous waste (EPA manifest)

(g) Hazardous waste (non-EPA manifest)

(h) Recyclable products

(9) **OTHER** (not elsewhere classified) – *Please describe in detail.*

Percent	
519	%
521	%
522	%
523	%
524	%
525	%
526	%
527	%
528	%
529	%
530	%
531	%
532	%
533	%
534	%
535	%
536	%
537	%
538	%
539	%
540	%
541	%
542	%
543	%
544	%
545	%
546	%
547	%
548	%
549	%
100%	

TOTAL – No load plus products carried should total 100%

ITEM 29

a. At any time during 1992 was this vehicle (or combination) used to haul hazardous materials in quantities large enough to require a hazmat placard on the vehicle due to title 49 CFR 177.823, Transportation?

550 1 Yes - Continue with item 29b 2 No - **SKIP to item 30**

b. What type(s) of hazardous materials were carried by this vehicle? Write in the approximate percent of the vehicle's 1992 mileage which accounted for each hazardous material carried.

NOTE - Indicate only percents for those hazardous materials carried in quantities large enough to require a hazmat placard placed on the vehicle.

Placard name	Former placard name (if different)	Percent	Placard name	Former placard name (if different)	Percent
Explosives 1.1	Explosives A	551 %	Flammable solid		562 %
Explosives 1.2	Explosives A	552 %	Spontaneously combustible	Flammable solid	563 %
Explosives 1.3	Explosives B	553 %	Dangerous when wet	Flammable solid W	564 %
Explosives 1.4	Dangerous	554 %	Oxidizer		565 %
Explosives 1.5	Blasting agents	555 %	Oxygen		566 %
Explosives 1.6	Dangerous	556 %	Organic peroxide		567 %
Flammable gas		557 %	Poison		568 %
Non-flammable gas		558 %	Keep away from food	(none required)	569 %
Poisonous gas		559 %	Radioactive		570 %
Flammable		560 %	Corrosive		571 %
Combustible		561 %	Class 9	(none required)	572 %

ITEM 30

Please indicate below the total number of trucks, truck tractors (power units), and trailers owned and/or operated by you or your company.

NOTE - Trucks refer to pickups, small vans (including mini-vans), and straight trucks. Trailers refer to semi and/or full trailers. Do **not** include utility trailers. Subsidiaries of companies should report fleet size for the respective subsidiary only.

Mark (X) ONE box only.

600 01 1 03 6 to 9 05 25 to 99 07 500 to 999 09 5,000 to 9,999
 02 2 to 5 04 10 to 24 06 100 to 499 08 1,000 to 4,999 10 10,000 or more

ITEM 31

Remarks - Please use this space for any explanations that may be important in understanding your reported data.

ITEM 32 Contact Information

a. Name of person to contact regarding this report			b. Address (Number and street)		
c. City			d. State	e. ZIP Code	
f. Daytime telephone number →	Area code	Number	Extension (if any)	g. If this vehicle has a fleet number, please enter it here	
h. Signature of authorized person			i. Title		j. Date



U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

FORM
TC-9502

1987 CENSUS OF TRANSPORTATION TRUCK INVENTORY AND USE SURVEY

OMB APPROVAL NO. 0807-0182; EXPIRES 12/88

NOTICE — Response to this inquiry is required by law (Title 13, U.S. Code). By the same law, your report to the Census Bureau is confidential; it may be seen only by sworn Census employees and may be used only for statistical purposes. The law also provides that copies retained in your files are immune from legal process.

In correspondence pertaining to this report, please refer to this Census File Number (CFN)

Please complete this form and RETURN TO

BUREAU OF THE CENSUS
1201 East Tenth Street
Jeffersonville, Indiana 47134

DUE DATE: 15 days after receipt of form

Important — Please read

All questions on this form refer to the vehicle described below and its use during 1987. If you did not own the vehicle during 1987, please continue with the questionnaire answering each item according to how you used the vehicle during the last 12 months you owned (or leased) it. If there are errors in the vehicle registration information, consult the instruction sheet before continuing with the questionnaire.

ESTIMATES ARE ACCEPTABLE.

Please correct errors in name, address, and ZIP Code. ENTER street and number if not shown.

CENSUS USE						
1	2	3	4	5	6	7
REGISTRATION INFORMATION						
Make of vehicle		Year of model	State	License number	Vehicle identification number (VIN)	
101	102	103	104	105	106	107

Item 1 — When did you obtain this vehicle? 110 Month Year
Enter figures only

Item 2 — How did you obtain this vehicle?

111 Purchased it new } SKIP to item 3
 Purchased it used (or otherwise acquired) }
 Leased or rented it FROM someone else — Continue with items 2a and b

a. How was this vehicle leased or rented?

112 Without a driver
 With a driver other than an owner-operator
 With an owner-operator as driver

b. Was the agreement for 12 months or more?

113 NO
 YES — Which of the following did the leasing agreement include? Mark (X) all that apply

114 Financing only (Do not mark if installment sales contract)
115 Full maintenance
116 Maintenance on specified parts only
117 Payment on taxes
118 Obtaining licenses and permits
119 Recordkeeping for leased trucks
120 Other — Specify X

Item 3 — Is this vehicle still in your possession?

208 YES — Are you the — 207 owner? } SKIP to item 4 and continue
 lessee? } with questionnaire
 NO — Please continue with this questionnaire, answering each item according to how you used the vehicle during the last 12 months you owned (or leased) it. Continue with items 3a and b.

a. When did you dispose of this vehicle? 208 Month Year
Enter figures only

b. How did you dispose of this vehicle?

209 Sold it (or gave it away)
 Junked, scrapped, or otherwise destroyed
 Returned to leasing company

Item 4 — Please indicate the body type which most closely resembles this vehicle or the trailer most often attached to it, if the power-unit is a truck-tractor.

311 **PLATFORM TYPES**

08 Low boy (gooseneck) — platform with depressed center
09 Basic platform — including flatbed, stake, etc.
04 Platform with devices permanently mounted on bed of truck — such as high lift, lift gate, hoist, etc.

VAN TYPES

03 Multistop or step van (including hi-cube or outway)
12 Basic enclosed van (dry cargo)
19 Drop frame van — including furniture van, etc.
06 Insulated, non-refrigerated van
08 Insulated, refrigerated van
11 Open top van, including fruit

SPECIALIZED USE TRUCKS

18 Automobile transport
13 Beverage truck
70 Concrete mixer
40 Dump truck (including belly or bottom dump)
28 Grain bodies (including low-side grain and hoppers, etc.)
30 Garbage truck
07 Livestock truck (including livestock drop frame)
27 Offroad truck — service equipment permanently mounted on vehicle
17 Pole, logging, pulpwood, or pipe truck
22 Service truck or "craftsman's vehicle" — body equipped for mobile repair and service
80 Tank truck for dry bulk
50 Tank truck for liquids or gases
14 Utility truck — used in public utility operations (telephone line truck, etc.), body equipped for major repair (may have aerial lift, derrick, etc.)
15 Winch or crane truck — lifting equipment (including roll on, roll off) permanently mounted on vehicle
18 Wrecker — for motor vehicle towing or lifting
23 Yard tractor — cab and chassis ONLY, used to spot trailers

NOTE — If none of the above descriptions match the body type of this vehicle, or the truck usually attached to it, mark (X) the "Other" box below and specify type.

40 Other — Specify _____

Item 4 - Did you lease or rent out this vehicle TO anyone else?

210 1 YES - Continue with items 4a and b
2 NO - SKIP to item 5

a. How was it leased or rented out?

211 1 Without a driver
2 With a driver other than an owner-operator
3 With an owner-operator as driver

b. Was the agreement for 12 months or more?

213 2 NO
1 YES - Which of the following did the leasing agreement include? Mark (X) all that apply

214 Financing only (Do not mark if installment sales contract)
215 Full maintenance
216 Maintenance on specified parts only
217 Payment of taxes
218 Obtaining licenses and permits
219 Reconditioning for leased trucks
220 Other - Specify _____

Item 5 - How would you best describe this vehicle as it was most often operated? (If the vehicle is a pickup, compact van, mini-van, or panel truck, enter body type on the "Other" line.)

300 1 Straight truck
2 Straight truck pulling trailer(s)
3 Truck-tractor (power unit) pulling trailer(s)
4 Other - Specify _____

Item 6 - If you indicated in item 5 that you operated this vehicle with trailer(s) attached, indicate below the kind of trailer(s) you most often pulled. Mark (X) one box only, also indicate if axes are liftable.

a. Utility and other trailers less than 20 feet used with straight truck

304 1 One axle on trailer
2 Two axles on trailer
3 Three axles or more on trailer

b. One full trailer * used with straight truck

305 1 Two axles on trailer
2 Three axles on trailer
3 Four or more axles on trailer

How many, IF ANY, of the trailer's axles are liftable? → 306 _____

c. One semi-trailer, used with truck-tractor (power unit)

307 1 One axle on trailer
2 Two axles on trailer
3 Three or more axles on trailer

How many, IF ANY, of the trailer's axles are liftable? → 308 _____

d. Two trailers, one semi- and one full * used with truck-tractor (power unit)

308 1 Three axles on two trailers
2 Four axles on two trailers
3 Five axles on two trailers
4 Six or more axles on two trailers

How many, IF ANY, of the trailer's axles are liftable? → 309 _____

e. Three trailers, one semi- and two full * used with truck-tractor (power unit)

309 1 Five axles on three trailers
2 Six axles on three trailers
3 Seven axles on three trailers
4 Eight or more axles on three trailers

How many, IF ANY, of the trailer's axles are liftable? → 310 _____

f. Other - Please describe in detail the number of trailers and axles on those trailers. Also give number of any liftable axles on trailer(s).

310 _____

Item 7 - If you indicated in item 6 that you operated a truck-tractor (power unit) pulling trailer(s), what percent of annual mileage did you haul -

a. Railroad, ocean-going, or similar containers? 312 %
b. Piggyback trailers? 313 %

Item 9 - How many axles are on this vehicle and how many of them are driving axles? (Do not include axles on any trailers pulled.)

a. Total number of axles on truck or truck-tractor (power unit) (include front and rear axles.)

314 1 Two axles (4 tires)
2 Two axles (6 tires)
3 Three axles
4 Four or more axles

How many, IF ANY, are liftable axles? → 317 _____

b. Number of driving (powered) axles on truck or truck-tractor (power unit)

316 1 One driving axle
2 Two driving axles
3 Three or more driving axles

Item 10 - What type of cab does this vehicle have?

315 1 Cab forward of engine
2 Cab over engine
3 Conventional cab
4 Cab beside engine
5 Other

Item 11a - What is the OVERALL length of this vehicle or combination as it was most often operated? Report distance from front bumper to rear of truck or rear of the last trailer pulled. 325 Feet

b. If this is a combination vehicle, what was the width of the trailer most often attached to the truck or power unit? (If more than one trailer was pulled, give the width of the widest trailer pulled.) 326 inches

Item 12 - What is the EMPTY weight (truck minus cargo) of this vehicle or vehicle/trailer combination? 328 Pounds
An estimate is acceptable.

Item 13 - What was the AVERAGE weight (empty weight plus weight of cargo) of the vehicle or vehicle/trailer combination when carrying a typical payload during the past year? 327 Pounds
An estimate is acceptable.

Item 14a - What was the MAXIMUM GROSS weight (MGW) at which this vehicle or vehicle/trailer combination was operated? 324 Pounds
An estimate is acceptable.

b. What percent of annual mileage did this vehicle carry no payload? 328

c. What percent of annual mileage did this vehicle carry payloads that - 328
(1) filled its maximum cargo size? 330
(2) weighed the maximum cargo weight?

Item 15 - How many miles was this vehicle driven during 1987? 400 Miles
An estimate is acceptable.

Item 16 - How many miles has this vehicle been driven since it was manufactured? 401 Miles
NOTE - If it is no longer in your possession, please estimate the total lifetime mileage at the time you last operated it. If the odometer/speedometer is broken, please give your best estimate. If the odometer has turned over (100,000 + miles), please enter the total figure.

Item 17 - How many miles-per-gallon (MPG) did this vehicle average during 1987? (Use tanks, if available.) 402 Miles per gallon

Example: 10.5 MPG should be entered as

Miles	Tenths
10	5

 Error miles per gallon →

Item 18 - Where was the home base of this vehicle on July 1, 1987? If put into service after July 1, 1987, enter current home base.

404 City _____
405 County _____ 406 State _____ 407 ZIP Code _____

* or Semi-trailer with converter dolly

Item 19 - What percent of annual mileage was driven OUTSIDE the home base state? An estimate is acceptable. (If none, enter zero.) 408 %

Item 20 - What PERCENTAGE of this vehicle's ANNUAL MILEAGE was accounted for by the type of trips listed below? (If all trips were within one range, enter 100%. If more than one range is applicable, be sure that percentages add up to 100%.)

Trips off-the-road, little travel on public roads	409	%
Trips less than a 50 mile radius of vehicle's home base	410	%
Trips within a 50-200 mile radius of vehicle's home base	411	%
Trips beyond a 200 mile radius of vehicle's home base	412	%
TOTAL - Should equal 100%	100%	

Item 21 - Not applicable to this form.

Item 22 - What is the horsepower rating of this vehicle's engine? 341 Horsepower

Item 23 - What is the size (displacement) of this vehicle's engine? Enter cubic inches, cubic centimeters, or liters, whichever is applicable.

342 Cubic inches (CI) OR 343 Cubic centimeters (CC) OR 344 Liters (L)

Item 24 - What kind of fuel does this vehicle use?

348 Gasoline
 Diesel
 Liquefied petroleum gas (LPG)
 Other - Specify fuel _____

Item 25 - What type of brakes does the power unit (truck or truck-tractor) have?

347 Hydraulic (standard)
 Hydraulic with power assist
 Air

Item 26 - Does this vehicle have any of the following equipment? Mark (X) all that apply.

350 Aerodynamic features
 351 Axle or drive ratio to maximize fuel efficiency
 352 Fuel economy engine with low RPM, high torque rise, turbo-charge, etc.
 353 Reflective materials (in addition to those required by law)
 354 Radial tires
 355 Road speed governor
 356 Variable fan drives
 357 Other fuel conservation features
 358 Power steering
 359 Air conditioning in cab
 360 Engine retarder
 361 Electronic vehicle management system
 362 Electronic vehicle identification device (transponder), etc.
 363 Trip recorders
 364 Navigational systems

Item 27 - Who performed the general maintenance and major overhauls on this vehicle? Mark (X) all that apply.

	General maintenance	Major overhauls
Yourself	370 <input type="checkbox"/>	378 <input type="checkbox"/>
Your company's own maintenance facilities	371 <input type="checkbox"/>	379 <input type="checkbox"/>
Dealership's service department	372 <input type="checkbox"/>	380 <input type="checkbox"/>
Leasing company	373 <input type="checkbox"/>	381 <input type="checkbox"/>
Independent garage or private mechanic (includes gasoline or service stations)	374 <input type="checkbox"/>	382 <input type="checkbox"/>
Component distributorship (engine, transmission, etc.)	375 <input type="checkbox"/>	383 <input type="checkbox"/>
No one	376 <input type="checkbox"/>	384 <input type="checkbox"/>
Other - Specify _____	377 <input type="checkbox"/>	385 <input type="checkbox"/>

Item 30 - From the following list of products, materials, and equipment, indicate which item or items this vehicle carried. Write in the approximate percentage of the vehicle's annual mileage that was accounted for while carrying loads. (See instruction sheet for further explanation and examples.)

Products, equipment, materials, etc.

(1) AGRICULTURAL AND FOOD PRODUCTS	
(a) Live animals - cattle, horses, poultry, hogs, live seafood, insects, etc.	528 %
(b) Fresh farm products - grain, crops, flowers, nursery stock, raw milk, raw tobacco, etc.	527 %
(c) Processed foods and tobacco products - canned goods, prepared meats, frozen foods, beverages, bottled water, dairy products, cigarettes, etc.	528 %
(2) MINING PRODUCTS, UNREFINED - crude oil, coal, metal ores	529 %
(3) BUILDING MATERIALS - gravel, sand, concrete, flat glass, etc. (except cut lumber - See "Lumber.")	530 %
(4) FORESTRY, WOOD, AND PAPER PRODUCTS	
(a) Logs and forest products - except cut lumber and fabricated wood products (See below.)	531 %
(b) Lumber and fabricated wood products - except furniture (See (7) below.)	532 %
(c) Paper and paper products	533 %
(5) CHEMICALS, PETROLEUM, AND ALLIED PRODUCTS	
(a) Chemicals and/or drugs (including fertilizers, pesticides, cosmetics, paints, etc.)	534 %
(b) Petroleum and petroleum products (including paving and roofing materials)	535 %
(c) Plastics and/or rubber products	536 %
(6) METALS AND METAL PRODUCTS	
(a) Primary metal products - pipes, ingots, billets, sheets, etc.	538 %
(b) Fabricated metal products - except machinery or transportation equipment (See below.)	539 %
(c) Machinery - electrical or nonelectrical and electronic	540 %
(d) Transportation equipment (including complete vehicles) and parts	541 %
(7) OTHER MANUFACTURED PRODUCTS	
(a) Furniture (wood and nonwood) and/or hardware - not involved in household moving	542 %
(b) Glass products	543 %
(c) Textiles and apparel - fibers, leather goods, carpets, clothing, etc.	544 %
(d) Miscellaneous products of manufacturing - including photographic goods, watches, clocks, jewelry, and toys	545 %
(8) MISCELLANEOUS	
(a) Moving of household and office furniture - from home, office, etc., under contract	546 %
(b) Miscellaneous tools and/or parts for specialized use, as in a craftsman's vehicle - traveling workshop for plumbers, carpenters, road service crews, etc.	547 %
(c) Mixed cargo, general freight (including the delivery of small packages)	548 %
(d) Scrap, garbage, trash, septic tank waste	549 %
(e) Industrial waste	550 %
(f) Hazardous waste	551 %
(9) OTHER (not elsewhere classified) - Please describe in detail.	

Item 31 - At any time during 1987 was this vehicle (or combination) used to haul hazardous materials in quantities large enough to require a special placard placed on the vehicle due to the Code of Federal Regulations, title 49, Transportation?

562 YES - Continue with items 31a and b
 NO - SKIP to item 32

a. What types of hazardous materials were carried by this vehicle? Mark (X) all that apply.

Hazardous Materials

563 <input type="checkbox"/> Flammable liquids	565 <input type="checkbox"/> Blasting agents
564 <input type="checkbox"/> Combustible liquids	566 <input type="checkbox"/> Radioactive materials
566 <input type="checkbox"/> Corrosive liquids	567 <input type="checkbox"/> ORM - A, B, or C
568 <input type="checkbox"/> Poison B solids	568 <input type="checkbox"/> ORM E
567 <input type="checkbox"/> Poison B liquids	569 <input type="checkbox"/> Hazardous materials not listed above - Specify _____
568 <input type="checkbox"/> Flammable solids	
569 <input type="checkbox"/> Oxidizers	
569 <input type="checkbox"/> Flammable gas	
561 <input type="checkbox"/> Nonflammable gas	
562 <input type="checkbox"/> Poison A	
563 <input type="checkbox"/> Corrosive solids	
564 <input type="checkbox"/> Explosives, A or B	

b. Approximately what percent of this vehicle's annual mileage was accounted for by carrying these hazardous materials?

570 Below 10% 50-74%
 10-24% 75-100%
 25-49%

- Item 28a - Which of the following best describes the primary way this vehicle was operated?**
- 101 **BUSINESS USE** - Operated by and for a private business (including self-employers) or a company; used in related activities of that business (including transportation of employees) - SKIP to item 29
- PERSONAL TRANSPORTATION** - Operated as a personal-use vehicle in place of an automobile for pleasure driving, travel to work, etc. (NO BUSINESS USE) - SKIP to item 32
- FOR HIRE** - SKIP to item 28b
- DAILY RENTAL OR SHORT TERM LEASE** - Rented or leased out to various operators and for various activities, under daily or short term rental or lease agreements (Not motor carrier) - SKIP to item 29
- MIXED**

Percent business use	502	%
Percent personal use	503	%
Percent for hire (includes intercorporate hauling and the leasing, etc.)	504	%

Complete B below

b. If this vehicle was for hire, indicate below the type of for hire operation. Enter percentage of mileage for each category.

(1) Operation type

- MOTOR CARRIER** - Operated by a company whose primary business is to provide transportation services, carrying freight belonging to others 506 %
- OWNER/OPERATOR** - Operated by an independent trucker who drives vehicle for himself or on lease to a company -
- as an independent 507 %
- leased to a company 508 %

(2) Jurisdiction served

- INTERSTATE** 509 %
- INTRASTATE** 510 %
- LOCAL** - in a single municipality, contiguous municipalities of a municipality and its suburban area; in commercial zones 511 %

(3) Kind of carrier

- CONTRACT** - Offered transportation service to certain shippers under contracts 512 %
- COMMON** - Offered transportation service to the general public over regular or irregular routes 513 %
- EXEMPT** - transported commodities or provided types of services that were exempt from Federal regulation; operated within exempt commercial zones 514 %

(4) Was this vehicle operated under ICC authority? 516 YES NO

Item 29 - Which of the following best describes your business or the part of your business in which the vehicle was used? If the vehicle was leased, indicate business of lessee.

- 128 **AGRICULTURAL ACTIVITIES** (including fisheries)
- FORESTRY OR LUMBERING ACTIVITIES**
- CONSTRUCTION WORK** - buildings, homes, roads, structures, etc.
- CONTRACTOR ACTIVITIES OR SPECIAL TRADES** - painting, plumbing, electrical work, masonry, carpentry, etc.
- MANUFACTURING, REFINING, OR PROCESSING ACTIVITIES**
- WHOLESALE TRADE**
- RETAIL TRADE**
- BUSINESS AND PERSONAL SERVICES** - used to assist in such services as lodging operations, landscaping, repair (except plumbing, electrical work, etc. - See "Contractor Activities"), laundry, advertising, entertainment, etc.
- UTILITIES** - Used to assist in operation or service of public utilities (telephone, gas, electric, etc.)
- MINING OR QUARRY ACTIVITIES** (includes well drilling) - used to assist in the extraction of natural resources or in hauling or processors
- DAILY RENTAL** - rented out, without a driver, to someone else on a daily or short-term basis
- ONE-WAY RENTAL**
- GOVERNMENTAL OPERATIONS**
- NOT IN USE** - vehicle idle, wrecked, awaiting repair, etc., for more than 90 days
- FOR HIRE TRANSPORTATION** - including small package delivery
- OTHER** - Please describe in detail.

Item 32a - Was this truck or power unit involved in any accidents during 1987?

- 580 YES - Continue with item 32b
- NO - SKIP to item 33

b. If this truck or power unit was involved in any accidents during 1987, how many -

- (1) involved a fatality? 581
- (2) involved no fatalities, but involved bodily injury requiring medical treatment? 582
- (3) involved property damage of \$4,200 or more? 583

Item 33 - Please enter below the number of any ADDITIONAL trucks and/or trailers you own and/or operate at the same home base you listed in item 1B.

- a. Pickups, small vans (includes mini-vans) 573
- b. Straight trucks 572
- c. Truck-tractors (power units) 573
- d. Trailers (semi- and/or full) 574
- e. Converter dollies 575

Item 34 - Please enter below Employer Identification (EI) Number if vehicle owned by company or Social Security Number (SSN) if vehicle owned by individual.

EI:

or

SSN:

Item 35 - REMARKS - Please use this space for any explanations that may be essential in understanding your reported data.

Item 36 - Person to contact regarding this report

Does this person have records on (or knowledge of) the daily activities of driver (stops, weights of individual shipments, destinations of shipments, etc.)?

- YES
- NO

Name: _____

Address (number and street): _____

City: _____ State: _____ ZIP Code: _____

Daytime telephone number: _____ Area code: _____ Number: _____ Extension, if any: _____

If this vehicle has a fleet number, please enter it here: _____