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LIGHT DUTY TRUCK CHARACTERISTICS, HISTORICAL DATA BASE

C. CANTWELL

CHILTON COMPANY
201 King of Prussia Road
Radnor PA 19089

DECEMBER 1979
FINAL REPORT

Prepared for

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16. Abstract

This report is a collection of data concerning physical, operating, performance, and market characteristics of light duty trucks for the model years 1972 and 1975 thru 1977. The data is stored on tape in DOT/TSC DEC System 10 computer system. Information was collected from published and unpublished sources with extrapolation and correlations being made when raw data was not available.

Vehicles are reported by model year and grouped by manufacturer using production volume, model, body type, engine displacement, transmission and GVWR class attributes as criteria to select representative vehicle configurations. Models which are essentially duplicated by more than one division of a manufacturer--i.e., Chevrolet C-10 and GMC C-1500--are represented by attributes of only one of the duplicate models. Production volume for both models is then combined.

Characteristics are documented for vehicles representative of total U.S. sales of domestic and imported light duty trucks for the model years indicated.

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PREFACE

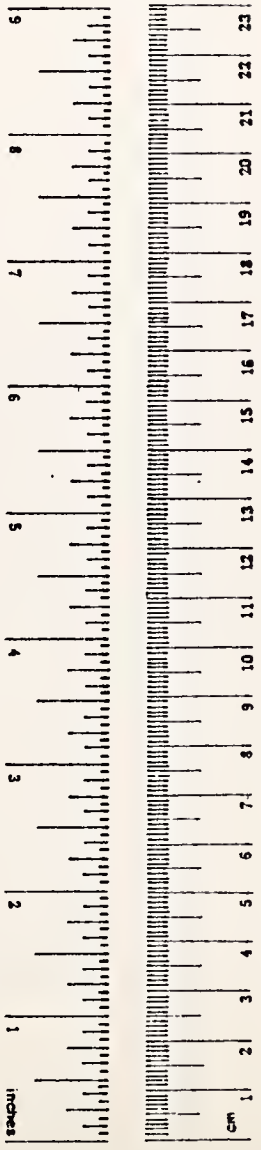
The work included in this project greatly enhances the research and development program at the Transportation Systems Center and is aimed at providing an information base for standards-setting deliberations. The data collected will help the Government to understand historical changes and to develop a forecasting model to help determine the impact of potential fuel economy standards.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

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LIST OF ABBREVIATIONS

Abbreviation	Definition
AM	Amplitude Modulation
CID	Cubic Inch Displacement
EPA	Environmental Protection Agency
FM	Frequency Modulation
GVWR	Gross Vehicle Weight Rating
LDT	Light Duty Truck(s)
MPH	Miles per hour
NA	Not Applicable
N/V	Ratio of engine speed (RPM) to vehicle speed (MPH)
RPM	Revolutions per minute
STD	Standard
TSC	Transportation Systems Center
WD	Wheel Drive as 2 Wheel Drive

1. INTRODUCTION

1.1 GENERAL

The information presented and discussed in this report is the result of an extensive, in-depth research effort directed toward the compilation of pertinent information relating to all domestic and imported light duty trucks sold in the United States during the 1977, 1976, 1975 and 1972 model years.

The information produced by this research project constitutes an historical data base similar to the TSC data base previously developed for passenger cars. This historical data base may be used as a means of defining light duty truck characteristics during the time period covered by the project (1972, 1975, 1976, and 1977).

The background, scope, limitations, methodology, conclusions and recommendations sections follow.

1.2 BACKGROUND

The light duty truck (10,000 lb. GVWR and below), after many years as an unpretentious small work vehicle, has begun an evolutionary period. The myriad changes that have occurred during the past two decades have dramatically altered the character, use, population, and market penetration of the light duty truck. The changes have ranged from subtle styling alterations to proliferations of models, body types, drivetrain variations, and accessory options. These changes, due to normal market forces, changing transportation requirements, and federal regulations have created a need to understand what changes have occured during the past several years. Such knowledge, coupled with additional knowledge in areas such as prevailaing economic forces, transportation regulations, etc. can be used to predict what may happen to this light duty truck market as influencing factors change.

This need to understand the changes in light duty trucks establishes the requirement for this project to present an historical data base for light duty trucks for the 1972 and 1975 through 1977 model years to show recent years trends in the light duty truck market. The approximately 60 attributes for each representative light duty truck, sold domestically for these model years, constitute a meaningful and useful data base.

1.3 SCOPE

The objective of this project is to procure and present data pertaining to specified characteristics for subject model years. The physical, operating, performance, and production characteristics are gathered for all domestically manufactured and imported light duty trucks that were sold in the United States during the 1972 and 1975 through 1977 model years. Each vehicle configuration is defined by approximately 60 attributes.

The work is divided into two main areas. The first area includes vehicle selection, attribute selection, attribute definitions, and format. The second area includes data collection, correlation, and collation. Data is presented on tape and is loaded into the DOT/TSC DEC10 Computer System.

The information was gathered from trade publications, direct contact with manufacturers, unpublished sources, specialized testing reports, the Environmental Protection Agency, and trade associations.

1.4 LIMITATIONS

The lack of published sources of information for certain attributes necessitated the use of unpublished, but reliable, sources (such as Auto Manufacturers Data Books), and some extrapolation or expansion of hard data. The model year 1977 sales figures are projected since the completion date of the project is prior to the end of the model year. Accessory attributes could not be aligned with a particular model/engine/transmission configuration, so they apply to the model configuration as a whole.

No EPA fuel economy data was available for the 1972 model year for light duty trucks. Some road-test mileage information was used in the few instances where the tested configuration matched a configuration of this study. When used, technical judgements were applied to match the road test data to the 1975 EPA CVS-1 cycle. No fuel economy data was available from the EPA for GVWR configurations over 6,000 pounds. There is less available EPA fuel economy data for 1975 Ford vehicles that for other major manufacturers. Some road test data was used to supplement the EPA 1975, 1976 and 1977 data, but this use was minimal. Data presented in the data base reflects these limtations.

2. METHODOLOGY

2.1 GENERAL

The light duty truck is a complex and diverse vehicle, intended for a multitude of utilitarian and recreational activities. These many uses create a potential for engine/transmission/model configurations that number into the thousands for each model year. The incorporation of every engine/transmission/model configuration into the data base is beyond the scope of this project. However, the requirements for the data base allow a selected vehicle sampling to represent a specific model year fleet. All domestic and imported vehicles that fit the requirements are included in the data base for the model years 1972 and 1975 through 1977.

The means of reducing the many possible variations to the selected list of meaningful configurations was established after a thorough inspection of published and non-published information and a thorough discussion with DOT/TSC personnel.

For the following discussion, a vehicle "make" refers to a manufacturer, and a vehicle "model" refers to a vehicle series designation of that manufacturer. For example; Ford, Dodge, and Chevrolet are makes, and Ford F100, Dodge D100, and Chevrolet C10 are models.

2.2. VEHICLE SELECTION

2.2.1 Selection Parameters

The parameters used for selecting the vehicle configurations representing each of the model years used in the data base are as follows:

(a) All models manufactured domestically.

(b) All models of imported light duty trucks whose sales exceed 15,000 units annually.

(c) The most popular model of imports whose sales are between 2,000 and 15,000 units annually.
Imports other than the above, with sales of less than 2,000 units, are excluded.

Vehicle configurations are determined by model identification, engine, and transmission, i.e., D100, 318V8, 3 Speed Automatic. Vehicles manufactured by two or more divisions of the same corporation are combined (i.e., Chevrolet C10/GMC C-1500) if they are essentially the same vehicle, and are listed as a single vehicle in the data base. Both model names or identification numbers are listed in the model name attribute to simplify identification.

Individual vehicle configurations with a production volume of 2500 units or more are included in the data base. The minimum production volume of a configuration included in the data base is 2500 units. Passenger and cargo van versions of the same model are maintained as separate configurations throughout the data base. Suburban and pickup versions of the same model are also recorded as separate configurations. Production volumes are always listed separately for passenger and cargo vans, suburban and pickup trucks and for four wheel drive and two wheel drive versions of the same vehicle.

Similar body configurations within a model series are grouped, and one body configuration is used to represent the group; i.e., with stepside and fleetside pickups; fleetside is used as the representative vehicle.

Models whose GVWR start at or near 10,000 lbs. and go well beyond (i.e., 14,000 lbs.) are excluded from the data base.

Cab and chassis units are combined with their pickup counterparts to form a single configurations, and Cutaway vans are combined with their van counterparts.

Suburban type vehicles include and combine both 2 and 4-door versions.

When there are models available in more than three wheelbases, and the usage of one wheelbase which is basically the same as one of the other wheelbases is very low, then the two are combined. For example, if a Ford 159 inch wheelbase is seven percent, and a Ford 161 inch wheelbase is one percent, then a Ford 159 wheelbase is listed instead as eight percent.

Van models available in cargo and passenger versions are combined, and the attributes peculiar to each of these versions and their production volumes are listed separately.

A configuration of a vehicle available in both two and four-wheel drive is shown as one vehicle configuration. Attribute values, which vary between the two and four-wheel drive versions, and the production volumes of these versions are listed separately and identified by drive version.

Vehicle model configurations produced by manufacturers with low model year productions totals that fall below the 2,500 minimum, are represented by at least one configuration in order to give that corporation proper representation.

2.2.2 Selection Example

The following example illustrates the vehicle selection process in detail.

For the 1976 model year, the Plymouth and Dodge Divisions of Chrysler Corporation offered virtually identical trucks. The Dodge version is known as the B-100 truck and is available in a cargo (Tradesman) and passenger (Sportsman) configuration. The Plymouth version is known as PB100 Voyager and is only available in a passenger version. Table 2-1 describes the initial configuration selection process.

TABLE 2-1. PRODUCTION TOTALS

1976	Dodge B-100 (Van)		1976	Plymouth PB100 Voyager
	Cargo (Tradesman)	34889		N.A.
	Passenger (Sportsman)	3897		2103
	Total	38786		2103

Table 2-2 shows the combined production total that is obtained by applying the rule of selection which states that vehicles manufactured by two or more divisions of the same corporations are combined if they are essentially the same vehicle.

TABLE 2-2. COMBINED PRODUCTION TOTAL

	Dodge/Plymouth B-Truck (Van)			
	Dodge	+ Plymouth	=	Combined
Cargo	34,889	+ 0	=	34,889
Passenger	3,897	+ 2103	=	6,000
Total	38,786	+ 2103	=	40,889

Referring to Figures 2-1 and 2-2, the Manufacturers Production Data Collection Sheets, it can be seen that the Dodge/Plymouth Van has three possible engines and three possible transmissions, giving a total possible vehicle line representations of 9. The Dodge/Plymouth Van is available in two variations, a passenger and a cargo configuration. All engines and all transmissions are available in both configurations, which brings the possible total representative vehicles to 18. If the rule is applied that states that Van models available in cargo and passenger configurations are combined and the attributes peculiar to each configuration and their production volumes are listed separately, then nine (9) configurations represent these vehicles as shown in Table 2-3.

All configurations over 2500 units are represented separately in the data base. Cargo and passenger versions of the same van configuration are combined into one configuration, but the production total for each version is listed separately. Referencing Table 2-3, it is seen that these rules would provide for the combination of lines 1 and 2 with 225M3 configuration representing this combination. Similarly, lines 4 and 5 and lines 7, 8, and 9 are combined. The rules would permit the further combination of

TABLE 2-3. INITIAL NINE (9) CONFIGURATIONS FOR 1976 DODGE/ PLYMOUTH VANS.

		Production		
Line	*Engine/Transmission	Total	Cargo	Passenger
1.	225M3	5314	4974	340
2.	225M4	133	111	22
3.	225A3	10044	8731	1313
4.	318M3	8003	7209	794
5.	318M4	207	160	47
6.	318A3	15816	12657	3159
7.	360M3	441	377	64
8.	360M4	13	8	5
9.	360A3	918	662	256

* 255=255 CID engine; M3 = 3 speed manual transmission; A3 = 3 speed automatic

the 360 CID vehicles (lines 7, 8 and 9) with the 318A3 vehicles. However, in the interest of maintaining maximum engine representation the 360 CID engine is represented in the data base also. The resulting five configurations used to represent the 1976 Dodge/Plymouth vans are shown in Table 2-4. This table also shows the production volumes for the cargo and passenger versions.

The vehicles listed in Table 2-4 are those that appear in the data fine and for which all information is given.

In every case, as vehicle model configurations are combined, the total production of the model and model/engine configuration is maintained. Also, in every case, the broadset vehicle model/ engine configuration representation is maintained.

TABLE 2-4. FINAL VEHICLE CONFIGURATIONS SELECTED FOR 1976 DODGE/PLYMOUTH VANS

*Engine/Transmission	Production Totals	
	Cargo	Passenger
225M3	5085	362
225A3	8731	1313
318M3	7369	841
318A3	12657	3159
360A3	1047	325
Total	34889	6000

* 225 = 225 CID engine; M3 = 3 speed manual transmission; A3 = 3 speed automatic.

Data collection sheets compiled from manufacturers production records are referenced for all years of Dodge, Plymouth, Ford, and all import cars. The years 1975, 1976, and 1977 for AMC and International, and 1976 and 1977 for Chevrolet/GMC are also supported by these data collection sheets.

Where data for data collection sheets were not available, the best available published and unpublished sources were used to determine production volumes and option penetrations; i.e., Wards Automotive Yearbooks, Automotive News, Almanac Issues, and M.V.M.A. (Motor Vehicle Manufacturers Association) statistical reports. In a very few cases judgement had to be employed to determine production quantities for a specific configuration such as production models which a manufacturer may lump together because of the similarity of the vehicles (i.e., P10, P20, P30 Cheveolet Parcel delivery vans) or for lack of recorded data.

The use of the manufacturer's production data collection sheet is described below.

The data collection sheet contains information relating to the production totals and option penetrations of the light duty truck listed at the top of each sheet. The information contained on these sheets was obtained directly from the manufacturers, rather than published sources, in order to obtain the highest degree of accuracy. The data collection sheet information was used as input for the data recording sheets wherever applicable. The information on the data collection sheets was used to fill the appropriate attributes as well as to assist in the final vehicle selection. The following is a detailed example of how the data sheet was employed and which attributes it filled.

Refer to Figures 2-1 and 2-2, Manufacturers Production Data Collection Sheets for Dodge and Plymouth. Data sheet lines A, 1-7 were used to determine the final vehicle selection and as such fills the following attributes for the 1976 Dodge/Plymouth van. See Section 2.3 for attribute definitions.

Line A - fills attributes	03) Model Name - Cargo Van
	04) Model Name - Passenger Van for all final vehicles.
Lines 2, 3 or 4 fill attributes	09) Cubic inch displacement
	10) Number of cylinders and arrangement.
Lines 5, 6 or 7 fill attribute	06) Transmission type and number of gears.
Lines 8-11 fill attribute	17) Wheelbase 1
	18) Percent of sales Wheelbase 1
	19) Wheelbase 2
	20) Percent of sales Wheelbase 2
	21) Wheelbase 3
	22) Percent of sales Wheelbase 3 for each of the vehicles.

1)	Total of Model No. 38786				Percentage 100	
	____ C.I.D. 4 Cyl.			Total		
2)	225 C.I.D. 6 Cyl.	14700	37.9		(13816)	(884)
	____ C.I.D. 6 Cyl.				39.6	25.3
3)	318 C.I.D. 8 Cyl.	22806	58.8		(20026)	(2780)
4)	360 C.I.D. 8 Cyl.	1280	3.3		57.4	67.9
	____ C.I.D. 8 Cyl.				3.1	4.8
	____ C.I.D. 8 Cyl.				(1047)	(233)
5)	3 Sp. Manual		28.0		36.0	19.0
6)	4 Sp. Manual		1.3		.8	1.0
7)	Automatic		70.7		63.2	80.0
8)	109 Inch WB	26047	1786 = (27833)		71.8	
9)	127 Inch WB	8842	2111 = (10953		28.2	
10)	127X Inch WB					
	____ Inch WB					
11)	TOTAL	34889	3897 = 38786			
12)	Models w/ 4 WD				N.A.	
13)	Cargo Van	34889				
14)	Pass. Van	3897				
15)	Air Conditioning	6361	16.4		13.8	39.6
16)	Power Disc Brakes	12062	31.1		25.0	85.8
17)	Power Steering	28702	74.0		72.0	92.7
18)	AM Radio	24435	26.3		23.2	54.0
19)	AM/FM Radio	1784	4.6		3.8	11.5
20)	Interior Trim	of Pass Carrier		48.7	of total 4.8	
21)	Exterior Trim	1862				
			H.R.1.8			H.R.5.0
22)	Radial Tire	698				
23)	Adjustable Steering				N.A.	
24)	Tinted Glass	2521			6.5A + 16.4w/s	
25)	GVW Group	4600	61.6		68.5	
		4800	32.1		31.5	37.7
		5200	6.3			

FIGURE 2-1. MANUFACTURERS PRODUCTION DATA SHEET - DODGE

			Percentage 100
	Total of Model No. 2103		
	____ C.I.D. 4 Cyl.		
1)	225 C.I.D. 6 Cyl.	791 + 884 = 1675	37.6
	____ C.I.D. 6 Cyl.		
2)	318 C.I.D. 8 Cyl.	1220 + 22806 = 24026	58.0
3)	360 C.I.D. 8 Cyl.	92	4.4
	____ C.I.D. 8 Cyl.		
	____ C.I.D. 8 Cyl.		
5)	3 Sp. Manual	458	21.8
6)	4 Sp. Manual	34	1.6
7)	Automatic	1611	76.6
8)	109 Inch WB	1418	67.4
9)	127 Inch WB	685	32.6%
10)	___ Inch WB		
11)	___ Inch WB		
12)	Models w/ 4WD		000
13)	Cargo Van		
14)	Pass. Van		100%
15)	Air Conditioning	595	28.3%
16)	Power Disc Brakes	1785	84.9%
17)	Power Steering	1750	83.2%
18)	AM Radio	1129	53.7
19)	AM/FM Radio	164	7.8
20)	Interior Trim		STD
21)	Exterior Trim		STD
22)	Radial Tire	124	5.9%
23)	Adjustable Steering		N.A.
24)	Tinted Glass	831	39.5A - 11.3w/s
25)	GVW Group Total		
		4800	54.6
		5200	45.4

FIGURE 2-2. MANUFACTURERS PRODUCTION DATA SHEET-PLYMOUTH

Line 12 does not apply to the vehicles in the example but is used to determine the final vehicle selection for models available in a 4-wheel configuration.

Lines 13 and 14 indicate the total number of Cargo-Vans and passenger vans for checking purposes (i.e., to determine if recorded engines per vehicle configuration match the total number of that configuration (Cargo or Passenger) produced.)

Line 15 fills attribute	53) Air conditioning, percentage of sales for each vehicle.
Line 16 fills attribute	57) Power Disc Brakes, percentage of sales, for each vehicle
Line 17 fills attribute	60) Power Steering, percentage of sales for each vehicle.
Line 18 fills attribute	63) AM radio, percentage of sales for each vehicle.
Line 19 fills attribute	66) AM/FM radio, percentage of sales for each vehicle.
Lines 20 and 21 fill attributes	69) Interior trim, percentage of sales for each vehicle.
Line 22 fills attributes	73) Steel belted radial tires, percentage of sales for each vehicle.

Line 23 does not apply to the vehicle configurations in the example but fills attribute

75) Adjustable steering column percentage of sales for each vehicle when applicable.

Line 24 fills attribute	77) Tinted glass, percentage of sales for each vehicle.

Line 25, generally written in on the reverse side of the sheet, fills attributes

29) GVWR 1

30) GVWR 2

31) GVWR 3

for each vehicle, depending on the number of wheelbases available.

The total result of the Manufacturers Production Data Collection Sheet is to fill a minimum of 18 attributes and a maximum of 25, depending upon how many varieties of a configuration were produced.

2.3 VEHICLE ATTRIBUTE DEFINITIONS

The vehicle attributes selected for this study are listed below with their corresponding definitions. The attributes are listed in field order of the data input and are identified by their field numbers and attribute names.

01. Vehicle Identification Code

The code to identify the vehicle includes the manufacturer, domestic or import designation, GVWR class, body type, and model year, e.g. General Motors (GM), Domestic (D), 0-6000 lbs. (1), pickup (1), 1974 (74).

02. Model Name, 2 Wheel Drive

The manufacturers designated model name for two wheel drive vehicle, e.g. C-10.

03. Model Name, 4 Wheel Drive

The manufacturers designated model name for four wheel drive vehicle, e.g. K-10.

04. Model Name, Cargo Van

The manufacturers designated model name for Cargo Van vehicle, e.g. Tradesman B100.

05. Model Name, Passenger Van

The manufacturers designated model name for passenger van vehicle, e.g. Sportsman B100.

06. Transmission Type, Number of Gears

Automatic, manual, or semi-automatic and the number of gear ratio changes in forward speed.

07. N/V (std.) (2 Wheel Drive/4 Wheel Drive)

Ratio of engine speed (rpm) divided by vehicle speed (MPH) with standard tires and gearing; first two digits designate N/V for 2 Wheel Drive, and the next two digits designate N/V for 4 Wheel Drive.

08. N/V (std.) (Cargo Van/Passenger Van)

Ratio of engine speed (rpm) divided by vehicle speed (MPH) with standard tires and gearing; first three digits designate N/V for Cargo Vans, and the next three digits designate N/V for Passenger Van.

09. Cubic Inch Displacement

The volume in cubic inches displaced by one piston as it moves from the bottom to the top of its stroke, times the number of cylinders.

10. Number of Engine Cylinders and Arrangement

Number of cylinders and the arrangement in the cylinder block (V, L, or H arrangement) and 8, 6, or 4 cylinders. R denotes Rotary and the number of chambers is listed. Diesel engine is noted in comments.

11. Compression Ratio

The ratio of maximum volume displaced (volume of a cylinder plus the volume of the combustion chamber) to the minimum volume

(combustion chamber volume).

12. Engine Horsepower

Net horsepower (as defined in SAE standard J 245) is the maximum brake power output of a "fully equipped" engine with all accessories necessary to perform all its intended functions unaided, including, but not limited to, basic built-in components such as intake air system, exhaust system, cooling system, alternator, starter, and emission control equipment.

13. Engine Revolutions per Minute (Horsepower)

The engine revolutions per minute at which engine horsepower is specified.

14. Engine Torque

Net maximum torque in foot pounds of the same "fully equipped" engine as tested for horsepower output.

15. Engine Revolutions per Minute (Torque)

The engine revolutions per minute at which maximum torque is specified.

16. Carburetion and Number of Barrels (STD)

Indicates "Carburetor" (C) and number of barrels on standard engine; or "fuel injection" (FI) if standard.

17. Wheelbase 1

The distance between the centers of the front and rear wheels. The minimum wheelbase for the indicated model.

18. Percentage of Sales 1

The percentage of a model sold in wheelbase 1 form.

19. Wheelbase 2

The distance between the centers of the front and rear

wheels for the next wheelbase configuration over minimum.

20. Percentage of Sales 2

The percentage of a model sold in wheelbase 2 form.

21. Wheelbase 3

The distance between the centers of the front and rear wheels for the longest wheelbase configuration.

22. Percentage of Sales 3

The percentage of a model sold in wheelbase 3 form.

23. Curb Weight 1 (lbs.) (2 Wheel Drive/4 Wheel Drive)

The weight of the vehicle in wheelbase 1 form including all standard equipment, spare tire and wheel, all fluids and lubricants to capacity and a full tank of gasoline. (4 digits for 2 Wheel Drive followed by 4 digits for 4 Wheel Drive)

24. Van Curb Weight 1 (lbs.) (Cargo/Passenger)

The weight of the vehicle in wheelbase 1 form including all standard equipment, spare tire and wheel, all fluids and lubricants to capacity and a full tank of gasoline. (4 digits for Cargo Van followed by 4 digits for passenger van)

25. Curb Weight 2 (lbs.) (2 Wheel Drive/4 Wheel Drive)

The weight of the vehicle as in "Curb Weight 1" except the vehicle is in "Wheelbase 2" form. (4 digits for 2 Wheel Drive followed by 4 digits for 4 Wheel Drive)

26. Van Curb Weight 2 (lbs.) (Cargo/Passenger)

The weight of the vehicle, as in "Van curb weight 1," except the vehicle is in "Wheelbase 2" form.
(4 digits for Cargo Van followed by 4 digits for passenger van)

27. Curb Weight 3 (lbs.) (2 Wheel Drive/4 Wheel Drive).

The weight of the vehicle, as in "Curb Weight 1" except the vehicle is in "Wheelbase 3" form. (4 digits for 2 Wheel Drive followed by 4 digits for 4 Wheel Drive)

28. Van Curb Weight 3 (lbs.) (Cargo/Passenger)

The weight of the vehicle, as in "Van Curb Weight 1," except the vehicle is in "Wheelbase 3" form. (4 digits for cargo van followed by 4 digits for passenger van)

29. GVWR 1

The gross vehicle weight rating in pounds with the vehicle in "Wheelbase 1" form.

30. GVWR 2

The gross vehicle weight rating in pounds with the vehicle in "Wheelbase 2" form.

31. GVWR 3

The gross vehicle weight rating in pounds with the vehicle in "Wheelbase 3" form.

32. Cargo Capacity 1 ($ft.^3$)

For enclosed trucks, the volume of the enclosed cargo area. If folding or removable seats are provided, the volume is the maximum with seats folded or removed. For open bodied trucks, the bed area multiplied by a height of 6 feet. In either case the vehicle is in "Wheelbase 1" form.

33. Cargo Capacity 2 ($ft.^3$)

The cargo volume as stated in attribute 32 except the vehicle is in "Wheelbase 2" form.

34. Cargo Capacity 3 ($ft.^3$)

The cargo volume as stated in attribute 32 except the vehicle is in "Wheelbase 3" form.

35. Number of Passengers

The number of passengers including the driver for which the vehicle was designed and for which normal seating accomodation is provided. For all trucks with variable passenger capacity the minimum and maximum number is listed (2 digits for minimum followed by a dash and 2 digits for maximum).

36. Urban Fuel Economy (MPG)

1975 EPA Federal Test Procedure (FTP) cycle urban fuel ecomony equal to:

A. For 1974 models, EPA CVS-1 cycle X 1.045[1] factor.

B. 1973 and prior models; fuel economy from literature, if available, adjusted to 1975 EPA test level.

37. Wheelbase, Fuel Economy

The wheelbase of the vehicle used for fuel economy data.

38. Drive Cycle - Urban

If not EPA CVS-1 will indicate other cycle.

39. Highway Fuel Economy (MPG)

1975 EPA cycle urban economy X 1.42[1] factor for the wheelbase recorded in attribute 37.

40. Drive Cycle - Highway

Indicates drive cycle for above.

41. Composite Fuel Economy (MPG)

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[1]SAE Technical Report #75057 "Passenger Car Fuel Economy Trends Through 1976" by Austin, Michael and Service.

1975 EPA cycle combination urban-highway fuel economy (weighted 55 percent urban, 45 percent highway) equal to 1975 urban economy x 1.154[1] factor.

42. Catalytic Converter

Is the vehicle equipped with a catalytic converter? Yes or No answer.

43. Acceleration Time

Time in seconds, for a vehicle to accelerate from 0 to 40 MPH. If 0 to 40 MPH time is not available, 0 to X is used and X is noted in comments.

*44. Model Production Volume (2 Wheel Drive version)

Production Volume of the 2 Wheel Drive version of the vehicle configuration identified in attribute 01.

*45. Model Production Volume (4 Wheel Drive Version)

Production Volume of the 4 Wheel Drive version of the vehicle configuration identified in attribute 01.

*46. Model Production Volume (Cargo Van)

Production Volume of the Cargo Van version of the vehicle configuration identified in attribute 01.

*47. Model Production Volume (Passenger Van)

Production volume of the Passenger Van version of the vehicle configuration identified in attribute 01.

48. List Price (2 Wheel Drive models)

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[1]SAE Technical Report #75057 "Passenger Car Fuel Economy Trends Through 1976" by Austin, Michael and Service.

*NOTE: The production volumes include all similar vehicles represented by the specific vehicle configuration described. i.e. The total for all vehicles listed for a specific model year equals the total of LDT manufactured for that model year under 10,000 GVWR.

Base list price of the 2 Wheel Drive vehicle configuration incorporating the described engine and transmission and the most popular Wheelbase.

49. List Price (4 Wheel Drive models)

Base list price of the 4 Wheel Drive vehicle configuration, incorporating the described engine and transmission and the most popular wheelbase.

50. List Price (Cargo Van)

Base list price of the Cargo Van version of the vehicle configuration, incorporating the described engine and transmission and the most popular wheelbase.

51. List Price (Passenger Van)

The base list price of the Passenger Van version of the vehicle configuration incorporating the described engine and transmission and the most popular wheelbase.

52. Highway or Off-Highway (2 Wheel Drive/4 Wheel Drive)

Indicates highway or off-highway configuration, first for the 2 Wheel Drive version and next for the 4 Wheel Drive version. Off-highway vehicles are high chassis height vehicles.

53. Axle clearance (2 Wheel Drive/4 Wheel Drive)

The distance from the bottom of the axle housing to the ground. Two Wheel Drive first then 4 Wheel Drive.

54. Percentage with Air Conditioning

The rate, for the model indicated in attribute 02, of installation of air conditioning, in percentage of the total production.

55. Air Conditioning Weight (lbs.)

The weight, in pounds, that must be added to the curb weight of the vehicle when air conditioning is installed as a factory option.

56. Cost, Air Conditioning

The cost, in dollars, of the air conditioning option.

57. Percentage with Power Disc Brakes

The rate, for the model indicated in attribute 02, of installation of Power Disc Brakes, in percentage of total production.

58. Power Disc Brakes Weight (lbs.)

The weight, in pounds, that must be added to the curb weight when Power Disc Brakes are installed as a factory option.

59. Cost, Power Disc Brakes

The cost, in dollars, of the Power Disc Brake option.

60. Percentage with Power Steering

The rate of installation of power steering, in percentage of total production for the model indicated.

61. Power Steering Weight (lbs.)

The weight, in pounds, added to the curb weight when power steering is installed as a factory option.

62. Cost, Power Steering

The cost, in dollars, of the power steering option.

63. Percentage with AM Radio

The rate of installation of an AM Radio, in percentage of total production for the model indicated.

74. Cost, Steel Belted Radial Tires

The cost, in dollars, of the Steel Belted Radial tire option.

75. Percentage with Adjustable Steering

The rate of installation of Adjustable Steering, in percentage of total production for the indicated model.

76. Cost, Adjustable Steering

The cost, in dollars, of the Adjustable Steering option.

77. Percentage with Tinted Glass

The rate of installation of Tinted Glass, in percentage of total production for the model indicated.

78. Cost, Tinted Glass

The cost, in dollars, of the Tinted Glass option (all windows).

79. Comments 1 (maximum 40 characters)

Clarifying information relating to attribute variations or attribute sources.

80. Comments 2 (maximum 40 characters)

Same as attribute 79.

2.4 DATA BASE DEVELOPMENT

After the selection of the vehicle configurations to be included in the data base and the attributes used to describe these configurations, the actual collection, collation and recording of the data on computer tapes occurs.

This process involves:

1. Identifying and locating sources of reference material and gathering that reference material.
2. Recording data on computer coding sheets.

64. AM Radio, Weight

The weight, in pounds, added to the curb weight when an AM Radio is installed as a factory option.

65. Cost, AM Radio

The cost, in dollars, of the AM radio option.

66. Percentage with AM/FM Radio

The rate of installation of an AM/FM radio, in percentage of total production for the model indicated.

67. AM/FM Radio, Weight

The weight, in pounds, added to the curb weight when an AM/FM Radio is installed as a factory option.

68. Cost, AM/FM Radio

The cost, in dollars, of the AM/FM Radio option.

69. Percentage with Interior Trim

The rate of installation of a special interior trim option, in percentage of a total production for the model indicated.

70. Cost, Interior Trim

The cost, in dollars, of the special interior trim option.

71. Percentage with Exterior Trim

The rate of installation of special exterior trim options, in percentage of total production for the model indicated.

72. Cost, Exterior Trim

The cost, in dollars, of the special exterior trim option.

73. Percentage with Steel Belted Radial Tires

The rate of installation of Steel Belted Radial tires, percentage of total production for the model indicated.

3. Checking coding sheets for accuracy.

4. Transferring input data from coding sheets to a key tape. After the data is transferred, it is key verified.

5. Processing the keyed data into the Datalog directory system.

6. Making formated master list printout and final checking of data for ommissions, key punch errors, etc.

7. Converting Datalog directory output to DOT/TSC tape and master list as required.

2.4.1 Data Research

Data, from published sources, covering specific model configurations were difficult to obtain for any of the subject data base years. This problem increased in the earliest years. General vehicle specification data were also more difficult to find for the early years of the study. These data gaps were filled through extensive research in Chilton files, the Philadelphia Public Library's Automotive Library, and automotive manufacturers files.

In some other cases where data was sparce, some extrapolation was necessary. This occured primarily in 1972 for Chevrolet, IHC, and AMC.

For these manufacturers, the 1973 model configuration percentages were applied to the known 1972 production totals. Engine varieties, usage of wheelbase variations, and 4-wheel drive variants were determined by referencing known industry usage during the 1973 period.

2.4.2 Fuel Economy

The fuel economy attributes were filled directly from EPA literature for the 1975 to 1977 period where possible. When EPA Data was used N/V ratio, weight, body, engine, and transmission combinations were matched as closely as possible to the configuration chosen for the data base.

Some road tests were used to supplement available EPA fuel economy information. This was done mostly for the 1972 model year. Though these road tests were sparce, examples were found which indicated the same truck was tested by more than one magazine. In these cases the various testers achieved similar fuel economy results which created some confidence in the data.

The fuel economy rating of a light duty truck has not historically been a very influential characteristic in the prospective purchaser's selection procedure. This, coupled with the fact that road tests data and EPA data correlate very well, indicates that the manufacturers are not inclined, as they are with passenger cars, to supply the testing publications with specially tuned and prepared vehicles.

As a result of this assumption, the road tests data, when used, was recorded as reported by the testing publications. Every effort was made to determine that the road tested vehicle was very similar in weight, type and engine/transmission configuration to the vehicle recorded in the data base.

The fuel economy data available for 1972 LDT vehicles were scarce since no EPA data were available and only a few road tests have been performed on LDT vehicles. The data available for 1975 Ford LDT vehicles was significantly less than other major manufacturers for the 1975 model year. No EPA fuel economoy data was available for any year for GVWR values over 6,000 pounds.

The fact that fuel economy is affected by such a wide variety of factors including type of route traveled, vehicle speed, cold start frequency, accessory equipment use, vehicle weight, N/V ratio, transmission type, aerodynamic characteristics, and driver habits, indicates that the fuel economy figures recorded can only serve as a base line. The many variations cannot be defined in the scope of this research.

The following are the drive cycles used by two publications that road test trucks. The road test cycles of these publications are considered to give reliable information and were referenced

for data base information.

1. Motor Trend/Car Life
   A 73 mile public road loop representing approximately 1/3 city, 1/3 suburban and 1/3 highway driving is used. Maximum speeds do not exceed 60 mph. The tank is filled before and refilled afterwards at the same station. The test loop measures 73.125 miles on a fifth wheel and the testing ambient temperature is 70° to 80°F. The motor is warm at start with no special attempts made to gain fuel economy. The vehicle is driven normally, following traffic. The results of this test are considered equal to EPA composite ratings.

2. Popular Science
   The vehicle is driven steadily at 45 mph around Bridgehampton (Long Island) New York raceway. This is a 2.5 mile course with many turns and hills intermixed. The test results are considered equal to the EPA composite ratings.

2.4.3 Vehicle Performance

Accelerations times were recorded for 0-40 or 0-60 mph. When the time entered in attribute 43 was 0-60 mph, this was noted in the comments. Very little acceleration time data was found.

It should also be noted that acceleration times would be materially different if the truck were loaded to its capacity.

No attempt was made to assign acceleration times to vehicles for which data was not available. Hence, very little data is recorded in this area.

2.5 ATTRIBUTE INFORMATION SOURCES

The following lists indicate the sources of information for each attribute.

Attribute No.	Attribute Name	Source
01)	Vehicle Identification	Manufacturer Data Books and from Manufacturer Production Data Information Sheets sourced from the Manufacturer
02)	Model Name, 2-Wheel Drive	
03)	Model Name, 4-Wheel Drive	
04)	Model Name, Cargo Van	
05)	Model Name, Passenger Van	
06)	Transmission Type, Number of Gears	Manufacturers Production Data Information Sheets
07)	N/V (STD) (2 Wheel Drive/ 4 Wheel Drive)	Calculated From Information Obtained From Manufacturers Data Book or in the case of Chevrolet, directly from the Data Book
08)	N/V (STD) (Cargo Van/ Passenger Van)	Calculated from Information Obtained from Manufacturers Data Books or in the case of Chevrolet, directly from the Data Book
09)	Cubic Inch Displacement	Manufacturers Production Data Information Sheets and/or Manufacturers Data Books
10)	Number of Engine Cylinders	Manufacturers Production Data Information Sheets and/or Manufacturers Data Books
11)	Compression Ratio	Manufacturers Data Books
12)	Engine Horsepower	Manufacturers Data Books- Automotive Industries

Attribute No.	Attribute Name	Source
13)	Engine Revolutions per Minute (Horsepower)	Manufacturers Data Books-Automotive Industries
14)	Engine Torque	Manufacturers Data Books and Automotive Data Books
15)	Engine Revolutions per Minute (Torque)	Manufacturers Data Books-Automotive Industries
16)	Carburetion and Number of Barrels (STD)	Manufacturers Data Books-Automotive Industries
17)	Wheelbase 1	Manufacturers Production Data Information Sheets-Manufacturers Data Books
18)	Percentage of Sales Wheelbase 1	Manufacturers Production Data Information Sheets-Professional judgement based on available information
19)	Wheelbase 2	Manufacturers Production Data Information Sheets or Manufacturers Data Books
20)	Percentage of Sales Wheelbase 2	Manufacturers Production Data Information Sheets-Professional judgement based on available information
21)	Wheelbase 3	Manufacturers Production Data Information Sheets-Manufacturers Data Books
22)	Percentage of Sales Wheelbase 3	Manufacturers Production Data Information Sheets-Professional judgement based on available information
23)	Curb Weight 1 (2 Wheel Drive/4 Wheel Drive)	Manufacturers Data Books
24)	Curb Weight Van 1 (Cargo/Passenger)	Manufacturers Data Books
25)	Curb Weight 2 (2 Wheel Drive/ 4 Wheel Drive)	Manufacturers Data Books

Attribute No.	Attribute Name	Source
26)	Curb Weight Van 2 (Cargo/Passenger)	Manufacturers Data Books
27)	Curb Weight 3 (2 Wheel Drive/ 4 Wheel Drive)	Manufacturers Data Books
28)	Curb Weight 3 (Cargo-Passenger)	Manufacturers Data Books
29)	GVWR 1 (Most Popular)	Manufacturers Production Data Information Sheets-judgements based on information available
30)	GVWR 2 (Most Popular)	Manufacturers Production Data Information Sheets-judgement based on information available
31)	GVWR 3 (Most Popular)	Data Information Sheets-judgement based on information available
32)	Cargo Volume 1	Manufacturers Data Books, Edmunds, Calculation
33)	Cargo Volume 2	Manufacturers Data Books, Edmunds, Calculation
34)	Cargo Volume 3	Manufacturers Data Books, Edmunds, Calculation
35)	Number of Passengers	Manufacturers Data Books (with normal seating)
36)	Urban Fuel Economy	EPA Literature, Road Test Publications
37)	Wheelbase, Fuel Economy	EPA Literature, Road Test Publications, Judgement
38)	Drive Cycle-Urban	EPA Literature, Road Test Publications
39)	Highway Fuel Economy	EPA Literature, Road Test Publications

Attribute No.	Attribute Name	Source
40)	Drive Cycle-Highway	EPA Literature, Road Test Publications
41)	Composite Fuel Economy	EPA Literature, Road Test Publications
42)	Catalytic Converter (Yes or No)	Manufacturers Data Book
43)	Acceleration Time	Road Test and Publications, Edmunds, Manufacturer Spec Sheets
44)	Model Production Volume (2 Wheel Drive)	Manufacturers Production Data Information Sheets, Wards
45)	Model Production Volume (4 Wheel Drive)	Manufacturers Production Data Information Sheets, Wards)
46)	Model Production Volume (Cargo Van)	Manufacturers Production Data Information Sheets, Wards
47)	Model Production Volume (Passenger Van)	Manufacturers Production Data Information Sheets, Wards
48)	List Price (2 Wheel Drive)	Edmunds, Auto News
49)	List Price (4 Wheel Drive)	Edmunds, Auto News
50)	List Price (Cargo Van)	Edmunds, Auto News
51)	List Price (Passenger Van)	Edmunds, Auto News
52)	Highway or Off-Highway (2 Wheel Drive/4 Wheel Drive)	Judgement based on high ground clearance and intended use by manufacturer and government priorities. Based on information obtained from Manufacturers Data Books

Attribute No.	Attribute Name	Source
53)	Axle Clearance (2 Wheel Drive/4 Wheel Drive)	Manufacturers Data Books
54)	Air Conditioning, Percentage of Sales	Manufacturers Data Books
55)	Air Conditioning, Weight	Manufacturers Data Books
56)	Air Conditioning, Cost	Edmunds
57)	Power Disc Brakes, Percentage of Sales	Manufacturers Production Data Information Sheets, Wards
58)	Power Disc Brakes, Weight	Manufacturers Data Books
59)	Power Disc Brakes, Cost	Edmunds
60)	Power Steering, Percentage of Sales	Manufacturers Production Data Information Sheets, Wards
61)	Power Steering, Weight	Manufacturers Data Books
62)	Power Steering, Cost	Edmunds
63)	AM Radio, Percentage of Sales	Wards, Manufacturers Production Data Information Sheets
64)	AM Radio, Weight	Manufacturers Data Books
65)	AM Radio, Cost	Edmunds
66)	AM/FM Radio, Percentage of Sales	Manufacturers Production Data Information Sheets, Wards
67)	AM/FM Radio, Weight	Manufacturers Data Books
68)	AM/FM Radio, Cost	Edmunds
69)	Interior Trim, Percentage of Sales	Wards, Manufacturers Production Data Information Sheets
70)	Interior Trim, Cost	Edmunds

Attribute No.	Attribute Name	Source
71)	Exterior Trim, Percentage of Sales	Wards, Manufacturers Production Data Information Sheets
72)	Exterior Trim, Cost	Edmunds
73)	Steel Belted Radial Tires, Percentage of Sales	Wards, Manufacturers Production Data Information Sheets
74)	Steel Belted Radial Tires, Cost	Edmunds
75)	Adjustable Steering Percentage of Sales	Wards, Manufacturers Production Data Information Sheets
76)	Adjustable Steering, Cost	Edmunds
77)	Tinted Glass, Percentage of Sales	Wards, Manufacturers Production Data Information Sheets
78)	Tinted Glass, Cost	Edmunds
79)	Comments 1	Footnotes relating to other attributes
80)	Comments 2	Footnotes relating to other attributes

2.6 COLLATION AND DATA PROCESSING

Data accumulated during this project was collated and recorded on magnetic tape. Data is delivered on (9) nine track unlabeled tape, at a recording mode or 800 BPI, conforming to 8-bit EBCDIC interchange code. The Structure Definitions Sheet, File Description, Attribute Codes List, Code Tables, and Body Class Definitions are given in Tables 2-5 to 2-9.

TABLE 2-5. STRUCTURE DEFINITION SHEET

1. Contract
2. Data Title
3. Tape ID
4. Number of Blocks
5. Number of Records

TABLE 2-6. FILE DESCRIPTION (SHEET 1 OF 7)

FILE DESCRIPTION FILE ID. $ Bypass

FILE NAME LDT Historical Data Base REC. SIZE 445

DISK ORGANIZATION N/A FILE SEQ. 01 BLOCK SIZE 4450

FIELD TYPES = A-alphanumeric; I-Integer; R-Real

FLD	SUB FLD	FIELD NAME	POSITION FROM	TO	# OF BYTES	FLD TYP	DEC POS	ABBR.	REMARKS
01		Vehicle Ident.Code	1	11	11	A		VID	
		Record #	1	4	4	I			
		Manufacturer	5	6	2	A			See Code Table
		Domestic or Import	7	7	1	A			See Code Table
		GVWR Class	8	8	1	I			See Code Table
		Body Type	9	9	1	I			See Code Table
		Model Year	10	11	2	I			See Code Table
02		Model Name (2WD)	12	21	10	A		MN2	
03		Model Name (4WD)	22	31	10	A		MN4	
04		Model Name (Cargo Van)	32	41	10	A		MNC	
05		Model Name (Pass. Van)	42	51	10	A		MNP	
06		Transmission Type/ # of Gears	52	54	3	A		TR	
	A	Transmission Type	52	52	1	A			
	B	# of Gears	53	54	2	A			
07		N/V STD 2WD/4WD	55	63	9	A		NV4	
	A	N/V STD 2WD	55	58	4	R	1		
	B	Hyphen Separator	59	59	1	A			See Note 1
	C	N/V STD 4WD	60	63	4	R	1		
08		N/V STD (Cargo/ Pass. Van)	64	72	9	A		NVV	
	A	N/V STD Cargo Van	64	67	4	R	1		

Note 1: Hyphen Separator (H/S) - Hyphen will separate 2 distinct entries; if field is not present, entire field will be spaces.

TABLE 2-6. FILE DESCRIPTION (SHEET 4 OF 7)

FILE DESCRIPTION FILE ID. $ Bypass

FILE NAME LDT Historical Data Base REC. SIZE 445

DISK ORGANIZATION N/A FILE SEQ. 01 BLOCK SIZE 4450

FIELD TYPES = A-alphanumeric; I-Integer; R-Real

FLD	SUB FLD	FIELD NAME	POSITION FROM	TO	# OF BYTES	FLD TYP	DEC POS	ABBR.	REMARKS
28		Curb Weight Van 3 (Cargo/Pass.)	159	167	9	A	0	C3V	
	A	Curb Weight Van 3 (Cargo)	159	162	4	I	0		
	B	H/S	163	163	1	A	0		See Note 1
	C	Curb Weight Van 3 (Pass.)	164	167	4	I	0		
29		GVWR 1	168	171	4	I	0	VW1	
30		GVWR 2	172	175	4	I	0	VW2	
31		GVWR 3	176	179	4	I	0	VW3	
32		Cargo Volume 1	180	183	4	I	0	CC1	
33		Cargo Volume 2	184	187	4	I	0	CC2	
34		Cargo Volume 3	188	191	4	I	0	CC3	
35		# of Passengers	192	196	5	A	0	PAS	
	A	Min. #	192	193	2	I	0		
	B	H/S	194	194	1	A	0		See Note 1
	C	Max. #	195	196	2	I	0		
36		Urban Fuel Econ.	197	200	4	R	1	UFE	
37		Wheelbase/ Fuel Economy	201	203	3	I	0	WFE	
38		Drive Cycle-Urban	204	216	13	A	0	DCU	
39		Highway Fuel Econ.	217	220	4	R	1	HFE	
40		Drive Cycle - Highway	221	233	13	A	0	DCH	
41		Composite Fuel Economy	234	237	4	R	1	CFE	

TABLE 2-6. FILE DESCRIPTION (SHEET 5 OF 7)

FILE DESCRIPTION FILE ID. $ Bypass

FILE NAME LDT Historical Data Base REC. SIZE 445

DISK ORGANIZATION N/A FILE SEQ. 01 BLOCK SIZE 4450

FIELD TYPES = A-alphanumeric; I-Integer; R-Real

FLD	SUB FLD	FIELD NAME	POSITION FROM	TO	# OF BYTES	FLD TYP	DEC POS	ABBR.	REMARKS
42		Catalytic Converter	238	240	3	A	0	CAT	
43		Acceleration Time	241	244	4	R	1	ACC	
44		Model Production Volume (2WD)	245	250	6	R	2	MP2	Thousand
45		Model Production Volume (4WD)	251	256	6	R	2	MP4	Thousand
46		Model Production Volume (Cargo)	257	262	6	R	2	MPC	Thousand
47		Model Production Volume (Pass.)	263	268	6	R	2	MPP	Thousand
48		List Price (2WD)	269	273	5	I	0	LP2	
49		List Price (4WD)	274	278	5	I	0	LP4	
50		List Price (Cargo)	279	283	5	I	0	LPC	
51		List Price (Pass.)	284	288	5	I	0	LPP	
52		Highway or Off-Highway	289	295	7	A	0	HOH	
	A	HOH - 2WD	289	291	3	A	0		
	B	H/S	292	292	1	A	0		See Note 1
	C	HOH - 4WD	293	295	3	A	0		
53		Axle Clearance (2WD/4WD)	296	302	7	A	0	AC2	
	A	2WD	296	298	3	R	1		
	B	H/S	299	299	1	A	0		See Note 1
	C	4WD	300	302	3	R	1		
54		Air Cond. %	303	304	2	I	0	PAC	
55		Air Cond. Weight	305	307	3	I	0	ACW	

TABLE 2-6. FILE DESCRIPTION (SHEET 6 OF 7)

FILE DESCRIPTION FILE ID. $ Bypass

FILE NAME LDT Historical Data Base REC. SIZE 445

DISK ORGANIZATION N/A FILE SEQ. 01 BLOCK SIZE 4450

FIELD TYPES = A-alphanumeric; I-Integer; R-Real

FLD	SUB FLD	FIELD NAME	POSITION FROM	TO	# OF BYTES	FLD TYP	DEC POS	ABBR.	REMARKS
56		Air Cond. Cost	308	310	3	I	0	CAC	
57		Power Disc Brakes, %	311	312	2	I	0	PDB	
58		Power Disc Brakes,Weight	313	315	3	I	0	PDW	
59		Power Disc Brakes,Cost	316	318	3	I	0	CPD	
60		Power Steering, %	319	320	2	I	0	PPS	
61		Power Steering, Weight	321	323	3	I	0	PSW	
62		Power Steering, Cost	324	326	3	I	0	CPS	
63		AM Radio %	327	328	2	I	0	PAM	
64		AM Radio Weight	329	330	2	I	0	AMW	
65		AM Radio Cost	331	333	3	I	0	CAR	
66		AM/FM Radio %	334	335	2	I	0	AFR	
67		AM/FM Radio Weight	336	337	2	I	0	AFW	
68		AM/FM Radio Cost	338	340	3	I	0	AFC	
69		Interior Trim %	341	342	2	I	0	PIT	
70		Interior Trim Cost	343	345	3	I	0	CIT	
71		Exterior Trim %	346	347	2	I	0	PET	
72		Exterior Trim Cost	348	350	3	I	0	CET	
73		Steel Belt Tires %	351	352	2	I	0	PSB	
74		Steel Belt Tires Cost	353	355	3	I	0	SBC	
75		Adjustable Steering %	356	357	2	I	0	ASP	

TABLE 2-6. FILE DESCRIPTION (SHEET 7 OF 7)

FILE DESCRIPTION FILE ID. $ Bypass

FILE NAME LDT Historical Data Base REC. SIZE 445

DISK ORGANIZATION N/A FILE SEQ. 01 BLOCK SIZE 4450

FIELD TYPES = A-alphanumeric; I-Integer; R-Real

FLD	SUB FLD	FIELD NAME	POSITION FROM	TO	# OF BYTES	FLD TYP	DEC POS	ABBR.	REMARKS
76		Adjustable Steering Cost	358	360	3	I	0	ASC	
77		Tinted Glass %	361	362	2	I	0	PTG	
78		Tinted Glass Cost	363	365	3	I	0	CTG	
79		Comments 1	366	405	40	A	0	COM	
80		Comments 2	406	445	40	A	0	CO2	

TABLE 2-7. ATTRIBUTE CODE LIST (SHEET 1 OF 4)

ATTRUBUTE NAME		CODE
01)	Vehicle Identification Code	VID
02)	Model Name, 2 Wheel Drive	MN2
03)	Model Name, 4 Wheel Drive	MN4
04)	Model Name, Cargo Van	MNC
05)	Model Name, Passenger Van	MNP
06)	Transmission type, Number of Gears	TR
07)	N/V (STD) (2 Wheel Drive/4 Wheel Drive)	NV4
08)	N/V (STD) (Cargo Van/Passenger Van)	NVV
09)	Cubic Inch Displacement	CID
10)	Number of Engine Cylinders and Arrangement	CYL
11)	Compression Ratio	CR
12)	Engine Horsepower	HP
13)	Engine Revolutions per Minute (Horsepower)	RPM
14)	Engine Torque	TOR
15)	Engine Revolution per Minute (Torque)	RMT
16)	Carburetion and Number of Barrels (STD)	ISF
17)	Wheelbase 1	WB1
18)	Percentage of Sales 1	PS1
19)	Wheelbase 2	WB2
20)	Percentage of Sales 2	PS2
21)	Wheelbase 3	WB3
22)	Percentage of Sales 3	PS3
23)	Curb Weight 1 (2 Wheel Drive/4 Wheel Drive)	CW1
24)	Curb Weight Van 1 (Cargo/Passenger)	C1V

TABLE 2-7. ATTRIBUTE CODE LIST (SHEET 2 OF 4)

ATTRIBUTE NAME		CODE
25)	Curb Weight 2 (2 Wheel Drive/4 Wheel Drive)	CW2
26)	Curb Weight,Van 2 (Cargo/Passenger)	C2V
27)	Curb Weight 3 (2 Wheel Drive/4 Wheel Drive)	CW3
28)	Curb Weight,Van 3 (Cargo/Passenger)	C3V
29)	GVWR 1	VW1
30)	GVWR 2	VW2
31)	GVWR 3	VW3
32)	Cargo Volume 1	CC1
33)	Cargo Volume 2	CC2
34)	Cargo Volume 3	CC3
35)	Number of Passengers	PAS
36)	Urban Fuel Economy	UFE
37)	Wheelbase, Fuel Economy	WFE
38)	Drive Cycle - Urban	DCU
39)	Highway Fuel Economy	HFE
40)	Drive Cycle - Highway	DCH
41)	Composite Fuel Economy	CFE
42)	Catalytic Converter (If used)	CAT
43)	Acceleration Time (0-40 MPH)	ACC
44)	Model Production Volume (2 Wheel Drive)	MP2
45)	Model Production Volume (4 Wheel Drive)	MP4
46)	Model Production Volume (Cargo Van)	MPC
47)	Model Production Volume (Passenger Van)	MPP
48)	List Price (2 Wheel Drive)	LP2
49)	List Price (4 Wheel Drive)	LP4

TABLE 2-7. ATTRIBUTE CODE LIST (SHEET 3 OF 4)

ATTRIBUTE NAME		CODE
50)	List Price (Cargo Van)	LPC
51)	List Price (Passenger Van)	LPP
52)	Highway or Off-Highway (2 WD/4 WD)	HOH
53)	Axle Clearance (2 WD/4 WD)	AC2
54)	Air Conditioning, Percentage of Sales	PAC
55)	Air Conditioning, Weight	ACW
56)	Air Conditioning, Cost	CAC
57)	Power Disc Brakes, Percentage of Sales	PDB
58)	Power Disc Brakes, Weight	PDW
59)	Power Disc Brakes, Cost	CPD
60)	Power Steering, Percentage of Sales	PPS
61)	Power Steering, Weight	PSW
62)	Power Steering, Cost	CPS
63)	AM Radio, Percentage of Sales	PAM
64)	AM Radio, Weight	AMW
65)	AM Radio, Cost	CAR
66)	AM/FM Radio, Percentage of Sales	AFR
67)	AM/FM Radio, Weight	AFW
68)	AM/FM Radio, Cost	AFC
69)	Interior Trim, Percentage of Sales	PIT
70)	Interior Trim, Cost	CIT
71)	Exterior Trim, Percentage of Sales	PET
72)	Exterior Trim, Cost	CET
73)	Steel Belted Radial Tires, Percentage of Sales	PSB
74)	Steel Belted Radial Tires, Cost	SBC

TABLE 2-7. ATTRIBUTE CODE LIST (SHEET 4 OF 4)

ATTRIBUTE NAME	CODE
75) Adjustable Steering, Percentage of Sales	ASP
76) Adjustable Steering, Cost	ASC
77) Tinted Glass, Percentage of Sales	PTG
78) Tinted Glass, Cost	CTG
79) Comments 1	COM
80) Comments 2	CO2

TABLE 2-8. CODE TABLES (SHEET 1 OF 2)

ATTR.
NO.
01) IDENTIFICATION CODE

MANUFACTURERS (Nameplate)	CODE
General Motors Corporation	GM
Chrysler Corporation	CH
Ford	FM
American Motors Corp. (Jeep)	AM
International Harvester Corp.	IH
Toyo Kogo (Mazda)	TK
Nissan (Datsun)	NI
Toyota	TO
Volkswagen	VW

POINT OF ORIGIN	CODE
Domestic	D
Imported	I

GVWR CLASS	CODE
0-6000	1
6001-8500	2
8501-10,000	3
0-6000 + 6001-8500	4
6001-8500 + 8501-10,000	5

BODY TYPE	CODE
Pick-up	1
Suburban	2
Utility	3
Van	4
Multi-Stop	5

MODEL YEAR	CODE
1977	77
1976	76
1975	75
1974	74
1973	73
1972	72

TABLE 2-8. CODE TABLES (SHEET 2 OF 2)

ATTR.
NO.

06) TRANSMISSION TYPE, NUMBER OF GEARS

TYPE	CODE
Manual	M
Automatic	A
Semi-Automatic	S
Over-drive	O

NUMBER OF GEARS	CODE
2	2
3	3
4	4
5	5

10) NUMBER OF ENGINE CYLINDERS AND ARRANGEMENT

ARRANGEMENT	CODE
In-line	L
"V" Type	V
Horizontally Opposed	H
Rotary	R

NUMBER OF CYLINDERS	CODE
2	2
4	4
6	6
8	8

16) CARBURETION and NUMBER OF BARRELS

TYPE	CODE
Carburetor	C
Fuel Injection	I

NUMBER OF BARRELS	CODE
1	1
2	2
3	3
4	4

TABLE 2-9. BODY CLASS DEFINITIONS DOT LIGHT DUTY TRUCK DATA BASE

File Code	Body Class	Definition
"1"	Pickup, 2 or 4 Wheel Drive	A conventional truck with a 2 or 4-door cab and an open top cargo carrying bed.
"2"	Suburban, 2 or 4 Wheel Drive	A conventional cab vehicle with extended hood on light truck chassis with passenger and cargo room within the body. A truck version of a passenger station wagon.
"3"	Utility, 2 or 4 Wheel Drive	Any vehicle normally referred to as a rough terrain or "Jeep" type. Vehicle is characterized as having a high ramp breakover angle and very little front and rear overhang. Equipped for off-highway as well as on-highway use.
"4"	Van (Passenger or Cargo)	A somewhat rectangular vehicle without the traditional long hood of conventional trucks, having passenger and cargo capacity contained within the body. Has relatively high cargo capacity.
"5"	Multi-Stop	Similar to a Van but much higher and with standard seating capacity limited to 1 or 2 passengers including the driver (i.e. the typical bread van or commercial laundry delivery van). Vehicle has none of the qualities of a passenger car. Is intended, primarily, for low speed intra-city delivery.

3. CONCLUSIONS

Data was collected, correlated, and collated for the defined attributes of the applicable physical, operating, performance, and market characteristics of light duty trucks for the subject model years 1972 and 1975 through 1977. These vehicle configurations represent the total light duty fleet as sold in the United States in these model years.

Characteristics were documented for over 680 vehicle configurations for all attributes for which information was available or could be reasonably extrapolated from available information. With the addition of this data base, the ability of the Department of Transportation/Transportaton Systems Center to understand past and current trends in the light duty truck market is greatly enhanced. This, coupled with other economic studies, will allow DOT/TSC to predict future trends and possible reactions to outside influences, regulations, etc. that may occur.

4. RECOMMENDATIONS

Although this data base combines physical, operating, performance, and market characteristics which are representative of the United States light duty truck market for 1972 and 1975 through 1977, the usefulness of the information would be enhanced by expanding the data base coverage. It is recommended that the data base be expanded to include all years, from 1955 to the present. The light duty truck market has developed rapidly in different areas at different times during this period. The wider base is desirable as it would allow close examination and tracking of the light duty truck over an expanded period of truck and economic changes.

Other studies which would provided additional insight into the light duty trucks' place in the overall transportation picture would be:

1. The uses of light duty trucks, i.e., commercial, personal recreation or combination.

2. The types and magnitudes of loads usually carried in different makes and models of light duty trucks.

3. The effects of cargo load on light duty truck fuel economy, including a study of operation and load cycles.

4. An analysis of the increased use of light duty truck vehicles, and which light duty truck vehicles may be replacing other types of vehicles in the transportation market with identification of the replaced vehicles.

APPENDIX A
REPORT OF NEW TECHNOLOGY

This report concerns the collection of existing data on light duty truck characteristics. Although some extrapolation and/or interpretation of data was used by the contractor as part of the methodology for task completion, no "subject inventions" were achieved during the performance of work on this contract.

U.S. DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
TRANSPORTATION SYSTEMS CENTER
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