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**Vehicle Purchase and Use Data Matrices:
J.D. Power/DOE New Vehicle
owner Surveys**

April 1981

Prepared for:

U.S. Department of Energy

Assistant Secretary for Conservation and Renewable Energy

Office of Transportation Programs

Transportation Systems Utilization Division

Under Contract No. AC01-79PE70032

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1. INTRODUCTION

This report compiles vehicle purchase and use data collected from buyers of new 1978 and 1979 cars and light-duty trucks in the two recent J.D. Power/DOE New Vehicle Owner Surveys. The survey information is broad in scope, extending from the public awareness of fuel economy information to decision-making in the purchase process, to in-use fuel economy. The survey data consequently have many applications in transportation studies. The objective of this report is to make a general summary of the data base contents available to interested individuals and organizations.

The importance of this data base is its variety of information on consumers and motor vehicles and the timeliness of its development. The owner surveys are part of a larger review of the U.S. Department of Energy (DOE) Fuel Economy Information Program and, accordingly, focus on public awareness and use of the Program's Gas Mileage Guide (hereafter called the "Guide") and the Fuel Economy Label (hereafter called the "Label"). They included many questions designed to characterize decision-making in the purchase process, emphasizing an understanding of how and when decisions are made on desired vehicle characteristics. The surveys also asked how owners perceived the accuracy and usefulness of information presented in the Guide and Label. A major goal of the first survey was to determine the importance of fuel economy to buyers and how comparative information influences their decisions. The second owner survey reached June 1979 buyers and was conducted to reveal how spring 1979 gasoline shortages had changed public attitudes on vehicle use and fuel economy. In all, the two surveys involved responses from more than 12,000 buyers of new 1978 and 1979 cars and light trucks.

The text of this report is brief and limited to guiding the reader in locating and using survey data. Energy and Environmental Analysis, Inc.

(EEA) and other organizations have issued reports^{1,2/} that apply the owner survey data to understanding current issues in fuel economy and the influence of fuel economy information. Accordingly, this report does not draw conclusions from the survey findings and does not attempt to analyze specific questions.

The organizational principle of this report is to allow easy reference to survey data -- a task complicated by the many tables and figures required to display the survey findings. The solution adopted here is to group related survey questions into sections. Following the discussion of Section 2 regarding the purpose and statistical structure of the owner surveys, Section 3 describes the six categories of survey data and identifies where each may be found. Section 3 lists the survey questions included in each category and cross-references the questions to tables and figures of later sections. Sections 4 (Fuel Economy Information) through 9 (Demographic Information) then introduce their data and outline their organization and contents. These later sections also provide examples to explain the formats of tables and figures. For the reader's reference, Appendix A reproduces specimens of the survey questionnaires. In addition, Appendix B describes computer techniques employed in production of this report.

REFERENCES FOR SECTION 1

- 1/ Energy and Environmental Analysis, Inc. 1980. "Influence of the Gas Mileage Guide on New Vehicle Fuel Economy and the Purchase of Imported Vehicles," prepared for the U.S. Department of Energy. Arlington, VA: EEA, December.
- 2/ U.S. Environmental Protection Agency. 1980. Technical Support Report for Regulatory Action, Light-Duty Vehicle Fuel Economy Labeling. Ann Arbor, MI: EPA, CTAB, October.

2. J. D. POWER/DOE NEW VEHICLE OWNER SURVEYS

The DOE Fuel Economy Information Program has the responsibility of providing consumers with a comprehensive source of new vehicle fuel economy ratings. In doing so, its objective is to promote energy conservation through encouraging the purchase of fuel-efficient vehicles. The J. D. Power/ DOE New Vehicle Owner Surveys were commissioned by DOE (Contract #EC-77-C-01-8840) to establish a data base for evaluating the Program's Gas Mileage Guide and the Fuel Economy Label. The evaluation was prompted by consumer criticism of the accuracy of the fuel economy ratings and indications that the Guide and Label did not achieve widespread use. The purpose of this section is to review the motivation and structure of the owner surveys.

2.1. MOTIVATION FOR THE OWNER SURVEYS

The Gas Mileage Guide and Fuel Economy Label contain comparative ratings of new vehicle fuel economy. The Guide, required by law to be available at dealerships, facilitates comparison by grouping together similar sized vehicles. By law, the Label must appear on all new cars and trucks and so be available to consumers during comparison shopping. A primary motivation for the owner surveys was to determine the extent of the public's use and satisfaction with the published fuel economy ratings.

Fuel economy estimates found in the Guide and Label are derived from a testing program begun in 1974 by the U.S. Environmental Protection Agency (EPA). Currently, fuel economy is measured over two different driving cycles, representing typical patterns found in city and highway driving. The urban cycle models a trip of 7.5 miles over urban roadways as might be encountered in commuting or stop-and-go driving. Laboratory testing permits careful control of test conditions, but requires a

dynamometer to simulate the engine loads encountered on the road. The highway fuel economy is measured using similar procedures, although it employs a driving cycle with higher average speeds and fewer accelerations. The composite fuel economy estimate is then calculated from the city and highway test results.

Laboratory testing and standardized driving cycles were chosen to give consumers a uniform scale for comparing new vehicle fuel economy. The ratings do not estimate what an owner may expect, since in-use fuel economy is dramatically affected by many factors. Nevertheless, consumer experience indicates that the EPA test results overstate the actual fuel economy achieved by most motorists. This shortfall between EPA and in-use fuel economy is the subject of a continuing DOE study^{1,2/} and has become a focus for consumer criticism of the Fuel Economy Information Program.

Concern for the public's perception of the ratings' accuracy and usefulness led to changes in the 1979 Guide and Label. These publications displayed for each vehicle a single EPA estimated mileage figure, which was based on the urban cycle test results. Advertising was not restricted to the single, city-based figure, however. In contrast to the composite fuel economy found in 1978 and earlier publications, the 1979 Estimated Fuel Economy Rating represented a lower fuel economy, intended to reflect more closely what owners can expect from each vehicle.

The differences between 1978 and 1979 Guide and Label also reflect substantially different methods of presenting fuel economy information. The 1978 publications exposed consumers to all three estimates and instructed them to use the composite figure for comparisons. Presenting separate estimates for city and highway mileage permits interpreting the ratings as a range of expected fuel economy dependent upon type of driving. The single estimate, as used in 1979, cannot supply such information. A second concern explored in the owner surveys, then, is

what fuel economy information buyers want and how the format of presentation affects the usefulness of comparative ratings.

Finally, the owner surveys also were designed to reveal the process of decision-making during vehicle purchase. Issues of specific concern to the Fuel Economy Information Program include the importance of fuel economy to buyers, when desired vehicle characteristics (such as size or fuel economy range) are determined, and how products such as the Guide and Label can be most influential. Understanding gained through the owner surveys will shape recommendations for increasing the effectiveness of the Guide and Label.

2.2 SURVEY METHODS

As explained above, the owner surveys were commissioned to explore basic issues in the public's use of fuel economy information. To reach a cross-section of buyers, the surveys were based on random samples drawn from vehicle registration data. Not all States permit disclosure of these records, so that in the strictest sense the surveys are not representative of the national population of vehicle buyers. Nevertheless, the owner surveys are broad in geographic coverage and accurately convey an understanding of the dominant trends in consumer attitudes and behavior.

Car and light truck buyers participated in the owner surveys by responding to the mail questionnaires found in Appendix A. Two surveys were conducted, the first reaching buyers of new model year 1978 and 1979 cars and trucks. These vehicles were purchased in August and October 1978; the October buyers represent new vehicle sales at the beginning of the 1979 model year. The second survey included only June 1979 buyers and used a shortened questionnaire exploring whether gasoline shortages in the spring had changed public attitudes toward fuel economy and use of the Guide and Label.

TABLE 2-1

J.D. POWER/DOE NEW VEHICLE OWNER SURVEY DESIGN
 FIRST SURVEY: 1978 AND 1979 BUYERS

TARGET SAMPLE SIZE

<u>National Sample</u>	<u>MY 1978</u>	<u>MY 1979</u>
Passenger Cars	4,800	4,800
Light Trucks	<u>1,200</u>	<u>1,200</u>
TOTALS	6,000	6,000

STATES EXCLUDED

<u>Region</u>	<u>States</u>
Northeast	Massachusetts New Jersey Pennsylvania
North Central	Missouri South Dakota
South	Maryland Oklahoma
West	Alaska Washington

SAMPLE SIZE ACHIEVED

<u>National Sample</u>	<u>MY 1978</u>	<u>MY 1979</u>
Passenger Cars	4,414	4,319
Light Trucks	<u>961</u>	<u>928</u>
TOTALS	5,375	5,247

TABLE 2-2

J.D. POWER/DOE NEW VEHICLE OWNER SURVEY DESIGN
SECOND SURVEY: JUNE 1979 BUYERS

TARGET SAMPLE SIZES

National, California, and New York Probability Samples	897 each
California Oversample	806 additional
New York Oversample	<u>709 additional</u>
TOTAL	2,412

STATES EXCLUDED

<u>Region</u>	<u>States</u>
Northeast	Connecticut Massachusetts New Jersey Pennsylvania Vermont
North Central	Indiana Kansas Missouri South Dakota
South	Arkansas Maryland Oklahoma Virginia
West	Alaska Hawaii Nevada Washington

SAMPLE SIZE ACHIEVED

	<u>Passenger Cars</u>	<u>Light Trucks</u>	<u>Total</u>
All States	1,485	299	1,784
California Only	247	40	287
New York Only	265	54	319

Because sampling was based on month of purchase, the model year 1978 and 1979 samples are not individually representative of consumer choices over complete years. This factor is most important for the first survey's sample of model year 1979 vehicles (purchased in October 1978), which contains a low proportion of imports and small cars and which also has a lower average fuel economy than the August 1978 vehicles. While the October 1978 data do not capture changes in consumer preference due to fuel price increases occurring later in the year, they do reflect accurately the buying patterns of the beginning of the model year, which traditionally is a time of strong sales for mid-size and large domestic cars.

The surveys differ slightly in design, as summarized in Tables 2-1 and 2-2. Owners were selected for the first survey in random national sampling stratified by month of purchase and vehicle type, with names and addresses drawn from vehicle registration lists compiled by R. L. Polk and Company. Nine States were necessarily excluded from the first survey because of State laws restricting access to these records. The second (post-shortage) survey employed three different probability samples of equal size (897) -- national, California, and New York. Over-sampling in California and New York gives greater statistical weight to these regions, which experienced greater gasoline shortages and longer waiting lines. An additional eight States did not participate in this survey due to restrictions in effect as of October 1979. As seen in Table 2-2, New York is the only major Northeast State included in the second survey. The exclusion of several States in each survey poses no significant limitations in use of survey data, however. Unlike a census, these surveys were conducted to understand fundamental issues and not solely to produce statistical estimates.

J. D. Power employed the standard survey technique of multiple wave sampling followed by data collection for evaluating non-response bias. In this approach, all individuals selected for the surveys receive questionnaires in the first mailing or wave. The size of the initial

wave is based on target sample sizes and a priori estimates of response rate. Non-respondents then are mailed new questionnaires in later waves. In the case of the first owner survey, three waves were mailed and the returned questionnaires processed. At close of the last wave, the remaining non-respondents present a potential for bias if they differ from respondents in relevant ways. In the first survey, a small sample was contacted by telephone and personal visits to collect simple demographic and attitudinal information for comparison with respondents. While the evaluation of non-response bias is a complicated matter and not discussed here, preliminary findings communicated by J.D. Power and Associates show no indication of major distortion in the samples.

Questions asked in the second survey are identical in almost every respect to those of the larger first survey, although less information was collected. This similarity facilitates comparison of survey findings. As a result, findings are summarized in this report by survey group, without reference to the survey or wave number. The groups are defined in Table 2-3 and indicate the model year and type of vehicle purchased, in addition to the month of purchase. As seen there, the second (post-shortage) survey participants are identified by the June month of purchase. All survey groups appear in the tables of later sections in the order found in Table 2-3. The next section describes the major categories of information contained in the owner surveys and relates these categories to later sections of the report.

TABLE 2-3

SURVEY GROUPS IN J.D. POWER/DOE NEW VEHICLE OWNER SURVEYS

<u>GROUP</u>	<u>SURVEY</u>	<u>MODEL YEAR</u>	<u>PURCHASE MONTH</u>
1978 Car (Aug)	First	1978	August 1978
1978 Truck (Aug)	First	1978	August 1978
1979 Car (Oct)	First	1979	October 1978
1979 Truck (Oct)	First	1979	October 1978
1979 Car (Jun)	Second	1979	June 1979
1979 Truck (Jun)	Second	1979	June 1979

REFERENCES FOR SECTION 2

- 1/ Energy and Environmental Analysis, Inc. 1978. A Comparison of Fuel Economy Results from EPA Tests and Actual In-Use Experience, 1974-1977 Model Year Cars. Prepared for U. S. Department of Energy. Arlington, VA: EEA, February.
- 2/ Energy and Environmental Analysis, Inc. 1979. Comparison of EPA and In-use Fuel Economy of 1974-1978 Automobiles. Prepared for U.S. Department of Energy. Arlington, VA: EEA, October.

3. CONTENTS OF THE SURVEY DATA BASE

To gather data pertaining to issues discussed in Section 2, the owner surveys focused on the following information:

- Awareness, use, and influence of fuel economy information found in the Guide and on the Label
- Decision-making in the purchase process and consumer attitudes on national issues
- Characteristics of new vehicles
- Fuel Economy Data
- Vehicle use patterns
- Demographic descriptions of owner and family.

The rest of Section 3 presents survey findings for each of these six categories. Because the second survey findings are very important to understanding how the 1979 fuel shortage changed public attitudes, they are included in the sections on awareness of fuel economy information (Section 4) and the purchase process (Section 5). Because the sample sizes employed in the second survey are small, they provide little additional information on vehicle characteristics and use or on in-use fuel economy. The second survey data, therefore, are not included in the other sections of this report.

3.1 FUEL ECONOMY INFORMATION

The first category of survey data relates to the Fuel Economy Information Program's visibility and influence. Buyers were asked whether they knew of the Guide or Label before shopping and whether they had actually used these sources for comparing vehicles. Importantly, the survey also asked if this information led to selecting or rejecting any vehicles.

Several questions on the usefulness and credibility of the Guide and Label were followed by open-ended questions soliciting opinions on how these products could be improved.

All first and second survey findings on awareness and use of the Guide and Label are included in this category. The owner surveys asked the following questions, which are displayed in Section 4 in the tables indicated in parantheses:

- Question 14: At the time of purchase, did the respondent see a Fuel Economy Label and use the information to compare vehicles? (Tables 4-1 and 4-2)
- Question 15: How useful were the Label's fuel economy ratings, and why does the respondent feel that way? (Tables 4-3 through 4-6)
- Question 16: Does the Label need additional information and, if so, what should it be? (Tables 4-7 and 4-8)
- Question 18: While shopping for the new vehicle, 1) was the respondent aware of the Gas Mileage Guide, 2) was the Guide available at dealerships, and 3) was the respondent aware that dealerships must make the Guide available? (Tables 4-9 through 4-11)
- Question 19: Had the respondent heard of the Guide before buying a new vehicle? If so, did the respondent attempt to locate the Guide? (Tables 4-12 and 4-13)
- Question 20: Did the respondent actually consult the Guide? How useful was it in the purchase decision? Did the information lead to selecting or rejecting any vehicles? (Tables 4-14 through 4-16)
- Question 21: Has the respondent heard of the Guide since the purchase? (Table 4-17)
- Question 22: How useful was the information in the Guide, specifically the interior volume index, fuel economy ratings, average annual fuel cost, the factors affecting fuel economy, and the description of fuel economy testing procedures? (Tables 4-18 A through H)

- Question 23: Is additional information needed in the Guide and, if so, what should it be? (Tables 4-19 and 4-20)
- Question 26: How does the respondent rate the actual new vehicle fuel economy in comparison with his or her expectations? (Table 4-21)
- Question 28: How does the respondent's fuel economy under normal driving compare with the EPA ratings? If the gas mileage is less, then to what does the respondent attribute the difference? Why do the EPA ratings overstate fuel economy? (Tables 4-22 through 4-24)

The question numbers listed above are taken from the first owner survey and do not correspond with the numbering of the second survey. The shortened questionnaire of the second (post-shortage) survey also eliminated some of these questions, e.g., whether the Guide and Label should contain more information. In these instances, the survey groups of June 1979 buyers are omitted from the tables of Section 4.

3.2 THE PURCHASE PROCESS

Decision-making in the vehicle purchase process is a complicated phenomenon explored at length in the owner surveys. In addition to giving the reasons for buying a new vehicle, owners rated the importance of vehicle characteristics in their final decisions. The characteristics included fuel economy range and size of vehicle, safety, engineering design, and many others. Because developing and distributing influential fuel economy information requires understanding when these decisions are made, the timing of important decisions such as fuel economy range and vehicle size also was probed. Further, several questions explored public attitudes on national energy issues, including the government's proper role in promoting fuel efficiency, the accuracy and usefulness of EPA fuel economy ratings, and the influence of the fuel shortage on purchase decisions. Section 5 reports the findings of this category.

The specific questions displayed for this category are the following:

- Question 8: Why did the respondent buy a new vehicle?
(Tables 5-1 A/B)
- Question 10: When during the purchase process were the decisions made on basic characteristics, including size of vehicle, engine size, and transmission type? (Tables 5-2 and 5-3)
- Question 11: How important to the respondent's purchase decision were specific vehicle characteristics? Which was most important? (Tables 5-4 through 5-6)
- Question 13: Did the respondent actually compare the fuel economies of vehicles under consideration and why or why not? (Tables 5-7 through 5-9)
- Question 17: What sources did the respondent use for information on fuel economy? Which one source was most helpful? (Tables 5-10 through 5-12)
- Question 7 of second survey: How influential was the 1979 fuel shortage in the purchase decision? (Table 5-13)
- Question 33: How much does the respondent agree or disagree with statements on national energy issues? (Tables 5-14 and 5-15)

This selection of questions includes all of the survey's attitudinal information on the purchase process and national issues. Other pertinent data deal with descriptions of the vehicle replaced and other vehicles considered for purchase. This information reveals the latitude perceived by consumers in selecting vehicle types, but can not be displayed here due to the restrictions of space. As in the survey findings on the use of the Guide and Label, data from the second survey are included in the tables of Section 5 whenever the questions listed above were asked of the participating June 1979 buyers.

3.3 NEW VEHICLE CHARACTERISTICS

The third category of survey information contains owner descriptions of the new vehicles and also engineering specifications, which have been added to the data base. These data are presented for the vehicles of the first owner survey. While the second survey also collected owner descriptions, its primary purpose was to reveal attitudinal changes resulting from the 1979 fuel shortages. Its much smaller sample size cannot characterize the rapidly changing conditions of the 1979 automobile market and its data on vehicle characteristics are not shown in this report.

Section 6 draws upon survey questions 1 through 5 to detail the following characteristics of new vehicles in the first owner survey:

- Origin of New Vehicle (domestic vs. import) (Table 6-1)
- Manufacturer of New Cars (Table 6-2)
- Body Style (Tables 6-3A/B)
- Selection of Air Conditioning or Radial Tires (Tables 6-4 and 6-5)
- Transmission Type (Table 6-6)
- Engine Description (cylinder count) (Table 6-7)
- Fuel Type (Table 6-8)
- Size Class of New Cars (Table 6-9)
- Inertial Weight Class of New Cars (Table 6-10).

The information specific to cars has been added to the survey data base. The size class of cars is taken from the 1978 and 1979 Gas Mileage Guide, while the inertial weight classifications are from the EPA test car lists (which summarize the specifications of vehicles tested each year for emissions and fuel economy). EEA also has identified the fuel type required in each vehicle by examining each survey response for models

offered with diesel engines. Section 6 explains further the process of identifying fuel type.

3.4 FUEL ECONOMY DATA

The category of fuel economy data, reported in Section 7, is very broad, and encompasses the four types of information found in the survey:

- Fuel economy distributions
 - in-use fuel economies for the new and replaced vehicles
 - owner-reported (or perceived) EPA ratings
 - correct (or actual) EPA ratings, which EEA has added to the survey data base
- Comparisons of owner-reported and actual EPA ratings
- Perceived shortfall relationships
- Actual shortfall relationships.

This information is of considerable importance, since the in-use fuel economy shortfall is the reason for concern regarding the EPA rating system.

The numerous figures and tables of Section 7 have been designed to facilitate understanding how fuel economy and shortfall are related to driving patterns. Because the in-use data are owner-reported, rather than based on fuel purchase records, owner record-keeping practices also are important. Therefore, the data table formats which summarize the fuel economy data include several categories or subsets based on these two factors. Section 7 explains these formats and guides the reader in locating and interpreting their many distributions.

3.5 VEHICLE USE PATTERNS

The owner surveys collected information on the use of new vehicles, with focus on two basic issues: individual travel needs and the type of driving done by consumers. The data related to travel demand include estimated annual miles traveled, vehicle odometer readings, and the intensity of vehicle use (measured as average miles per day). Trip characteristics data are average one-way trip length and typical driving conditions, in terms of both the type of roadway and the carrying of passengers. Section 8 uses histograms and tables to display this information.

The survey data on vehicle use are the following:

- Question 6a: Odometer reading at time of survey (Figure 8-1)
- Imputed intensity of vehicle use: Average miles per day (Figure 8-2 and Table 8-2)
- Question 7: Expected length of service before replacement of the new vehicle (Table 8-3)
- Question 29: Length of average one-way trip during a typical week (Figure 8-3)
- Question 30: Expected annual mileage for the new vehicle (Figure 8-4)
- Question 31: Percentage of weekly driving done in city, expressway, and rural roadway conditions (Tables 8-4 through 8-6)
- Question 32: Percentage of weekly driving with and without passengers (Tables 8-7 and 8-8).

Section 8 explains further how the average miles per day has been calculated for each vehicle. As in the section on vehicle characteristics, vehicle use data are displayed only for the cars and trucks of the first owner survey.

3.6 DEMOGRAPHIC INFORMATION

Finally, the sixth category provides basic demographic data on survey participants. On their own, the data describe personal and family characteristics of the new car and truck buyers. A more important application is in the cross-tabulation with other questions, e.g., attitudes on national energy issues. However, the many variations in presentation and the large number of resulting tables preclude such presentations in this report.

Section 9 displays the following basic demographic variables:

- Question 34: Gender of respondent (Table 9-1)
- Question 37: Age group of respondent (Table 9-2)
- Question 38A: Family demographics
 - marital status of respondents (Table 9-3A)
 - number of children at home (Table 9-3B)
- Question 39: Educational level of respondents (Table 9-4)
- Question 40: Annual income of respondents (Table 9-5).

4. AWARENESS AND USE OF THE GUIDE AND LABEL

This section presents owner survey data related to the Fuel Economy Information Program's Gas Mileage Guide and the Fuel Economy Label. The survey findings report consumer awareness and use of these sources and also indicate the influence and credibility of their information. The data found here are drawn from both the first and second owner surveys and reveal how the 1979 fuel shortage changed public perception of the Guide and Label. The next section reports further on attitudes toward fuel economy by exploring the decisions made in purchasing a new vehicle.

4.1 PRESENTATION

The information contained in this section is organized as follows:

- The Fuel Economy Label
 - awareness and use of the Label (Tables 4-1 and 4-2)
 - usefulness of the information (Tables 4-3 through 4-6)
 - satisfaction with the Label (Tables 4-7 and 4-8)
- The Gas Mileage Guide
 - awareness, availability, and use of the Guide (Tables 4-9 through 4-17)
 - Usefulness of the information (Tables 4-18 A through H)
 - Satisfaction with the Guide (Tables 4-19 and 4-20)
- Credibility of the Guide and Label's information (Tables 4-21 through 4-24).

Each table examines owner responses to one question asked in the survey and tabulates these responses by survey group, as defined in Section 2. These six groups correspond to the sampling stratification by model year

and vehicle type in the two owner surveys. The second survey included only June 1979 buyers of model year 1979 cars and trucks and is identified in the tables by the month of purchase. These fifth and sixth groups do not appear in tables when the related question was not a part of the second survey.

The survey findings are summarized in standard cross-tabulation tables. Each cell in the tables contains its frequency (or number of responses), its percentage of the survey sample, and the row percentage. The row percentage is the percent of survey group participants giving the indicated response and has been calculated to include only buyers answering the question. The number of participants not providing the requested information is tabulated separately. In addition, each table reports overall frequencies and percents by both survey group and response; the overall totals do not include non-respondents.

The cross-tabulation tables are largely self-documenting. Each is labeled with a shortened version of the survey question and is referenced with the question number used in the first survey (see questionnaires in Appendix A). Several of these questions were open-ended, i.e., they requested that participants write in the reasons for an opinion or action previously identified. J. D. Power and Associates defined categories within these responses and coded each returned questionnaire during processing. Code numbers appear in the cross-tabulation tables and are explained in a preceeding coding form. Other questions permit only specific answers, often yes or no. Responses to these questions are clearly indicated at the top of each table's columns.

4.2 EXAMPLE

Table 4-1 tabulates responses to Question 14A: Did the consumer see a Fuel Economy Label on his or her vehicle or on one similar? Overall, 70.87 percent of the 12,210 buyers answering the question did see a

Label. Awareness is highest among car buyers in the June 1979 sample, in which 79.76 percent (or 1,174 of 1,472 respondents) saw a Label. Respondents not remembering vary from 11 to 16 percent of the survey groups. In total, the August 1978 sample of car buyers comprise 35.50 percent of the entire sample and June 1979 car buyers 12 percent. Note that the relative proportions of the six survey groups largely are determined by the target sample sizes of the survey design.

TABLE 4-1: DID RESPONDENT SEE A FUEL ECONOMY LABEL DURING PURCHASE?

(SOURCE: QUESTION 14A)

FREQUENCY PERCENT ROW PCT		NO	DON'T	NO	YES	TOTAL
		ANSWER	REMEMBER			
MY78 CAR (AUG)		80	694	392	3248	4334
		.	5.68	3.21	26.60	35.50
		.	16.01	9.04	74.94	
MY78 TRUCK (AUG)		16	152	235	558	945
		.	1.24	1.92	4.57	7.74
		.	16.08	24.87	59.05	
MY79 CAR (OCT)		71	570	631	3047	4248
		.	4.67	5.17	24.95	34.79
		.	13.42	14.85	71.73	
MY79 TRUCK (OCT)		13	142	290	483	915
		.	1.16	2.38	3.96	7.49
		.	15.52	31.69	52.79	
MY79 CAR (JUN)		13	168	130	1174	1472
		.	1.38	1.06	9.62	12.06
		.	11.41	8.83	79.76	
MY79 TRUCK (JUN)		3	46	107	143	296
		.	0.38	0.88	1.17	2.42
		.	15.54	36.15	48.31	
TOTAL		.	1772	1785	8653	12210
		.	14.51	14.62	70.87	100.00

TABLE 4-2: DID RESPONDENT USE THE LABEL FOR COMPARING?

(SOURCE: QUESTION 14R)

FREQUENCY PERCENT ROW PCT				TOTAL
	NO ANSWER	NO	YES	
MY78 CAR (AUG)	189	1376	1683	3059
	.	16.84	20.60	37.44
	.	44.98	55.02	
MY78 TRUCK (AUG)	27	283	248	531
	.	3.46	3.04	6.50
	.	53.30	46.70	
MY79 CAR (OCT)	187	1615	1245	2860
	.	19.77	15.24	35.00
	.	56.47	43.53	
MY79 TRUCK (OCT)	27	281	175	456
	.	3.44	2.14	5.58
	.	61.62	38.38	
MY79 CAR (JUN)	46	460	668	1128
	.	5.63	8.18	13.80
	.	40.78	59.22	
MY79 TRUCK (JUN)	6	70	67	137
	.	0.86	0.82	1.68
	.	51.09	48.91	
TOTAL	.	4085	4086	8171
	.	49.99	50.01	100.00

TABLE 4-3: HOW USEFUL WAS THE LABEL?

(SOURCE: QUESTION 15A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	(1) NOT USEFUL	2	3	4	5	6	(7) VERY USEFUL	TOTAL
MY78 CAR (AUG)	104	572	252	349	537	522	393	519	3144
	.	6.81	3.00	4.15	6.39	6.21	4.68	6.17	37.41
	.	18.19	8.02	11.10	17.08	16.60	12.50	16.51	
MY78 TRUCK (AUG)	20	160	45	69	86	65	47	66	538
	.	1.90	0.54	0.82	1.02	0.77	0.56	0.79	6.40
	.	29.74	8.36	12.83	15.99	12.08	8.74	12.27	
MY79 CAR (OCT)	109	730	242	310	547	404	285	420	2938
	.	8.69	2.88	3.69	6.51	4.81	3.39	5.00	34.96
	.	24.85	8.24	10.55	18.62	13.75	9.70	14.30	
MY79 TRUCK (OCT)	14	138	50	60	72	52	38	59	469
	.	1.64	0.59	0.71	0.86	0.62	0.45	0.70	5.58
	.	29.42	10.66	12.79	15.35	11.09	8.10	12.58	
MY79 CAR (JUN)	1	162	81	113	218	179	185	235	1173
	.	1.93	0.96	1.34	2.59	2.13	2.20	2.80	13.96
	.	13.81	6.91	9.63	18.58	15.26	15.77	20.03	
MY79 TRUCK (JUN)	0	37	5	17	27	17	14	26	143
	.	0.44	0.06	0.20	0.32	0.20	0.17	0.31	1.70
	.	25.87	3.50	11.89	18.88	11.89	9.79	18.18	
TOTAL	.	1799	675	918	1487	1239	962	1325	8405
	.	21.40	8.03	10.92	17.69	14.74	11.45	15.76	100.00

TABLE 4-4A

REASONS FOR POSITIVE OPINIONS ON USEFULNESS OF THE LABEL: CODING FORM

<u>CODE</u>	<u>REASON</u>
1	Fuel economy is important
2	The price of fuel
3	Economy (non-specific response)
4	Respondent found the Label useful
5	Label provides good comparison among cars
6	Conservation (non-specific response)
7	Respondent felt the EPA ratings were accurate
9	Any other reason for a positive opinion

TABLE 4-4B: REASONS FOR A POSITIVE OPINION ON THE LABEL

(SOURCE: QUESTION 15B)

FREQUENCY PERCENT ROW PCT		NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	CODE 6	CODE 7	CODE 9	TOTAL
MY78 CAR	(AUG)	480	252	107	146	152	276	21	22	100	1076
		.	11.45	4.86	6.64	6.91	12.55	0.95	1.00	4.55	48.91
		.	23.42	9.94	13.57	14.13	25.65	1.95	2.04	9.29	
MY78 TRUCK	(AUG)	67	30	21	21	11	47	5	6	13	154
		.	1.36	0.95	0.95	0.50	2.14	0.23	0.27	0.59	7.00
		.	19.48	13.64	13.64	7.14	30.52	3.25	3.90	8.44	
MY79 CAR	(OCT)	536	231	113	77	157	137	22	45	70	852
		.	10.50	5.14	3.50	7.14	6.23	1.00	2.05	3.18	38.73
		.	27.11	13.26	9.04	18.43	16.08	2.58	5.28	8.22	
MY79 TRUCK	(OCT)	80	20	16	11	13	22	0	18	18	118
		.	0.91	0.73	0.50	0.50	1.00	0.00	0.82	0.82	5.36
		.	16.95	13.56	9.32	11.02	18.64	0.00	15.25	15.25	
TOTAL		.	533	257	255	333	482	48	91	201	2200
		.	24.23	11.68	11.59	15.14	21.91	2.18	4.14	9.14	100.00

TABLE 4-5A

REASONS FOR NEUTRAL OPINIONS ON USEFULNESS OF THE LABEL: CODING FORM

<u>CODE</u>	<u>REASON</u>
1	Fuel economy does not matter
2	Only the <u>Gas Mileage Guide</u> was available
3	Fuel economy depends on driving habits
4	Fuel economy was not the only consideration
9	Any other reason for a neutral opinion

TABLE 4-5B: REASONS FOR A NEUTRAL OPINION ON THE LABEL

(SOURCE: QUESTION 15B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 9	TOTAL
MY78 CAR (AUG)	480	68	67	119	136	66	456
	.	7.06	6.96	12.36	14.12	6.85	47.35
	.	14.91	14.69	26.10	29.82	14.47	
MY78 TRUCK (AUG)	67	8	0	13	14	15	50
	.	0.83	0.00	1.35	1.45	1.56	5.19
	.	16.00	0.00	26.00	28.00	30.00	
MY79 CAR (OCT)	536	68	36	110	133	67	414
	.	7.06	3.74	11.42	13.81	6.96	42.99
	.	16.43	8.70	26.57	32.13	16.18	
MY79 TRUCK (OCT)	80	10	1	8	12	12	43
	.	1.04	0.10	0.83	1.25	1.25	4.47
	.	23.26	2.33	18.60	27.91	27.91	
TOTAL	.	154	104	250	295	160	963
	.	15.99	10.80	25.96	30.63	16.61	100.00

TABLE 4-6A

REASONS FOR NEGATIVE OPINIONS ON USEFULNESS OF THE LABEL: CODING FORM

<u>CODE</u>	<u>REASON</u>
1	EPA ratings overstate fuel economy
2	EPA ratings are not accurate
3	EPA ratings do not reflect real-world driving
4	Fuel economy is not important
5	Respondent did not trust EPA ratings
6	Respondent was more interested in other characteristics
9	Respondent made decision on past experience

TABLE 4-6B: REASONS FOR A NEGATIVE OPINION ON THE LABEL.

(SOURCE: QUESTION 15B)

FREQUENCY PERCENT ROW PCT		NO	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	CODE 6	CODE 7	CODE 9	TOTAL
		ANSWER									
MY78 CAR (AUG)		480	136	363	114	85	145	194	45	77	1159
		.	4.82	12.86	4.04	3.01	5.14	6.87	1.59	2.73	41.07
		.	11.73	31.32	9.84	7.33	12.51	16.74	3.88	6.64	
MY78 TRUCK (AUG)		67	36	86	41	11	24	31	15	19	263
		.	1.28	3.05	1.45	0.39	0.85	1.10	0.53	0.67	9.32
		.	13.69	32.70	15.59	4.18	9.13	11.79	5.70	7.22	
MY79 CAR (OCT)		536	56	289	110	207	110	236	53	104	1165
		.	1.98	10.24	3.90	7.34	3.90	8.36	1.88	3.69	41.28
		.	4.81	24.81	9.44	17.77	9.44	20.26	4.55	8.93	
MY79 TRUCK (OCT)		80	15	78	37	14	20	15	15	41	235
		.	0.53	2.76	1.31	0.50	0.71	0.53	0.53	1.45	8.33
		.	6.38	33.19	15.74	5.96	8.51	6.38	6.38	17.45	
TOTAL		.	243	816	302	317	299	476	128	241	2822
		.	8.61	28.92	10.70	11.23	10.60	16.87	4.54	8.54	100.00

TABLE 4-7: SHOULD THE LABEL CONTAIN MORE INFORMATION?

(SOURCE: QUESTION 16A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	NO, FINE AS IS	NO, TOO MUCH NOW	YES	TOTAL
MY78 CAR (AUG)	439	1925	101	783	2809
	.	30.15	1.58	12.26	43.99
	.	68.53	3.60	27.87	
MY78 TRUCK (AUG)	69	299	12	178	489
	.	4.68	0.19	2.79	7.66
	.	61.15	2.45	36.40	
MY79 CAR (OCT)	388	1925	112	622	2659
	.	30.15	1.75	9.74	41.64
	.	72.40	4.21	23.39	
MY79 TRUCK (OCT)	55	291	16	121	428
	.	4.56	0.25	1.90	6.70
	.	67.99	3.74	28.27	
TOTAL	.	4440	241	1704	6385
	.	69.54	3.77	26.69	100.00

TABLE 4-8A

ADDITIONAL INFORMATION DESIRED ON THE LABEL: CODING FORM

<u>CODE</u>	<u>INFORMATION</u>
1	More accurate or reliable ratings
2	Ratings measured under normal driving
3	Percent of drivers achieving the ratings
4	Estimate of actual fuel economy
5	Explanation of the EPA ratings
6	Recommended octane for vehicle
7	Guarantee of minimum fuel economy achieved
8	Type of fuel required by vehicle
9	Recommended frequency of tune-ups
10	Fuel economy when using power options
11	Fuel economy at different speeds
12	Influence of weather on fuel economy
13	Fuel economy with and without emission controls
14	The range of expected fuel economy
15	The vehicle weight versus horsepower rating
22	Any other information desired

TABLE 4-8B: ADDITIONAL INFORMATION NEEDED ON THE LABEL

(SOURCE: QUESTION 16B)

FREQUENCY PERCENT ROW PCT	CODE 8	CODE 9	CODE 10	CODE 11	CODE 12	CODE 13	CODE 14	CODE 15	CODE 22	TOTAL
MY78 CAR (AUG)	16 1.13 2.65	16 1.13 2.65	17 1.20 2.82	14 0.99 2.32	15 1.06 2.49	3 0.21 0.50	14 0.99 2.32	5 0.35 0.83	83 5.85 13.76	603 42.52
MY78 TRUCK (AUG)	0 0.00 0.00	10 0.71 6.17	10 0.71 6.17	8 0.56 4.94	3 0.21 1.85	0 0.00 0.00	3 0.21 1.85	1 0.07 0.62	13 0.92 8.02	162 11.42
MY79 CAR (OCT)	11 0.78 2.03	15 1.06 2.77	10 0.71 1.85	18 1.27 3.33	16 1.13 2.96	1 0.07 0.18	9 0.63 1.66	1 0.07 0.18	38 2.68 7.02	541 38.15
MY79 TRUCK (OCT)	1 0.07 0.89	7 0.49 6.25	4 0.28 3.57	3 0.21 2.68	2 0.14 1.79	0 0.00 0.00	4 0.28 3.57	1 0.07 0.89	13 0.92 11.61	112 7.90
TOTAL	28 1.97	48 3.39	41 2.89	43 3.03	36 2.54	4 0.28	30 2.12	8 0.56	147 10.37	1418 100.00

TABLE 4-8B: ADDITIONAL INFORMATION NEEDED ON THE LABEL

(SOURCE: QUESTION 16B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	DON'T KNOW	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	CODE 6	CODE 7	TOTAL
MY78 CAR (AUG)	40	2	152	54	44	66	66	12	24	603
	.	0.14	10.72	3.81	3.10	4.65	4.65	0.85	1.69	42.52
	.	0.33	25.21	8.96	7.30	10.95	10.95	1.99	3.98	
MY78 TRUCK (AUG)	13	0	37	12	16	6	32	3	8	162
	.	0.00	2.61	0.85	1.13	0.42	2.26	0.21	0.56	11.42
	.	0.00	22.84	7.41	9.88	3.70	19.75	1.85	4.94	
MY79 CAR (OCT)	39	5	120	53	60	62	93	17	12	541
	.	0.35	8.46	3.74	4.23	4.37	6.56	1.20	0.85	38.15
	.	0.92	22.18	9.80	11.09	11.46	17.19	3.14	2.22	
MY79 TRUCK (OCT)	8	0	28	7	9	11	17	0	5	112
	.	0.00	1.97	0.49	0.63	0.78	1.20	0.00	0.35	7.90
	.	0.00	25.00	6.25	8.04	9.82	15.18	0.00	4.46	
TOTAL	.	7	337	126	129	145	208	32	49	1418
	.	0.49	23.77	8.89	9.10	10.23	14.67	2.26	3.46	100.00

(CONTINUED)

TABLE 4-9: WAS RESPONDENT AWARE OF THE GUIDE WHEN SHOPPING?

(SOURCE: QUESTION 18A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	NO	YES	TOTAL
MY78 CAR (AUG)	132	3509	773	4282
	.	29.04	6.40	35.44
	.	81.95	18.05	
MY78 TRUCK (AUG)	22	763	176	939
	.	6.31	1.46	7.77
	.	81.26	18.74	
MY79 CAR (OCT)	132	3338	849	4187
	.	27.63	7.03	34.65
	.	79.72	20.28	
MY79 TRUCK (OCT)	18	725	185	910
	.	6.00	1.53	7.53
	.	79.67	20.33	
MY79 CAR (JUN)	18	1172	295	1467
	.	9.70	2.44	12.14
	.	79.89	20.11	
MY79 TRUCK (JUN)	1	213	85	298
	.	1.76	0.70	2.47
	.	71.48	28.52	
TOTAL	.	9720	2363	12083
	.	80.44	19.56	100.00

TABLE 4-10 WAS THE GUIDE AVAILABLE AT DEALERSHIPS?

(SOURCE: QUESTION 18B)

FREQUENCY PERCENT ROW PCT		NO ANSWER	DON'T KNOW	NO	YES, AT SOME	YES, ALL OF THEM	TOTAL
MY78 CAR	(AUG)	12	253	82	233	193	761
		.	12.99	4.21	11.96	9.91	39.07
		.	33.25	10.78	30.62	25.36	
MY78 TRUCK	(AUG)	1	55	26	51	43	175
		.	2.82	1.33	2.62	2.21	8.98
		.	31.43	14.86	29.14	24.57	
MY79 CAR	(OCT)	18	308	93	178	252	831
		.	15.81	4.77	9.14	12.94	42.66
		.	37.06	11.19	21.42	30.32	
MY79 TRUCK	(OCT)	4	73	31	41	36	181
		.	3.75	1.59	2.10	1.85	9.29
		.	40.33	17.13	22.65	19.89	
TOTAL		.	689	232	503	524	1948
		.	35.37	11.91	25.82	26.90	100.00

TABLE 4-11: DID RESPONDENT KNOW DEALERS MUST HAVE THE GUIDE AVAILABLE?

(SOURCE: QUESTION 18C)

FREQUENCY PERCENT ROW PCT	NO ANSWER	NO	YES	TOTAL
MY78 CAR (AUG)	21	562	190	752
	.	29.16	9.86	39.02
	.	74.73	25.27	
MY78 TRUCK (AUG)	1	128	47	175
	.	6.64	2.44	9.08
	.	73.14	26.86	
MY79 CAR (OCT)	26	503	320	823
	.	26.10	16.61	42.71
	.	61.12	38.88	
MY79 TRUCK (OCT)	8	125	52	177
	.	6.49	2.70	9.19
	.	70.62	29.38	
TOTAL	.	1318	609	1927
	.	68.40	31.60	100.00

TABLE 4-12: HAD RESPONDENT HEARD OF THE GUIDE BEFORE THE PURCHASE?

(SOURCE: QUESTION 19A)

FREQUENCY PERCENT ROW PCT	NO		YES		TOTAL
	ANSWER				
MY78 CAR (AUG)	17	95	661		756
	.	4.90	34.09		38.99
	.	12.57	87.43		
MY78 TRUCK (AUG)	0	16	160		176
	.	0.83	8.25		9.08
	.	9.09	90.91		
MY79 CAR (OCT)	19	61	769		830
	.	3.15	39.66		42.81
	.	7.35	92.65		
MY79 TRUCK (OCT)	8	17	160		177
	.	0.88	8.25		9.13
	.	9.60	90.40		
TOTAL	.	189	1750		1939
	.	9.75	90.25		100.00

TABLE 4-13: DID RESPONDENT ATTEMPT TO LOCATE A GUIDE?

(SOURCE: QUESTION 19B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	NO	YES	TOTAL
MY78 CAR (AUG)	15	395	251	646
	.	22.98	14.60	37.58
	.	61.15	38.85	
MY78 TRUCK (AUG)	1	101	58	159
	.	5.88	3.37	9.25
	.	63.52	36.48	
MY79 CAR (OCT)	12	532	225	757
	.	30.95	13.09	44.04
	.	70.28	29.72	
MY79 TRUCK (OCT)	3	111	46	157
	.	6.46	2.68	9.13
	.	70.70	29.30	
TOTAL	.	1139	580	1719
	.	66.26	33.74	100.00

TABLE 4-14: DID THE RESPONDENT CONSULT THE GUIDE BEFORE BUYING?

(SOURCE: QUESTION 20A)

FREQUENCY PERCENT ROW PCT	NO		YES		TOTAL
	ANSWER				
MY78 CAR (AUG)	21	343	297	640	
	.	16.64	14.41	31.05	
	.	53.59	46.41		
MY78 TRUCK (AUG)	4	87	69	156	
	.	4.22	3.35	7.57	
	.	55.77	44.23		
MY79 CAR (OCT)	30	493	246	739	
	.	23.92	11.94	35.86	
	.	66.71	33.29		
MY79 TRUCK (OCT)	7	102	51	153	
	.	4.95	2.47	7.42	
	.	66.67	33.33		
MY79 CAR (JUN)	5	151	139	290	
	.	7.33	6.74	14.07	
	.	52.07	47.93		
MY79 TRUCK (JUN)	2	49	34	83	
	.	2.38	1.65	4.03	
	.	59.04	40.96		
TOTAL		1225	836	2061	
		59.44	40.56	100.00	

TABLE 4-15: HOW USEFUL WAS THE GUIDE DURING PURCHASE?

(SOURCE: QUESTION 20B)

FREQUENCY PERCENT ROW PCT		NO ANSWER	(1) NOT USEFUL	2	3	4	5	6	(7) VERY USEFUL	TOTAL
MY78 CAR	(AUG)	5	19	28	21	55	55	54	60	292
		.	2.31	3.41	2.56	6.70	6.70	6.58	7.31	35.57
		.	6.51	9.59	7.19	18.84	18.84	18.49	20.55	
MY78 TRUCK	(AUG)	1	9	8	8	13	10	9	11	68
		.	1.10	0.97	0.97	1.58	1.22	1.10	1.34	8.28
		.	13.24	11.76	11.76	19.12	14.71	13.24	16.18	
MY79 CAR	(OCT)	6	22	11	24	51	50	41	41	240
		.	2.68	1.34	2.92	6.21	6.09	4.99	4.99	29.23
		.	9.17	4.58	10.00	21.25	20.83	17.08	17.08	
MY79 TRUCK	(OCT)	3	9	5	7	10	5	4	8	48
		.	1.10	0.61	0.85	1.22	0.61	0.49	0.97	5.85
		.	18.75	10.42	14.58	20.83	10.42	8.33	16.67	
MY79 CAR	(JUN)	0	10	6	8	21	33	28	33	139
		.	1.22	0.73	0.97	2.56	4.02	3.41	4.02	16.93
		.	7.19	4.32	5.76	15.11	23.74	20.14	23.74	
MY79 TRUCK	(JUN)	0	7	0	4	9	4	3	7	34
		.	0.85	0.00	0.49	1.10	0.49	0.37	0.85	4.14
		.	20.59	0.00	11.76	26.47	11.76	8.82	20.59	
TOTAL		.	76	58	72	159	157	139	160	821
		.	9.26	7.06	8.77	19.37	19.12	16.93	19.49	100.00

TABLE 4-16: DID THE GUIDE LEAD TO SELECTING OR REJECTING
ANY VEHICLES THE RESPONDENT WAS CONSIDERING?

(SOURCE: QUESTION 20C)

FREQUENCY PERCENT ROW PCT		NO ANSWER	NO	YES	TOTAL
MY78 CAR (AUG)		10	150	137	287
		.	18.68	17.06	35.74
		.	52.26	47.74	
MY78 TRUCK (AUG)		2	46	21	67
		.	5.73	2.62	8.34
		.	68.66	31.34	
MY79 CAR (OCT)		9	161	76	237
		.	20.05	9.46	29.51
		.	67.93	32.07	
MY79 TRUCK (OCT)		6	32	13	45
		.	3.99	1.62	5.60
		.	71.11	28.89	
MY79 CAR (JUN)		4	63	72	135
		.	7.85	8.97	16.81
		.	46.67	53.33	
MY79 TRUCK (JUN)		2	20	12	32
		.	2.49	1.49	3.99
		.	62.50	37.50	
TOTAL		.	472	331	803
		.	58.78	41.22	100.00

TABLE 4-17: HAS RESPONDENT HEARD OF THE GUIDE SINCE BUYING?

(SOURCE: QUESTION 21)

FREQUENCY PERCENT ROW PCT	NO ANSWER	NO	YES	TOTAL
MY78 CAR (AUG)	415	2543	683	3226
	.	28.68	7.70	36.38
	.	78.83	21.17	
MY78 TRUCK (AUG)	94	536	155	691
	.	6.04	1.75	7.79
	.	77.57	22.43	
MY79 CAR (OCT)	409	2458	603	3061
	.	27.72	6.80	34.52
	.	80.30	19.70	
MY79 TRUCK (OCT)	81	500	162	662
	.	5.64	1.83	7.47
	.	75.53	24.47	
MY79 CAR (JUN)	145	840	205	1045
	.	9.47	2.31	11.79
	.	80.38	19.62	
MY79 TRUCK (JUN)	32	138	44	182
	.	1.56	0.50	2.05
	.	75.82	24.18	
TOTAL	.	7015	1852	8867
	.	79.11	20.89	100.00

TABLE 4-18A: USEFULNESS OF INFORMATION IN THE GUIDE - INTERIOR VOLUME INDEX

(SOURCE: QUESTION 22A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	TOTAL
MY78 CAR (AUG)	967	1269	1393	487	298	3447
	.	15.43	16.93	5.92	3.62	41.90
	.	36.81	40.41	14.13	8.65	
MY78 TRUCK (AUG)	227	221	279	130	104	734
	.	2.69	3.39	1.58	1.26	8.92
	.	30.11	38.01	17.71	14.17	
MY 79 CAR (OCT)	999	1185	1240	500	395	3320
	.	14.41	15.07	6.08	4.80	40.36
	.	35.69	37.35	15.06	11.90	
MY79 TRUCK (OCT)	203	217	276	129	103	725
	.	2.64	3.36	1.57	1.25	8.81
	.	29.93	38.07	17.79	14.21	
TOTAL		2892	3188	1246	900	8226
		35.16	38.76	15.15	10.94	100.00

TABLE 4-18B: USEFULNESS OF INFORMATION IN THE GUIDE --

EPA CITY FUEL ECONOMY RATING

(SOURCE: QUESTION 22B FOR 1978)

FREQUENCY PERCENT ROW PCT						TOTAL
	NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	
MY78 CAR (AUG)	911	2032	931	314	226	3503
	.	47.76	21.88	7.38	5.31	82.33
	.	58.01	26.58	8.96	6.45	
MY78 TRUCK (AUG)	209	372	187	104	89	752
	.	8.74	4.39	2.44	2.09	17.67
	.	49.47	24.87	13.83	11.84	
TOTAL	.	2404	1118	418	315	4255
	.	56.50	26.27	9.82	7.40	100.00

TABLE 4-18C: USEFULNESS OF INFORMATION IN THE GUIDE --

EPA ESTIMATED FUEL ECONOMY RATING

(SOURCE: QUESTION 22B FOR 1979)

FREQUENCY PERCENT ROW PCT		NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	TOTAL
MY79 CAR (OCT)		933	1710	1009	313	354	3386
		.	41.32	24.38	7.56	8.55	81.83
		.	50.50	29.80	9.24	10.45	
MY79 TRUCK (OCT)		176	364	235	69	84	752
		.	8.80	5.68	1.67	2.03	18.17
		.	48.40	31.25	9.18	11.17	
TOTAL		.	2074	1244	382	438	4138
		.	50.12	30.06	9.23	10.58	100.00

TABLE 4-18D: USEFULNESS OF INFORMATION IN THE GUIDE --

EPA COMPOSITE FUEL ECONOMY RATING

(SOURCE: QUESTION 22C)

FREQUENCY PERCENT ROW PCT		NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	TOTAL
MY78 CAR (AUG)		928	2062	900	289	235	3486
		-	48.60	21.21	6.81	5.54	82.16
		-	59.15	25.82	8.29	6.74	
MY78 TRUCK (AUG)		204	396	179	92	90	757
		-	9.33	4.22	2.17	2.12	17.84
		-	52.31	23.65	12.15	11.89	
TOTAL			2458	1079	381	325	4243
			57.93	25.43	8.98	7.66	100.00

TABLE 4-18E: USEFULNESS OF INFORMATION IN THE GUIDE --

EPA HIGHWAY FUEL ECONOMY RATING

(SOURCE: QUESTION 22D)

FREQUENCY PERCENT ROW PCT						TOTAL
	NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	
MY78 CAR (AUG)	909	2064	938	279	224	3505
	.	48.42	22.00	6.54	5.25	82.22
	.	58.89	26.76	7.96	6.39	
MY78 TRUCK (AUG)	203	398	181	91	88	758
	.	9.34	4.25	2.13	2.06	17.78
	.	52.51	23.88	12.01	11.61	
TOTAL	.	2462	1119	370	312	4263
	.	57.75	26.25	8.68	7.32	100.00

TABLE 4-18F. USEFULNESS OF INFORMATION IN THE GUIDE --

AVERAGE ANNUAL FUEL COST

(SOURCE: QUESTION 22E)

FREQUENCY PERCENT ROW PCT	NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	TOTAL
MY78 CAR (AUG)	949	1503	974	588	400	3465
	.	18.19	11.79	7.12	4.84	41.94
	.	43.38	28.11	16.97	11.54	
MY78 TRUCK (AUG)	220	276	176	156	133	741
	.	33.34	2.13	1.89	1.61	8.97
	.	37.25	23.75	21.05	17.95	
MY79 CAR (OCT)	1004	1271	1004	527	513	3315
	.	15.39	12.15	6.38	6.21	40.13
	.	38.34	30.29	15.90	15.48	
MY79 TRUCK (OCT)	188	294	215	111	120	740
	.	3.56	2.60	1.34	1.45	8.96
	.	39.73	29.05	15.00	16.22	
TOTAL	.	3344	2369	1382	1166	8261
	.	40.48	28.68	16.73	14.11	100.00

TABLE 4-18G: USEFULNESS OF INFORMATION IN THE GUIDE --

FACTORS AFFECTING FUEL ECONOMY

(SOURCE: QUESTION 22F)

FREQUENCY PERCENT ROW PCT						TOTAL
	NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	
MY78 CAR (AUG)	942	1669	1170	360	273	3472
	.	20.16	14.13	4.35	3.30	41.94
	.	48.07	33.70	10.37	7.86	
MY78 TRUCK (AUG)	216	344	229	86	86	745
	.	4.16	2.77	1.04	1.04	9.00
	.	46.17	30.74	11.54	11.54	
MY79 CAR (OCT)	1001	1450	1097	405	366	3318
	.	17.51	13.25	4.89	4.42	40.08
	.	43.70	33.06	12.21	11.03	
MY79 TRUCK (OCT)	184	342	253	78	71	744
	.	4.13	3.06	0.94	0.86	8.99
	.	45.97	34.01	10.48	9.54	
TOTAL	.	3805	2749	929	796	8279
	.	45.96	33.20	11.22	9.61	100.00

TABLE 4-1811: USEFULNESS OF INFORMATION IN THE GUIDE --

DESCRIPTION OF THE TEST PROCEDURES.

(SOURCE: QUESTION 22G)

FREQUENCY PERCENT ROW PCT	NO ANSWER	VERY USEFUL	SOMEWHAT USEFUL	NOT TOO USEFUL	NOT USEFUL	TOTAL
MY78 CAR (AUG)	990	1220	1102	671	431	3424
	.	14.86	13.42	8.17	5.25	41.71
	.	35.63	32.18	19.60	12.59	
MY78 TRUCK (AUG)	215	266	219	136	125	746
	.	3.24	2.67	1.66	1.52	9.09
	.	35.66	29.36	18.23	16.76	
MY79 CAR (OCT)	1017	940	1085	684	593	3302
	.	11.45	13.22	8.33	7.22	40.22
	.	28.47	32.86	20.71	17.96	
MY79 TRUCK (OCT)	191	228	238	146	125	737
	.	2.78	2.90	1.78	1.52	8.98
	.	30.94	32.29	19.81	16.96	
TOTAL	.	2654	2644	1637	1274	8209
	.	32.33	32.21	19.94	15.52	100.00

TABLE 4-19: SHOULD THE GUIDE CONTAIN MORE INFORMATION?

(SOURCE: QUESTION 23A)

FREQUENCY PERCENT ROW PCT				TOTAL
	NO ANSWER	NO	YES	
MY78 CAR (AUG)	1072	2921	421	3342
	.	36.50	5.26	41.76
	.	87.40	12.60	
MY78 TRUCK (AUG)	215	611	135	746
	.	7.64	1.69	9.32
	.	81.90	18.10	
MY79 CAR (OCT)	1138	2837	344	3181
	.	35.45	4.30	39.75
	.	89.19	10.81	
MY79 TRUCK (OCT)	195	630	103	733
	.	7.87	1.29	9.16
	.	85.95	14.05	
TOTAL	.	6999	1003	8002
	.	87.47	12.53	100.00

TABLE 4-20A

ADDITIONAL INFORMATION DESIRED IN GAS MILEAGE GUIDE: CODING FORM

<u>CODE</u>	<u>INFORMATION</u>
1	More accurate fuel economy ratings
2	Estimate of actual fuel economy
3	Recommended octane for vehicle
4	Fuel economy under normal driving conditions
5	How to get better fuel economy
6	Ratings using a more realistic testing program
7	Ratings while vehicle's accessories in operation
8	Quality of workmanship
9	Listing of standard types of tires
10	Testing which does not use professional drivers
11	Ratings measured in varying weather conditions
12	Minimum and maximum ratings for city and highway driving
13	Road conditions during EPA testing
14	Estimated maintenance cost
15	Vehicles should not be restricted to unleaded fuel (respondent's opinion)
16	What to do if actual fuel economy is less than ratings
17	Manufacturers should be responsible for lower in-use fuel economy (respondent's opinion)
18	Fuel type required to achieve EPA ratings
19	Durability of each vehicle
20	Where to obtain a <u>Gas Mileage Guide</u>
22	Any other information desired

TABLE 4-20B: ADDITIONAL INFORMATION NEEDED IN THE GUIDE

(SOURCE: QUESTION 23B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	DON'T KNOW	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	CODE 6	TOTAL
MY78 CAR (AUG)	13	2	67	20	14	19	7	18	399
	.	0.21	6.97	2.08	1.46	1.98	0.73	1.87	41.52
	.	0.50	16.79	5.01	3.51	4.76	1.75	4.51	
MY78 TRUCK (AUG)	3	0	24	8	5	5	4	9	132
	.	0.00	2.50	0.83	0.52	0.52	0.42	0.94	13.74
	.	0.00	18.18	6.06	3.79	3.79	3.03	6.82	
MY79 CAR (OCT)	10	0	53	18	17	21	13	23	331
	.	0.00	5.52	1.87	1.77	2.19	1.35	2.39	34.44
	.	0.00	16.01	5.44	5.14	6.34	3.93	6.95	
MY79 TRUCK (OCT)	2	0	14	9	3	8	2	5	99
	.	0.00	1.46	0.94	0.31	0.83	0.21	0.52	10.30
	.	0.00	14.14	9.09	3.03	8.08	2.02	5.05	
TOTAL	.	2	158	55	39	53	26	55	961
	.	0.21	16.44	5.72	4.06	5.52	2.71	5.72	100.00

(CONTINUED)

TABLE 4-20B

ADDITIONAL INFORMATION NEEDED IN THE GUIDE

(SOURCE: QUESTION 23B)

FREQUENCY PERCENT ROW PCT	CODE 7	CODE 8	CODE 9	CODE 10	CODE 11	CODE 12	CODE 13	CODE 14	TOTAL
MY78 CAR (AUG)	16 1.66 4.01	4 0.42 1.00	6 0.62 1.50	9 0.94 2.26	10 1.04 2.51	18 1.87 4.51	3 0.31 0.75	30 3.12 7.52	399 41.52
MY78 TRUCK (AUG)	3 0.31 2.27	1 0.10 0.76	1 0.10 0.76	1 0.10 0.76	5 0.52 3.79	4 0.42 3.03	0 0.00 0.00	10 1.04 7.58	132 13.74
MY79 CAR (OCT)	6 0.62 1.81	3 0.31 0.91	9 0.94 2.72	4 0.42 1.21	12 1.25 3.63	16 1.66 4.83	10 1.04 3.02	36 3.75 10.88	331 34.44
MY79 TRUCK (OCT)	1 0.10 1.01	2 0.21 2.02	2 0.21 2.02	2 0.21 2.02	0 0.00 0.00	3 0.31 3.03	6 0.62 6.06	8 0.83 8.08	99 10.30
TOTAL	26 2.71	10 1.04	18 1.87	16 1.66	27 2.81	41 4.27	19 1.98	84 8.74	961 100.00

(CONTINUED)

TABLE 4-20B: ADDITIONAL INFORMATION NEEDED IN THE GUIDE

(SOURCE: QUESTION 23B)

FREQUENCY PERCENT ROW PCT	CODE 15	CODE 16	CODE 17	CODE 18	CODE 19	CODE 20	CODE 22	TOTAL
MY78 CAR (AUG)	3 0.31 0.75	7 0.73 1.75	5 0.52 1.25	17 1.77 4.26	5 0.52 1.25	4 0.42 1.00	115 11.97 28.82	399 41.52
MY78 TRUCK (AUG)	0 0.00 0.00	0 0.00 0.00	3 0.31 2.27	7 0.73 5.30	2 0.21 1.52	1 0.10 0.76	39 4.06 29.55	132 13.74
MY79 CAR (OCT)	4 0.42 1.21	0 0.00 0.00	12 1.25 3.63	11 1.14 3.32	10 1.04 3.02	3 0.31 0.91	50 5.20 15.11	331 34.44
MY79 TRUCK (OCT)	2 0.21 2.02	0 0.00 0.00	4 0.42 4.04	6 0.62 6.06	3 0.31 3.03	2 0.21 2.02	17 1.77 17.17	99 10.30
TOTAL	9 0.94	7 0.73	24 2.50	41 4.27	20 2.08	10 1.04	221 23.00	961 100.00

TABLE 4-21: RESPONDENT'S COMPARISON OF IN-USE FUEL ECONOMY
WITH HIS OR HER EXPECTATIONS

(SOURCE: QUESTION 26)

FREQUENCY PERCENT ROW PCT		NOT REPORTED	1. MUCH LESS	2.	3.	4. ABOUT THE SAME	5.	6.	7. MUCH MORE	TOTAL
MY78 CAR	(AUG)	181	601	461	575	1406	593	353	244	4233
		.	5.01	3.84	4.79	11.72	4.94	2.94	2.03	35.29
		.	14.20	10.89	13.58	33.22	14.01	8.34	5.76	
MY78 TRUCK	(AUG)	30	190	106	146	285	107	52	45	931
		.	1.58	0.88	1.22	2.38	0.89	0.43	0.38	7.76
		.	20.41	11.39	15.68	30.61	11.49	5.59	4.83	
MY79 CAR	(OCT)	174	499	346	459	1541	654	383	263	4145
		.	4.16	2.88	3.83	12.85	5.45	3.19	2.19	34.56
		.	12.04	8.35	11.07	37.18	15.78	9.24	6.34	
MY79 TRUCK	(OCT)	27	166	100	116	276	120	70	53	901
		.	1.38	0.83	0.97	2.30	1.00	0.58	0.44	7.51
		.	18.42	11.10	12.87	30.63	13.32	7.77	5.88	
MY79 CAR	(JUN)	0	140	99	127	542	278	176	123	1485
		.	1.17	0.83	1.06	4.52	2.32	1.47	1.03	12.38
		.	9.43	6.67	8.55	36.50	18.72	11.85	8.28	
MY79 TRUCK	(JUN)	0	40	31	36	110	36	23	23	299
		.	0.33	0.26	0.30	0.92	0.30	0.19	0.19	2.49
		.	13.38	10.37	12.04	36.79	12.04	7.69	7.69	
TOTAL		.	1636	1143	1459	4160	1788	1057	751	11994
		.	13.64	9.53	12.16	34.68	14.91	8.81	6.26	100.00

TABLE 4-22: RESPONDENT'S COMPARISON OF IN-USE FUEL ECONOMY
WITH THE EPA RATINGS FOR THE NEW VEHICLE

(SOURCE: QUESTION 28)

FREQUENCY PERCENT ROW PCT					TOTAL
	NO ANSWER	IN-USE IS < EPA	ABOUT EQUAL	IN-USE IS > EPA	
MY78 CAR (AUG)	921	1992	1349	152	3493
	.	23.86	16.16	1.82	41.84
	.	57.03	38.62	4.35	
MY78 TRUCK (AUG)	228	467	241	25	733
	.	5.59	2.89	0.30	8.78
	.	63.71	32.88	3.41	
MY79 CAR (OCT)	894	1421	1628	376	3425
	.	17.02	19.50	4.50	41.02
	.	41.49	47.53	10.98	
MY79 TRUCK (OCT)	230	358	270	70	698
	.	4.29	3.23	0.84	8.36
	.	51.29	38.68	10.03	
TOTAL	.	4238	3488	623	8349
	.	50.76	41.78	7.46	100.00

TABLE 4-23A: THE IN-USE FUEL ECONOMY IS LESS THAN EPA RATINGS --

BECAUSE THE NEW VEHICLE'S ENGINE IS FAULTY

(SOURCE: QUESTION 28B)

FREQUENCY PERCENT ROW PCT	Q28B: NO NOT THE AGREE			TOTAL
	ANSWER	REASON		
MY78 CAR (AUG)	44	1791	157	1948
	.	43.45	3.81	47.26
	.	91.94	8.06	
MY78 TRUCK (AUG)	14	419	34	453
	.	10.16	0.82	10.99
	.	92.49	7.51	
MY79 CAR (OCT)	47	1249	125	1374
	.	30.30	3.03	33.33
	.	90.90	9.10	
MY79 TRUCK (OCT)	11	310	37	347
	.	7.52	0.90	8.42
	.	89.34	10.66	
TOTAL	.	3769	353	4122
	.	91.44	8.56	100.00

TABLE 4-23B: THE IN-USE FUEL ECONOMY IS LESS THAN EPA RATINGS --

BECAUSE RESPONDENT'S TYPE OF DRIVING IS NOT TYPICAL

(SOURCE: QUESTION 28B)

FREQUENCY PERCENT ROW PCT	Q28B: NO NOT THE AGREE			TOTAL
	ANSWER	REASON		
MY78 CAR (AUG)	44	1700	248	1948
	.	41.24	6.02	47.26
	.	87.27	12.73	
MY78 TRUCK (AUG)	14	399	54	453
	.	9.68	1.31	10.99
	.	88.08	11.92	
MY79 CAR (OCT)	47	1131	243	1374
	.	27.44	5.90	33.33
	.	82.31	17.69	
MY79 TRUCK (OCT)	11	295	52	347
	.	7.16	1.26	8.42
	.	85.01	14.99	
TOTAL	.	3525	597	4122
	.	85.52	14.48	100.00

TABLE 4-23C: THE IN-USE FUEL ECONOMY IS LESS THAN EPA RATINGS --

BECAUSE RESPONDENT'S VEHICLE IS NOT ALWAYS TUNED

(SOURCE: QUESTION 28B)

FREQUENCY PERCENT ROW PCT	Q28B: NO NOT THE AGREE			TOTAL
	ANSWER	REASON		
MY78 CAR (AUG)	44	1862	86	1948
	.	45.17	2.09	47.26
	.	95.59	4.41	
MY78 TRUCK (AUG)	14	427	26	453
	.	10.36	0.63	10.99
	.	94.26	5.74	
MY79 CAR (OCT)	47	1327	47	1374
	.	32.19	1.14	33.33
	.	96.58	3.42	
MY79 TRUCK (OCT)	11	337	10	347
	.	8.18	0.24	8.42
	.	97.12	2.88	
TOTAL	.	3953	169	4122
	.	95.90	4.10	100.00

TABLE 4-23D: THE IN-USE FUEL ECONOMY IS LESS THAN EPA RATINGS --

BECAUSE THE EPA RATINGS OVERSTATE IN-USE FUEL ECONOMY

(SOURCE: QUESTION 28B)

FREQUENCY PERCENT ROW PCT		Q28B: NO NOT THE AGREE			TOTAL
		ANSWER	REASON		
MY78 CAR (AUG)		44	382	1566	1948
		.	9.27	37.99	47.26
		.	19.61	80.39	
MY78 TRUCK (AUG)		14	108	345	453
		.	2.62	8.37	10.99
		.	23.84	76.16	
MY79 CAR (OCT)		47	389	985	1374
		.	9.44	23.90	33.33
		.	28.31	71.69	
MY79 TRUCK (OCT)		11	95	252	347
		.	2.30	6.11	8.42
		.	27.38	72.62	
TOTAL		.	974	3148	4122
		.	23.63	76.37	100.00

TABLE 4-24A: THE EPA RATINGS OVERSTATE IN-USE FUEL ECONOMY --

BECAUSE LABORATORY TESTING DOES NOT REFLECT REAL DRIVING

(SOURCE: QUESTION 28C)

FREQUENCY PERCENT ROW PCT	Q28C: NO NOT THE AGREE			TOTAL
	ANSWER	REASON		
MY78 CAR (AUG)	67	440	1126	1566
	.	13.98	35.77	49.75
	.	28.10	71.90	
MY78 TRUCK (AUG)	17	107	238	345
	.	3.40	7.56	10.96
	.	31.01	68.99	
MY79 CAR (OCT)	40	267	718	985
	.	8.48	22.81	31.29
	.	27.11	72.89	
MY79 TRUCK (OCT)	10	68	184	252
	.	2.16	5.84	8.01
	.	26.98	73.02	
TOTAL	.	882	2266	3148
	.	28.02	71.98	100.00

TABLE 4-24B: THE EPA RATINGS OVERSTATE IN-USE FUEL ECONOMY --

BECAUSE THE EPA TESTS ONLY ONE VEHICLE PER MODEL

(SOURCE: QUESTION 28C)

FREQUENCY PERCENT ROW PCT	Q28C: NO NOT THE AGREE			TOTAL
	ANSWER	REASON		
MY78 CAR (AUG)	67	1058	441	1499
	.	35.10	14.63	49.73
	.	70.58	29.42	
MY78 TRUCK (AUG)	17	230	98	328
	.	7.63	3.25	10.88
	.	70.12	29.88	
MY79 CAR (OCT)	40	665	280	945
	.	22.06	9.29	31.35
	.	70.37	29.63	
MY79 TRUCK (OCT)	10	170	72	242
	.	5.64	2.39	8.03
	.	70.25	29.75	
TOTAL	.	2123	891	3014
	.	70.44	29.56	100.00

TABLE 4-24C: THE EPA RATINGS OVERSTATE IN-USE FUEL ECONOMY --

BECAUSE THE EPA TESTS ONLY BRAND NEW VEHICLES

(SOURCE: QUESTION 28C)

FREQUENCY PERCENT ROW PCT	Q28C: NO ANSWER	NOT THE REASON	AGREE	TOTAL
MY78 CAR (AUG)	67	1194	305	1499
	.	39.62	10.12	49.73
	.	79.65	20.35	
MY78 TRUCK (AUG)	17	254	74	328
	.	8.43	2.46	10.88
	.	77.44	22.56	
MY79 CAR (OCT)	40	789	156	945
	.	26.18	5.18	31.35
	.	83.49	16.51	
MY79 TRUCK (OCT)	10	200	42	242
	.	6.64	1.39	8.03
	.	82.64	17.36	
TOTAL	.	2437	577	3014
	.	80.86	19.14	100.00

TABLE 4-24D: THE EPA RATINGS OVERSTATE IN-USE FUEL ECONOMY --

TEST PROCEDURES ARE VALID, BUT ARE NOT FOLLOWED CLOSELY

(SOURCE: QUESTION 28C)

FREQUENCY PERCENT ROW PCT	Q28C: NO NOT THE AGREE			TOTAL
	ANSWER	REASON		
MY78 CAR (AUG)	67	1292	207	1499
	.	42.87	6.87	49.73
	.	86.19	13.81	
MY78 TRUCK (AUG)	17	277	51	328
	.	9.19	1.69	10.88
	.	84.45	15.55	
MY79 CAR (OCT)	40	797	148	945
	.	26.44	4.91	31.35
	.	84.34	15.66	
MY79 TRUCK (OCT)	10	195	47	242
	.	6.47	1.56	8.03
	.	80.58	19.42	
TOTAL	.	2561	453	3014
	.	84.97	15.03	100.00

5. VEHICLE PURCHASE AND CONSUMER ATTITUDES

During the purchase of a new vehicle, buyers acquire and use information from a variety of sources, including the dealer or salesman, magazine or newspaper advertisements, and consumer publications. The Gas Mileage Guide and Fuel Economy Label are among these sources. The Guide, for example, not only provides fuel economy ratings, but also contains annual fuel cost estimates and an interior roominess index. The owner surveys examined the purchase process by asking buyers to rate the importance of specific characteristics in their choice of vehicle and to reveal when they made the decisions affecting fuel economy most strongly -- size of vehicle, engine size, and transmission type. Owners also responded to questions on national issues, including the 1979 fuel shortage (second survey only) and the credibility and usefulness of the EPA ratings. This information leads to an improved understanding of the importance of fuel economy in vehicle selection and how information sources can promote the purchase of efficient vehicles.

5.1 PRESENTATION

The survey data on vehicle purchase and consumer attitudes are grouped as follows:

- Reasons for purchase (Tables 5-1A/B)
- Timing of key decisions (Tables 5-2 and 5-3)
- Importance of vehicle characteristics (Tables 5-4 through 5-6)
- Comparison of fuel economy
 - did buyers compare? (Table 5-7)
 - why or why not? (Tables 5-8 and 5-9)

- Sources of fuel economy information (Tables 5-10 through 5-12)
- Consumer Attitudes
 - importance of the 1979 fuel shortage (Table 5-13).
 - national issues (Tables 5-14 and 5-15).

These survey data are presented in cross-tabulation tables as found in Section 4. Each table summarizes the responses to one question and tabulates its information by survey group, which identifies the model year and type of vehicle purchased in addition to the month of purchase. Participants in the second (post-shortage) survey are indicated by the June month of purchase. They are included in tables for those questions asked in the shortened survey questionnaire. The importance of the 1979 fuel shortage to purchase decisions is, of course, not part of the first owner survey. An explanation of response coding also is provided when the cross-tabulation tables are not self-explanatory.

5.2 EXAMPLE

Tables 5-1 A and B show the reasons consumers bought a new vehicle. As indicated in Table 5-1A, consumers giving responses 1 or 2 were acquiring a first vehicle or adding one to the household; others were replacing a vehicle (responses 3 through 5). As seen in Table 5-1B, the most frequent reason for purchase (35.24 percent overall) was to replace a vehicle not operating properly. Note, however, that October 1978 car buyers were motivated most often by the desire to drive a current model (response 5). This finding reflects a traditional pattern of the car market, since October starts the model year, and is one reason the October sample is atypical of the 1979 model year. Demographic information on the October buyers also shows them to have higher incomes (See Table 9-5, Section 9).

TABLE 5-1A

REASONS FOR PURCHASING A NEW VEHICLE: CODING FORM

<u>CODE</u>	<u>REASON</u>
1	Respondent never owned a vehicle before but needed one now
2	Respondent needed an additional vehicle in the family
3	Respondent needed to replace another vehicle that was no longer operating properly
4	Respondent wanted to replace another vehicle that used too much gasoline
5	Respondent wanted to drive a current model and so replaced another vehicle
6	Any other reason

TABLE 5-1B: RESPONDENT'S REASON FOR BUYING A NEW VEHICLE

(SOURCE: QUESTION 8)

FREQUENCY PERCENT ROW PCT		NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	CODE 6	TOTAL
MY78 CAR (AUG)		99	149	404	1715	604	810	633	4315
		.	1.44	3.91	16.59	5.84	7.84	6.12	41.74
		.	3.45	9.36	39.75	14.00	18.77	14.67	
MY78 TRUCK (AUG)		41	25	113	338	125	121	198	920
		.	0.24	1.09	3.27	1.21	1.17	1.92	8.90
		.	2.72	12.28	36.74	13.59	13.15	21.52	
MY79 CAR (OCT)		114	115	257	1300	479	1446	608	4205
		.	1.11	2.49	12.58	4.63	13.99	5.88	40.68
		.	2.73	6.11	30.92	11.39	34.39	14.46	
MY79 TRUCK (OCT)		31	13	77	290	141	178	198	897
		.	0.13	0.74	2.81	1.36	1.72	1.92	8.68
		.	1.45	8.58	32.33	15.72	19.84	22.07	
TOTAL		.	302	851	3643	1349	2555	1637	10337
		.	2.92	8.23	35.24	13.05	24.72	15.84	100.00

TABLE 5-2

TIMING OF DECISIONS ON VEHICLE CHARACTERISTICS: CODING FORM

KEY DECISIONS RATED

- Size of vehicle
- Engine size
- Transmission type (automatic, manual)
- Fuel economy range
- Model name

WHEN DECISION WAS MADE

Before visiting any dealerships

Before visiting any dealerships, but
changed decision while shopping

After visiting dealerships

CODED AS

BEFORE

DURING

AFTER

TABLE 5-3A: TIMING OF DECISION ON VEHICLE SIZE

(SOURCE: QUESTION 10)

FREQUENCY PERCENT ROW PCT					TOTAL
	NO ANSWER	BEFORE	DURING	AFTER	
MY78 CAR (AUG)	176	3535	258	445	4238
	.	34.89	2.55	4.39	41.82
	.	83.41	6.09	10.50	
MY78 TRUCK (AUG)	51	773	50	87	910
	.	7.63	0.49	0.86	8.98
	.	84.95	5.49	9.56	
MY79 CAR (OCT)	211	3493	203	412	4108
	.	34.47	2.00	4.07	40.54
	.	85.03	4.94	10.03	
MY79 TRUCK (OCT)	51	745	49	83	877
	.	7.35	0.48	0.82	8.65
	.	84.95	5.59	9.46	
TOTAL	.	8546	560	1027	10133
	.	84.34	5.53	10.14	100.00

TABLE 5-3B: TIMING OF DECISION ON ENGINE SIZE

(SOURCE: QUESTION 10)

FREQUENCY PERCENT ROW PCT	NO ANSWER	BEFORE	DURING	AFTER	TOTAL
MY78 CAR (AUG)	331	2901	412	770	4083
	.	29.68	4.22	7.88	41.78
	.	71.05	10.09	18.86	
MY78 TRUCK (AUG)	78	626	87	170	883
	.	6.41	0.89	1.74	9.04
	.	70.89	9.85	19.25	
MY79 CAR (OCT)	373	2992	318	636	3946
	.	30.61	3.25	6.51	40.38
	.	75.82	8.06	16.12	
MY79 TRUCK (OCT)	67	659	75	127	861
	.	6.74	0.77	1.30	8.81
	.	76.54	8.71	14.75	
TOTAL	.	7178	892	1703	9773
	.	73.45	9.13	17.43	100.00

TABLE 5-3C: TIMING OF DECISION ON TRANSMISSION TYPE

(SOURCE: QUESTION 10)

FREQUENCY PERCENT ROW PCT	NO ANSWER	BEFORE	DURING	AFTER	TOTAL
MY78 CAR (AUG)	278	3665	194	277	4136
	.	37.12	1.96	2.81	41.89
	.	88.61	4.69	6.70	
MY78 TRUCK (AUG)	75	738	64	84	886
	.	7.47	0.65	0.85	8.97
	.	83.30	7.22	9.48	
MY79 CAR (OCT)	334	3680	108	197	3985
	.	37.27	1.09	2.00	40.36
	.	92.35	2.71	4.94	
MY79 TRUCK (OCT)	62	758	43	65	866
	.	7.68	0.44	0.66	8.77
	.	87.53	4.97	7.51	
TOTAL	.	8841	409	623	9873
	.	89.55	4.14	6.31	100.00

TABLE 5-3D: TIMING OF DECISION ON FUEL ECONOMY RANGE

(SOURCE: QUESTION 10)

FREQUENCY PERCENT ROW PCT	NO ANSWER	BEFORE	DURING	AFTER	TOTAL
MY78 CAR (AUG)	469	3129	344	472	3945
	.	33.37	3.67	5.03	42.08
	.	79.32	8.72	11.96	
MY78 TRUCK (AUG)	126	627	89	119	835
	.	6.69	0.95	1.27	8.91
	.	75.09	10.66	14.25	
MY79 CAR (OCT)	537	3103	262	417	3782
	.	33.10	2.79	4.45	40.34
	.	82.05	6.93	11.03	
MY79 TRUCK (OCT)	114	647	62	105	814
	.	6.90	0.66	1.12	8.68
	.	79.48	7.62	12.90	
TOTAL	.	7506	757	1113	9376
	.	80.06	8.07	11.87	100.00

TABLE 5- 3E: TIMING OF DECISION ON MODEL NAME

(SOURCE: QUESTION 10)

FREQUENCY PERCENT ROW PCT	NO ANSWER	BEFORE	DURING	AFTER	TOTAL
MY78 CAR (AUG)	231	2333	540	1310	4183
	.	23.32	5.40	13.10	41.82
	.	55.77	12.91	31.32	
MY78 TRUCK (AUG)	69	574	93	225	892
	.	5.74	0.93	2.25	8.92
	.	64.35	10.43	25.22	
MY79 CAR (OCT)	261	2703	403	952	4058
	.	27.02	4.03	9.52	40.57
	.	66.61	9.93	23.46	
MY79 TRUCK (OCT)	58	616	85	169	870
	.	6.16	0.85	1.69	8.70
	.	70.80	9.77	19.43	
TOTAL	.	6226	1121	2656	10003
	.	62.24	11.21	26.55	100.00

TABLE 5-4

IMPORTANCE OF VEHICLE CHARACTERISTICS IN PURCHASE DECISION

CHARACTERISTICS RATED

a. Engineering/Design Features	h. Overall Size of Vehicle
b. Cargo Capacity	i. Purchase Price Range
c. Ease of Handling/Driving	j. Quality of Workmanship
d. Passenger Capacity	k. EPA Fuel Economy Ratings
e. Interior Roominess	l. Riding Comfort
f. Fuel Economy	m. Styling/Appearance
g. Engine/Horsepower/Acceleration/
Performance	n. Safety in Case of Accident
	o. Trailer Towing Ability

IMPORTANCECODING

Extremely important

1

Very important

2

Somewhat important

3

Not too important

4

Not at all important

5

TABLE 5-5A: THE IMPORTANCE OF ENGINEERING/DESIGN FEATURES

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT		NO	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
		ANSWER						
MY78 CAR (AUG)		286	1296	1419	1044	267	102	4128
		.	11.15	12.21	8.99	2.30	0.88	35.53
		.	31.40	34.38	25.29	6.47	2.47	
MY78 TRUCK (AUG)		78	248	277	264	63	31	883
		.	2.13	2.38	2.27	0.54	0.27	7.60
		.	28.09	31.37	29.90	7.13	3.51	
MY79 CAR (OCT)		281	1471	1365	864	257	81	4038
		.	12.66	11.75	7.44	2.21	0.70	34.75
		.	36.43	33.80	21.40	6.36	2.01	
MY79 TRUCK (OCT)		50	262	280	221	84	31	878
		.	2.25	2.41	1.90	0.72	0.27	7.56
		.	29.84	31.89	25.17	9.57	3.53	
MY79 CAR (JUN)		81	399	498	378	108	21	1404
		.	3.43	4.29	3.25	0.93	0.18	12.08
		.	28.42	35.47	26.92	7.69	1.50	
MY79 TRUCK (JUN)		11	95	98	62	25	8	288
		.	0.82	0.84	0.53	0.22	0.07	2.48
		.	32.99	34.03	21.53	8.68	2.78	
TOTAL		.	3771	3937	2833	804	274	11619
		.	32.46	33.88	24.38	6.92	2.36	100.00

TABLE 5-5B THE IMPORTANCE OF CARGO CAPACITY

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT							TOTAL
	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	
MY78 CAR (AUG)	295	593	1097	1391	816	222	4119
	.	5.98	11.06	14.03	8.23	2.24	41.54
	.	14.40	26.63	33.77	19.81	5.39	
MY78 TRUCK (AUG)	67	197	275	269	121	32	894
	.	1.99	2.77	2.71	1.22	0.32	9.02
	.	22.04	30.76	30.09	13.53	3.58	
MY79 CAR (OCT)	296	679	1009	1272	801	262	4023
	.	6.85	10.18	12.83	8.08	2.64	40.57
	.	16.88	25.08	31.62	19.91	6.51	
MY79 TRUCK (OCT)	48	174	224	276	153	53	880
	.	1.75	2.26	2.78	1.54	0.53	8.87
	.	19.77	25.45	31.36	17.39	6.02	
TOTAL	.	1643	2605	3208	1891	569	9916
	.	16.57	26.27	32.35	19.07	5.74	100.00

TABLE 5-5G: THE IMPORTANCE OF HANDLING/DRIVING

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT		NO	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
		ANSWER						
MY78 CAR (AUG)		177	1760	1894	487	73	23	4237
		.	14.81	15.94	4.10	0.61	0.19	35.66
		.	41.54	44.70	11.49	1.72	0.54	
MY78 TRUCK (AUG)		56	290	367	183	51	14	905
		.	2.44	3.09	1.54	0.43	0.12	7.62
		.	32.04	40.55	20.22	5.64	1.55	
MY79 CAR (OCT)		182	1905	1667	471	71	23	4137
		.	16.04	14.03	3.96	0.60	0.19	34.82
		.	46.05	40.29	11.39	1.72	0.56	
MY79 TRUCK (OCT)		31	319	358	147	54	19	897
		.	2.69	3.01	1.24	0.45	0.16	7.55
		.	35.56	39.91	16.39	6.02	2.12	
MY79 CAR (JUN)		65	469	613	281	42	15	1420
		.	3.95	5.16	2.37	0.35	0.13	11.95
		.	33.03	43.17	19.79	2.96	1.06	
MY79 TRUCK (JUN)		15	71	122	63	20	8	284
		.	0.60	1.03	0.53	0.17	0.07	2.39
		.	25.00	42.96	22.18	7.04	2.82	
TOTAL		.	4814	5021	1632	311	102	11880
		.	40.52	42.26	13.74	2.62	0.86	100.00

TABLE 5-5D: THE IMPORTANCE OF PASSENGER CAPACITY

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT		NO	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
		ANSWER						
MY78 CAR (AUG)		256	668	1204	1401	718	167	4158
		.	6.69	12.06	14.04	7.19	1.67	41.65
		.	16.07	28.96	33.69	17.27	4.02	
MY78 TRUCK (AUG)		80	117	140	259	283	82	881
		.	1.17	1.40	2.59	2.84	0.82	8.83
		.	13.28	15.89	29.40	32.12	9.31	
MY79 CAR (OCT)		247	814	1161	1256	659	182	4072
		.	8.15	11.63	12.58	6.60	1.82	40.79
		.	19.99	28.51	30.84	16.18	4.47	
MY79 TRUCK (OCT)		57	103	128	256	286	98	871
		.	1.03	1.28	2.56	2.87	0.98	8.73
		.	11.83	14.70	29.39	32.84	11.25	
TOTAL		.	1702	2633	3172	1946	529	9982
		.	17.05	26.38	31.78	19.50	5.30	100.00

TABLE 5-5E: THE IMPORTANCE OF INTERIOR ROOMINESS

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT							TOTAL
	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	
MY78 CAR (AUG)	261	915	1481	1342	341	74	4153
	.	9.19	14.87	13.48	3.42	0.74	41.71
	.	22.03	35.66	32.31	8.21	1.78	
MY78 TRUCK (AUG)	74	178	226	281	162	40	887
	.	1.79	2.27	2.82	1.63	0.40	8.91
	.	20.07	25.48	31.68	18.26	4.51	
MY79 CAR (OCT)	266	1080	1387	1189	326	71	4053
	.	10.85	13.93	11.94	3.27	0.71	40.71
	.	26.65	34.22	29.34	8.04	1.75	
MY79 TRUCK (OCT)	64	176	211	292	148	37	864
	.	1.77	2.12	2.93	1.49	0.37	8.68
	.	20.37	24.42	33.80	17.13	4.28	
TOTAL	.	2349	3305	3104	977	222	9957
	.	23.59	33.19	31.17	9.81	2.23	100.00

TABLE 5-5F: THE IMPORTANCE OF FUEL ECONOMY

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
MY78 CAR (AUG)	174	1783	1303	894	217	43	4240
	.	14.99	10.96	7.52	1.82	0.36	35.65
	.	42.05	30.73	21.08	5.12	1.01	
MY78 TRUCK (AUG)	55	347	269	216	56	18	906
	.	2.92	2.26	1.82	0.47	0.15	7.62
	.	38.30	29.69	23.84	6.18	1.99	
MY79 CAR (OCT)	183	1443	1233	1077	296	87	4136
	.	12.13	10.37	9.06	2.49	0.73	34.78
	.	34.89	29.81	26.04	7.16	2.10	
MY79 TRUCK (OCT)	38	358	239	220	51	22	890
	.	3.01	2.01	1.85	0.43	0.18	7.48
	.	40.22	26.85	24.72	5.73	2.47	
MY79 CAR (JUN)	47	570	459	284	91	34	1438
	.	4.79	3.86	2.39	0.77	0.29	12.09
	.	39.64	31.92	19.75	6.33	2.36	
MY79 TRUCK (JUN)	16	75	56	93	41	18	283
	.	0.63	0.47	0.78	0.34	0.15	2.38
	.	26.50	19.79	32.86	14.49	6.36	
TOTAL	.	4576	3559	2784	752	222	11893
	.	38.48	29.93	23.41	6.32	1.87	100.00

TABLE 5-5G: THE IMPORTANCE OF ENGINE HORSEPOWER/PERFORMANCE

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT		NO	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
		ANSWER						
MY78 CAR (AUG)		275	827	1300	1412	498	102	4139
		.	8.29	13.03	14.15	4.99	1.02	41.49
		.	19.98	31.41	34.11	12.03	2.46	
MY78 TRUCK (AUG)		74	177	235	310	140	25	887
		.	1.77	2.36	3.11	1.40	0.25	8.89
		.	19.95	26.49	34.95	15.78	2.82	
MY79 CAR (OCT)		249	940	1306	1280	435	109	4070
		.	9.42	13.09	12.83	4.36	1.09	40.80
		.	23.10	32.09	31.45	10.69	2.68	
MY79 TRUCK (OCT)		48	212	262	261	113	32	880
		.	2.13	2.63	2.62	1.13	0.32	8.82
		.	24.09	29.77	29.66	12.84	3.64	
TOTAL		.	2156	3103	3263	1186	268	9976
		.	21.61	31.10	32.71	11.89	2.69	100.00

TABLE 5-5H: THE IMPORTANCE OF OVERALL SIZE OF VEHICLE

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT							TOTAL
	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	
MY78 CAR (AUG)	290	731	1419	1375	497	102	4124
	.	7.37	14.31	13.86	5.01	1.03	41.58
	.	17.73	34.41	33.34	12.05	2.47	
MY78 TRUCK (AUG)	81	131	285	318	118	28	880
	.	1.32	2.87	3.21	1.19	0.28	8.87
	.	14.89	32.39	36.14	13.41	3.18	
MY79 CAR (OCT)	274	833	1417	1267	435	93	4045
	.	8.40	14.29	12.77	4.39	0.94	40.78
	.	20.59	35.03	31.32	10.75	2.30	
MY79 TRUCK (OCT)	58	151	249	302	135	33	870
	.	1.52	2.51	3.04	1.36	0.33	8.77
	.	17.36	28.62	34.71	15.52	3.79	
TOTAL	.	1846	3370	3262	1185	256	9919
	.	18.61	33.98	32.89	11.95	2.58	100.00

TABLE 5-51: THE IMPORTANCE OF PURCHASE PRICE RANGE

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
MY78 CAR (AUG)	213	1625	1385	894	230	67	4201
	.	13.81	11.77	7.60	1.96	0.57	35.71
	.	38.68	32.97	21.28	5.47	1.59	
MY78 TRUCK (AUG)	60	378	274	194	43	12	901
	.	3.21	2.33	1.65	0.37	0.10	7.66
	.	41.95	30.41	21.53	4.77	1.33	
MY79 CAR (OCT)	244	1377	1184	1074	325	115	4075
	.	11.71	10.06	9.13	2.76	0.98	34.64
	.	33.79	29.06	26.36	7.98	2.82	
MY79 TRUCK (OCT)	39	348	271	174	65	31	889
	.	2.96	2.30	1.48	0.55	0.26	7.56
	.	39.15	30.48	19.57	7.31	3.49	
MY79 CAR (JUN)	70	405	462	389	122	37	1415
	.	3.44	3.93	3.31	1.04	0.31	12.03
	.	28.62	32.65	27.49	8.62	2.61	
MY79 TRUCK (JUN)	16	78	82	87	24	12	283
	.	0.66	0.70	0.74	0.20	0.10	2.41
	.	27.56	28.98	30.74	8.48	4.24	
TOTAL	.	4211	3658	2812	809	274	11764
	.	35.80	31.09	23.90	6.88	2.33	100.00

TABLE 5-5J: THE IMPORTANCE OF QUALITY OF WORKMANSHIP

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
MY78 CAR (AUG)	248	2011	1689	407	40	19	4166
	.	17.20	14.45	3.48	0.34	0.16	35.64
	.	48.27	40.54	9.77	0.96	0.46	
MY78 TRUCK (AUG)	75	385	389	99	9	4	886
	.	3.29	3.33	0.85	0.08	0.03	7.58
	.	43.45	43.91	11.17	1.02	0.45	
MY79 CAR (OCT)	243	2032	1580	393	52	19	4076
	.	17.38	13.52	3.36	0.44	0.16	34.87
	.	49.85	38.76	9.64	1.28	0.47	
MY79 TRUCK (OCT)	55	427	333	86	16	11	873
	.	3.65	2.85	0.74	0.14	0.09	7.47
	.	48.91	38.14	9.85	1.83	1.26	
MY79 CAR (JUN)	75	506	629	232	25	18	1410
	.	4.33	5.38	1.98	0.21	0.15	12.06
	.	35.89	44.61	16.45	1.77	1.28	
MY79 TRUCK (JUN)	21	98	121	44	9	6	278
	.	0.84	1.04	0.38	0.08	0.05	2.38
	.	35.25	43.53	15.83	3.24	2.16	
TOTAL	.	5459	4741	1261	151	77	11689
	.	46.70	40.56	10.79	1.29	0.66	100.00

TABLE 5- 5K: THE IMPORTANCE OF EPA FUEL ECONOMY RATINGS

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
MY78 CAR (AUG)	262	1225	1291	1084	344	208	4152
	.	10.59	11.16	9.37	2.97	1.80	35.88
	.	29.50	31.09	26.11	8.29	5.01	
MY78 TRUCK (AUG)	80	236	256	229	97	63	881
	.	2.04	2.21	1.98	0.84	0.54	7.61
	.	26.79	29.06	25.99	11.01	7.15	
MY79 CAR (OCT)	326	1052	1154	1139	405	243	3993
	.	9.09	9.97	9.84	3.50	2.10	34.51
	.	26.35	28.90	28.52	10.14	6.09	
MY79 TRUCK (OCT)	66	242	191	249	89	91	862
	.	2.09	1.65	2.15	0.77	0.79	7.45
	.	28.07	22.16	28.89	10.32	10.56	
MY79 CAR (JUN)	76	402	456	349	138	64	1409
	.	3.47	3.94	3.02	1.19	0.55	12.18
	.	28.53	32.36	24.77	9.79	4.54	
MY79 TRUCK (JUN)	24	60	56	75	43	41	275
	.	0.52	0.48	0.65	0.37	0.35	2.38
	.	21.82	20.36	27.27	15.64	14.91	
TOTAL	.	3217	3404	3125	1116	710	11572
	.	27.80	29.42	27.00	9.64	6.14	100.00

TABLE 5- 5L: THE IMPORTANCE OF RIDING COMFORT

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT		NO	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
		ANSWER						
MY78 CAR (AUG)		190	1531	1865	723	85	20	4224
		.	15.10	18.39	7.13	0.84	0.20	41.65
		.	36.25	44.15	17.12	2.01	0.47	
MY78 TRUCK (AUG)		58	227	344	257	58	17	903
		.	2.24	3.39	2.53	0.57	0.17	8.90
		.	25.14	38.10	28.46	6.42	1.88	
MY79 CAR (OCT)		185	1759	1673	618	66	18	4134
		.	17.35	16.50	6.09	0.65	0.18	40.77
		.	42.55	40.47	14.95	1.60	0.44	
MY79 TRUCK (OCT)		48	269	326	221	44	20	880
		.	2.65	3.21	2.18	0.43	0.20	8.68
		.	30.57	37.05	25.11	5.00	2.27	
TOTAL		.	3786	4208	1819	253	75	10141
		.	37.33	41.49	17.94	2.49	0.74	100.00

TABLE 5-5M: THE IMPORTANCE OF STYLING/APPEARANCE

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
MY78 CAR (AUG)	240	1258	1513	1055	267	81	4174
	.	10.72	12.90	8.99	2.28	0.69	35.58
	.	30.14	36.25	25.28	6.40	1.94	
MY78 TRUCK (AUG)	71	220	297	248	95	30	890
	.	1.88	2.53	2.11	0.81	0.26	7.59
	.	24.72	33.37	27.87	10.67	3.37	
MY79 CAR (OCT)	237	1565	1456	807	204	50	4082
	.	13.34	12.41	6.88	1.74	0.43	34.80
	.	38.34	35.67	19.77	5.00	1.22	
MY79 TRUCK (OCT)	56	243	264	251	77	37	872
	.	2.07	2.25	2.14	0.66	0.32	7.43
	.	27.87	30.28	28.78	8.83	4.24	
MY79 CAR (JUN)	55	395	526	388	78	43	1430
	.	3.37	4.48	3.31	0.66	0.37	12.19
	.	27.62	36.78	27.13	5.45	3.01	
MY79 TRUCK (JUN)	17	69	99	79	23	12	282
	.	0.59	0.84	0.67	0.20	0.10	2.40
	.	24.47	35.11	28.01	8.16	4.26	
TOTAL	.	3750	4155	2828	744	253	11730
	.	31.97	35.42	24.11	6.34	2.16	100.00

TABLE 5-5N: THE IMPORTANCE OF SAFETY IN CASE OF ACCIDENT

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT							TOTAL
	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	
MY78 CAR (AUG)	237	1759	1378	778	199	63	4177
	.	15.04	11.79	6.65	1.70	0.54	35.73
	.	42.11	32.99	18.63	4.76	1.51	
MY78 TRUCK (AUG)	81	288	291	223	60	18	880
	.	2.46	2.49	1.91	0.51	0.15	7.53
	.	32.73	33.07	25.34	6.82	2.05	
MY79 CAR (OCT)	256	1825	1291	720	163	64	4063
	.	15.61	11.04	6.16	1.39	0.55	34.75
	.	44.92	31.77	17.72	4.01	1.58	
MY79 TRUCK (OCT)	56	299	278	196	71	28	872
	.	2.56	2.38	1.68	0.61	0.24	7.46
	.	34.29	31.88	22.48	8.14	3.21	
MY79 CAR (JUN)	67	413	459	365	141	40	1418
	.	3.53	3.93	3.12	1.21	0.34	12.13
	.	29.13	32.37	25.74	9.94	2.82	
MY79 TRUCK (JUN)	17	76	78	76	30	22	282
	.	0.65	0.67	0.65	0.26	0.19	2.41
	.	26.95	27.66	26.95	10.64	7.80	
TOTAL	.	4660	3775	2358	664	235	11692
	.	39.86	32.29	20.17	5.68	2.01	100.00

TABLE 5- 50: THE IMPORTANCE OF TRAILER TOWING ABILITY

(SOURCE: QUESTION 11A)

FREQUENCY PERCENT ROW PCT		NO	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
		ANSWER						
MY78 CAR (AUG)		361	140	186	327	707	2693	4053
		.	1.44	1.91	3.36	7.26	27.67	41.64
		.	3.45	4.59	8.07	17.44	66.44	
MY78 TRUCK (AUG)		86	145	143	178	189	220	875
		.	1.49	1.47	1.83	1.94	2.26	8.99
		.	16.57	16.34	20.34	21.60	25.14	
MY79 CAR (OCT)		387	162	170	298	674	2628	3932
		.	1.66	1.75	3.06	6.92	27.00	40.40
		.	4.12	4.32	7.58	17.14	66.84	
MY79 TRUCK (OCT)		55	143	144	161	168	257	873
		.	1.47	1.48	1.65	1.73	2.64	8.97
		.	16.38	16.49	18.44	19.24	29.44	
TOTAL		.	590	643	964	1738	5798	9733
		.	6.06	6.61	9.90	17.86	59.57	100.00

TABLE 5-8 THE MOST IMPORTANT VEHICLE CHARACTERISTIC

(SOURCE: QUESTION 11B)

FREQUENCY PERCENT ROW PCT		NO ANSWER	DON'T KNOW	A	B	C	D	E	F	G	TOTAL
MY78 CAR	(AUG)	891	5	323	65	383	116	120	735	126	3523
		.	0.05	3.18	0.64	3.77	1.14	1.18	7.24	1.24	34.71
		.	0.14	9.17	1.85	10.87	3.29	3.41	20.86	3.58	
MY78 TRUCK	(AUG)	161	2	52	51	45	33	29	165	29	800
		.	0.02	0.51	0.50	0.44	0.33	0.29	1.63	0.29	7.88
		.	0.25	6.50	6.38	5.63	4.13	3.63	20.63	3.63	
MY79 CAR	(OCT)	901	3	392	93	381	88	132	559	129	3418
		.	0.03	3.86	0.92	3.75	0.87	1.30	5.51	1.27	33.68
		.	0.09	11.47	2.72	11.15	2.57	3.86	16.35	3.77	
MY79 TRUCK	(OCT)	165	0	61	54	63	20	28	155	29	763
		.	0.00	0.60	0.53	0.62	0.20	0.28	1.53	0.29	7.52
		.	0.00	7.99	7.08	8.26	2.62	3.67	20.31	3.80	
MY79 CAR	(JUN)	117	1	168		114			388		1367
		.	0.01	1.66	NA	1.42	NA	NA	3.82	NA	13.47
		.	0.07	12.29		10.53			28.38		
MY79 TRUCK	(JUN)	21	0	65		24			46		278
		.	0.00	0.64	NA	0.24	NA	NA	0.45	NA	2.74
		.	0.00	23.38		8.63			16.55		
TOTAL		.	11	1061	431	1306	489	464	1704	509	10149
		.	0.11	10.45	4.25	12.87	4.82	4.57	16.79	5.02	100.00

(CONTINUED)

TABLE 5-6 THE MOST IMPORTANT VEHICLE CHARACTERISTIC

(SOURCE: QUESTION 11B)

FREQUENCY PERCENT ROW PCT	H	I	J	K	L	M	O	OTHER	ALL	TOTAL
MY78 CAR (AUG)	103	446	295	182	156	320	16	127	5	3523
	1.01	4.39	2.91	1.79	1.54	3.15	0.16	1.25	0.05	34.71
	2.92	12.66	8.37	5.17	4.43	9.08	0.45	3.60	0.14	
MY78 TRUCK (AUG)	12	130	69	43	24	51	28	35	2	800
	0.12	1.28	0.68	0.42	0.24	0.50	0.28	0.34	0.02	7.88
	1.50	16.25	8.63	5.38	3.00	6.38	3.50	4.38	0.25	
MY79 CAR (OCT)	110	356	270	140	178	420	19	143	5	3418
	1.08	3.51	2.66	1.38	1.75	4.14	0.19	1.41	0.05	33.68
	3.22	10.42	7.90	4.10	5.21	12.29	0.56	4.18	0.15	
MY79 TRUCK (OCT)	11	88	70	47	15	51	25	46	0	763
	0.11	0.87	0.69	0.46	0.15	0.50	0.25	0.45	0.00	7.52
	1.44	11.53	9.17	6.16	1.97	6.68	3.28	6.03	0.00	
MY79 CAR (JUN)	NA	190	122	76	NA	167	NA	24	NA	1367
		1.87	1.20	0.75		1.65		1.04		13.47
		13.90	8.92	5.56		12.22		7.75		
MY79 TRUCK (JUN)	NA	42	33	14	NA	29	NA	24	NA	278
		0.41	0.33	0.14		0.29		0.24		2.74
		15.11	11.87	5.04		10.43		8.63		
TOTAL	366	1020	704	412	373	842	88	351	18	10149
	3.61	10.05	6.94	4.06	3.68	8.30	0.87	3.46	0.18	100.00

Legend: NA denotes answer not included in post-crises survey.

TABLE 5-7: DID RESPONDENT COMPARE FUEL ECONOMIES OF VEHICLES UNDER CONSIDERATION?

(SOURCE: QUESTION 13A)

FREQUENCY PERCENT ROW PCT				TOTAL
	NO ANSWER	NO	YES	
MY78 CAR (AUG)	377	2135	1902	4037
	.	20.33	18.11	38.44
	.	52.89	47.11	
MY78 TRUCK (AUG)	87	543	331	874
	.	5.17	3.15	8.32
	.	62.13	37.87	
MY79 CAR (OCT)	430	2439	1450	3889
	.	23.23	13.81	37.03
	.	62.72	37.28	
MY79 TRUCK (OCT)	87	542	299	841
	.	5.16	2.85	8.01
	.	64.45	35.55	
MY79 CAR (JUN)	736	254	495	749
	.	2.42	4.71	7.13
	.	33.91	66.09	
MY79 TRUCK (JUN)	188	54	57	111
	.	0.51	0.54	1.06
	.	48.65	51.35	
TOTAL	.	5967	4534	10501
	.	56.82	43.18	100.00

TABLE 5-8A

REASONS FOR COMPARING NEW VEHICLE FUEL ECONOMY: CODING FORM

<u>CODE</u>	<u>REASONS</u>
1	The price of fuel
2	The importance of fuel economy
3	Conservation (non-specific response)
4	For maximum or best performance per dollar
5	Economy (non-specific response)
6	Curiosity
7	Because respondent drives long distances
8	Concern for better fuel economy
9	Concern for fuel shortage
10	Comparison is part of the decision process
11	Concern for the vehicle's trade-in value or depreciation
12	Any other reason

TABLE 5-8B: REASON FOR COMPARING FUEL ECONOMY

(SOURCE: QUESTION 13B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	CODE 6	TOTAL
MY78 CAR (AUG)	577	194	190	20	42	169	25	1235
	.	7.60	7.45	0.78	1.65	6.62	0.98	48.39
	.	15.71	15.38	1.62	3.40	13.68	2.02	
MY78 TRUCK (AUG)	124	53	25	0	7	29	3	203
	.	2.08	0.98	0.00	0.27	1.14	0.12	7.95
	.	26.11	12.32	0.00	3.45	14.29	1.48	
MY79 CAR (OCT)	538	171	127	4	23	103	25	910
	.	6.70	4.98	0.16	0.90	4.04	0.98	35.66
	.	18.79	13.96	0.44	2.53	11.32	2.75	
MY79 TRUCK (OCT)	95	36	25	0	5	21	2	204
	.	1.41	0.98	0.00	0.20	0.82	0.08	7.99
	.	17.65	12.25	0.00	2.45	10.29	0.98	
TOTAL	.	454	367	24	77	322	55	2552
	.	17.79	14.38	0.94	3.02	12.62	2.16	100.00

(CONTINUED)

TABLE 5- 8B: REASON FOR COMPARING FUEL ECONOMY-

(SOURCE: QUESTION 13B)

FREQUENCY PERCENT ROW PCT							TOTAL
	CODE 7	CODE 8	CODE 9	CODE 10	CODE 11	CODE 12	
MY78 CAR (AUG)	82	294	15	114	8	82	1235
	3.21	11.52	0.59	4.47	0.31	3.21	48.39
	6.64	23.81	1.21	9.23	0.65	6.64	
MY78 TRUCK (AUG)	10	47	0	12	0	17	203
	0.39	1.84	0.00	0.47	0.00	0.67	7.95
	4.93	23.15	0.00	5.91	0.00	8.37	
MY79 CAR (OCT)	59	268	25	57	5	43	910
	2.31	10.50	0.98	2.23	0.20	1.68	35.66
	6.48	29.45	2.75	6.26	0.55	4.73	
MY79 TRUCK (OCT)	24	66	6	13	2	4	204
	0.94	2.59	0.24	0.51	0.08	0.16	7.99
	11.76	32.35	2.94	6.37	0.98	1.96	
TOTAL	175	675	46	196	15	146	2552
	6.86	26.45	1.80	7.68	0.59	5.72	100.00

TABLE 5-9A

REASONS FOR NOT COMPARING NEW VEHICLE FUEL ECONOMY: CODING FORM

<u>CODE</u>	<u>REASON</u>
1	All models were the same or very similar
2	Fuel economy was not the most important factor
3	The EPA ratings are not accurate
4	Respondent already had decided on purchase
5	Vehicle price was more important
6	Safety was more important
7	Comfort was more important
8	Quality of workmanship was more important
9	Respondent does not use vehicle much
10	Respondent had prior experience or was replacing the same vehicle
11	Respondent wanted a particular model
12	Respondent relied on the Fuel Economy Label
13	Styling or appearance was more important
14	The fuel economy was better than with previous vehicle
15	Size or roominess was more important
16	Comparison was not convenient, or respondent had no opportunity
17	Respondent had trust in dealer or salesman
18	Performance was more important
19	Fuel economy is determined by driving habits
20	Respondent used magazines for information
22	Any other reason

TABLE 5-9B: REASON FOR NOT COMPARING FUEL ECONOMY

(SOURCE: QUESTION 13B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	DON'T KNOW	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	CODE 6	TOTAL
MY78 CAR (AUG)	561	17	242	255	116	47	59	13	1513
	.	0.42	5.98	6.30	2.86	1.16	1.46	0.32	37.37
	.	1.12	15.99	16.85	7.67	3.11	3.90	0.86	
MY78 TRUCK (AUG)	133	2	62	50	32	16	13	1	408
	.	0.05	1.53	1.23	0.79	0.40	0.32	0.02	10.08
	.	0.49	15.20	12.25	7.84	3.92	3.19	0.25	
MY79 CAR (OCT)	709	32	247	316	100	60	59	12	1722
	.	0.79	6.10	7.80	2.47	1.48	1.46	0.30	42.53
	.	1.86	14.34	18.35	5.81	3.48	3.43	0.70	
MY79 TRUCK (OCT)	136	5	62	41	35	21	9	2	406
	.	0.12	1.53	1.01	0.86	0.52	0.22	0.05	10.03
	.	1.23	15.27	10.10	8.62	5.17	2.22	0.49	
TOTAL	.	56	613	662	283	144	140	28	4049
	.	1.38	15.14	16.35	6.99	3.56	3.46	0.69	100.00

(CONTINUED)

TABLE 5-9B: REASON FOR NOT COMPARING FUEL ECONOMY

(SOURCE: QUESTION 13B)

FREQUENCY PERCENT ROW PCT		CODE 7	CODE 8	CODE 9	CODE 10	CODE 11	CODE 12	CODE 13	CODE 14	TOTAL
MY78 CAR (AUG)		25	27	42	58	193	44	34	29	1513
		0.62	0.67	1.04	1.43	4.77	1.09	0.84	0.72	37.37
		1.65	1.78	2.78	3.83	12.76	2.91	2.25	1.92	
MY78 TRUCK (AUG)		3	9	2	24	45	7	8	21	408
		0.07	0.22	0.05	0.59	1.11	0.17	0.20	0.52	10.08
		0.74	2.21	0.49	5.88	11.03	1.72	1.96	5.15	
MY79 CAR (OCT)		28	20	63	107	212	28	60	93	1722
		0.69	0.49	1.56	2.64	5.24	0.69	1.48	2.30	42.53
		1.63	1.16	3.66	6.21	12.31	1.63	3.48	5.40	
MY79 TRUCK (OCT)		5	5	10	24	56	7	4	23	406
		0.12	0.12	0.25	0.59	1.38	0.17	0.10	0.57	10.03
		1.23	1.23	2.46	5.91	13.79	1.72	0.99	5.67	
TOTAL		61	61	117	213	506	86	106	166	4049
		1.51	1.51	2.89	5.26	12.50	2.12	2.62	4.10	100.00

(CONTINUED)

TABLE 5- 9B: REASON FOR NOT COMPARING FUEL ECONOMY

(SOURCE: QUESTION 13B)

FREQUENCY PERCENT ROW PCT	CODE 15	CODE 16	CODE 17	CODE 18	CODE 19	CODE 20	CODE 22	TOTAL
MY78 CAR (AUG)	38	57	14	14	2	1	186	1513
	0.94	1.41	0.35	0.35	0.05	0.02	4.59	37.37
	2.51	3.77	0.93	0.93	0.13	0.07	12.29	
MY78 TRUCK (AUG)	12	36	7	8	2	4	44	408
	0.30	0.89	0.17	0.20	0.05	0.10	1.09	10.08
	2.94	8.82	1.72	1.96	0.49	0.98	10.78	
MY79 CAR (OCT)	63	68	34	22	12	9	77	1722
	1.56	1.68	0.84	0.54	0.30	0.22	1.90	42.53
	3.66	3.95	1.97	1.28	0.70	0.52	4.47	
MY79 TRUCK (OCT)	20	30	11	14	4	0	18	406
	0.49	0.74	0.27	0.35	0.10	0.00	0.44	10.03
	4.93	7.39	2.71	3.45	0.99	0.00	4.43	
TOTAL	133	191	66	58	20	14	325	4049
	3.28	4.72	1.63	1.43	0.49	0.35	8.03	100.00

TABLE 5-10

SOURCES OF INFORMATION ON NEW VEHICLE FUEL ECONOMY

<u>CODE</u>	<u>SOURCE</u>
a.	Magazine article
b.	Newspaper article
c.	Manufacturer's magazine advertisement
d.	Manufacturer's newspaper advertisement
e.	Manufacturer's television advertisement
f.	Friend, relative, or associate
g.	Automotive magazine
h.	Consumer's Report
i.	<u>Gas Mileage Guide</u>
j.	Car dealer or salesman
k.	Fuel Economy Label
l.	Other source (non-specific)

TABLE 5-11: SOURCES OF INFORMATION ON NEW VEHICLE FUEL ECONOMY

(MULTIPLE ANSWERS PERMITTED)

(SOURCE: QUESTION 17A)

FREQUENCY PERCENT ROW PCT		A	B	C	D	E	F	G	H	I	J	K	L	TOTAL
MY78 CAR (AUG)		717	333	440	239	735	957	452	790	478	2311	223	7675	
		3.52	1.64	2.16	1.17	3.61	4.70	2.22	3.88	2.35	11.36	1.10	37.73	
		9.34	4.34	5.73	3.11	9.58	12.47	5.89	10.29	6.23	30.11	2.91		
MY78 TRUCK (AUG)		114	35	77	31	115	263	89	89	101	361	69	1344	
		0.56	0.17	0.38	0.15	0.57	1.29	0.44	0.44	0.50	1.77	0.34	6.61	
		8.48	2.60	5.73	2.31	8.56	19.57	6.62	6.62	7.51	26.86	5.13		
MY79 CAR (OCT)		586	320	378	185	532	787	467	552	385	2078	266	6536	
		2.88	1.57	1.86	0.91	2.62	3.87	2.30	2.71	1.89	10.21	1.31	32.13	
		8.97	4.90	5.78	2.83	8.14	12.04	7.15	8.45	5.89	31.79	4.07		
MY79 TRUCK (OCT)		118	32	65	32	102	258	82	84	76	305	86	1240	
		0.58	0.16	0.32	0.16	0.50	1.27	0.40	0.41	0.37	1.50	0.42	6.10	
		9.52	2.58	5.24	2.58	8.23	20.81	6.61	6.77	6.13	24.60	6.94		
MY79 CAR (JUN)		346	164	168	107	308	406	196	313	192	771	92	3063	
		1.70	0.81	0.83	0.53	1.51	2.00	0.96	1.54	0.94	3.79	0.45	15.06	
		11.30	5.35	5.48	3.49	10.06	13.25	6.40	10.22	6.27	25.17	3.00		
MY79 TRUCK (JUN)		43	10	33	10	59	116	34	30	28	96	27	486	
		0.21	0.05	0.16	0.05	0.29	0.57	0.17	0.15	0.14	0.47	0.13	2.39	
		8.85	2.06	6.79	2.06	12.14	23.87	7.00	6.17	5.76	19.75	5.56		
TOTAL		1924	894	1161	604	1851	2787	1320	1858	1260	5922	763	20344	
		9.46	4.39	5.71	2.97	9.10	13.70	6.49	9.13	6.19	29.11	3.75	100.00	

TABLE 5-12 THE MOST USEFUL SOURCE OF FUEL ECONOMY INFORMATION

(SOURCE: QUESTION 17B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	A	B	C	D	E	F	TOTAL
MY78 CAR (AUG)	943	95	42	39	16	107	490	3471
	.	0.95	0.42	0.39	0.16	1.07	4.91	34.75
	.	2.74	1.21	1.12	0.46	3.08	14.12	
MY78 TRUCK (AUG)	201	18	3	13	2	30	192	760
	.	0.18	0.03	0.13	0.02	0.30	1.92	7.61
	.	2.37	0.39	1.71	0.26	3.95	25.26	
MY79 CAR (OCT)	905	96	68	41	5	99	441	3414
	.	0.96	0.68	0.41	0.05	0.99	4.41	34.18
	.	2.81	1.99	1.20	0.15	2.90	12.92	
MY79 TRUCK (OCT)	188	21	4	7	3	31	174	740
	.	0.21	0.04	0.07	0.03	0.31	1.74	7.41
	.	2.84	0.54	0.95	0.41	4.19	23.51	
MY79 CAR (JUN)	143	58	21	28	10	53	215	1342
	.	0.58	0.21	0.28	0.10	0.53	2.15	13.43
	.	4.32	1.56	2.09	0.75	3.95	16.02	
MY79 TRUCK (JUN)	37	14	0	5	0	12	69	262
	.	0.14	0.00	0.05	0.00	0.12	0.69	2.62
	.	5.34	0.00	1.91	0.00	4.58	26.34	
TOTAL	.	302	138	133	36	332	1581	9989
	.	3.02	1.38	1.33	0.36	3.32	15.83	100.00

(CONTINUED)

TABLE 5-12: THE MOST USEFUL SOURCE OF FUEL ECONOMY INFORMATION

(SOURCE: QUESTION 17B)

FREQUENCY PERCENT ROW PCT	G	H	I	J	K	L	TOTAL
MY78 CAR (AUG)	163	425	189	540	1216	149	3471
	1.63	4.25	1.89	5.41	12.17	1.49	34.75
	4.70	12.24	5.45	15.56	35.03	4.29	
MY78 TRUCK (AUG)	36	44	48	133	186	55	760
	0.36	0.44	0.48	1.33	1.86	0.55	7.61
	4.74	5.79	6.32	17.50	24.47	7.24	
MY79 CAR (OCT)	194	273	155	622	1197	223	3414
	1.94	2.73	1.55	6.23	11.98	2.23	34.18
	5.68	8.00	4.54	18.22	35.06	6.53	
MY79 TRUCK (OCT)	31	35	43	139	173	79	740
	0.31	0.35	0.43	1.39	1.73	0.79	7.41
	4.19	4.73	5.81	18.78	23.38	10.68	
MY79 CAR (JUN)	73	168	78	191	381	66	1342
	0.73	1.68	0.78	1.91	3.81	0.66	13.43
	5.44	12.52	5.81	14.23	28.39	4.92	
MY79 TRUCK (JUN)	12	16	16	52	43	23	262
	0.12	0.16	0.16	0.52	0.43	0.23	2.62
	4.58	6.11	6.11	19.85	16.41	8.78	
TOTAL	509	961	529	1677	3196	595	9989
	5.10	9.62	5.30	16.79	32.00	5.96	100.00

TABLE 5-13: INFLUENCE OF THE 1979 FUEL SHORTAGE IN PURCHASE DECISION

(SOURCE: QUESTION 7 OF SECOND SURVEY)

FREQUENCY PERCENT ROW PCT		NOT REPORTED	(1) NO IMPACT	(2)	(3)	(4)	(5)	(6)	(7) MUCH IMPACT	TOTAL
MY79 CAR (JUN)		11	177	71	90	211	204	244	477	1485
		0.62	9.92	3.98	5.04	11.83	11.43	13.68	26.74	83.24
		0.74	11.92	4.78	6.06	14.21	13.74	16.43	32.12	
MY79 TRUCK (JUN)		0	69	28	36	41	40	31	54	299
		0.00	3.87	1.57	2.02	2.30	2.24	1.74	3.03	16.76
		0.00	23.08	9.36	12.04	13.71	13.38	10.37	18.06	
TOTAL		11	246	99	126	252	244	275	531	1784
		0.62	13.79	5.55	7.06	14.13	13.68	15.41	29.76	100.00

TABLE 5-14

OPINIONS ON NATIONAL ISSUES

STATEMENTS

- a. The national 55 mph speed limit should be enforced more vigorously by police.
- b. One of the principal advantages of having the 55 mph speed is that it saves a significant amount of fuel.
- c. There is a serious long-term petroleum shortage facing the United States.
- d. The government should continue to demand that the automotive manufacturers build more efficient vehicles.
- e. The EPA gas mileage figures overstate what owners actually get.
- f. Even though they are criticized, the EPA gas mileage figures do serve a useful purpose by putting all models and manufacturers on the same measurement system for comparisons.
- g. The way a person drives a vehicle (driving style) affects gas mileage.

RESPONSES

- Agree strongly
- Agree somewhat
- Neither agree nor disagree
- Disagree somewhat
- Disagree strongly

TABLE 5-15A THE 55 MPH LIMIT SHOULD BE ENFORCED MORE VIGOROUSLY

(SOURCE: QUESTION 25)

FREQUENCY PERCENT ROW PCT		NO	AGREE	AGREE	NEUTRAL	DISAGREE	DISAGREE	TOTAL
		ANSWER	STRONGLY	SOMEWHAT		SOMEWHAT	STRONGLY	
MY78 CAR (AUG)		385	1322	898	618	594	597	4029
		.	11.53	7.83	5.39	5.18	5.21	35.14
		.	32.81	22.29	15.34	14.74	14.82	
MY78 TRUCK (AUG)		79	265	182	144	118	173	882
		.	2.31	1.59	1.26	1.03	1.51	7.69
		.	30.05	20.63	16.33	13.38	19.61	
MY79 CAR (OCT)		391	1261	804	611	567	685	3928
		.	11.00	7.01	5.33	4.95	5.97	34.26
		.	32.10	20.47	15.55	14.43	17.44	
MY79 TRUCK (OCT)		66	247	189	135	136	155	862
		.	2.15	1.65	1.18	1.19	1.35	7.52
		.	28.65	21.93	15.66	15.78	17.98	
MY79 CAR (JUN)		18	513	348	237	195	174	1467
		.	4.47	3.04	2.07	1.70	1.52	12.79
		.	34.97	23.72	16.16	13.29	11.86	
MY79 TRUCK (JUN)		1	104	64	45	40	45	298
		.	0.91	0.56	0.39	0.35	0.39	2.60
		.	34.90	21.48	15.10	13.42	15.10	
TOTAL		.	3712	2485	1790	1650	1829	11466
		.	32.37	21.67	15.61	14.39	15.95	100.00

TABLE 5-15B: THE 55 MPH LIMIT SAVES A SIGNIFICANT AMOUNT OF FUEL

(SOURCE: QUESTION 25)

FREQUENCY PERCENT ROW PCT		NO	AGREE	AGREE	NEUTRAL	DISAGREE	DISAGREE	TOTAL
		ANSWER	STRONGLY	SOMEWHAT		SOMEWHAT	STRONGLY	
MY78 CAR (AUG)		379	1476	1244	429	525	361	4035
		.	12.87	10.84	3.74	4.58	3.15	35.17
		.	36.58	30.83	10.63	13.01	8.95	
MY78 TRUCK (AUG)		80	302	258	96	127	98	881
		.	2.63	2.25	0.84	1.11	0.85	7.68
		.	34.28	29.28	10.90	14.42	11.12	
MY79 CAR (OCT)		392	1339	1257	454	485	392	3927
		.	11.67	10.96	3.96	4.23	3.42	34.23
		.	34.10	32.01	11.56	12.35	9.98	
MY79 TRUCK (OCT)		64	267	268	106	120	103	864
		.	2.33	2.34	0.92	1.05	0.90	7.53
		.	30.90	31.02	12.27	13.89	11.92	
MY79 CAR (JUN)		18	601	480	157	149	80	1467
		.	5.24	4.18	1.37	1.30	0.70	12.79
		.	40.97	32.72	10.70	10.16	5.45	
MY79 TRUCK (JUN)		1	107	96	38	35	22	298
		.	0.93	0.84	0.33	0.31	0.19	2.60
		.	35.91	32.21	12.75	11.74	7.38	
TOTAL		.	4092	3603	1280	1441	1056	11472
		.	35.67	31.41	11.16	12.56	9.21	100.00

TABLE 5-15C: A SERIOUS LONG-TERM OIL SHORTAGE FACES THE U. S.

(SOURCE: QUESTION 25)

FREQUENCY PERCENT ROW PCT							TOTAL
	NO ANSWER	AGREE STRONGLY	AGREE SOMEWHAT	NEUTRAL	DISAGREE SOMEWHAT	DISAGREE STRONGLY	
MY78 CAR (AUG)	444	1383	968	499	577	543	3970
	.	12.24	8.56	4.41	5.10	4.80	35.12
	.	34.84	24.38	12.57	14.53	13.68	
MY78 TRUCK (AUG)	96	263	223	107	133	139	865
	.	2.33	1.97	0.95	1.18	1.23	7.65
	.	30.40	25.78	12.37	15.38	16.07	
MY79 CAR (OCT)	454	1199	958	567	575	566	3865
	.	10.61	8.48	5.02	5.09	5.01	34.19
	.	31.02	24.79	14.67	14.88	14.64	
MY79 TRUCK (OCT)	82	208	188	115	154	181	846
	.	1.84	1.66	1.02	1.36	1.60	7.48
	.	24.59	22.22	13.59	18.20	21.39	
MY79 CAR (JUN)	24	607	381	164	185	124	1461
	.	5.37	3.37	1.45	1.64	1.10	12.93
	.	41.55	26.08	11.23	12.66	8.49	
MY79 TRUCK (JUN)	3	107	75	44	31	39	296
	.	0.95	0.66	0.39	0.27	0.35	2.62
	.	36.15	25.34	14.86	10.47	13.18	
TOTAL	.	3767	2793	1496	1655	1592	11303
	.	33.33	24.71	13.24	14.64	14.08	100.00

TABLE 5-15D: THE GOVERNMENT SHOULD CONTINUE TO DEMAND THAT THE
MANUFACTURERS BUILD MORE FUEL-EFFICIENT VEHICLES

(SOURCE: QUESTION 25)

FREQUENCY PERCENT ROW PCT		NO	AGREE	AGREE	NEUTRAL	DISAGREE	DISAGREE	TOTAL
		ANSWER	STRONGLY	SOMEWHAT		SOMEWHAT	STRONGLY	
MY78 CAR (AUG)		396	2816	721	216	111	154	4018
		.	24.66	6.32	1.89	0.97	1.35	35.19
		.	70.08	17.94	5.38	2.76	3.83	
MY78 TRUCK (AUG)		82	661	134	27	29	28	879
		.	5.79	1.17	0.24	0.25	0.25	7.70
		.	75.20	15.24	3.07	3.30	3.19	
MY79 CAR (OCT)		411	2351	810	297	223	227	3908
		.	20.59	7.09	2.60	1.95	1.99	34.23
		.	60.16	20.73	7.60	5.71	5.81	
MY79 TRUCK (OCT)		73	551	169	53	42	40	855
		.	4.83	1.48	0.46	0.37	0.35	7.49
		.	64.44	19.77	6.20	4.91	4.68	
MY79 CAR (JUN)		22	1081	219	72	39	52	1463
		.	9.47	1.92	0.63	0.34	0.46	12.81
		.	73.89	14.97	4.92	2.67	3.55	
MY79 TRUCK (JUN)		5	209	50	12	10	13	294
		.	1.83	0.44	0.11	0.09	0.11	2.58
		.	71.09	17.01	4.08	3.40	4.42	
TOTAL			7669	2103	677	454	514	11417
		.	67.17	18.42	5.93	3.98	4.50	100.00

TABLE 5-15E THE EPA RATINGS OVERSTATE WHAT OWNERS ACTUALLY ACHIEVE

(SOURCE: QUESTION 25)

FREQUENCY PERCENT ROW PCT		NO	AGREE	AGREE	NEUTRAL	DISAGREE	DISAGREE	TOTAL
		ANSWER	STRONGLY	SOMEWHAT		SOMEWHAT	STRONGLY	
MY78 CAR (AUG)		573	1739	1129	725	173	75	3841
		.	15.90	10.32	6.63	1.58	0.69	35.11
		.	45.27	29.39	18.88	4.50	1.95	
MY78 TRUCK (AUG)		113	454	210	134	35	15	848
		.	4.15	1.92	1.22	0.32	0.14	7.75
		.	53.54	24.76	15.80	4.13	1.77	
MY79 CAR (OCT)		601	1255	1087	988	263	125	3718
		.	11.47	9.94	9.03	2.40	1.14	33.99
		.	33.75	29.24	26.57	7.07	3.36	
MY79 TRUCK (OCT)		106	362	200	190	50	20	822
		.	3.31	1.83	1.74	0.46	0.18	7.51
		.	44.04	24.33	23.11	6.08	2.43	
MY79 CAR (JUN)		60	415	446	355	133	76	1425
		.	3.79	4.08	3.24	1.22	0.69	13.03
		.	29.12	31.30	24.91	9.33	5.33	
MY79 TRUCK (JUN)		13	126	75	58	16	11	286
		.	1.15	0.69	0.53	0.15	0.10	2.61
		.	44.06	26.22	20.28	5.59	3.85	
TOTAL		.	4351	3147	2450	670	322	10940
		.	39.77	28.77	22.39	6.12	2.94	100.00

TABLE 5-15F: THE EPA RATINGS ARE USEFUL FOR COMPARING FUEL ECONOMY

(SOURCE: QUESTION 25)

FREQUENCY PERCENT ROW PCT							TOTAL
	NO ANSWER	AGREE STRONGLY	AGREE SOMEWHAT	NEUTRAL	DISAGREE SOMEWHAT	DISAGREE STRONGLY	
MY78 CAR (AUG)	517	1279	1667	685	120	146	3897
	.	11.52	15.01	6.17	1.08	1.31	35.10
	.	32.82	42.78	17.58	3.08	3.75	
MY78 TRUCK (AUG)	108	248	353	173	27	52	853
	.	2.23	3.18	1.56	0.24	0.47	7.68
	.	29.07	41.38	20.28	3.17	6.10	
MY79 CAR (OCT)	539	1156	1560	732	142	190	3780
	.	10.41	14.05	6.59	1.28	1.71	34.04
	.	30.58	41.27	19.37	3.76	5.03	
MY79 TRUCK (OCT)	89	233	327	179	45	55	839
	.	2.10	2.95	1.61	0.41	0.50	7.56
	.	27.77	38.97	21.33	5.36	6.56	
MY79 CAR (JUN)	43	490	647	210	52	43	1442
	.	4.41	5.83	1.89	0.47	0.39	12.99
	.	33.98	44.87	14.56	3.61	2.98	
MY79 TRUCK (JUN)	7	83	120	52	18	19	292
	.	0.75	1.08	0.47	0.16	0.17	2.63
	.	28.42	41.10	17.81	6.16	6.51	
TOTAL	.	3489	4674	2031	404	505	11103
	.	31.42	42.10	18.29	3.64	4.55	100.00

TABLE 5-15G: DRIVING STYLE AFFECTS FUEL ECONOMY

(SOURCE: QUESTION 25)

FREQUENCY PERCENT ROW PCT		NO	AGREE	AGREE	NEUTRAL	DISAGREE	DISAGREE	TOTAL
		ANSWER	STRONGLY	SOMEWHAT		SOMEWHAT	STRONGLY	
MY78 CAR (AUG)		360	3321	670	46	14	3	4054
		.	28.86	5.82	0.40	0.12	0.03	35.23
		.	81.92	16.53	1.13	0.35	0.07	
MY78 TRUCK (AUG)		75	740	131	9	2	4	886
		.	6.43	1.14	0.08	0.02	0.03	7.70
		.	83.52	14.79	1.02	0.23	0.45	
MY79 CAR (OCT)		389	3252	608	44	17	9	3930
		.	28.26	5.28	0.38	0.15	0.08	34.15
		.	82.75	15.47	1.12	0.43	0.23	
MY79 TRUCK (OCT)		63	722	130	6	4	3	865
		.	6.27	1.13	0.05	0.03	0.03	7.52
		.	83.47	15.03	0.69	0.46	0.35	
MY79 CAR (JUN)		11	1257	193	19	1	4	1474
		.	10.92	1.68	0.17	0.01	0.03	12.81
		.	85.28	13.09	1.29	0.07	0.27	
MY79 TRUCK (JUN)		1	263	30	2	1	2	298
		.	2.29	0.26	0.02	0.01	0.02	2.59
		.	88.26	10.07	0.67	0.34	0.67	
TOTAL		.	9555	1762	126	39	25	11507
		.	83.04	15.31	1.09	0.34	0.22	100.00

6. NEW VEHICLE CHARACTERISTICS

The owner surveys are as much a study of the new vehicles as they are of public attitudes and perceptions. For example, the surveys included many questions on fuel economy (found in Section 7) and vehicle use (found in Section 8). The characteristics of the new cars and trucks provide, then, a profile of the vehicle sample in the same manner that demographic information describes the survey participants and families.

The data of this section include both the physical characteristics provided by owners and also engineering specifications, which have been added to the data base. All of the information displayed here pertains to the first owner survey. The second survey is most important in the understanding of attitudinal changes resulting from the 1979 fuel shortage. Its sample size also is small in comparison to the more than 10,000 owners participating in the first survey and cannot fully reveal the shifting market trends during the 1979 model year. The second (post-shortage) survey results, therefore, are not included in this section.

6.1 ENGINEERING DATA

The surveys asked owners to describe their new vehicles in the following simple terms:

- Make and model name
- Body style
- Number of engine cylinders and the transmission type
- Selection of air conditioning or radial tires.

To these basic physical characteristics, EEA has added the new car specifications of size class, inertial weight, and fuel type to first survey responses. Similar information is available for trucks but is

not included in the survey data base at this time. These engineering data provide further dimensions for the disaggregate analysis of vehicle use patterns and fuel economy distributions.

The size class and inertial weight specifications have been determined from the reported model name and body style information. The Guide provides a standard size class system for cars based on interior room; its categories include six classes of passenger cars and three classes of station wagons. The inertial weight specifications have been taken from the EPA test car list, which summarizes model year emissions certification and fuel economy test results. The weights are the dynamometer loading used in testing and grouping vehicles into classes rather than a continuum of weight. The weight classes are in all cases based on vehicle curb weight, plus 300 pounds to simulate the weight of passengers and fuel.

Survey participants were not asked whether their new vehicles were gasoline- or diesel-powered. Identifying fuel type in the passenger car sample is therefore not straightforward, as for size classes and inertial weight. Fuel type has been determined by examining all survey responses for models offered with diesel engines. The process is complicated by the fact that the largest selling diesel cars also are available in gasoline versions.

For a very limited number of questionnaires, the model name is sufficient information, e.g., for some Mercedes-Benz cars. In other instances, the gasoline versions can be identified by cylinder-count or transmission type, primarily in GM models available with both six-cylinder gasoline engines and optional V-8 diesels. For the remaining cars, particularly the Volkswagen Rabbit and some Oldsmobile, Buick, and Cadillac cars, fuel type can be identified only through the fuel economy advantage of the diesel engine, as reflected in owner-reported EPA ratings. The procedure is therefore subject to error when the difference between gasoline and

diesel fuel economies is small. EEA, accordingly, has exercised caution in this determination and has coded the fuel type as unknown when the reported EPA ratings are not clearly those of diesel vehicles. The resulting proportion of diesel cars agrees with 1978 and 1979 production statistics to within a few tenths of a percentage point, indicating that the diesels are correctly identified and that most vehicles with unknown fuel type are probably gasoline-powered.

6.2 PRESENTATION

The distributions of vehicle characteristics are displayed below in the cross-tabulation tables used in previous sections. Subsection 4.1 explained the cross-tabulation format in detail. As has been noted, vehicle data are displayed only for the first survey. Also, the physical characteristics reported by owners are tabulated for the four survey groups of 1978 and 1979 car and light-duty truck buyers, while engineering specifications are shown only for passenger cars.

This section contains the following tables:

- Origin of New Vehicle (Table 6-1)
- Manufacturer of New Car (Table 6-2)
- Body Style of New Car and Truck (Tables 6-3A/B)
- Selection of Air Conditioning for New Vehicle (Table 6-4)
- Selection of Radial Tires for New Vehicle (Table 6-5)
- Transmission Type of New Vehicle (Table 6-6)
- Engine Description for New Vehicle (Table 6-7)
- Fuel Type of New Vehicle (Table 6-8)
- Size Class of New Car (Table 6-9)
- Inertial Weight Class of New 1978 and 1979 Car (Tables 6-10A/B).

6.3 EXAMPLES

Table 6-1 shows the origin of new vehicles across the four groups of the first owner survey. As seen there, imported vehicles account for 21 and 28 percent of the 1978 car and light-duty truck samples, respectively. While the import shares decline in both 1979 samples, the change is greatest among passenger cars. The 1979 cars were purchased in October 1978, at the start of the 1979 model year. October traditionally has been a time of strong domestic car sales and, in particular, October 1978 buyers showed a smaller overall concern for fuel economy. They are in this way not typical of later buyers in the 1979 model year, which showed at its end an import penetration of approximately 21 percent. Very importantly, the car purchases made in October were not influenced by the fuel price increases and shortages occurring in Spring 1979.

Other tables are not as strongly influenced by the months chosen for sampling in the owner surveys. For example, Table 6-5 shows the selection of radial tires in the survey groups. Slightly more car owners chose radials in 1979 compared to 1978 (92 versus 86 percent), but 1979 truck buyers were almost twice as likely to purchase radial tires as in 1978 (61 versus 33 percent). These results illustrate the continuing trends toward greater market penetration of radial tires.

TABLE 6-1: ORIGIN OF NEW VEHICLE

(SOURCE: QUESTION 1)

FREQUENCY PERCENT ROW PCT		DOMESTIC	IMPORTED	TOTAL
MY78 CAR (AUG)		3490	924	4414
		32.86	8.70	41.56
		79.07	20.93	
MY78 TRUCK (AUG)		694	267	961
		6.53	2.51	9.05
		72.22	27.78	
MY79 CAR (OCT)		4103	216	4319
		38.63	2.03	40.66
		95.00	5.00	
MY79 TRUCK (OCT)		712	216	928
		6.70	2.03	8.74
		76.72	23.28	
TOTAL		8999	1623	10622
		84.72	15.28	100.00

TABLE 6-2: MANUFACTURER OF NEW CAR

(SOURCE: QUESTION 1)

FREQUENCY PERCENT ROW PCT		NOT REPORTED	AMERICAN MOTORS	CHRYSLER	FORD	GENERAL MOTORS	EUROPEAN	JAPANESE	TOTAL
MY78 CAR	(AUG)	642	37	361	822	1919	187	446	3772
		.	0.49	4.82	10.98	25.62	2.50	5.96	50.37
		.	0.98	9.57	21.79	50.87	4.96	11.82	
MY79 CAR	(OCT)	602	47	317	675	2551	95	32	3717
		.	0.63	4.23	9.01	34.06	1.27	0.43	49.63
		.	1.26	8.53	18.16	68.63	2.56	0.86	
TOTAL		.	84	678	1497	4470	282	478	7489
		.	1.12	9.05	19.99	59.69	3.77	6.38	100.00

TABLE 6-3A: BODY STYLE OF NEW CAR

(SOURCE: QUESTION 2)

FREQUENCY PERCENT ROW PCT							TOTAL
	2-DOOR SEDAN	3-DOOR (HATCH)	4-DOOR SEDAN	5-6 PASS ST-WAGON	8-9 PASS ST-WAGON	CONVERT- IBLE	
MY78 CAR (AUG)	2073 23.74 46.96	547 6.26 12.39	1289 14.76 29.20	393 4.50 8.90	80 0.92 1.81	32 0.37 0.72	4414 50.54
MY79 CAR (OCT)	2218 25.40 51.35	356 4.08 8.24	1402 16.05 32.46	260 2.98 6.02	67 0.77 1.55	16 0.18 0.37	4319 49.46
TOTAL	4291 49.14	903 10.34	2691 30.81	653 7.48	147 1.68	48 0.55	8733 100.00

TABLE 6-3B: BODY STYLE OF NEW TRUCK

(SOURCE: QUESTION 2)

FREQUENCY PERCENT ROW PCT	VAN	COMPACT PICK-UP	STANDARD PICK-UP	UTILITY VEHICLE	OTHER TRUCK	TOTAL
MY78 TRUCK (AUG)	222 11.75 23.10	250 13.23 26.01	419 22.18 43.60	50 2.65 5.20	20 1.06 2.08	961 50.87
MY79 TRUCK (OCT)	226 11.96 24.35	220 11.65 23.71	413 21.86 44.50	56 2.96 6.03	13 0.69 1.40	928 49.13
TOTAL	448 23.72	470 24.88	832 44.04	106 5.61	33 1.75	1889 100.00

TABLE 6-4 SELECTION OF AIR CONDITIONING FOR NEW VEHICLE

(SOURCE: QUESTION 5)

FREQUENCY PERCENT ROW PCT	NOT REPORTED	NO	YES	TOTAL
MY78 CAR (AUG)	9	981	3424	4405
	.	9.26	32.32	41.58
	.	22.27	77.73	
MY78 TRUCK (AUG)	2	474	485	959
	.	4.47	4.58	9.05
	.	49.43	50.57	
MY79 CAR (OCT)	14	869	3436	4305
	.	8.20	32.43	40.64
	.	20.19	79.81	
MY79 TRUCK (OCT)	3	508	417	925
	.	4.80	3.94	8.73
	.	54.92	45.08	
TOTAL	.	2832	7762	10594
	.	26.73	73.27	100.00

TABLE 6-5: SELECTION OF RADIAL TIRES FOR NEW VEHICLE

(SOURCE: QUESTION 5)

FREQUENCY PERCENT ROW PCT	NOT REPORTED	NO	YES	TOTAL
MY78 CAR (AUG)	46	633	3735	4368
	.	6.02	35.53	41.55
	.	14.49	85.51	
MY78 TRUCK (AUG)	14	631	316	947
	.	6.00	3.01	9.01
	.	66.63	33.37	
MY79 CAR (OCT)	41	340	3938	4278
	.	3.23	37.46	40.70
	.	7.95	92.05	
MY79 TRUCK (OCT)	9	357	562	919
	.	3.40	5.35	8.74
	.	38.85	61.15	
TOTAL	.	1961	8551	10512
	.	18.65	81.35	100.00

TABLE 6-6: TRANSMISSION TYPE OF NEW VEHICLE

(SOURCE QUESTION 5)

FREQUENCY PERCENT ROW PCT		NOT REPORTED	AUTO	MANUAL 3-SPEED	MANUAL 4-SPEED	MANUAL 5-SPEED	TOTAL
MY78 CAR	(AUG)	28	3406	41	601	338	4386
		.	32.28	0.39	5.70	3.20	41.56
		.	77.66	0.93	13.70	7.71	
MY78 TRUCK	(AUG)	11	549	131	164	106	950
		.	5.20	1.24	1.55	1.00	9.00
		.	57.79	13.79	17.26	11.16	
MY79 CAR	(OCT)	26	3735	29	457	72	4293
		.	35.39	0.27	4.33	0.68	40.68
		.	87.00	0.68	10.65	1.68	
MY79 TRUCK	(OCT)	4	564	122	168	70	924
		.	5.34	1.16	1.59	0.66	8.76
		.	61.04	13.20	18.18	7.58	
TOTAL		.	8254	323	1390	586	10553
		.	78.21	3.06	13.17	5.55	100.00

TABLE 6-7: ENGINE DESCRIPTION FOR NEW VEHICLE

(SOURCE: QUESTION 3)

FREQUENCY PERCENT ROW PCT		NOT	FOUR	SIX	EIGHT	ROTARY	OTHER	TOTAL
		REPORTED	CYLINDER	CYLINDER	CYLINDER	ENGINE		
MY78 CAR (AUG)		60	1195	1027	2101	8	23	4354
		.	11.39	9.79	20.03	0.08	0.22	41.51
		.	27.45	23.59	48.25	0.18	0.53	
MY78 TRUCK (AUG)		9	260	137	554	0	1	952
		.	2.48	1.31	5.28	0.00	0.01	9.08
		.	27.31	14.39	58.19	0.00	0.11	
MY79 CAR (OCT)		57	692	786	2721	51	12	4262
		.	6.60	7.49	25.94	0.49	0.11	40.63
		.	16.24	18.44	63.84	1.20	0.28	
MY79 TRUCK (OCT)		6	213	152	557	0	0	922
		.	2.03	1.45	5.31	0.00	0.00	8.79
		.	23.10	16.49	60.41	0.00	0.00	
TOTAL		.	2360	2102	5933	59	36	10490
		.	22.50	20.04	56.56	0.56	0.34	100.00

TABLE 6-8: FUEL TYPE OF NEW VEHICLE

(SOURCE: GAS MILEAGE GUIDE)

FREQUENCY PERCENT ROW PCT	NOT KNOWN	GASOLINE	DIESEL	TOTAL
MY78 CAR (AUG)	76	4298	40	4338
	.	42.09	0.39	42.48
	.	99.08	0.92	
MY78 TRUCK (AUG)	0	961	0	961
	.	9.41	0.00	9.41
	.	100.00	0.00	
MY79 CAR (OCT)	335	3898	86	3984
	.	38.17	0.84	39.02
	.	97.84	2.16	
MY79 TRUCK (OCT)	0	928	0	928
	.	9.09	0.00	9.09
	.	100.00	0.00	
TOTAL	.	10085	126	10211
	.	98.77	1.23	100.00

TABLE 6-9: SIZE CLASS OF NEW CAR

(SOURCE: GAS MILEAGE GUIDE)

FREQUENCY PERCENT ROW PCT	NOT	MINI-	SUB-	COMPACT	MID-SIZE	LARGE	SMALL	MID-SIZE	LARGE	TOTAL
	KNOWN	COMPACT	COMPACT				ST-WAGON	ST-WAGON	ST-WAGON	
MY78 CAR (AUG)	642	734	627	674	645	691	71	211	119	3772
	.	9.80	8.37	9.00	8.61	9.23	0.95	2.82	1.59	50.37
	.	19.46	16.62	17.87	17.10	18.32	1.88	5.59	3.15	
MY79 CAR (OCT)	602	652	393	546	625	1195	16	160	130	3717
	.	8.71	5.25	7.29	8.35	15.96	0.21	2.14	1.74	49.63
	.	17.54	10.57	14.69	16.81	32.15	0.43	4.30	3.50	
TOTAL	.	1386	1020	1220	1270	1886	87	371	249	7489
	.	18.51	13.62	16.29	16.96	25.18	1.16	4.95	3.32	100.00

TABLE 6-10A: INERTIAL WEIGHT CLASS OF NEW 1978 CAR

(SOURCE: EPA TEST CAR LIST)

MY=78

FREQUENCY PERCENT ROW PCT	NOT KNOWN	2000	2250	2500	2750	3000	3250	TOTAL
MY78 CAR (AUG)	642	34	355	255	198	275	59	3772
	.	0.90	9.41	6.76	5.25	7.29	1.56	100.00
	.	0.90	9.41	6.76	5.25	7.29	1.56	
TOTAL	.	34	355	255	198	275	59	3772
	.	0.90	9.41	6.76	5.25	7.29	1.56	100.00

(CONTINUED)

FREQUENCY PERCENT ROW PCT	3500	3750	4000	4500	5000	5500	TOTAL
MY78 CAR (AUG)	501	24	1087	721	234	29	3772
	13.28	0.64	28.82	19.11	6.20	0.77	100.00
	13.28	0.64	28.82	19.11	6.20	0.77	
TOTAL	501	24	1087	721	234	29	3772
	13.28	0.64	28.82	19.11	6.20	0.77	100.00

TABLE 6-10B INERTIAL WEIGHT CLASS OF NEW 1979 CAR

(SOURCE: EPA TEST CAR LIST)

MY=79

FREQUENCY PERCENT ROW PCT		NOT KNOWN	2250	2500	2750	3000	3250	3500	TOTAL
MY79 CAR	(OCT)	602	175	97	176	187	101	442	3717
		.	4.71	2.61	4.74	5.03	2.72	11.89	100.00
		.	4.71	2.61	4.74	5.03	2.72	11.89	
TOTAL		.	175	97	176	187	101	442	3717
		.	4.71	2.61	4.74	5.03	2.72	11.89	100.00

(CONTINUED)

FREQUENCY PERCENT ROW PCT		3750	4000	4250	4500	5000	5500	TOTAL
MY79 CAR	(OCT)	35	1390	14	820	213	67	3717
		0.94	37.40	0.38	22.06	5.73	1.80	100.00
		0.94	37.40	0.38	22.06	5.73	1.80	
TOTAL		35	1390	14	820	213	67	3717
		0.94	37.40	0.38	22.06	5.73	1.80	100.00

7. FUEL ECONOMY DATA

The central questions examined by the owner surveys are about the public's acceptance and satisfaction with the current fuel economy rating system. Because fuel economy shortfall is the origin of the issue, the surveys also collected much information on the in-use experience of participants. The first owner survey is itself an important data base on in-use fuel economy because of its large sample size. The surveys also provide a variety of information which aids in interpreting the observed shortfall. Among the most influential of these explanatory factors are owners' record-keeping practices and typical driving patterns. This section reports the fuel economy data of the first owner survey in a format that emphasizes how these two factors influence the reported data.

This section contains four types of fuel economy information:

- Fuel economy distributions themselves, i.e.,
 - in-use fuel economy of the new vehicle
 - in-use fuel economy of the vehicle replaced through purchase
 - owner-reported (or perceived) EPA ratings for the new vehicle
 - correct (or actual) EPA ratings, which have been matched with survey responses
- Comparisons of owner-reported and actual EPA ratings
- Perceived shortfall relationships, based on owner-reported EPA ratings
- Actual shortfall relationships, based on correct EPA ratings.

Many distributions are found within each group. For example, questions on new vehicle in-use fuel economy appear in two places on the survey questionnaires; therefore, two separate distributions of in-use fuel economy exist. These mileages figures are often different and reflect the subtle influence of the questionnaire itself, as explained below. In addition, fuel economy data were requested by driving mode in many instances. The fuel economy distributions, the comparisons of EPA ratings, and the shortfall relationships then may be analyzed by driving mode. Table 7-1 summarizes the fuel economy information requested in the owner surveys.

The several questions and many possible comparisons present a formidable array of tables. To aid the reader, this section first displays a selection of the available data, providing a cross-section of the data base. The remaining tables are found in the concluding section, which lists its contents in detail.

The data of the second (post-shortage) survey are not included here. While it requested the same information of participants, the survey was intended to examine changes in public attitudes. The smaller sample size appropriate to that objective does not significantly extend the data base provided by the first survey.

7.1 DESCRIPTION OF THE SURVEY DATA

The interpretation of the new-vehicle fuel economy data is complicated by the presence of three inter-related questions and the variations in question format between 1978 and 1979. The purpose of this section is to review the questions and to explain what information is available.

Questions 6b, 24, and 25 are the sources of survey information on new vehicle fuel economy (see Table 7-1). The questions differ not only in the data requested, but also in the interpretation of responses. The

TABLE 7-1

FUEL ECONOMY INFORMATION REQUESTED IN THE J.D. POWER/DOE NEW VEHICLE OWNER SURVEY

QUESTION NUMBER	INFORMATION REQUESTED	
	<u>MY 1979 VEHICLES</u>	<u>MY 1979 VEHICLES</u>
6b	<ul style="list-style-type: none"> • What fuel economy do you get with this (new) vehicle? 	<ul style="list-style-type: none"> • Same
9c	<ul style="list-style-type: none"> • What was the gas mileage you got with this (replaced) vehicle? 	<ul style="list-style-type: none"> • Same
24	<ul style="list-style-type: none"> • What is the <u>published</u> EPA gas mileage for your 1978 vehicle? <ul style="list-style-type: none"> - city driving? - combined city and highway driving? - highway driving? 	<ul style="list-style-type: none"> • What is the <u>published</u> EPA gas mileage for your 1979 vehicle? <ul style="list-style-type: none"> - estimated MPG? (only)
25	<ul style="list-style-type: none"> • What is the <u>actual</u> gas mileage you are getting with your 1978 vehicle? <ul style="list-style-type: none"> - city driving? - combined city and highway driving? - highway driving? 	<ul style="list-style-type: none"> • What is the <u>actual</u> gas mileage for your 1979 vehicle? <ul style="list-style-type: none"> - estimated MPG? (only)

first distinction is that question 6b represents an overall in-use fuel economy, while the other two questions request data by driving mode. Second, question 6b appears early in the survey questionnaire, so that its responses are less influenced by later questions that highlight awareness of the rating system. In fact, responses to the two questions on in-use fuel economy often are different numbers. Responses to question 6b are termed "overall in-use fuel economy" in this section and can be interpreted as the estimate most typical of the driver's experience. It therefore reflects the type of driving done most often by a participant and, in general, is not an estimate for mixed driving.

On the other hand, the later questions reflect owner perception of the new vehicle EPA ratings (question 24) and in-use fuel economy (question 25) on a driving mode basis. Each mode of question 25 then can be interpreted as the fuel economy estimate which best reflects a vehicles' performance in city, highway, or mixed driving. Because of the questions' proximity, survey responses also reflect the combined assessment of a vehicle's performance relative to the owner's perception of its ratings. These responses therefore may be influenced by owner satisfaction (or dissatisfaction) with the fuel economy achieved with the new vehicle.

The format of questions 24 and 25 also differs in the 1978 and 1979 questionnaires as a result of differences in the EPA ratings published in those years. Through the Guide and Label, 1979 buyers were exposed to a single EPA estimated mileage as discussed in Section 2.1. Advertising also used the highway ratings but emphasized the estimated rating for comparing vehicles. Because the most readily available information did not present fuel economy by driving mode (as for 1978), the 1979 questionnaire asks only for the Estimated rating and a single (question 25) Estimated in-use fuel economy. It therefore provides much less driving mode information than the 1978 questionnaire, which sought separate responses for city, highway, and mixed driving.

Although based on the urban cycle test results, the 1979 Estimated mode is comparable to the 1978 composite fuel economy because consumers used these mileage figures for comparing vehicles. The selected tables and figures presented first in this section include the composite (or city and highway driving mode) fuel economy for 1978 vehicles and the Estimated mode for 1979 vehicles. Later tables report the city and highway data available for the 1978 sample and the limited composite mode data for the 1979 sample.

7.2 PRESENTATION OF PRIMARY DISTRIBUTIONS

The primary distributions of fuel economy data and comparisons reported in this section are the following:

- Overall In-Use Fuel Economy of the New Vehicle (Figures 7-1 A/D and Tables 7-4 A/D)
- In-Use Fuel Economy of the New Vehicle
 - city and highway driving (Tables 7-5 A/B)
 - estimated driving mode (Tables 7-6 A/B)
- Owner-reported EPA Fuel Economy of the New Vehicle
 - composite (Figures 7-2 A/B and Tables 7-7 A/B)
 - estimated (Figures 7-3 A/B and Tables 7-8 A/B)
- EPA Fuel Economy of the New Vehicle
 - composite (Figures 7-4 A/B and Tables 7-9 A/B)
 - estimated (Figures 7-5 A/B and Tables 7-10 A/B)
- In-Use Fuel Economy of the Replaced Vehicle
 - city and highway driving (Tables 7-11 A/D)
- Comparison of EPA Fuel Economies -- Owner-reported minus true rating

- composite (Tables 7-12 A/B)
- estimated (Tables 7-13 A/B)
- Perceived Shortfall -- Overall in-use fuel economy versus owner-reported EPA ratings
 - composite (Tables 7-14 A/B)
 - estimated (Tables 7-15 A/B)
- Perceived Shortfall -- In-use fuel economy versus owner-reported EPA ratings by driving mode
 - composite city and highway driving (Tables 7-16 A/B)
 - estimated driving mode (Tables 7-17 A/B)
- Shortfall -- Overall in-use fuel economy versus EPA ratings
 - composite (Tables 7-18 A/B)
 - estimated (Tables 7-19 A/B)
- Shortfall: In-use fuel economy versus EPA ratings by driving mode:
 - composite city and highway driving (Tables 7-20 A/B)
 - estimated driving mode (Tables 7-21 A/B).

This selection focuses on the combined city and highway driving mode for 1978 vehicles and on the estimated mode for 1979 vehicle because these are comparable to the formats used in publishing fuel economy information in the Guide and Label. The information is presented in data table formats explained below and include several figures to illustrate the distributional properties. For example, Figure 7-1A is the histogram of overall in-use fuel economy data (question 6b) reported by 1978 car buyers; it appears before the related data table, Table 7-4A. Each data table contains summary statistics and distribution information for the survey group (e.g., 1978 car buyers) and also for several subsets within the group.

TABLE 7-2A

DEFINITION OF FUEL ECONOMY RECORD-KEEPING CATEGORIES

(SOURCE: QUESTION 27)

<u>CODE</u>	<u>RESPONDENT'S RECORD-KEEPING PRACTICE</u>	<u>CATEGORY FOUND IN TABLES</u>
1	Keeps accurate records at all times	Based on records
2	Makes frequent checks of gas mileage	Based on checks
3	Makes occasional checks of gas mileage	
4	Knows fairly well by what gasoline has been put in, but does not keep formal records	Based on perception
5	Does not make any checks	
No answer given	--	

TABLE 7-2B: RECORD-KEEPING BEHAVIOR OF SURVEY RESPONDENTS

(SOURCE: QUESTION 27)

FREQUENCY PERCENT ROW PCT COL PCT	NOT REPORTED	CODE 1	CODE 2	CODE 3	CODE 4	CODE 5	TOTAL
MY78 CAR (AUG)	64	714	1070	1479	856	231	4350
	.	6.83	10.23	14.15	8.19	2.21	41.61
	.	16.41	24.60	34.00	19.68	5.31	
	.	41.11	39.02	43.39	42.99	40.10	
MY78 TRUCK (AUG)	14	154	264	332	162	35	947
	.	1.47	2.53	3.18	1.55	0.33	9.06
	.	16.26	27.88	35.06	17.11	3.70	
	.	8.87	9.63	9.74	8.14	6.08	
MY79 CAR (OCT)	79	710	1114	1303	837	276	4240
	.	6.79	10.66	12.46	8.01	2.64	40.55
	.	16.75	26.27	30.73	19.74	6.51	
	.	40.88	40.63	38.22	42.04	47.92	
MY79 TRUCK (OCT)	10	159	294	295	136	34	918
	.	1.52	2.81	2.82	1.30	0.33	8.78
	.	17.32	32.03	32.14	14.81	3.70	
	.	9.15	10.72	8.65	6.83	5.90	
TOTAL	.	1737	2742	3409	1991	576	10455
	.	16.61	26.23	32.61	19.04	5.51	100.00

TABLE 7-3A

DEFINITION OF DRIVING PATTERN CATEGORIES

(SOURCE: QUESTION 31)

<u>BASIS</u>	<u>CRITERION</u>	<u>CATEGORY FOUND IN TABLES</u>
Percentage of usual weekly driving spent in city conditions	percentage > 90	Urban driving
	percentage < 20	Non-urban driving
	50 < percentage < 60	55/45 Mix

TABLE 7-3B: DRIVING MODE SUBSETS

(SOURCE: QUESTION 31A)

FREQUENCY PERCENT ROW PCT COL PCT		NO ANSWER	NON- URBAN	55/45 MIX	URBAN	OTHER	TOTAL
MY78 CAR (AUG)		163	1066	237	456	2492	4251
		.	10.40	2.31	4.45	24.30	41.46
		.	25.08	5.58	10.73	58.62	
		.	36.56	44.13	44.84	43.08	
MY78 TRUCK (AUG)		29	341	45	55	491	932
		.	3.33	0.44	0.54	4.79	9.09
		.	36.59	4.83	5.90	52.68	
		.	11.69	8.38	5.41	8.49	
MY79 CAR (OCT)		150	1145	207	459	2358	4169
		.	11.17	2.02	4.48	23.00	40.66
		.	27.46	4.97	11.01	56.56	
		.	39.27	38.55	45.13	40.77	
MY79 TRUCK (OCT)		26	364	48	47	443	902
		.	3.55	0.47	0.46	4.32	8.80
		.	40.35	5.32	5.21	49.11	
		.	12.48	8.94	4.62	7.66	
TOTAL		.	2916	537	1017	5784	10254
		.	28.44	5.24	9.92	56.41	100.00

Owner habits on the keeping of fuel economy records are clearly important to interpreting owner-reported in-use data, since these habits determine how accurately respondents know what gas mileage they achieve. Also, the type of driving done by survey participants provides a basis for interpreting fuel economy and shortfall results by driving mode. The data tables use a classification system based on record-keeping practice and driving pattern to establish the subsets within survey groups.

Table 7-2A and 7-2B show the record-keeping behavior indicated by participants in the first survey. The three categories of record-keeping practice -- based on accurate records, on frequent or occasional checks, and on perception -- form the first three subsets of later data tables. Tables 7-3A and 7-3B demonstrate the classification of respondents by driving pattern using each participant's reported fraction of weekly driving in city conditions. These driving modes correspond to traffic patterns which should be closely simulated in the EPA test procedure's dynamometer cycles. The data tables include each driving pattern subset and also the smaller subsets of accurate record-keepers within driving modes.

7.3 DATA TABLE FORMATS

7.3.1 Data Tables for Fuel Economy Distributions

The first data table format found in this section may be seen in Table 7-4A, which summarizes the responses to question 6b on overall in-use fuel economy. The purposes of this table format are to display summary statistics, such as means and standard deviations, and to concisely present the percentile points of the distributions. The percentiles have been estimated from the analysis of cumulative distribution functions, as explained in Appendix B, and can be used to construct histograms or other visual displays.

As seen in Table 7-4A, the title block at the upper right defines the distribution presented in the table, along with the source of the information (usually the survey question number) and the survey group. Each table displays data pertaining to one of the four groups in the first owner survey (e.g., 1978 car buyers). The units of the tabulated quantity also are found there. The remaining entries show the sample size on which the table is based and also the number of survey group participants not providing the necessary information. In Table 7-4A, 4,010 of the participating 1978 car buyers answered question 6b, while 404 did not. As a result, of the 4,414 1978 car buyers participating in the survey, 90.9 percent provided data on their overall in-use fuel economy.

The lower block in each table presents summary statistics and distribution percentiles by subset. The first line of this block pertains to all respondents, regardless of record-keeping practices or driving patterns. Below this line are found the distribution statistics for subsets.

The first category of subsets is based solely on record-keeping practice using the groups defined in Table 7-2A. The second category examines driving pattern subsets, both for respondents who did not practice record-keeping (line 1) and for those respondents keeping accurate fuel economy records (line 2). The driving pattern groups are defined in Table 7-3A and do not include all survey respondents. For example, a participant who reports that 31 to 40 percent of typical weekly driving is done in the city is not placed into any of the three driving pattern groups. Such a pattern contains more city driving than done by the non-urban drivers and somewhat less than found in the 55/45 mix. The 55/45 mix, in particular, was chosen to include those drivers whose typical driving conditions should correspond with the 55 percent urban and 45 percent highway driving of the EPA composite fuel economy rating. Each line of the data block then presents summary statistics and distribution percentiles for the indicated subset.

For example, the second line in Table 7-4A shows that 693 of the 1978 car buyers answering question 6b indicated they kept accurate fuel economy records at all times. The harmonic-mean in-use fuel economy within this group is 18.2 mpg with a standard error of 0.23 mpg. The harmonic mean is calculated in units of fuel consumption (gallons per mile) and then inverted for tabulating as a mileage figure. Following standard practice, the standard error of this mean is estimated in MPG-space from the calculated relative error of the mean fuel consumption rate.

Arithmetic statistics also are presented in the tables. The arithmetic mean is a simple average of reported mileage figures and is tabulated with its standard error. The distribution's standard deviation also is given. In Table 7-4A, the arithmetic mean fuel economy is 20.4 mpg for the subset of accurate record-keepers; their in-use fuel economy distribution has a standard deviation of 7.4 mpg. As is typical of fuel economy data, the harmonic mean is less than the simple arithmetic average since it weights the lower-mileage cars more heavily.

The remaining information found in tables like Table 7-4A is related to the distributional properties of the subsets. In some instances, figures accompany the data tables and present histograms of responses for the aggregate group of all respondents. However, the large number of distributions and subsets makes it impractical to include additional figures. The estimated percentiles, then, are a concise method of tabulating the distributions' forms and can be used to construct histograms if desired.

In their tabulated form, the percentiles reveal how closely each subset clusters about its center, e.g., by the fuel economy range between pairs of percentiles. The percentiles also report the median fuel economy and, by simple linear interpolation (between the 20th and 30th and the 70th and 80th percentiles), can be used to estimate quartiles. A more sophisticated use of the percentiles is to construct cumulative distribution

functions (CDF's). The CDF, which is easily drawn on probability graph paper from either the cumulative percentages of histograms or the tabulated percentiles, is a standard method of summarizing a distribution's statistical properties. Section B-2 gives examples of how the CDF can be used for analysis and explains in more detail the way in which the percentiles have been estimated.

7.3.2 Data Tables for Fuel Economy Shortfall

The second data table format found in this chapter is used to present the important statistics on fuel economy shortfall. The first example of this table may be seen in Table 7-14A, which examines the shortfall perceived by the buyers of 1978 cars. It uses the overall in-use fuel economy of question 6b and the owner-reported EPA composite rating of question 24. The purposes of this table are to present the summary statistics on average shortfall and to tabulate the co-efficients of the GPM-space shortfall regression.

As seen in Table 7-14A, the title block at the upper right defines the distribution and its sources in a manner similar to the first format. Because the shortfall calculations require data for both in-use and EPA fuel economies, sample sizes are typically much smaller than in the tables of the fuel economy distributions themselves. Of the 4,414 1978 car buyers participating in the owner survey, for example, only 1,395 (or 31.6 percent) provided enough information to permit the shortfall analysis of Table 7-14A.

The mean shortfall is quantified in two ways in these tables: as a shortfall in MPG numbers (hence, a negative mean value) and as an increase in fuel consumption rates. The GPM-space statistics are tabulated in units of gallons per mile, so that the 0.0071 gpm mean shown in Table 7-14A for all respondents represents a 7.1 gallon increase in fuel consumption over 1,000 miles, compared to the EPA fuel economy estimate.

Standard errors and the distribution standard deviations are given in both MPG- and GPM-space for these mean shortfall values.

The shortfall tables also include the results of linear regression analysis performed in GPM-space. The statistics presented are the intercept and slope of the regression line with associated standard errors. The regression model estimates the in-use fuel consumption rate of the sample subset as a function of fuel consumption during EPA testing; the model has been used extensively in previous shortfall analyses for the U.S. Department of Energy.

While the regression model is presented in terms of fuel consumption, it may be used to predict shortfall at selected fuel economies. For example, at an EPA fuel economy of 20 mpg, the EPA fuel consumption rate is 0.0500 gpm. The regression for all respondents in Table 7-14A predicts an in-use fuel consumption of 0.0569 gpm, or 17.6 mpg. This represents a 12 percent fuel economy shortfall.

In general, an important use of the data found in this section is the comparison of results across tables. Because the criteria which define subsets are applied consistently, the several subsets represent comparable groups in all tables. For example, Tables 7-14A and 7-18A present the perceived and actual shortfall for the survey's 1978 car buyers. In all subset categories, these participants perceived a larger shortfall (measured in gallons per mile) than indicated by the analysis of actual shortfall. The example may be explored further by examining the tables comparing perceived and actual EPA ratings. Other matters, such as the comparison of perceived and actual shortfall by driving mode, may be analyzed using the tables of secondary distributions found later in this section.

7.4 PRESENTATION OF SECONDARY DISTRIBUTIONS

The remaining fuel economy data of the first owner survey is presented in the following tables which use the data table formats described in Section 7.3. The tables found here are:

- In-Use Fuel Economy of the New 1978 Vehicle
 - city driving (Tables 7-22 A/B)
 - highway driving (Tables 7-23 A/B)
- Owner-Reported EPA Fuel Economy of the New 1978 Vehicle
 - city rating (Tables 7-24 A/B)
 - highway rating (Tables 7-25 A/B)
- Actual EPA Fuel Economy of the New Vehicle
 - city rating (Tables 7-26 A/B) (1978 only)
 - composite rating (Tables 7-27 A/B) (1979 only)
 - highway rating (Tables 7-28 A/D) (1978 and 1979)
- In-Use Fuel Economy of the Replaced Vehicle (1978 and 1979)
 - city driving (Tables 7-29 A/D)
 - highway driving (Tables 7-30 A/D)
- Comparison of EPA Fuel Economies -- Owner-reported minus true rating (1978)
 - city rating (Tables 7-31 A/B)
 - highway rating (Tables 7-32 A/B)
- Perceived Shortfall -- Overall in-use fuel economy versus owner-reported EPA ratings (1978)
 - city rating (Tables 7-33 A/B)
 - highway rating (Tables 7-34 A/B)
- Perceived Shortfall -- In-use fuel economy versus owner-reported EPA ratings by driving mode (1978)

- city driving (Tables 7-35 A/B)
- highway driving (Tables 7-36 A/B)
- Shortfall -- In-use fuel economy versus EPA ratings
 - city rating (Tables 7-37 A/B) (1978 only)
 - composite rating (Tables 7-38 A/B) (1979 only)
 - highway rating (Tables 7-39 A/D) (1978 and 1979)
- Shortfall -- In-use fuel economy versus EPA ratings by driving mode (1978)
 - city driving (Tables 7-40 A/B)
 - highway driving (Tables 7-41 A/B).

FIGURE 7-1A: OVERALL IN-USE FUEL ECONOMY

(SOURCE: QUESTION 6B)

SURVEY = MY78 CAR (AUG)

FREQUENCY BAR CHART

MPG		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
< 10	***	21	21	0.52	0.52
10	*****	50	71	1.25	1.77
11	*****	70	141	1.75	3.52
12	*****	150	291	3.74	7.26
13	*****	119	410	2.97	10.22
14	*****	240	650	5.99	16.21
15	*****	353	1003	8.80	25.01
16	*****	343	1346	8.55	33.57
17	*****	338	1684	8.43	42.00
18	*****	418	2102	10.42	52.42
19	*****	216	2318	5.39	57.81
20	*****	368	2686	9.18	66.98
21	*****	159	2845	3.97	70.95
22	*****	159	3004	3.97	74.91
23	*****	112	3116	2.79	77.71
24	*****	85	3201	2.12	79.83
25	*****	168	3369	4.19	84.01
26	*****	74	3443	1.85	85.86
27	*****	65	3508	1.62	87.48
28	*****	97	3605	2.42	89.90
29	*****	36	3641	0.90	90.80
30	*****	135	3776	3.37	94.16
31	*****	29	3805	0.72	94.89
32	*****	47	3852	1.17	96.06
33	***	23	3875	0.57	96.63
34	***	25	3900	0.62	97.26
35 - 40	*****	79	3979	1.97	99.23
> 40	****	31	4010	0.77	100.00

30 60 90 120 150 180 210 240 270 300 330 360 390 420

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-4A

DISTRIBUTION Overall In-Use Fuel Economy of New Vehicle

SOURCES Question 6(b)

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 4010

NOT REPORTED 404

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			RUN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		4010	18.1	.08	19.7	.10	6.2	4	12.8	14.5	15.6	16.7	17.8	19.0	20.8	23.6	28.1	50	
RECORD KEEPING BEHAVIOR	Based on Records	693	18.2	.23	20.4	.28	7.4	7	12.3	14.0	15.3	16.6	18.1	19.9	22.3	25.6	29.7	50	
	Based on Checks	2456	18.1	.11	19.7	.12	6.0	4	13.0	14.6	15.8	16.8	17.8	19.0	20.6	23.4	27.8	50	
	Based on Perception	861	17.9	.17	19.3	.19	5.7	8	13.0	14.4	15.3	16.4	17.6	18.7	20.2	22.8	27.0	43	
DRIVING PATTERN	Urban Driving	1 369	17.1	.25	18.6	.29	5.5	8	12.2	13.6	14.7	15.8	16.9	18.2	19.8	22.0	25.7	40	
		2 57	15.7	.61	17.3	.77	5.8	9	11.6	12.1	13.0	14.1	15.4	17.0	18.4	19.8	24.0	40	
	Non-Urban Driving	1 996	19.0	.18	20.7	.21	6.5	4	13.6	15.4	16.5	17.4	18.4	19.9	22.0	24.9	29.2	50	
		2 173	19.0	.48	21.4	.60	7.9	9	12.4	15.0	15.9	16.9	18.4	20.7	23.7	27.4	31.4	49	
	SS/45 Mix	1 231	18.5	.39	20.3	.42	6.4	7	13.2	14.6	15.7	16.9	18.4	20.0	22.2	25.0	29.0	43	
		2 45	18.1	1.15	21.1	1.23	8.3	7	10.6	14.1	14.8	16.6	19.2	21.5	23.7	27.2	32.6	41	

^{1/} All Respondents with Given Driving Pattern

^{2/} Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-1B: OVERALL IN-USE FUEL ECONOMY

(SOURCE: QUESTION 6B)

SURVEY = MY78 TRUCK (AUG)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-4 B

DISTRIBUTION Overall In-Use Fuel Economy of New Vehicle

SOURCES Question 6(b)

GROUP 1978 Trucks (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 910 **NOT REPORTED** 51

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		910	15.2	.16	16.8	.18	5.4	5	10.2	11.9	12.8	13.8	14.9	16.4	18.3	21.0	24.2	35	
RECORD KEEPING BEHAVIOR	Based on Records	153	14.8	.41	16.4	.43	5.3	5	9.0	11.8	12.6	13.5	14.7	16.3	18.1	20.1	23.3	35	
	Based on Checks	589	15.3	.20	16.9	.22	5.4	5	10.5	11.9	12.9	13.8	14.8	16.3	18.5	21.6	24.7	35	
	Based on Perception	168	15.1	.36	16.6	.40	5.1	8	9.8	11.4	13.1	14.2	15.3	16.7	18.3	20.0	22.6	31	
DRIVING PATTERN	Urban Driving	1 52	14.2	.65	15.8	.74	5.4	8	--	10.4	12.1	13.4	14.1	15.2	17.3	19.7	21.8	31	
		2 10	12.9	1.35	14.2	1.46	4.6	8	--	--	--	--	--	--	--	--	--	22	
	Non-Urban Driving	1 326	15.2	.29	16.8	.29	5.3	5	10.6	11.9	12.8	13.7	14.9	16.5	18.6	21.2	24.0	35	
		2 62	15.5	.74	17.1	.65	5.1	5	10.4	12.6	13.3	14.0	15.3	17.0	19.1	21.4	23.8	29	
	SS/45 Mix	1 44	15.4	.74	17.0	.85	5.6	8	10.5	12.5	13.9	14.0	14.6	15.9	18.1	21.4	24.9	32	
		2 7	14.7	1.24	15.4	1.49	4.0	12	--	--	--	--	--	--	--	--	--	21	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-1C: OVERALL IN-USE FUEL ECONOMY

(SOURCE: QUESTION 6B)

SURVEY = MY79 CAR (OCT)

FREQUENCY BAR CHART

MPG		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
< 10	*****	37	37	0.97	0.97
10	*****	103	140	2.69	3.66
11	*****	58	198	1.52	5.18
12	*****	203	401	5.31	10.48
13	*****	159	560	4.16	14.64
14	*****	298	858	7.79	22.43
15	*****	422	1280	11.03	33.46
16	*****	366	1646	9.57	43.02
17	*****	370	2016	9.67	52.69
18	*****	467	2483	12.21	64.90
19	*****	215	2698	5.62	70.52
20	*****	308	3006	8.05	78.57
21	*****	139	3145	3.63	82.20
22	*****	111	3256	2.90	85.10
23	*****	74	3330	1.93	87.04
24	*****	76	3406	1.99	89.02
25	*****	102	3508	2.67	91.69
26	*****	48	3556	1.25	92.94
27	*****	40	3596	1.05	93.99
28	*****	46	3642	1.20	95.19
29	***	21	3663	0.55	95.74
30	*****	79	3742	2.06	97.80
31	**	15	3757	0.39	98.20
32	**	17	3774	0.44	98.64
33	**	17	3791	0.44	99.09
34	*	6	3797	0.16	99.24
35 - 40	**	18	3815	0.47	99.71
> 40	*	11	3826	0.29	100.00

30 60 90 120 150 180 210 240 270 300 330 360 390 420 450

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-4 C

DISTRIBUTION Overall In-Use Fuel Economy of New Vehicle

SOURCES Question 6(b)

GROUP 1979 Car (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3826 **NOT REPORTED** 493

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		3826	16.7	.07	18.0	.08	5.1	6	12.0	13.7	14.7	15.7	16.7	17.6	18.7	20.4	24.3	50	
RECORD KEEPING BEHAVIOR	Based on Records	688	16.3	.19	17.8	.22	5.8	6	11.2	12.8	14.0	15.2	16.3	17.4	18.8	20.9	25.0	46	
	Based on Checks	2324	17.0	.09	18.2	.11	5.1	6	12.4	14.0	15.0	15.9	16.9	17.8	18.9	20.7	24.7	50	
	Based on Perception	814	16.2	.15	17.3	.16	4.5	6	11.7	13.5	14.5	15.4	16.3	17.2	18.0	19.4	22.5	38	
DRIVING PATTERN	Urban Driving	1 369	15.6	.21	16.7	.23	4.4	8	11.1	12.3	13.5	14.6	15.5	16.5	17.8	19.7	22.4	33	
		2 54	14.5	.46	15.4	.56	4.1	10	--	--	12.1	13.5	14.1	14.9	16.2	17.4	19.7	29	
	Non-Urban Driving	1 1061	17.7	.14	19.0	.17	5.5	7	13.1	14.6	15.7	16.7	17.6	18.4	19.4	21.5	26.0	50	
		2 203	17.9	.35	19.5	.42	6.0	10	12.7	14.3	15.4	16.8	18.0	19.0	20.2	22.5	26.6	43	
	55/45 Mix	1 190	16.4	.33	17.8	.40	5.6	9	11.5	13.2	14.3	15.3	16.3	17.2	18.3	20.1	24.4	50	
		2 36	15.2	.70	16.5	.87	5.2	10	--	11.9	12.8	14.6	15.1	15.5	17.1	18.6	23.1	33	

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-1D: OVERALL IN-USE FUEL ECONOMY

(SOURCE: QUESTION 6B)

SURVEY = MY79 TRUCK (OCT)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE <u>7-4D</u>	
DISTRIBUTION <u>Overall In-Use Fuel Economy of New Vehicle</u>	
SOURCES <u>Question 6(b)</u>	
GROUP	<u>1979 Truck (October 1979 Purchase)</u>
UNITS	<u>Miles per Gallon</u>
SAMPLE SIZE	<u>866</u> NOT REPORTED <u>62</u>

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		866	14.7	.17	16.3	.18	5.2	3	9.8	11.4	12.5	13.4	14.5	16.0	17.8	20.1	23.3	36	
RECORD KEEPING BEHAVIOR	Based on Records	156	14.3	.41	16.1	.45	5.6	5	9.6	10.6	11.9	13.0	14.2	15.9	18.2	20.6	23.5	30	
	Based on Checks	576	14.9	.19	16.3	.21	5.0	6	9.9	11.6	12.6	13.5	14.7	16.1	17.8	19.9	23.0	33	
	Based on Perception	134	14.4	.56	16.4	.50	5.8	3	10.0	11.4	12.6	13.4	14.2	15.5	17.5	20.1	24.0	36	
DRIVING PATTERN	Urban Driving	1 43	14.8	.59	15.8	.65	4.2	8	10.9	11.9	13.1	13.8	14.4	15.4	16.7	18.1	20.7	31	
		2 10	13.4	1.42	14.7	1.44	4.5	8	--	--	--	--	--	--	--	--	--	22	
	Non-Urban Driving	1 342	15.1	.27	16.8	.30	5.4	6	9.9	11.8	13.0	13.9	15.0	16.5	18.5	20.8	24.3	35	
		2 67	14.4	.60	16.2	.71	5.8	8	9.0	10.6	12.0	12.9	13.9	15.7	18.2	20.9	24.6	30	
	SS/45 Mix	1 43	14.5	.67	16.1	.83	5.5	9	--	--	10.0	13.5	14.0	14.8	17.4	19.7	27.4	30	
		2 9	13.3	.84	13.8	.95	2.9	10	--	--	--	--	--	--	--	--	--	20	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7- 5A

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(city and highway driving)

SOURCES Question 25

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 2849 **NOT REPORTED** 1565

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		2849	18.5	.10	20.3	.12	6.6	6	13.1	14.6	15.8	16.9	18.0	19.4	21.4	24.5	29.0	52	
RECORD KEEPING BEHAVIOR	Based on Records	568	18.9	.27	21.3	.33	7.9	6	12.7	14.3	15.7	17.1	18.7	20.8	23.5	26.7	31.0	50	
	Based on Checks	1851	18.5	.12	20.1	.15	6.3	7	13.3	14.7	15.9	16.9	18.0	19.2	21.1	24.2	28.7	52	
	Based on Perception	430	18.1	.23	19.6	.28	5.9	9	13.2	14.3	15.5	16.8	17.9	18.8	20.1	22.8	27.6	45	
DRIVING PATTERN	Urban Driving	1 ¹ 155	17.7	.37	19.1	.47	5.9	11	12.6	13.9	14.8	16.0	17.1	18.3	20.0	22.9	27.2	45	
		2 ² 23	15.4	.71	16.2	.82	4.0	11	--	--	12.9	14.1	15.3	16.2	16.5	18.5	20.3	27	
	Non-Urban Driving	1 ¹ 767	19.1	.20	20.9	.24	6.8	10	13.8	15.1	16.4	17.4	18.5	19.9	22.1	25.3	29.5	52	
		2 ² 152	19.2	.54	22.0	.70	8.6	10	12.9	14.5	15.8	17.1	18.8	21.0	24.1	28.1	32.7	49	
	55/45 Mix	1 ¹ 180	19.0	.50	21.1	.52	7.0	6	13.3	14.5	15.9	17.6	19.3	21.2	23.4	26.2	30.0	45	
		2 ² 39	19.0	1.49	22.3	1.35	1.3	6	12.4	14.0	15.6	18.6	21.2	23.0	25.0	28.7	33.6	40	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

EXAMPLE DISTRIBUTION

A normal distribution curve is shown, centered at 50. The horizontal axis is labeled 'PERCENTILES' and has tick marks at 10, 20, 30, 40, 50, 60, 70, 80, and 90. The curve is shaded with vertical lines, representing the distribution of scores across these percentiles. The left tail is labeled 'MIN' and the right tail is labeled 'MAX'.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-5B

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(city and highway driving)

SOURCES Question 25

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 687 **NOT REPORTED** 274

[illegible]

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-6A

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(Estimated)

SOURCES Question 25

GROUP 1979 Cars (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3418 **NOT REPORTED** 901

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		3418	16.7	.08	17.9	.09	5.2	6	12.0	13.5	14.6	15.6	16.6	17.6	18.7	20.5	24.3	51	
RECORD KEEPING BEHAVIOR	Based on Records	673	16.3	.19	17.9	.23	6.0	6	11.3	12.7	13.9	15.1	16.3	17.4	18.7	20.9	25.1	46	
	Based on Checks	2212	16.9	.09	18.1	.11	5.1	6	12.4	13.9	14.8	15.8	16.8	17.7	18.8	20.5	24.5	51	
	Based on Perception	533	16.1	.19	17.2	.20	4.5	8	11.1	13.2	14.3	15.3	16.3	17.1	18.0	19.7	22.6	35	
DRIVING PATTERN	Urban Driving	¹ 313	15.5	.24	16.6	.26	4.5	8	10.8	12.6	13.6	14.4	15.2	16.3	17.6	19.5	22.6	31	
		² 54	14.3	.50	15.2	.56	4.1	8	10.0	11.2	12.6	13.4	14.0	15.0	16.2	17.4	19.5	29	
	Non-Urban Driving	¹ 970	17.7	.15	19.0	.18	5.5	8	13.0	14.4	15.5	16.5	17.5	18.3	19.3	21.3	26.0	51	
		² 197	17.8	.35	19.4	.44	6.2	8	12.8	14.2	15.2	16.4	17.6	18.8	20.1	22.4	26.7	43	
	55/45 Mix	¹ 171	16.0	.34	17.2	.38	4.9	8	10.8	13.2	14.3	15.1	16.0	16.9	17.8	19.3	22.8	37	
		² 36	15.0	.70	16.3	.85	5.1	10	11.4	11.5	12.8	14.3	15.2	16.0	17.2	18.3	23.0	33	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-6B

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(Estimated)

SOURCES Question 25

GROUP 1979 Trucks

UNITS Miles Per Gallon

SAMPLE SIZE 813 **NOT REPORTED** 115

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		813	14.7	.17	16.2	.18	5.2	5	9.8	11.4	12.4	13.4	14.6	16.1	17.9	20.2	23.4	36	
RECORD KEEPING BEHAVIOR	Based on Records	156	14.4	.41	16.2	.45	5.7	5	9.3	10.8	11.8	12.9	14.4	16.0	18.0	20.4	24.1	35	
	Based on Checks	555	14.7	.20	16.2	.21	5.0	5	9.9	11.5	12.5	13.5	14.6	16.0	17.8	19.9	23.0	30	
	Based on Perception	102	15.0	.50	16.7	.57	5.7	6	10.1	11.6	12.6	13.4	14.5	16.2	18.5	21.0	23.7	36	
DRIVING PATTERN	Urban Driving	1 40	14.8	.62	15.9	.69	4.3	8	11.0	11.7	13.1	14.0	14.5	15.2	16.7	18.8	20.5	31	
		2 10	13.5	1.40	14.7	1.39	4.4	8	--	--	--	--	--	--	--	--	--	22	
	Non-Urban Driving	1 330	15.1	.28	16.8	.30	5.5	6	10.2	11.7	12.8	13.9	15.1	16.6	18.5	21.0	24.5	35	
		2 67	14.4	.63	16.5	.77	6.3	8	9.1	10.8	11.6	12.6	14.2	16.1	18.5	21.7	25.9	35	
	55/45 Mix	1 41	14.2	.68	15.7	.80	5.2	8	--	10.3	12.2	13.1	13.5	14.7	17.2	19.6	22.3	30	
		2 9	13.4	.84	13.9	.94	2.8	10	--	--	--	--	--	--	--	--	--	--	20

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-2A: OWNER-REPORTED EPA COMPOSITE FUEL ECONOMY

(SOURCE: QUESTION 24)

SURVEY = MY78 CAR (AUG)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-7A

DISTRIBUTION Owner - Reported EPA Fuel Economy of New Vehicle
(Composite)

SOURCES Question 24

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 1445 NOT REPORTED 2969

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		1445	21.0	.14	22.6	.18	6.7	11	15.6	16.9	18.0	19.0	20.2	21.8	23.8	26.9	31.8	51	
RECORD KEEPING BEHAVIOR	Based on Records	321	22.2	.35	24.3	.44	7.9	11	15.9	17.2	18.7	19.9	21.3	23.4	26.4	29.9	34.9	50	
	Based on Checks	907	20.8	.17	22.3	.21	6.3	11	15.7	16.9	17.9	18.9	20.1	21.5	23.3	26.0	30.7	51	
	Based on Perception	217	20.2	.35	21.7	.41	6.1	11	14.5	16.6	17.7	18.3	19.2	20.8	23.1	26.2	30.4	40	
DRIVING PATTERN	Urban Driving ¹	104	20.5	.49	22.0	.64	6.6	14	15.0	16.7	17.7	18.5	19.6	20.8	22.3	25.3	31.7	45	
	Urban Driving ²	20	18.6	.95	20.0	1.55	6.9	14	--	--	--	--	--	--	--	--	--	45	
	Non-Urban Driving ¹	357	21.1	.28	22.7	.36	6.8	12	15.7	17.2	18.1	19.0	20.0	21.6	23.7	26.8	31.7	50	
	Non-Urban Driving ²	75	22.1	.79	24.7	1.03	9.0	14	15.1	16.6	18.6	20.0	21.2	23.1	26.4	30.8	38.1	50	
	SS/45 Mix ¹	86	21.3	.58	22.9	.72	6.6	12	15.9	17.0	18.2	19.5	21.0	22.4	23.8	25.9	32.1	45	
	SS/45 Mix ²	22	22.1	1.14	23.6	1.44	6.7	15	--	17.1	19.9	20.8	21.3	23.7	25.3	23.9	28.9	45	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-2B: OWNER-REPORTED EPA COMPOSITE FUEL ECONOMY

(SOURCE: QUESTION 24)

SURVEY = MY78 TRUCK (AUG)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-7B

DISTRIBUTION Owner - Reported EPA Fuel Economy of New Vehicle
(Composite)

SOURCES Question 24

GROUP 1978 Truck (August 1978)

UNITS Miles Per Gallon

SAMPLE SIZE 282 NOT REPORTED 679

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		282	18.7	.28	20.1	.33	5.6	10	13.7	14.9	15.6	16.5	17.9	20.0	22.5	24.9	27.1	44	
RECORD KEEPING BEHAVIOR	Based on Records	58	18.9	.68	20.5	.82	6.3	13	12.4	14.1	15.4	16.7	18.7	20.9	22.7	25.0	27.5	38	
	Based on Checks	187	18.8	.34	20.1	.40	5.4	10	13.8	15.1	15.8	16.6	17.8	19.9	22.4	25.0	27.1	44	
	Based on Perception	37	18.1	.75	19.3	.84	5.1	12	14.3	13.6	15.5	15.9	16.5	19.2	22.8	24.0	26.5	38	
DRIVING PATTERN	Urban Driving	1 ¹ 2 ²	16 4	19.2 20.7	1.47 5.18	21.4 25.5	1.97 6.38	7.9 12.8	14 14	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	38 38	
	Non-Urban Driving	1 ¹ 2 ²	106 22	19.2 19.3	.48 1.09	20.5 20.6	.52 1.20	5.3 5.6	10 13	14.2 --	15.0 --	15.6 15.7	17.3 18.1	19.5 20.0	21.4 21.2	22.9 23.4	24.6 22.3	27.4 29.0	35 35
	55/45 Mix	1 ¹ 2 ²	11 0	18.4 --	1.53 --	19.8 --	1.77 --	5.9 --	14 --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	29 --	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-3A: OWNER-REPORTED EPA ESTIMATED FUEL ECONOMY

(SOURCE: QUESTION 24)

SURVEY = NY79 CAR (OCT)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-8A

DISTRIBUTION Owner - Reported EPA Fuel Economy of New Vehicle
(City - EPA Estimated)

SOURCES Question 24

GROUP 1979 Car (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 2288 **NOT REPORTED** 2031

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN 0	ESTIMATED PERCENTILES									MAX 100
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		2288	18.2	.09	19.3	.11	5.3	9	13.8	15.1	16.0	16.7	17.4	18.3	19.8	22.1	25.5	50
RECORD KEEPING BEHAVIOR	Based on Records	488	18.4	.20	19.8	.27	6.0	10	13.7	15.0	15.9	16.6	17.3	18.4	20.4	23.2	26.7	50
	Based on Checks	1408	18.3	.11	19.3	.14	5.1	9	14.0	15.1	16.0	16.7	17.4	18.4	19.8	22.0	25.3	50
	Based on Perception	392	17.9	.20	18.8	.24	4.8	10	13.6	15.0	16.0	16.6	17.1	17.9	19.2	21.3	24.5	45
DRIVING PATTERN	Urban Driving	1 204	17.8	.25	18.6	.28	4.0	12	13.2	14.8	15.8	16.7	17.5	18.2	19.1	21.1	24.2	33
		2 37	17.4	.59	18.3	.77	4.7	13	13.4	15.3	16.8	17.4	18.8	18.1	15.4	21.2	24.1	32
	Non-Urban Driving	1 645	19.0	.18	20.3	.23	5.9	10	14.4	15.5	16.3	17.1	18.0	19.2	20.9	23.5	27.4	50
		2 146	19.5	.42	21.0	.52	6.3	11	14.9	15.7	16.7	17.5	18.3	19.9	22.4	25.3	28.1	45
	55/45 Mix	1 104	17.6	.37	18.6	.46	4.6	10	13.2	15.1	15.4	16.1	16.9	17.6	18.6	20.9	24.5	39
		2 23	17.2	.78	18.0	.83	4.0	12	11.3	13.8	14.9	16.1	17.3	18.3	18.8	20.9	29.6	25

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-3B: OWNER-REPORTED EPA ESTIMATED FUEL ECONOMY

(SOURCE: QUESTION 24)

SURVEY = HY79 TRUCK (OCT)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-88

DISTRIBUTION Owner - Reported EPA Fuel Economy of New Vehicle
(City - EPA Estimated)

SOURCES Question 24

GROUP 1979 Truck (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 409 NOT REPORTED 519

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		409	17.8	.22	19.0	.25	5.1	8	13.0	14.3	15.4	16.2	17.0	18.2	20.1	22.5	25.4	36	
RECORD KEEPING BEHAVIOR	Based on Records	82	18.3	.58	19.8	.62	5.6	8	13.7	14.8	15.8	16.7	17.8	19.2	21.3	24.0	25.7	36	
	Based on Checks	273	17.8	.24	18.8	.29	4.7	11	14.5	14.2	15.5	16.3	16.8	17.8	19.7	22.1	24.8	36	
	Based on Perception	54	17.3	.67	19.0	.85	6.2	10	10.3	13.2	14.1	15.4	17.0	18.6	20.1	22.3	28.1	36	
DRIVING PATTERN	Urban Driving	18	17.5	.94	18.3	.94	4.0	11	--	--	--	--	--	--	--	--	--	28	
		4	17.8	1.11	18.0	1.00	2.0	15	--	--	--	--	--	--	--	--	--	19	
	Non-Urban Driving	159	18.2	.34	19.4	.42	5.3	13	15.8	14.2	15.6	16.5	17.4	18.8	20.8	23.1	26.0	36	
		37	18.9	.77	20.3	.96	5.8	13	15.8	14.5	16.1	16.6	17.9	19.7	21.8	24.2	25.0	36	
	55/45 Mix	17	17.3	1.04	18.4	1.24	5.1	12	--	--	--	--	--	--	--	--	--	31	
		3	16.2	1.26	16.3	1.20	2.1	14	--	--	--	--	--	--	--	--	--	18	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-9A

DISTRIBUTION EPA Fuel Economy of New Vehicle
(Composite)

SOURCES Gas Mileage Guide

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3910 NOT REPORTED 504

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		3910	20.7	.09	21.8	.09	5.4	11	15.9	17.1	18.4	19.3	20.0	20.6	21.9	24.7	29.9	40	
RECORD KEEPING BEHAVIOR	Based on Records	620	22.0	.22	23.5	.25	6.3	11	16.3	17.8	19.0	19.8	20.6	22.3	25.2	29.0	32.4	38	
	Based on Checks	2281	20.6	.13	21.8	.11	5.4	12	15.8	17.1	18.4	19.4	20.0	20.7	21.9	24.6	29.8	40	
	Based on Perception	1009	20.1	.12	20.9	.15	4.6	13	16.0	16.8	18.0	18.9	19.6	20.2	21.0	22.4	26.3	40	
DRIVING PATTERN	Urban Driving	1 413	20.6	.22	21.6	.25	5.0	11	15.6	17.4	18.8	19.4	20.1	20.7	21.3	23.0	28.1	40	
		2 53	20.9	.62	22.0	.77	5.6	14	--	--	--	--	--	--	--	--	--	38	
	Non-Urban Driving	1 945	20.8	.15	21.9	.18	5.5	11	16.1	17.0	18.3	19.3	19.9	20.5	22.0	25.0	30.4	38	
		2 149	21.8	.44	23.3	.53	6.5	14	--	--	--	--	--	--	--	--	--	38	
	SS/45 Mix	1 212	20.2	.92	22.2	.40	5.8	12	15.8	17.3	18.7	19.5	20.0	20.9	22.7	26.0	30.4	40	
		2 41	22.1	.84	23.6	.97	6.2	15	--	--	--	--	--	--	--	--	--	--	38

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-4B: EPA COMPOSITE FUEL ECONOMY

(SOURCE: 1978 GAS MILEAGE GUIDE)

SURVEY - MY78 TRUCK (AUG)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-9B

DISTRIBUTION EPA Fuel Economy of New Vehicle
(Composite)

SOURCES Gas Mileage Guide

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 791 NOT REPORTED 170

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN 0	ESTIMATED PERCENTILES									MAX 100
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		791	18.7	.22	19.9	.17	4.8	13	--	--	--	--	--	--	--	--	--	33
RECORD KEEPING BEHAVIOR	Based on Records	131	18.8	.84	20.6	.48	5.5	13	--	--	--	--	--	--	--	--	--	33
	Based on Checks	481	18.9	.27	20.0	.22	4.8	13	--	--	--	--	--	--	--	--	--	33
	Based on Perception	179	18.2	.26	19.0	.32	4.2	14	--	--	--	--	--	--	--	--	--	33
DRIVING PATTERN	Urban Driving	1/ 43	18.4	.63	19.5	.77	5.1	14	--	--	--	--	--	--	--	--	--	33
		2/ 10	19.1	1.60	20.6	2.08	6.6	14	--	--	--	--	--	--	--	--	--	33
	Non-Urban Driving	1/ 279	18.5	.41	19.8	.28	4.7	13	--	--	--	--	--	--	--	--	--	33
		2/ 55	18.0	1.75	20.8	.78	5.7	13	--	--	--	--	--	--	--	--	--	33
	SS/45 Mix	1/ 32	19.2	.70	20.1	.83	4.7	14	--	--	--	--	--	--	--	--	--	29
		2/ 4	18.1	2.59	19.5	3.33	6.7	14	--	--	--	--	--	--	--	--	--	29

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-5A: EPA ESTIMATED FUEL ECONOMY

(SOURCE: 1979 GAS MILEAGE GUIDE)

SURVEY = MY79 CAR (OCT)

FREQUENCY BAR CHART

MPG		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
< 10		1	1	0.03	0.03
10	***	33	34	0.91	0.94
11	*	8	42	0.22	1.16
12	*****	74	116	2.04	3.20
13	*****	57	173	1.57	4.77
14	*****	454	627	12.52	17.29
15	*****	427	1054	11.77	29.06
16	*****	559	1613	15.41	44.47
17	*****	602	2215	16.60	61.07
18	*****	524	2739	14.45	75.52
19	*****	202	2941	5.57	81.09
20	*****	134	3075	3.69	84.78
21	*****	202	3277	5.57	90.35
22	*****	62	3339	1.71	92.06
23	*	14	3353	0.39	92.45
24	*****	112	3465	3.09	95.53
25	*****	121	3586	3.34	98.87
26		2	3588	0.06	98.92
27		2	3590	0.06	98.98
28		2	3592	0.06	99.04
29	*	10	3602	0.28	99.31
30	*	8	3610	0.22	99.53
31		0	3610	0.00	99.53
32		0	3610	0.00	99.53
33		0	3610	0.00	99.53
34		0	3610	0.00	99.53
35 - 40	**	17	3627	0.47	100.00
> 40		0	3627	0.00	100.00

50 100 150 200 250 300 350 400 450 500 550 600

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-10A

DISTRIBUTION EPA Fuel Economy of New Vehicle
(City: EPA Estimated)

SOURCES Gas Mileage Guide

GROUP 1979 Car (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3931 **NOT REPORTED** 388

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		3931	16.8	.05	17.3	.05	3.1	9	13.8	14.3	15.1	15.8	16.4	16.9	17.6	18.6	20.6	30	
RECORD KEEPING BEHAVIOR	Based on Records	655	17.1	.12	17.6	.13	3.3	9	12.0	15.2	15.1	15.8	16.6	17.0	17.7	19.1	23.1	30	
	Based on Checks	2186	16.7	.06	17.2	.07	3.0	10	13.8	14.3	15.1	15.8	16.3	16.8	17.5	18.4	20.3	30	
	Based on Perception	1090	16.7	.09	17.1	.09	2.9	10	13.6	14.2	15.0	15.8	16.5	17.0	17.5	18.6	20.5	30	
DRIVING PATTERN	Urban Driving	1 416	16.9	.14	17.3	.14	2.9	10	13.5	14.5	15.3	16.0	16.6	17.2	17.7	18.5	20.4	30	
		2 51	16.7	.33	16.9	.35	2.5	11	--	--	--	--	--	--	--	--	--	25	
	Non-Urban Driving	1 1051	16.8	.09	17.3	.10	3.2	10	13.7	14.3	15.1	15.8	16.3	16.9	17.7	18.7	21.2	30	
		2 187	17.5	.22	18.1	.25	3.4	11	--	--	--	--	--	--	--	--	--	30	
	SS/45 Mix	1 190	16.7	.20	17.2	.22	3.0	10	15.6	13.9	14.8	15.9	16.5	16.9	17.4	18.6	20.5	25	
		2 35	16.7	.58	17.3	.61	3.6	10	--	--	--	--	--	--	--	--	--	25	

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 7-5B: EPA ESTIMATED FUEL ECONOMY

(SOURCE: 1979 GAS MILEAGE GUIDE)

SURVEY = NY79 TRUCK (OCT)

FREQUENCY BAR CHART

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-108

DISTRIBUTION EPA Fuel Economy for New Vehicle
(City: EPA Estimated)

SOURCES Gas Mileage Guide

GROUP 1979 Truck (October 1979 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 772 NOT REPORTED 156

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		772	15.4	.10	15.9	.12	3.2	11	--	--	--	--	--	--	--	--	--	27	
RECORD KEEPING BEHAVIOR	Based on Records	128	15.9	.27	16.5	.31	3.5	11	--	--	--	--	--	--	--	--	--	27	
	Based on Checks	493	15.3	.12	15.9	.14	3.2	11	--	--	--	--	--	--	--	--	--	27	
	Based on Perception	151	15.1	.21	15.6	.25	3.0	11	--	--	--	--	--	--	--	--	--	23	
DRIVING PATTERN	Urban Driving	1 35	15.5	.48	16.1	.55	3.3	13	--	--	--	--	--	--	--	--	--	23	
		2 9	15.7	.86	16.1	1.02	3.1	13	--	--	--	--	--	--	--	--	--	23	
	Non-Urban Driving	1 308	15.4	.16	16.0	.18	3.2	11	--	--	--	--	--	--	--	--	--	26	
		2 54	15.8	.42	16.5	.48	3.5	13	--	--	--	--	--	--	--	--	--	23	
	55/45 Mix	1 41	15.0	.39	15.4	.46	3.0	11	--	--	--	--	--	--	--	--	--	23	
		2 6	13.6	.82	13.8	.83	2.0	11	--	--	--	--	--	--	--	--	--	17	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-11A

DISTRIBUTION	In-Use Fuel Economy of Replaced Vehicle (city and highway driving)		
SOURCES	Question 9(c)		
GROUP	1978 Car	(August 1978 Purchase)	
UNITS	Miles Per Gallon		
SAMPLE SIZE	3270	NOT REPORTED	1144

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		3270	15.8	.08	17.3	.10	5.5	6	11.1	12.4	13.5	14.5	15.5	16.8	18.5	20.9	24.5	45	
RECORD KEEPING BEHAVIOR	Based on Records	580	15.7	.20	17.3	.24	5.8	7	10.9	12.0	13.1	14.2	15.3	16.8	18.9	21.4	24.9	40	
	Based on Checks	1977	15.8	.10	17.3	.12	5.3	6	11.2	12.4	13.5	14.4	15.4	16.7	18.5	20.9	24.4	43	
	Based on Perception	713	15.9	.18	17.4	.21	5.5	6	10.9	12.6	13.9	14.9	15.8	16.8	18.1	20.2	24.2	45	
DRIVING PATTERN	Urban Driving	1 298	15.9	.26	17.3	.32	5.5	7	10.9	12.2	13.3	14.4	15.6	17.0	18.6	20.7	24.4	43	
		2 48	15.5	.70	16.9	.73	5.0	7	6.3	11.8	13.1	14.1	15.5	17.0	18.5	20.5	22.4	29	
	Non-Urban Driving	1 808	16.3	.16	17.8	.20	5.5	8	11.2	13.0	13.9	14.8	15.9	17.2	18.8	21.2	25.4	40	
		2 146	16.1	.39	17.7	.49	6.0	9	11.2	12.3	13.3	14.4	15.7	17.1	18.8	21.3	26.2	40	
	55/45 Mix	1 180	15.8	.34	17.2	.41	5.5	7	11.2	12.6	13.5	14.4	15.6	16.9	18.3	20.2	23.1	45	
		2 37	15.7	.85	17.6	1.08	6.6	9	10.6	11.5	13.1	14.6	15.6	16.7	18.8	22.0	24.7	40	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-11B

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(city and highway driving)

SOURCES Question 9(c)

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 697 NOT REPORTED 264

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		697	14.7	.19	16.5	.22	5.8	5	9.7	11.2	12.4	13.5	14.6	16.1	18.0	20.5	24.2	41	
RECORD KEEPING BEHAVIOR	Based on Records	118	14.2	.50	16.3	.56	6.1	6	9.6	10.8	11.7	12.9	14.2	15.8	17.9	20.7	24.8	35	
	Based on Checks	443	14.7	.23	16.5	.27	5.8	6	9.7	11.1	12.5	13.6	14.7	15.9	17.7	20.4	24.3	41	
	Based on Perception																		
		136	14.8	.47	16.7	.49	5.7	5	10.0	11.6	12.6	13.6	14.9	16.4	18.3	20.5	23.2	35	
DRIVING PATTERN	Urban Driving	1 37	16.4	.82	17.8	.82	5.0	9	11.6	12.4	13.8	14.8	16.2	18.4	20.2	21.2	26.9	28	
		2 7	14.6	1.76	16.1	2.24	5.9	10	--	--	--	--	--	--	--	--	--	27	
	Non-Urban Driving	1 240	14.3	.35	16.4	.40	6.2	5	9.3	10.9	12.1	13.2	14.4	15.9	17.8	20.3	24.7	41	
		2 43	14.3	.86	16.5	.97	6.4	6	9.2	10.6	11.6	12.7	14.3	16.5	18.8	20.9	24.6	34	
	55/45 Mix	1 36	16.5	.90	18.4	1.04	6.2	10	8.4	11.1	12.8	14.9	15.9	18.3	21.9	23.9	25.7	33	
		2 7	14.8	1.80	16.6	2.52	6.7	11	--	--	--	--	--	--	--	--	--	27	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-11C

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(city and highway driving)

SOURCES Question 9(c)

GROUP 1979 Car (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3291 NOT REPORTED 1028

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		3291	15.4	.07	16.6	.08	4.7	6	11.1	12.3	13.5	14.3	15.2	16.2	17.4	19.0	22.2	43	
RECORD KEEPING BEHAVIOR	Based on Records	584	15.0	.16	16.1	.19	4.5	8	10.9	12.0	13.0	13.8	14.5	15.5	16.9	19.0	22.0	33	
	Based on Checks	1978	15.5	.09	16.7	.11	4.7	6	11.1	12.4	13.5	14.4	15.3	16.3	17.5	19.1	22.4	43	
	Based on Perception	729	15.5	.15	16.7	.17	4.6	7	11.1	12.5	13.6	14.6	15.5	16.4	17.5	19.0	21.8	40	
DRIVING PATTERN	Urban Driving	¹ 292	15.3	.22	16.4	.26	4.5	9	10.8	12.2	13.2	13.9	14.9	16.1	17.3	18.7	21.8	35	
		² 41	15.1	.62	16.3	.78	5.0	10	6.4	12.3	12.0	13.5	14.5	15.4	16.8	19.1	23.4	30	
	Non-Urban Driving	¹ 910	15.7	.14	16.9	.16	4.9	8	11.2	12.6	13.6	14.5	15.4	16.5	17.8	19.6	22.7	43	
		² 170	15.8	.34	17.0	.36	4.7	8	11.2	12.7	13.5	14.4	15.5	16.8	18.4	20.5	23.0	31	
	SS/45 Mix	¹ 167	15.6	.31	16.7	.34	4.4	8	11.2	12.7	13.7	14.6	15.3	16.0	17.1	19.4	23.3	31	
		² 31	15.1	.63	16.0	.80	4.4	11	--	12.2	14.1	14.4	14.6	15.6	16.1	17.7	19.9	28	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-11D

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(city and highway driving)

SOURCES Question 9(c)

GROUP 1979 Truck (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 736 NOT REPORTED 192

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		736	14.4	.16	15.8	.19	5.1	6	9.5	11.0	12.1	13.1	14.2	15.4	16.9	18.9	22.6	38	
RECORD KEEPING BEHAVIOR	Based on Records	134	14.6	.42	16.3	.49	5.7	7	9.1	10.8	12.0	13.0	14.2	15.8	18.0	21.2	24.8	32	
	Based on Checks	477	14.3	.19	15.6	.22	4.8	8	9.4	11.0	12.3	13.2	14.2	15.4	16.7	18.4	21.6	38	
	Based on Perception	125	14.3	.40	15.9	.48	5.4	6	10.1	11.0	11.8	12.7	13.9	15.4	17.1	19.2	22.9	37	
DRIVING PATTERN	Urban Driving	1 30	15.6	.85	16.9	.95	5.2	9	11.0	11.8	13.0	14.7	15.7	16.7	18.6	20.9	21.4	33	
		2 9	13.0	1.33	14.2	1.52	4.5	9	--	--	--	--	--	--	--	--	--	22	
	Non-Urban Driving	1 298	14.7	.25	16.1	.29	5.0	8	9.7	11.4	12.2	13.3	14.6	15.9	17.2	19.1	22.9	37	
		2 58	15.4	.69	17.2	.75	5.7	8	11.5	10.8	12.7	13.7	15.5	17.9	19.8	24.1	--	27	
	55/45 Mix	1 37	14.7	.76	16.4	.95	5.8	9	11.5	11.1	12.6	13.5	14.6	15.4	16.4	19.4	24.5	32	
		2 7	15.5	1.36	16.4	1.90	5.0	12	--	--	--	--	--	--	--	--	--	27	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-12A

DISTRIBUTION Comparison of EPA Composite Fuel Economies:
Owner Reported Minus True FE

SOURCES Question 24 and Gas Mileage Guide

GROUP 1978 Cars (August 1978 Purchase)

UNITS Miles per Gallon (except as noted)

SAMPLE SIZE 1295 NOT REPORTED 3119

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC *		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		1295	.3	.21	.2	.11	3.8	-17	-3.9	-2.6	-1.6	-1.0	-0.6	-0.2	0.5	1.7	3.9	31	
RECORD KEEPING BEHAVIOR	Based on Records	281	-.1	.36	.6	.25	4.2	-11	-3.7	-2.4	-1.5	-0.8	-0.5	-0.2	0.5	2.0	3.7	19	
	Based on Checks	831	.4	.27	.2	.13	3.7	-17	-3.9	-2.6	-1.6	-1.1	-0.7	-0.3	0.4	1.6	3.9	31	
	Based on Perception	183	.9	.64	0	.26	3.5	-11	-4.3	-3.0	-1.8	-1.1	-0.6	-0.1	0.6	1.8	3.7	12	
DRIVING PATTERN	Urban Driving	1 91	1.3	.70	-.5	.37	3.5	-12	-4.7	-3.0	-1.8	-1.1	-0.8	-0.7	-0.4	0.5	2.4	14	
		2 16	2.4	1.29	-.4	1.11	4.4	-8	--	--	--	--	--	--	--	--	--	14	
	Non-Urban Driving	1 322	-.2	.37	.5	.20	3.6	-13	-3.8	-2.2	-1.3	-0.9	-0.5	0.0	0.9	2.1	4.1	19	
		2 64	-1.1	.92	1.4	.66	5.3	-11	-3.0	-2.5	-1.4	-0.5	-0.3	0.0	1.7	4.1	5.4	19	
	55/45 Mix	1 81	-1.1	.86	1.1	.45	4.1	-9	-3.6	-2.2	-1.3	-0.6	0.0	0.4	1.0	2.4	5.5	17	
		2 22	-1.5	1.08	1.2	.87	4.1	-4	--	--	--	--	--	--	--	--	--	17	

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

* Difference in fuel consumption rates
(units of 10^{-3} gallons per mile).

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-128

DISTRIBUTION Comparison of EPA Composite Fuel Economies:
Owner Reported Minus True FE

SOURCES Question 24 and Gas Mileage Guide

GROUP 1978 Trucks (August 1978 Purchase)

UNITS Miles per Gallon (except as noted)

SAMPLE SIZE 236 NOT REPORTED 725

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC*		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		236	.5	.66	.3	.26	3.9	-10	-4.0	-2.9	-2.0	-1.3	-0.7	-0.1	0.6	1.8	4.8	25	
RECORD KEEPING BEHAVIOR	Based on Records	51	.4	1.45	.7	.59	4.2	-9	-4.0	-3.3	-1.9	-1.3	-0.6	0.4	1.5	3.3	7.9	9	
	Based on Checks	154	.8	.82	.1	.32	4.0	-10	-4.2	-3.0	-2.2	-1.5	-0.8	-0.1	0.5	1.4	3.7	25	
	Based on Perception	31	.5	1.81	.3	.57	3.2	-7	--	--	--	--	--	--	--	--	--	8	
DRIVING PATTERN	Urban Driving	1 15	.8	1.98	.3	.91	3.5	-6	--	--	--	--	--	--	--	--	--	9	
		2 4	3.3	5.03	1.3	2.87	5.7	-4	--	--	--	--	--	--	--	--	--	9	
	Non-Urban Driving	1 88	.5	1.05	.6	.36	3.4	-9	-3.3	-2.3	-1.6	-1.0	-0.6	-0.2	0.7	2.4	4.8	11	
		2 18	1.3	2.28	1.1	.88	3.7	-4	--	--	--	--	--	--	--	--	--	9	
	SS/45 Mix	1 9	2.4	2.74	.8	.94	2.8	-4	--	--	--	--	--	--	--	--	--	5	
		2 0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Difference in fuel consumption rates,
(units of 10^{-3} gallons per mile)

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-13A

DISTRIBUTION Comparison of EPA Estimated Fuel Economies:
Owner Reported Minus True FE
 SOURCES Question 24 and Gas Mileage Guide
 GROUP 1979 Cars (October 1978 Purchase)
 UNITS Miles per Gallon (except as noted)
 SAMPLE SIZE 2096 NOT REPORTED 2223

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC *		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		2096	-4.2	.25	1.9	0.10	4.6	-10	-2.4	-1.3	-0.8	-0.5	-0.2	0.6	2.0	4.0	7.5	27	
RECORD KEEPING BEHAVIOR	Based on Records	456	-4.4	.55	2.2	.24	5.1	-9	-2.6	-1.4	-0.8	-0.6	-0.3	0.4	1.8	4.7	9.7	25	
	Based on Checks	1276	-4.4	.31	1.9	.13	4.5	-10	-2.3	-1.1	-0.6	-0.4	-0.1	0.8	2.1	4.0	7.0	27	
	Based on Perception	364	-3.2	.61	1.5	.24	4.5	-9	-3.1	-1.5	-1.0	-0.8	-0.4	0.4	1.7	3.4	6.4	27	
DRIVING PATTERN	Urban Driving	1 185	-3.0	.78	1.2	.27	3.7	-9	-2.9	-1.4	-1.0	-0.8	-0.5	0.3	1.4	2.8	5.6	13	
		2 35	-2.5	1.84	1.4	.74	4.4	-4	--	--	--	--	--	--	--	--	--	13	
	Non-Urban Driving	1 596	-5.7	.46	2.7	.21	5.0	-9	-1.8	-1.1	-0.7	-0.3	0.3	1.4	2.9	5.3	9.4	27	
		2 134	-5.2	.97	2.8	.46	5.3	-9	-2.0	-1.0	-0.4	-0.2	0.0	0.9	2.8	6.3	10.9	22	
	SS/45 Mix	1 96	-1.8	1.08	1.0	.42	4.1	-7	-3.0	-1.7	-0.8	-0.2	-0.1	-0.2	0.2	2.0	5.7	16	
		2 23	-.7	2.07	.1	.51	2.5	-5	--	--	--	--	--	--	--	--	--	--	5

1/ All Respondents with Given Driving Pattern
 2/ Respondents Keeping Accurate Fuel Economy Records

*Difference in fuel consumption rates,
 (units of 10^{-3} gallons per mile)

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-138

DISTRIBUTION Comparison of EPA Estimated Fuel Economies:
Owner Reported Minus True FE

SOURCES Question 24 and Gas Mileage Guide

GROUP 1979 Trucks (October 1978 Purchase)

UNITS Miles per Gallon (except as noted)

SAMPLE SIZE 350 NOT REPORTED 578

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC *		ARITHMETIC			MIN 0	ESTIMATED PERCENTILES									MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		350	-6.0	.45	2.1	.17	3.1	-4	-0.8	-0.7	-0.5	-0.4	0.6	1.6	2.6	3.7	5.6	18
RECORD KEEPING BEHAVIOR	Based on Records	67	-6.8	1.04	2.6	.48	3.9	-1	--	--	--	--	1.3	1.4	2.6	3.5	6.8	18
	Based on Checks	238	-5.8	.54	2.0	.19	2.9	-4	--	--	--	-1.2	0.7	1.6	2.6	3.7	5.3	14
	Based on Perception	45	-5.7	1.27	2.3	.47	3.1	-4	--	--	--	--	1.1	2.0	2.7	4.0	6.2	13
DRIVING PATTERN	Urban Driving	1 15	-4.8	1.84	1.7	.62	2.4	0	--	--	--	--	--	--	--	--	--	6
		2 4	-8.4	5.46	2.3	1.32	2.6	0	--	--	--	--	--	--	--	--	--	6
	Non-Urban Driving	1 139	-7.1	.70	2.4	.27	3.2	-4	-3.4	-2.9	-1.1	0.1	1.1	2.0	3.0	4.2	6.1	18
		2 30	-7.2	1.60	2.7	.76	4.2	-1	--	--	--	--	--	--	--	--	--	18
	55/45 Mix	1 14	-3.1	2.55	1.0	.63	2.4	-2	--	--	--	--	--	--	--	--	--	5
		2 0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Difference in fuel consumption rates
(units of 10^{-3} gallons per mile).

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-14A

DISTRIBUTION Perceived Shortfall: Overall In-Use Fuel Economy
versus Owner Reported EPA Composite Rating

SOURCES Questions 6b and 24

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 1395 NOT REPORTED 3019

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		1395	-2.7	0.11	4.2	.0071	.00030	.0111	.01128	.00119	.91147	.02424
RECORD KEEPING BEHAVIOR	Based on Records	314	-4.1	0.30	5.3	.0103	.00076	.0135	.01161	.00280	.97096	.05996
	Based on Checks	885	-2.5	0.13	3.8	.0065	.00034	.0100	.01059	.00143	.91432	.02889
	Based on Perception	196	-1.7	0.24	3.4	.0056	.00072	.0101	.00880	.00281	.91554	.05517
DRIVING PATTERN	Urban Driving	1 97	-2.7	0.37	3.6	.0078	.00114	.0112	.00581*	.00475	1.04031	.09491
		2 19	-3.8	0.64	2.8	.0164	.00325	.0142	-.00875*	.01402	1.47457	.25817
	Non-Urban Driving	1 349	-2.3	0.22	4.1	.0055	.00050	.0094	.01077	.00201	.88872	.04103
		2 74	-4.1	0.69	6.0	.0095	.00142	.0122	.01280	.00482	.92785	.10205
	SS/45 Mix	1 86	-3.0	0.43	4.0	.0098	.00167	.0155	.00026*	.00678	1.20401	.14042
		2 22	-4.9	0.99	4.6	.0171	.00491	.0231	.00864*	.02181	1.18665	.46892

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the
.05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-14B

DISTRIBUTION	Perceived Shortfall: Overall In-Use Fuel Economy versus Owner Reported EPA Composite Rating	
SOURCES	Questions 6b and 24	
GROUP	1978 Trucks	(August 1978 Purchase)
SAMPLE SIZE	277	NOT REPORTED 684

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		277	-3.2	0.25	4.1	.0109	.00086	.0127	.01393	.00308	.94251	.05587
RECORD KEEPING BEHAVIOR	Based on Records	54	-4.7	0.65	5.0	.0149	.00160	.0122	.02184	.00607	.86853	.11074
	Based on Checks	185	-3.0	0.28	3.9	.0105	.00093	.0126	.01172	.00384	.97790	.07013
	Based on Perception	34	-1.5	0.50	2.9	.0057	.00204	.0119	.00683*	.00852	.97941	.14822
DRIVING PATTERN	Urban Driving 1	16	-4.8	1.60	6.4	.0141	.00302	.0121	.02038*	.01085	.87862	.20000
	Urban Driving 2	4	-9.8	4.50	9.0	.0198	.00475	.0093	.03097*	.01152	.76816*	.21902
	Non-Urban Driving 1	105	-3.0	0.37	3.7	.0099	.00125	.0128	.01503	.00496	.90299	.09225
	Non-Urban Driving 2	22	-4.7	0.98	4.6	.0132	.00268	.0121	.03635	.00907	.55395	.16920
	55/45 Mix 1	11	-1.9	0.98	3.2	.0061	.00329	.0109	.00920*	.01358	.94392	.24123
		1	--	--	--	--	--	--	--	--	--	--

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-15A

DISTRIBUTION Perceived Shortfall: Overall In-Use Fuel Economy
versus Owner Reported EPA Estimated Ratings

SOURCES Questions 6b and 24

GROUP 1979 Cars (October 1978 Purchase)

SAMPLE SIZE 2182 NOT REPORTED 2137

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		2182	-1.2	0.08	3.8	.0045	.00027	.0127	.01232	.00121	.85737	.02168
RECORD KEEPING BEHAVIOR	Based on Records	479	-1.9	0.20	4.3	.0074	.00066	.0145	.00971	.00281	.95825	.05020
	Based on Checks	1373	-1.0	0.10	3.6	.0036	.00032	.0118	.01251	.00146	.83702	.02614
	Based on Perception	330	-1.2	0.21	3.8	.0040	.00070	.0127	.01618	.00309	.78155	.05417
DRIVING PATTERN	Urban Driving	1 ¹ 189	-1.8	0.23	3.1	.0072	.00089	.0123	.01110	.00449	.92960	.07842
		2 ² 36	-2.3	0.69	4.1	.0095	.00238	.0143	.02247*	.01173	.77341	.20202
	Non-Urban Driving	1 ¹ 630	-0.8	0.15	3.8	.0023	.00041	.0102	.01244	.00170	.80778	.03136
		2 ² 144	-1.1	0.32	3.8	.0034	.00089	.0106	.01116	.00350	.84960	.06594
	SS/45 Mix	1 ¹ 98	-0.7	0.31	3.0	.0036	.00121	.0120	.00594*	.00571	.95909	.09833
		2 ² 23	-1.4	0.64	3.1	.0082	.00254	.0122	-.01178*	.01171	1.34377	.19740

1¹: All Respondents with Given Driving Pattern

2²: Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-15B

DISTRIBUTION Perceived Shortfall: Overall In-Use Fuel Economy
versus Owner Reported EPA Estimated Rating
 SOURCES Questions 6b and 24
 GROUP 1979 Trucks (October 1978 Purchase)
 SAMPLE SIZE 397 NOT REPORTED 531

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		397	-1.6	0.18	3.5	.0075	.00097	.0194	.00862	.00411	.98068	.07100
RECORD KEEPING BEHAVIOR	Based on Records	81	-2.4	0.43	3.84	.0095	.00154	.0138	.00791 ²	.00562	1.02981	.09927
	Based on Checks	268	-1.4	0.20	3.3	.0063	.00079	.0130	.00207*	.00368	1.07450	.06383
	Based on Perception	48	-1.8	0.56	3.9	.0113	.00620	.0043	.03480*	.02291	.59982*	.37609
DRIVING PATTERN	Urban Driving	1/ 17	-1.2	0.84	3.5	.0035	.00298	.0123	.02978	.01206	.54168	.20505
		2/ 4	-1.5	1.66	3.3	.0085	.00680	.0136	-.07542*	.04929	2.49495	.87292
	Non-Urban Driving	1/ 155	-1.7	0.29	3.6	.0074	.00114	.0142	-.00092*	.00494	1.15200	.08743
		2/ 36	-3.3	0.74	4.5	.0132	.00252	.0151	-.00633	.01016	1.37224	.18769
	55/45 Mix	1/ 16	-1.63	0.80	3.2	.0101	.00408	.0163	-.00286*	.01810	1.21967	.29975
		2/ 3	-1.0	2.08	3.6	.0063	.00924	.0160	.02432*	.11754	.70936*	1.88636

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-16A

DISTRIBUTION Perceived Shortfall: In-Use Composite Fuel Economy
versus Owner Reported EPA Composite Rating

SOURCES Questions 25 and 24

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 1188 NOT REPORTED 3226

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD ERROR	STD. DEV.	MEAN	STD. ERROR	STD DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		1188	-2.6	0.10	3.4	.0067	.00030	.0102	.00732	.00118	.98719	.02418
RECORD KEEPING BEHAVIOR	Based on Records	288	-3.5	.024	4.2	.0088	.00075	.0128	.00788	.00275	1.02098	.05946
	Based on Checks	766	-2.4	0.11	3.1	.0064	.00033	.0092	.00529	.00139	1.02395	.02824
	Based on Perception	134	-1.6	0.25	2.8	.0038	.00073	.0085	.01062	.00282	.86221	.05538
DRIVING PATTERN	Urban Driving	53	-1.7	0.38	2.8	.0061	.00136	.0100	-.00329*	.00604	1.19209	.12029
		11	-2.6	0.98	3.3	.0109	.00420	.0139	.02714*	.03168	.70912*	.56008
	Non-Urban Driving	317	-2.5	0.18	3.2	.0063	.00050	.0090	.00594	.00196	1.00695	.04027
		72	-3.3	0.46	3.9	.0085	.00130	.0108	.00492*	.00426	1.07870	.08990
	55/45 Mix	79	-2.8	0.44	3.9	.0088	.00192	.0171	.00445*	.00773	1.09417	.16201
		27	-4.9	1.08	4.6	.0177	.00696	.0300	.00080*	.03319	1.39627*	.76140

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the
.05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-16B

DISTRIBUTION Perceived Shortfall: In-Use Composite Fuel Economy
versus Owner Reported EPA Composite Rating

SOURCES Questions 25 and 24

GROUP 1978 Trucks (August 1978 Purchase)

SAMPLE SIZE 240 **NOT REPORTED** 721

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		240	-3.2	0.23	3.5	.0110	.00071	.0120	.01027	.00312	1.01379	.05688
RECORD KEEPING BEHAVIOR	Based on Records	50	-4.8	0.62	4.4	.0154	.00177	.0118	.02017	.00647	.90966	.11860
	Based on Checks	164	-2.9	0.24	3.1	.0105	.00090	.0115	.00764	.00371	1.05282	.06754
	Based on Perception	26	-1.7	0.59	3.0	.0060	.00237	.0116	.00554*	.00976	1.00975	.17986
DRIVING PATTERN	Urban Driving	10 ¹	-4.3	1.63	5.1	.0140	.00450	.0142	.02213*	.01755	.85017	.31111
		2 ²	-7.0	--	--	.0134	--	--	--	--	--	--
	Non-Urban Driving	87 ¹	-3.2	0.39	3.6	.0101	.00130	.0121	.01524	.00504	.90078	.09452
		18 ²	-5.0	1.11	4.7	.0137	.00300	.0136	.03668	.01072	.54321	.20649
	55/45 Mix	10 ¹	-2.4	1.14	3.6	.0071	.00345	.0109	.01454*	.01368	.86003	.24807
		1 ²	--	--	--	--	--	--	--	--	--	--

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-17A

DISTRIBUTION Perceived Shortfall: In-Use Fuel Economy
 Estimate versus Owner Reported EPA Estimated Rating

SOURCES Questions 25 and 24

GROUP 1979 Cars (October 1978 Purchase)

SAMPLE SIZE 2089 NOT REPORTED 2230

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		2089	-1.3	.07	3.3	.0050	.00026	.0121	.00891	.00117	.92902	.02080
RECORD KEEPING BEHAVIOR	Based on Records	477	-2.0	0.18	3.8	.0078	.00065	.0141	.00691	.00272	1.01716	.04870
	Based on Checks	1355	-1.1	0.09	3.1	.0042	.00030	.0111	.00948	.00138	.90305	.02462
	Based on Perception	257	-1.2	0.19	3.1	.0044	.00068	.0109	.01024	.00299	.89503	.05298
DRIVING PATTERN	Urban Driving	1/ 179	-2.0	0.23	3.0	.0080	.00091	.0121	.00897	.00442	.98273	.00783
		2/ 36	-2.8	0.64	3.8	.0112	.00240	.0144	.02336*	.01188	.78871	.20284
	Non-Urban Driving	1/ 601	-0.9	0.14	3.4	.0029	.00041	.0100	.01026	.00170	.85941	.03144
		2/ 143	-1.4	0.33	3.9	.0045	.00093	.0111	.00946	.00369	.90316	.06996
	55/45 Mix	1/ 91	-1.0	0.30	2.9	.0046	.00124	.0121	.00297*	.00576	1.02940	.09921
		2/ 23	-1.4	0.66	3.2	.0087	.00280	.0132	-.01330*	.01268	1.37873	.21377

1/ All Respondents with Given Driving Pattern
 2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-17B

DISTRIBUTION Perceived Shortfall: In-Use Fuel Economy
Estimate versus Owner Reported EPA Estimated Rating

SOURCES Questions 25 and 24

GROUP 1979 Trucks (October 1978 Purchase)

SAMPLE SIZE 390 NOT REPORTED 538

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		390	-1.7	0.16	3.2	.0073	.00070	.0140	.00527*	.00294	1.03567	.05100
RECORD KEEPING BEHAVIOR	Based on Records	81	-2.3	0.34	3.0	.0091	.00150	.0135	.00420*	.00547	1.08962	.09624
	Based on Checks	266	-1.5	0.20	3.3	.0069	.00083	.0141	.00118*	.00384	1.10118	.06680
	Based on Perception	43	-1.8	0.50	3.3	.0061	.00252	.0161	.01958	.00832	.76518	.13903
DRIVING PATTERN	Urban Driving	1 17	-1.3	0.83	3.4	.0038	.00281	.0120	.02922	.01128	.55730	.19174
		2 4	-1.5	1.56	3.1	.0074	.00541	.0107	.04183*	.04983	1.87756*	.88240
	Non-Urban Driving	1 155	-1.6	0.26	3.2	.0078	.00120	.0150	.00625*	.00506	1.25674	.09020
		2 37	-2.8	0.52	3.2	.0127	.00256	.0160	.02145	.00927	1.64653	.17059
	55/45 Mix	1 17	-1.8	0.82	3.4	.0105	.00400	.0170	.00283*	.01738	1.22978	.29184
		2 3	-1.0	2.08	3.6	.0063	.00924	.0160	.02432*	.11751	.70936*	1.88636

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-18A

DISTRIBUTION Shortfall: In-Use Fuel Economy
versus EPA Composite Rating

SOURCES Question 6b and Gas Mileage Guide

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 3354 NOT REPORTED 860

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		3354	-2.32	.072	4.31	.0074	.00025	.0150	.02552	.00090	.62349	.01810
RECORD KEEPING BEHAVIOR	Based on Records	603	-3.14	.214	5.26	.0098	.00055	.0135	.00268*	.00229	1.15668	.04904
	Based on Checks	2199	-2.22	.086	4.06	.0069	.00035	.0162	.03150	.00108	.49262	.02126
	Based on Perception	752	-1.96	.150	4.13	.0069	.00043	.0119	.00842	.00230	.96832	.04566
DRIVING PATTERN	Urban Driving	1 336	-3.30	.216	3.95	.0105	.00070	.0128	.00583*	.00359	1.09678	.07311
		2 51	-4.88	.542	3.87	.0161	.00183	.0130	-.00127*	.00840	1.36487	.17244
	Non-Urban Driving	1 880	-1.52	.144	4.28	.0051	.00043	.0127	.00855	.00198	.92854	.04013
		2 147	-2.24	.439	5.32	.0075	.00099	.0120	.00162*	.00411	1.12780	.08709
	55/45 Mix	1 207	-2.00	.327	4.71	.0048	.00244	.0351	.05050	.00213	.07526	.03588
		2 41	-3.20	.815	5.22	.0117	.00299	.0191	-.00263*	.01277	1.31693	.27472

1: All Respondents with Given Driving Pattern

2: Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE _____ 7-18B

DISTRIBUTION _____ Shortfall: In-Use Fuel Economy _____
 _____ versus EPA Composite Rating _____

SOURCES _____ Question 6b and Gas Mileage Guide _____

GROUP _____ 1978 Trucks _____ (August 1978 Purchase) _____

SAMPLE SIZE _____ 747 _____ NOT REPORTED _____ 214 _____

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD ERROR	SLOPE	STD ERROR
ALL RESPONDENTS		747	-2.92	.125	3.41	.0113	.00079	.0215	.04087	.00215	.44538	.03802
RECORD KEEPING BEHAVIOR	Based on Records	130	-3.78	.361	4.12	.0123	.00277	.0315	.05547	.00429	.19014	.07161
	Based on Checks	475	-2.86	.146	3.18	.0111	.00090	.0196	.03581	.00272	.53310	.04882
	Based on Perception	142	-2.35	.277	3.31	.0108	.00131	.0156	-.00447*	.00691	1.27861	.12356
DRIVING PATTERN	Urban Driving	40	-4.15	.594	3.76	.0175	.00276	.0175	.00517*	.01266	1.22578	.22728
		9	-6.44	1.215	3.64	.0238	.00559	.0168	.00009*	.02156	1.46204	.40585
	Non-Urban Driving	268	-2.79	.213	3.48	.0106	.00150	.0245	.04723	.00352	.31947	.06126
		55	-3.33	.633	4.70	.0079	.00606	.0449	.06023	.00571	.05713*	.08366
	55/45 Mix	31	-1.97	.647	3.60	.0084	.00234	.0130	-.00555*	.01154	1.26881	.21831
		4	-2.00	2.739	5.48	.0045	.00672	.0134	.02859*	.02930	.56310*	.51458

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-19A

DISTRIBUTION Shortfall: Overall In-Use Fuel Economy
versus EPA Estimated Rating

SOURCES Question 6b and Gas Mileage Guide

GROUP 1979 Cars (October 1978 Purchase)

SAMPLE SIZE 3478 NOT REPORTED 841

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		3478	.64	.076	4.47	.0003	.00026	.0152	.02160	.00149	.64325	.02454
RECORD KEEPING BEHAVIOR	Based on Records	633	.24	.191	4.81	.0029	.00067	.0168	.01352	.00384	.81832	.06446
	Based on Checks	2106	.91	.096	4.39	.0007	.00032	.0145	.02146	.00187	.62888	.03093
	Based on Perception	739	.24	.159	4.33	.0011	.00056	.0153	.02796	.00303	.55434	.04940
DRIVING PATTERN	Urban Driving 1	328	-.65	.241	4.36	.0046	.00093	.0169	.03549	.00516	.48123	.08548
	Urban Driving 2	48	-1.69	.555	3.84	.0094	.00212	.0147	.02172*	.01512	.79517	.24814
	Non-Urban Driving 1	974	1.59	.147	4.58	.0029	.00043	.0134	.01851	.00240	.63979	.03975
	Non-Urban Driving 2	183	1.47	.350	4.74	.0015	.00098	.0133	.00684*	.00580	.85501	.09996
	55/45 Mix 1	173	.51	.358	4.71	.0013	.00109	.0144	.01141*	.00645	.83105	.10602
	55/45 Mix 2	34	-.76	.670	3.91	.0055	.00250	.0146	.01066*	.01255	.91428	.20571

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-19B

DISTRIBUTION Shortfall: Overall In-Use Fuel Economy
versus EPA Estimated Rating

SOURCES: Question 6b and Gas Mileage Guide

GROUP 1979 Trucks (October 1978 Purchase)

SAMPLE SIZE 722 NOT REPORTED 206

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		722	.36	.126	3.39	.0023	.00068	.0182	-.00774	.00380	1.15509	.05755
RECORD KEEPING BEHAVIOR	Based on Records	126	-.23	.295	3.31	.0046	.00129	.0145	-.01241*	.00662	1.26985	.10347
	Based on Checks	482	.42	.142	3.12	.0015	.00066	.0145	-.00994	.00377	1.17521	.05693
	Based on Perception	114	.78	.408	4.35	.0034	.00291	.0310	.00505*	.01688	.97515	.25212
DRIVING PATTERN	Urban Driving 1	32	-.31	.631	3.57	.0043	.00271	.0153	-.00080*	.01569	1.07910	.23868
	Urban Driving 2	9	-1.33	1.434	4.30	.0113	.00800	.0240	.00504*	.05589	1.09779*	.86573
	Non-Urban Driving 1	290	.67	.194	3.30	.0010	.00091	.0154	-.01436	.00505	1.23749	.07693
	Non-Urban Driving 2	54	-.11	.470	3.45	.0046	.00206	.0152	-.01580*	.01054	1.32262	.16393
	SS/45 Mix 1	36	.86	.696	4.18	.0011	.00288	.0173	-.00989*	.01843	1.16332	.26952
	SS/45 Mix 2	6	0.0	1.033	2.53	.0022	.00618	.0151	.01893*	.05090	.77256*	.68525

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-20A

DISTRIBUTION Shortfall: In-Use Composite Fuel Economy
versus EPA Composite Rating

SOURCES Question 25 and Gas Mileage Guide

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 2519 NOT REPORTED 1895

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		2519	-2.12	.088	4.43	.0066	.00029	.0147	.02663	.00094	.58024	.01898
RECORD KEEPING BEHAVIOR	Based on Records	493	-2.62	.235	5.22	.0084	.00058	.0128	.0067*	.00237	1.17256	.05124
	Based on Checks	1655	-2.09	.103	4.17	.0063	.00039	.0158	.03223	.00107	.45984	.02113
	Based on Perception	371	-1.60	2.27	4.37	.0059	.00060	.0115	.00854	.00311	.94602	.06152
DRIVING PATTERN	Urban Driving	1 ¹ 140	-2.26	.333	3.94	.0074	.00090	.0106	.00532*	.00454	1.04247	.09016
		2 ² 19	-3.79	.651	2.84	.0138	.00257	.0012	.01295*	.01602	1.01633	.30238
	Non-Urban Driving	1 ¹ 678	-1.65	.163	4.26	.0054	.00039	.0100	.00470	.00178	1.01590	.03668
		2 ² 130	-1.72	.485	5.53	.0067	.00101	.0115	-.00179*	.00407	1.18491	.08599
	55/45 Mix	1 ¹ 80	-1.64	.409	5.12	.0037	.00319	.0400	.04998	.00248	.06235*	.03997
		2 ² 35	-3.06	.864	5.11	.0115	.00376	.0223	-.01117*	.01676	1.52751	.38070

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-20B

DISTRIBUTION	Shortfall: In-Use Composite Fuel Economy versus EPA Composite Rating	
SOURCES	Question 25 and Gas Mileage Guide	
GROUP	1978 Trucks	(August 1978 Purchase)
SAMPLE SIZE	560	NOT REPORTED 401

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		560	-2.89	.162	3.84	.0111	.00099	.0234	.04506	.00234	.36430	.04101
RECORD KEEPING BEHAVIOR	Based on Records	107	-3.95	.433	4.48	.0120	.00317	.0328	.05696	.00417	.15621	.06831
	Based on Checks	373	-2.86	.175	3.39	.0115	.00112	.0217	.04003	.00313	.46550	.05553
	Based on Perception	80	-1.65	.502	4.49	.0078	.00156	.0140	.00234*	.00767	1.09973	.13842
DRIVING PATTERN	Urban Driving	19	-2.58	1.250	5.45	.0113	.00360	.0157	.01055*	.01659	1.01360	.29459
		7	-6.25	1.315	2.63	.0240	.00508	.0102	-.00148*	.01739	1.47611	.31504
	Non-Urban Driving	200	-2.85	.277	3.91	.0110	.00192	.0272	.05189	.00391	.24889	.06639
		19	-3.72	.858	5.63	.0073	.00745	.0488	.06148	.00554	.03388*	.07747
	55/45 Mix	25	-2.20	.748	3.74	.0074	.00243	.0121	.01273*	.01211	.89683	.22845
		3	-1.75	2.955	5.91	.0039	.00724	.0145	.02920*	.03188	.54228*	.55982

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-21A

DISTRIBUTION Shortfall: In-Use Fuel Economy Estimate
Versus EPA Estimated Rating

SOURCES Question 25 and Gas Mileage Guide

GROUP 1979 Cars (October 1978 Purchase)

SAMPLE SIZE 3102 NOT REPORTED 1217

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD ERROR	STD DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		3102	.60	.080	4.48	.0006	.00027	.0150	.01939	.00156	.68463	.02585
RECORD KEEPING BEHAVIOR	Based on Records	619	.32	.198	4.93	.0028	.00067	.0167	.01142	.00382	.85276	.06428
	Based on Checks	1997	.81	.097	4.34	.0004	.00032	.0143	.02017	.00189	.65590	.03118
	Based on Perception	486	.08	.198	4.37	.0018	.00070	.0154	.02549	.00381	.60692	.06220
DRIVING PATTERN	Urban Driving ¹	276	-.62	.251	4.16	.0047	.00101	.0167	.02935	.00569	.58830	.09365
	Urban Driving ²	48	-1.63	.590	4.09	.0099	.00262	.0178	.02567*	.01831	.73955	.29924
	Non Urban Driving ¹	892	1.48	.156	4.66	.0023	.00046	.0137	.01698	.00261	.67477	.04350
	Non Urban Driving ²	178	1.34	.365	4.87	.0010	.00100	.0136	.00756*	.00595	.85060	.10254
	55/45 Mix ¹	155	-.05	.321	4.00	.0028	.00120	.0150	.01316*	.00708	.82842	.11586
	55/45 Mix ²	34	-.94	.636	3.71	.0063	.00253	.0148	.00903*	.01277	.95396	.20937

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-21B

DISTRIBUTION Shortfall: In-Use Fuel Economy Estimate
versus EPA Estimated Rating

SOURCES Question 25 and Gas Mileage Guide

GROUP 1979 Trucks (October 1978 Purchase)

SAMPLE SIZE 677 NOT REPORTED 251

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		677	.26	.128	3.33	.0026	.00059	.0154	-.01078	.00326	1.20635	.04962
RECORD KEEPING BEHAVIOR	Based on Records	126	-.21	.328	3.68	.0047	.00132	.0148	-.01301*	.00676	1.28246	.10558
	Based on Checks	463	.29	.143	3.09	.0022	.00069	.0148	-.01201	.00386	1.21810	.05849
	Based on Perception	88	.81	.415	3.90	.0014	.00202	.0190	-.00459*	.01112	1.09260	.16833
DRIVING PATTERN	Urban Driving 1	30	-.40	.665	3.65	.0048	.00281	.0154	-.00279*	.01614	1.11837	.24883
	Urban Driving 2	9	-1.33	1.394	4.18	.0108	.00780	.0234	.00733*	.05454	1.05446*	.84480
	Non-Urban Driving 1	279	.60	.194	3.24	.0014	.00095	.0159	-.01675	.00520	1.28225	.07937
	Non-Urban Driving 2	53	.17	.603	4.39	.0047	.00227	.0165	-.02141*	.04141	1.41509	.17807
	SS/45 Mix 1	34	.15	.611	3.56	.0039	.00289	.0169	-.01550*	.01675	1.29207	.24898
	SS/45 Mix 2	6	0	1.033	2.53	.0022	.00617	.0151	.01892*	.05090	.77256*	.68525

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-22A

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(city driving)

SOURCES Question 25

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 2581 NOT REPORTED 1833

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		2581	15.9	.10	17.6	.12	6.0	5	10.9	12.4	13.5	14.6	15.7	17.0	18.6	21.2	25.5	49	
RECORD KEEPING BEHAVIOR	Based on Records	516	16.0	.25	18.1	.30	6.9	6	10.6	12.2	13.4	14.8	16.1	17.4	19.4	22.4	26.6	45	
	Based on Checks	1646	15.8	.12	17.4	.14	5.6	5	10.9	12.4	13.5	14.6	15.6	16.8	18.4	20.8	25.0	49	
	Based on Perception	419	16.1	.23	17.7	.29	5.9	8	11.0	12.6	13.9	14.7	15.7	17.0	18.8	21.2	25.7	45	
DRIVING PATTERN	Urban Driving	¹ 264	15.4	.28	16.9	.34	5.5	8	11.1	11.7	13.3	14.3	15.0	16.1	18.0	20.5	23.6	43	
		² 55	14.4	.56	15.9	.80	6.0	9	--	11.1	11.7	13.3	14.4	15.2	16.3	17.9	21.6	43	
	Non-Urban Driving	¹ 491	16.4	.21	17.9	.26	5.7	8	11.5	12.9	14.0	15.0	16.1	17.4	19.0	21.4	25.3	45	
		² 98	16.6	.54	18.4	.64	6.3	8	11.4	12.7	13.9	15.1	16.3	17.8	19.8	22.8	27.7	43	
	55/45 Mix	¹ 170	16.3	.42	18.2	.47	6.2	6	10.9	12.6	13.8	15.0	16.3	17.8	19.6	22.0	26.5	35	
		² 36	15.8	1.09	18.2	1.16	7.0	6	9.8	12.8	13.9	14.6	15.7	17.3	19.5	22.8	28.2	35	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-22B

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(city driving)

SOURCES Question 25

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 553 **NOT REPORTED** 408

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		553	12.9	.19	14.4	.21	4.9	4	8.9	9.5	10.4	11.4	12.5	14.0	16.0	18.5	21.1	30	
RECORD KEEPING BEHAVIOR	Based on Records	104	12.6	.41	14.0	.46	4.7	5	7.0	9.6	10.4	11.5	12.4	13.6	15.5	17.6	19.7	30	
	Based on Checks	372	12.9	.23	14.5	.26	5.1	4	8.9	9.5	10.3	11.3	12.4	14.0	16.0	18.7	21.8	30	
	Based on Perception	77	13.2	.47	14.5	.51	4.5	7	9.1	9.8	10.9	11.8	12.8	14.4	16.9	19.4	20.0	25	
DRIVING PATTERN	Urban Driving	41	12.7	.64	14.2	.78	5.0	8	--	9.5	10.1	11.2	12.5	13.4	14.8	17.9	20.3	27	
		10	12.3	.95	13.0	1.10	3.5	9	--	--	--	--	--	--	--	--	--	19	
	Non-Urban Driving	150	12.3	.38	14.0	.43	5.2	4	8.5	9.7	10.1	10.6	11.7	13.3	15.3	17.8	21.4	30	
		34	13.1	.90	14.7	.79	4.6	5	9.2	9.9	11.5	12.4	13.4	14.8	16.3	17.6	20.9	26	
	55/45 Mix	36	13.6	.88	15.4	.88	5.3	6	8.7	10.0	10.7	12.3	14.0	15.3	16.7	19.3	21.6	28	
		5	12.1	1.62	13.2	2.13	4.8	9	--	--	--	--	--	--	--	--	--	21	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-23A

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(highway driving)

SOURCES Question 25

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 2662 **NOT REPORTED** 1752

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		2662	20.8	.11	22.7	.14	7.2	6	14.9	16.6	17.9	18.9	20.1	21.8	24.2	27.6	32.3	58	
RECORD KEEPING BEHAVIOR	Based on Records	498	21.4	.32	23.8	.37	8.2	6	14.7	16.4	17.9	19.6	21.4	23.6	26.4	30.1	34.3	53	
	Based on Checks	1756	20.8	.13	22.5	.16	6.9	10	15.0	16.7	17.9	18.9	20.0	21.5	23.7	27.0	31.8	58	
	Based on Perception	408	20.5	.28	22.3	.35	7.0	10	14.9	16.5	17.7	18.6	19.7	21.3	23.6	26.9	31.5	55	
DRIVING PATTERN	Urban Driving	1 206	20.3	.34	21.7	.44	6.3	13	15.3	16.4	17.6	18.5	19.1	20.1	22.0	25.4	30.6	50	
		2 36	18.5	.69	19.6	.86	5.1	13	16.1	14.1	15.6	16.9	18.4	19.5	20.6	22.3	24.0	35	
	Non-Urban Driving	1 644	20.9	.23	22.7	.28	7.0	10	15.0	16.7	17.8	19.0	20.3	22.1	24.4	27.4	32.0	55	
		2 122	20.9	.61	23.1	.70	7.7	10	14.6	16.2	17.5	18.8	20.6	23.0	25.9	29.2	33.6	48	
	55/45 Mix	1 160	21.3	.58	23.5	.58	7.4	6	15.4	16.7	17.8	19.1	21.0	23.6	26.5	29.4	33.1	48	
		2 32	20.9	2.07	24.9	1.62	9.2	6	12.4	16.8	17.8	20.7	23.9	26.0	28.7	34.2	36.2	45	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-23B

DISTRIBUTION In-Use Fuel Economy of New Vehicle
(highway driving)

SOURCES Question 25

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 610 NOT REPORTED 351

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		610	16.7	.21	18.4	.24	5.9	6	11.7	13.1	14.1	15.0	16.2	17.8	20.0	23.1	26.9	42	
RECORD KEEPING BEHAVIOR	Based on Records	106	16.7	.50	18.4	.59	6.1	8	10.7	13.6	13.9	14.6	16.3	18.3	20.0	22.3	26.5	40	
	Based on Checks	421	16.7	.25	18.4	.29	6.0	6	11.8	12.9	14.0	15.0	16.1	17.6	20.0	23.3	27.2	42	
	Based on Perception																		
		83	17.2	.51	18.5	.56	5.1	10	11.5	14.0	14.5	15.7	16.6	17.5	19.9	23.6	24.8	30	
DRIVING PATTERN	Urban Driving	1 32	16.1	.73	17.3	.90	5.1	10	10.7	14.0	14.0	14.1	15.0	16.2	17.5	20.0	25.2	31	
		2 6	15.0	1.46	15.8	1.78	4.4	11	--	--	--	--	--	--	--	--	--	24	
	Non-Urban Driving	1 216	16.5	.35	18.0	.38	5.6	6	11.9	13.1	13.9	14.8	15.9	17.4	19.5	22.4	25.9	40	
		2 42	17.4	.90	19.2	.90	5.8	8	11.5	13.9	14.0	16.0	18.2	19.6	21.5	24.5	27.2	32	
	55/45 Mix	1 35	17.0	.93	18.7	.98	5.8	8	9.2	13.7	14.8	16.0	17.2	18.0	19.4	22.9	26.0	34	
		2 5	15.5	1.45	16.2	1.99	4.4	13	--	--	--	--	--	--	--	--	--	24	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

7-24A

TABLE

DISTRIBUTION Owner - Reported EPA Fuel Economy of New Vehicle
(city)

SOURCES Question 24

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 1743 **NOT REPORTED** 2671

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		1743	18.6	.12	20.1	.15	6.2	8	13.7	15.0	16.3	17.0	17.6	18.8	21.0	24.2	28.7	47	
RECORD KEEPING BEHAVIOR	Based on Records	393	19.7	.30	21.7	.36	7.2	10	13.7	15.8	16.8	17.4	18.7	21.0	23.9	27.0	31.1	47	
	Based on Checks	1078	18.3	.14	19.7	.18	5.8	8	13.7	14.8	16.0	16.8	17.4	18.4	20.1	23.1	27.8	42	
	Based on Perception	272	18.5	.29	19.9	.35	5.7	8	13.8	15.1	16.3	17.2	17.8	18.7	20.4	23.6	27.8	45	
DRIVING PATTERN	Urban Driving	1 ¹ 157	18.5	.37	19.9	.46	5.7	10	13.9	15.2	16.3	17.1	17.7	18.5	20.1	23.0	27.6	40	
		2 ² 29	17.6	.77	18.8	1.12	6.0	11	13.4	14.5	15.7	16.5	17.1	17.7	18.4	19.1	22.8	40	
	Non-Urban Driving	1 ¹ 413	19.0	.25	20.6	.32	6.5	10	13.8	15.3	16.7	17.1	17.6	18.8	21.2	25.0	30.0	47	
		2 ² 97	20.1	.72	22.7	.85	8.4	10	12.4	16.0	17.2	17.8	19.3	22.0	25.5	28.8	33.4	47	
	55/45 Mix	1 ¹ 87	18.5	.48	19.7	.58	5.4	11	14.2	14.5	15.7	16.8	17.7	19.0	20.8	23.6	26.7	38	
		2 ² 21	18.8	.96	19.8	1.03	4.7	12	14.9	15.1	16.9	17.0	18.5	20.0	19.8	24.1	29.6	32	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE	7-24B
DISTRIBUTION	Owner-Reported EPA Fuel Economy of New Vehicle (city)
SOURCES	Question 24
GROUP	1978 Truck (August 1978 Purchase)
UNITS	Miles Per Gallon
SAMPLE SIZE	287 NOT REPORTED 674

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		287	16.8	.29	18.1	.29	5.0	5	12.0	13.4	14.3	15.1	16.2	18.0	20.2	22.7	24.8	35	
RECORD KEEPING BEHAVIOR	Based on Records	53	16.5	.67	17.9	.75	5.5	8	11.5	13.3	13.9	14.8	15.8	17.1	18.8	21.7	24.7	35	
	Based on Checks	194	16.8	.36	18.0	.35	4.8	5	12.4	13.4	14.3	15.0	16.0	17.7	20.2	22.8	24.6	30	
	Based on Perception	40	17.2	.79	18.7	.82	5.2	11	19.3	13.1	14.7	15.4	17.8	19.8	21.4	23.6	28.6	28	
DRIVING PATTERN	Urban Driving	1	18	1.4	1.23	19.0	1.41	6.0	11	15.1	14.2	12.1	13.6	16.3	17.7	21.8	22.7	36.0	30
		2	5	19.7	3.16	21.8	3.34	7.5	13	--	--	--	--	--	--	--	--	30	
	Non-Urban Driving	1	101	16.8	.59	18.3	.50	5.0	5	12.4	13.4	14.6	15.9	17.1	18.3	20.0	22.7	25.3	30
		2	20	16.3	1.13	17.5	.99	4.4	8	12.0	13.3	14.6	15.2	16.1	18.0	19.2	18.7	24.0	26
	55/45 Mix	1	11	18.1	1.66	19.6	1.67	5.5	12	--	--	--	--	--	--	--	--	--	28
		2	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-25A

DISTRIBUTION Owner - Reported EPA Fuel Economy of New Vehicle
(highway)

SOURCES Question 24

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 1795 **NOT REPORTED** 2619

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		1795	24.9	.16	26.9	.19	8.0	11	18.3	20.2	21.6	22.7	23.9	25.7	28.6	33.0	38.5	55	
RECORD KEEPING BEHAVIOR	Based on Records	391	26.8	.40	29.3	.46	9.2	11	18.4	21.3	22.9	24.0	25.9	29.0	33.0	36.8	41.6	55	
	Based on Checks	1131	24.5	.18	26.3	.23	7.6	13	18.3	20.1	21.3	22.3	23.3	24.9	27.4	31.4	37.2	53	
	Based on Perception	273	24.4	.40	26.3	.46	7.6	11	17.8	19.6	21.2	22.5	23.8	25.4	27.9	31.8	37.5	55	
DRIVING PATTERN	Urban Driving	1 ¹ 157	24.9	.46	26.5	.59	7.4	16	18.7	20.5	21.8	22.8	23.8	25.0	27.2	30.9	37.2	53	
		2 ² 30	24.0	1.08	25.7	1.41	7.7	16	--	20.3	21.6	22.4	23.6	24.8	25.8	27.8	35.3	53	
	Non-Urban Driving	1 ¹ 444	25.1	.32	27.2	.39	8.2	12	18.3	20.3	21.7	22.9	24.0	25.8	28.9	33.7	39.2	53	
		2 ² 99	27.0	.83	29.8	.98	9.8	16	18.3	21.1	23.4	24.0	25.6	29.4	34.2	38.2	44.0	53	
	55/45 Mix	1 ¹ 89	25.0	.68	26.9	.80	7.5	16	18.0	19.8	21.4	23.1	24.7	26.5	28.7	32.1	37.5	50	
		2 ² 20	25.5	1.42	27.0	1.51	6.8	16	18.0	21.3	22.5	23.7	25.1	26.9	29.1	30.9	38.0	41	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-25B

DISTRIBUTION Owner - Reported EPA Fuel Economy of New Vehicle
(highway)

SOURCES

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 328 NOT REPORTED 633

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		328	21.9	.34	23.7	.38	6.9	10	15.8	17.1	18.0	19.5	21.5	24.0	26.8	29.9	33.2	50	
RECORD KEEPING BEHAVIOR	Based on Records	63	22.5	.81	24.5	.93	7.4	12	16.7	17.3	18.4	20.4	22.7	24.8	27.0	29.8	33.7	50	
	Based on Checks	219	21.8	.41	23.6	.45	6.7	10	16.0	17.0	18.0	19.4	21.2	23.6	26.6	30.0	33.2	43	
	Based on Perception	46	21.3	.89	23.2	1.02	6.9	14	15.0	16.4	17.3	18.6	21.0	23.8	26.6	29.3	32.7	38	
DRIVING PATTERN	Urban Driving	1 21	22.2	1.51	24.4	1.67	7.6	14	17.7	15.5	19.8	19.0	20.6	24.9	28.5	31.3	33.9	39	
		2 7	25.2	2.69	27.0	2.86	7.6	18	--	--	--	--	--	--	--	--	--	39	
	Non-Urban Driving	1 118	22.3	.59	24.1	.61	6.7	10	16.4	17.2	18.6	20.7	22.7	24.4	26.6	29.9	33.0	43	
		2 23	22.6	1.52	24.6	1.43	6.9	12	15.7	17.0	19.0	22.1	24.5	25.9	26.6	28.7	34.7	38	
	*55/45 Mix	1 14	23.7	1.92	25.6	1.84	6.9	16	--	--	--	--	--	--	--	--	--	--	36
	2 0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

7-26A

TABLE

DISTRIBUTION EPA Fuel Economy of New Vehicle
(city)

SOURCES Gas Mileage Guide

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3910 **NOT REPORTED** 504

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		3910	17.9	.10	19.0	.08	5.1	10	13.9	14.7	15.7	16.7	17.3	17.8	18.8	21.4	26.1	36	
RECORD KEEPING BEHAVIOR	Based on Records	620	19.0	.19	20.4	.23	5.7	10	14.1	15.2	16.6	17.1	17.7	19.2	21.8	24.9	28.5	35	
	Based on Checks	2280	17.8	.15	18.9	.10	4.9	11	13.7	14.6	15.7	16.7	17.3	17.8	18.8	21.3	26.1	36	
	Based on Perception	1010	17.4	.11	18.2	.15	4.9	11	13.6	14.8	15.3	16.1	17.0	17.6	18.0	19.2	23.2	36	
DRIVING PATTERN	Urban Driving	1 413	17.9	.18	18.8	.22	4.6	11	13.8	14.6	16.0	16.7	17.5	17.9	18.2	19.8	24.7	36	
		2 53	18.1	.54	19.1	.70	5.1	13	--	--	--	--	--	--	--	--	--	34	
	Non-Urban Driving	1 945	18.0	.13	19.0	.16	5.0	10	14.0	14.7	15.6	16.6	17.3	17.8	18.9	21.7	26.5	35	
		2 149	18.9	.39	20.4	.48	5.9	12	--	--	--	--	--	--	--	--	--	35	
	55/45 Mix	1 212	18.3	.29	19.4	.35	5.1	11	12.3	15.0	15.7	16.9	17.6	18.0	19.6	22.9	26.4	35	
		2 41	19.2	.75	20.6	.89	5.7	13	--	--	--	--	--	--	--	--	--	--	34

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

7-260

TABLE _____

DISTRIBUTION EPA Fuel Economy for New Vehicle
(city)

SOURCES Gas Mileage Guide

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 791 **NOT REPORTED** 170

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		791	17.0	.12	17.8	.14	4.1	12	--	--	--	--	--	--	--	--	--	29	
RECORD KEEPING BEHAVIOR	Based on Records	131	17.3	.35	18.3	.40	4.6	12	--	--	--	--	--	--	--	--	--	29	
	Based on Checks	481	17.1	.16	17.9	.18	4.0	12	--	--	--	--	--	--	--	--	--	29	
	Based on Perception	179	16.3	.23	17.0	.28	3.7	12	--	--	--	--	--	--	--	--	--	29	
DRIVING PATTERN	Urban Driving	1 43	16.4	.55	17.3	.67	4.4	12	--	--	--	--	--	--	--	--	--	29	
		2 10	16.5	1.42	17.9	1.85	5.9	12	--	--	--	--	--	--	--	--	29		
	Non-Urban Driving	1 279	16.9	.20	17.7	.23	3.9	12	--	--	--	--	--	--	--	--	--	29	
		2 55	17.7	.55	18.6	.60	4.5	12	--	--	--	--	--	--	--	--	29		
	55/45 Mix	1 32	17.1	.61	17.9	.72	4.0	12	--	--	--	--	--	--	--	--	--	26	
		2 4	15.8	2.24	17.0	2.80	5.6	12	--	--	--	--	--	--	--	--	--	25	

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

7-27A

TABLE _____

DISTRIBUTION EPA Fuel Economy of New Vehicle
(composite)

SOURCES Gas Mileage Guide

GROUP 1979 Car (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3929 **NOT REPORTED** 390

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		3929	19.1	.05	19.6	.06	3.6	9	14.1	16.6	17.4	18.0	18.6	19.1	19.7	21.1	23.4	35	
RECORD KEEPING BEHAVIOR	Based on Records	655	19.4	.14	20.1	.15	3.9	9	15.8	16.9	17.7	18.1	18.5	19.1	20.1	21.8	25.1	35	
	Based on Checks	2184	19.0	.07	19.6	.08	3.5	12	14.2	16.5	17.4	18.0	18.5	19.0	19.7	20.9	23.1	35	
	Based on Perception	1090	19.0	.10	19.5	.10	3.4	12	15.6	16.3	17.3	18.2	18.7	19.1	19.8	21.2	23.3	34	
DRIVING PATTERN	Urban Driving	1 416	19.2	.15	19.7	.16	3.3	12	15.3	16.6	17.6	18.3	18.8	19.4	20.1	21.1	23.0	34	
		2 51	18.8	.36	19.2	.41	2.9	13	--	--	--	--	--	--	--	--	--	29	
	Non-Urban Driving	1 1050	19.1	.10	19.7	.12	3.7	12	13.8	16.6	17.4	18.0	18.6	19.1	19.8	21.3	24.0	35	
		2 187	19.9	.25	20.6	.29	4.0	13	--	--	--	--	--	--	--	--	--	35	
	55/45 Mix	1 190	19.0	.24	19.6	.26	3.6	12	12.5	16.1	17.3	18.1	18.8	19.1	19.5	21.2	23.3	30	
		2 35	19.0	.67	19.9	.74	4.4	12	--	--	--	--	--	--	--	--	--	--	30

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE

7-27B

DISTRIBUTION EPA Fuel Economy of New Vehicle
(composite)

SOURCES Gas Mileage Guide

GROUP 1979 Truck (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 772 **NOT REPORTED** 156

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN 0	ESTIMATED PERCENTILES									MAX 100
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		772	16.1	.24	17.4	.15	4.1	13	--	--	--	--	--	--	--	--	--	30
RECORD KEEPING BEHAVIOR	Based on Records	128	15.4	.82	17.6	.43	4.8	13	--	--	--	--	--	--	--	--	--	30
	Based on Checks	493	16.4	.27	17.5	.18	3.9	14	--	--	--	--	--	--	--	--	--	30
	Based on Perception	151	15.9	.50	17.1	.32	3.9	14	--	--	--	--	--	--	--	--	--	25
DRIVING PATTERN	Urban Driving	1/ 35	15.7	1.42	17.4	.75	4.4	14	--	--	--	--	--	--	--	--	--	25
		2/ 9	17.4	1.09	18.0	1.20	3.6	14	--	--	--	--	--	--	--	--	--	25
	Non-Urban Driving	1/ 308	16.6	.30	17.6	.22	3.9	14	--	--	--	--	--	--	--	--	--	29
		2/ 54	15.4	1.24	17.6	.66	4.8	14	--	--	--	--	--	--	--	--	--	25
	55/45 Mix	1/ 41	16.6	.47	17.2	.56	3.6	13	--	--	--	--	--	--	--	--	--	25
		2/ 6	15.3	.96	15.7	1.05	2.6	13	--	--	--	--	--	--	--	--	--	20

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

7-28A

TABLE

DISTRIBUTION EPA Fuel Economy of New Vehicle
(highway)

SOURCES Gas Mileage Guide

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3908 **NOT REPORTED** 506

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN 0	ESTIMATED PERCENTILES									MAX 100
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		3908	24.0	.46	26.7	.10	6.4	16	20.8	20.8	22.0	23.6	24.8	25.4	26.5	30.1	36.8	46
RECORD KEEPING BEHAVIOR	Based on Records	620	25.9	1.07	28.7	.30	7.5	16	20.8	21.3	23.0	24.4	25.5	27.3	30.9	36.0	38.5	46
	Based on Checks	2279	23.7	.64	26.7	.13	6.4	17	20.7	21.0	22.1	23.6	24.8	25.5	26.6	30.1	36.5	46
	Based on Perception	1009	23.5	.77	25.6	.17	5.4	16	20.9	20.8	21.4	22.8	24.2	25.1	25.6	26.9	32.3	46
DRIVING PATTERN	Urban Driving	¹ 413	25.5	.23	26.5	.28	5.7	16	21.0	21.1	22.5	24.1	25.0	25.4	26.0	28.2	34.2	46
		² 53	25.8	.74	27.1	.91	6.6	17	--	--	--	--	--	--	--	--	--	46
	Non-Urban Driving	¹ 945	23.6	1.01	26.8	.22	6.6	16	20.9	20.5	21.7	23.5	24.7	25.4	26.7	30.6	37.1	46
		² 149	26.8	.51	28.5	.63	7.6	18	--	--	--	--	--	--	--	--	--	46
	55/45 Mix	¹ 212	23.3	2.47	27.2	.46	6.7	16	20.5	21.3	22.4	23.7	24.7	25.9	28.0	31.9	36.9	46
		² 41	27.4	.97	29.0	1.11	7.1	19	--	--	--	--	--	--	--	--	--	46

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-28B

DISTRIBUTION EPA Fuel Economy of New Vehicle
(highway)

SOURCES Gas Mileage Guide

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 791 **NOT REPORTED** 170

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN 0	ESTIMATED PERCENTILES									MAX 100
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		791	22.8	.17	23.9	.20	5.6	17	--	--	--	--	--	--	--	--	--	38
RECORD KEEPING BEHAVIOR	Based on Records	131	23.6	.48	25.0	.54	6.2	17	--	--	--	--	--	--	--	--	--	38
	Based on Checks	481	22.9	.22	24.1	.26	5.6	17	--	--	--	--	--	--	--	--	--	38
	Based on Perception	179	21.9	.30	22.8	.37	4.9	17	--	--	--	--	--	--	--	--	--	38
DRIVING PATTERN	Urban Driving	1/ 43	22.3	.74	23.5	.90	5.9	17	--	--	--	--	--	--	--	--	--	38
		2/ 10	23.1	1.82	24.7	2.31	7.3	18	--	--	--	--	--	--	--	--	--	38
	Non-Urban Driving	1/ 279	22.6	.28	23.8	.33	5.6	17	--	--	--	--	--	--	--	--	--	38
		2/ 55	24.1	.77	25.5	.84	6.2	17	--	--	--	--	--	--	--	--	--	38
	55/45 Mix	1/ 32	23.1	.83	24.2	.96	5.4	18	--	--	--	--	--	--	--	--	--	35
		2/ 4	22.2	2.99	23.8	3.90	7.8	18	--	--	--	--	--	--	--	--	--	35

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-28C

DISTRIBUTION EPA Fuel Economy of New Vehicle
(highway)

SOURCES Gas Mileage Guide

GROUP 1979 Car (October 1979 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3931 NOT REPORTED 388

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		3931	23.4	.06	24.1	.07	4.5	16	19.1	20.1	20.9	22.3	23.4	23.9	24.2	25.9	29.0	42	
RECORD KEEPING BEHAVIOR	Based on Records	655	23.9	.17	24.8	.20	5.0	16	19.5	20.3	21.4	22.6	23.4	23.8	24.7	27.3	30.3	42	
	Based on Checks	2186	23.4	.08	24.1	.10	4.5	16	19.3	20.0	20.8	22.2	23.3	23.8	24.1	25.7	28.9	42	
	Based on Perception	1090	23.2	.11	23.9	.12	4.1	16	18.9	20.1	20.9	22.5	23.6	23.9	24.0	25.5	28.8	40	
DRIVING PATTERN	Urban Driving	1 416	23.5	.18	24.1	.20	4.1	16	19.8	20.0	21.2	22.9	23.4	24.0	24.7	25.4	28.6	40	
		2 51	23.2	.47	23.8	.57	4.1	17	--	--	--	--	--	--	--	--	--	38	
	Non-Urban Driving	1 1051	23.5	.12	24.3	.15	4.7	16	19.3	20.0	20.8	22.2	23.3	23.8	24.3	26.2	29.6	42	
		2 187	24.6	.32	25.5	.38	5.2	17	--	--	--	--	--	--	--	--	--	42	
	55/45 Mix	1 190	23.4	.29	24.1	.34	4.7	16	26.0	19.6	20.8	22.2	24.4	24.4	23.5	26.5	27.0	38	
		2 35	23.3	.76	24.3	.91	5.4	16	--	--	--	--	--	--	--	--	--	38	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-28D

DISTRIBUTION EPA Fuel Economy of New Vehicle

(highway)

SOURCES Gas Mileage Guide

GROUP 1979 Trucks (October 1979 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 772 NOT REPORTED 156

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		772	19.4	.17	20.7	.20	5.5	15	--	--	--	--	--	--	--	--	--	--	36
RECORD KEEPING BEHAVIOR	Based on Records	128	20.1	.45	21.5	.52	5.9	15	--	--	--	--	--	--	--	--	--	--	36
	Based on Checks	493	19.4	.21	20.7	.25	5.5	15	--	--	--	--	--	--	--	--	--	--	36
	Based on Perception	151	18.8	.35	19.9	.42	5.2	15	--	--	--	--	--	--	--	--	--	--	32
DRIVING PATTERN	Urban Driving	1 35	19.9	.86	21.3	.99	5.8	15	--	--	--	--	--	--	--	--	--	--	32
		2 9	20.5	1.75	21.8	1.88	5.7	15	--	--	--	--	--	--	--	--	--	--	32
	Non-Urban Driving	1 308	19.3	.26	20.5	.31	5.5	15	--	--	--	--	--	--	--	--	--	--	34
		2 54	19.7	.69	21.1	.80	5.9	15	--	--	--	--	--	--	--	--	--	--	32
	55/45 Mix	1 41	18.9	.65	20.0	.81	5.2	15	--	--	--	--	--	--	--	--	--	--	32
		2 6	17.5	1.10	17.8	1.22	3.0	15	--	--	--	--	--	--	--	--	--	--	23

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-29A

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(city driving)

SOURCES Question 9(c)

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3409 NOT REPORTED 1005

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		3409	13.5	.08	15.1	.09	5.1	5	9.1	10.1	11.3	12.4	13.5	14.9	16.4	18.4	21.5	38	
RECORD KEEPING BEHAVIOR	Based on Records	599	13.4	.19	15.1	.22	5.5	6	9.0	9.7	10.8	12.0	13.4	14.9	16.6	18.7	21.8	36	
	Based on Checks	2047	13.6	.10	15.0	.11	5.0	5	9.2	10.2	11.3	12.3	13.5	14.8	16.4	18.3	21.4	36	
	Based on Perception	763	13.6	.17	15.2	.19	5.2	5	9.1	10.2	11.4	12.6	13.9	15.0	16.3	18.2	21.5	38	
DRIVING PATTERN	Urban Driving	1 340	13.3	.23	14.8	.28	5.1	6	9.0	9.9	11.0	11.8	12.8	14.3	16.3	18.6	21.6	35	
		2 54	12.9	.56	14.3	.64	4.7	6	1.9	8.9	10.8	11.5	12.3	13.5	15.3	18.0	20.0	29	
	Non-Urban Driving	1 813	14.3	.16	15.8	.18	5.3	5	8.7	11.0	12.1	13.1	14.3	15.6	16.8	18.7	22.6	36	
		2 146	14.2	.39	15.9	.48	5.7	7	8.9	10.7	11.7	12.7	14.1	15.5	17.0	19.0	23.6	36	
	55/45 Mix	1 189	13.5	.33	15.1	.38	5.2	6	9.1	10.0	11.1	12.4	13.7	15.0	16.4	18.2	21.1	35	
		2 39	13.3	.81	15.4	1.00	6.2	7	8.0	9.6	10.7	12.3	13.9	15.1	16.6	19.5	22.1	35	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-298

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(city driving)

SOURCES Question 9(c)

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 711 NOT REPORTED 250

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES									MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90
ALL RESPONDENTS		711	12.7	.18	14.5	.20	5.4	4	8.2	9.5	10.6	11.8	13.0	14.3	15.9	17.9	21.2	38
RECORD KEEPING BEHAVIOR	Based on Records	121	12.4	.44	14.3	.50	5.5	5	7.4	9.2	10.2	11.3	12.6	14.1	15.8	18.2	21.5	31
	Based on Checks	450	12.8	.23	14.6	.26	5.4	5	8.2	9.5	10.6	11.9	13.1	14.3	15.7	17.7	21.3	38
	Based on Perception	140	12.9	.43	14.6	.43	5.1	4	8.4	9.7	10.9	11.7	12.9	14.6	16.5	18.1	20.5	30
DRIVING PATTERN	Urban Driving	1 ¹ 40	13.7	.70	15.0	.70	4.4	7	8.9	10.4	11.5	12.7	13.9	15.3	17.3	20.0	20.5	25
		2 ² 8	11.7	1.26	12.8	1.47	4.2	8	--	--	--	--	--	--	--	--	--	20
	Non-Urban Driving	1 ¹ 243	12.5	.34	14.6	.37	5.7	4	7.8	9.4	10.6	11.9	13.1	14.3	15.7	18.1	22.1	38
		2 ² 43	12.7	.79	14.7	.87	5.7	5	8.1	9.3	10.3	11.5	12.8	14.3	16.2	18.8	21.7	31
	55/45 Mix	1 ¹ 36	14.4	.89	16.3	.94	5.7	7	9.1	11.0	12.3	13.2	14.6	16.7	18.5	19.4	22.4	30
		2 ² 7	12.9	1.83	14.7	2.24	5.9	8	--	--	--	--	--	--	--	--	--	25

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-29C

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(city driving)

SOURCES Question 9(c)

GROUP 1979 Car (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3429 NOT REPORTED 890

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		3429	13.2	.07	14.5	.08	4.5	5	9.1	10.1	11.1	12.1	13.2	14.3	15.6	17.1	19.6	39	
RECORD KEEPING BEHAVIOR	Based on Records	606	12.7	.15	13.9	.18	4.4	6	8.9	9.6	10.5	11.5	12.4	13.6	15.0	16.7	19.1	31	
	Based on Checks	2041	13.3	.09	14.6	.10	4.6	5	9.2	10.2	11.2	12.3	13.3	14.4	15.6	17.2	19.9	39	
	Based on Perception	782	13.3	.14	14.6	.16	4.4	5	9.2	10.0	11.2	12.3	13.3	14.5	15.9	17.3	19.2	34	
DRIVING PATTERN	Urban Driving	¹ 333	13.0	.21	14.2	.25	4.5	7	9.0	9.6	10.8	11.7	12.7	13.9	15.4	17.0	19.0	35	
		² 49	12.3	.56	13.7	.68	4.8	7	8.0	10.0	10.2	10.9	12.2	13.5	14.5	16.3	18.4	28	
	Non-Urban Driving	¹ 933	13.7	.14	15.0	.15	4.7	6	9.3	10.5	11.7	12.7	13.8	14.9	16.2	17.7	20.2	39	
		² 173	13.8	.30	15.0	.34	4.5	8	6.8	10.4	11.6	12.4	13.6	15.1	16.5	18.0	20.5	31	
	55/45 Mix	¹ 170	13.3	.29	14.4	.32	4.2	6	8.6	10.6	11.4	12.0	12.8	13.8	15.1	17.4	20.4	26	
		² 33	12.8	.60	13.8	.76	4.3	8	9.2	10.3	11.7	11.8	11.9	12.6	14.2	15.7	19.4	25	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

7-29D

TABLE _____

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle

(city driving)

SOURCES Question 9(c)

GROUP 1979 Truck (October 1979 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 757 **NOT REPORTED** 171

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		757	12.4	.16	13.9	.18	4.9	5	8.0	9.3	10.1	11.1	12.3	13.8	15.4	17.3	20.3	35	
RECORD KEEPING BEHAVIOR	Based on Records	136	12.6	.40	14.5	.48	5.6	6	8.1	9.2	9.9	10.9	12.4	14.3	16.6	19.1	22.7	28	
	Based on Checks	492	12.4	.19	13.8	.21	4.6	5	8.1	9.3	10.2	11.2	12.4	13.7	15.2	16.9	19.5	35	
	Based on Perception	129	12.1	.39	13.8	.47	5.3	5	7.8	9.1	9.9	10.6	11.7	13.3	15.4	17.8	20.5	35	
DRIVING PATTERN	Urban Driving	1 33	13.1	.78	14.6	.87	5.0	7	9.9	13.2	10.1	10.2	13.1	16.2	17.7	18.2	19.8	27	
		2 10	11.6	1.38	13.2	1.57	5.0	7	--	--	--	--	--	--	--	--	--	20	
	Non-Urban Driving	1 300	12.9	.25	14.3	.28	4.9	6	8.3	9.6	10.5	11.7	13.0	14.4	15.9	17.8	20.5	35	
		2 58	13.4	.68	15.4	.73	5.6	6	8.1	9.6	10.4	12.1	14.0	16.0	18.2	20.4	24.3	26	
	55/45 Mix	1 38	12.4	.73	14.2	.88	5.4	7	--	9.2	10.2	11.4	12.4	13.5	15.4	18.1	21.8	28	
		2 7	13.1	1.20	14.0	1.63	4.3	10	--	--	--	--	--	--	--	--	--	23	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-30A

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(highway driving)

SOURCES Question 9(c)

GROUP 1978 Car (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3362 NOT REPORTED 1052

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		3362	17.7	.09	19.3	.10	5.9	6	12.5	14.1	15.2	16.2	17.3	18.6	20.4	23.1	27.4	45	
RECORD KEEPING BEHAVIOR	Based on Records	588	17.7	.21	19.4	.26	6.2	8	12.3	13.8	14.8	16.0	17.3	18.8	20.8	23.9	28.1	45	
	Based on Checks	2039	17.7	.11	19.3	.13	5.9	6	12.6	14.2	15.1	16.2	17.3	18.6	20.4	23.2	27.4	43	
	Based on Perception	735	17.7	.19	19.2	.22	5.9	7	12.4	14.3	15.6	16.6	17.4	18.5	20.1	22.6	26.8	45	
DRIVING PATTERN	Urban Driving	1 305	18.2	.29	19.7	.34	5.9	8	13.2	14.4	15.6	16.8	17.9	19.1	20.7	23.2	27.5	42	
		2 48	17.5	.78	19.1	.81	5.6	8	12.6	13.8	14.7	15.9	17.7	19.6	21.3	22.9	24.3	32	
	Non-Urban Driving	1 838	17.9	.18	19.4	.21	6.0	8	12.6	14.3	15.4	16.3	17.4	18.8	20.8	23.4	27.1	43	
		2 148	17.7	.43	19.4	.51	6.2	9	12.1	13.7	14.9	16.1	17.4	18.9	20.9	23.7	28.4	36	
	55/45 Mix	1 182	17.7	.38	19.2	.44	6.0	7	13.2	14.2	15.1	16.2	17.4	18.5	20.0	22.4	26.7	45	
		2 37	18.1	.90	20.0	1.18	7.2	11	12.3	13.6	14.7	16.5	18.0	19.2	21.1	25.0	27.9	45	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-30B

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(highway driving)

SOURCES Question 9(c)

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 728 NOT REPORTED 233

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN.	ESTIMATED PERCENTILES										MAX.
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		728	16.1	.21	18.1	.24	6.4	5	10.7	12.4	13.6	14.9	16.3	17.7	19.5	22.4	26.9	44	
RECORD KEEPING BEHAVIOR	Based on Records	120	15.8	.55	18.2	.64	7.0	7	10.4	12.0	12.9	14.0	15.6	17.7	20.5	23.9	27.7	40	
	Based on Checks	464	16.2	.24	18.0	.29	6.2	8	10.8	12.5	13.8	15.0	16.2	17.5	19.3	22.0	26.9	44	
	Based on Perception	144	16.1	.53	18.3	.55	6.6	5	10.7	12.4	13.8	15.3	16.7	18.1	19.7	22.0	25.6	40	
DRIVING PATTERN	Urban Driving	1 37	18.0	.97	19.8	1.01	6.2	10	11.8	13.7	15.2	16.5	18.1	20.2	22.4	24.6	28.1	32	
		2 7	16.3	2.06	18.3	2.77	7.3	11	--	--	--	--	--	--	--	--	--	32	
	Non-Urban Driving	1 263	15.5	.36	17.7	.40	6.6	5	10.0	12.0	13.1	14.3	15.7	17.3	19.4	22.4	26.7	44	
		2 45	15.6	.88	18.0	1.08	7.2	8	9.9	11.6	12.5	13.3	15.0	17.6	20.9	24.5	27.0	36	
	55/45 Mix	1 36	18.4	1.01	20.5	1.15	6.9	10	12.9	13.5	15.0	15.9	17.8	20.8	23.4	25.1	34.2	38	
		2 7	16.1	2.03	18.3	2.96	7.8	12	--	--	--	--	--	--	--	--	--	30	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-30C

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(highway driving)

SOURCES Question 9(c)

GROUP 1979 Car (October 1979 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 3396 NOT REPORTED 923

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		3396	17.3	.08	18.5	.09	5.2	7	12.7	14.2	15.1	16.0	17.1	18.1	19.2	21.1	25.1	43	
RECORD KEEPING BEHAVIOR	Based on Records	593	17.0	.19	18.2	.21	5.1	8	12.6	13.9	14.8	15.8	16.8	17.7	18.9	20.8	25.2	40.	
	Based on Checks	2046	17.3	.10	18.6	.12	5.2	7	12.7	14.2	15.1	16.1	17.1	18.1	19.3	21.2	25.3	43	
	Based on Perception	757	17.3	.16	18.5	.18	5.0	8	12.8	14.2	15.3	16.2	17.2	18.1	19.4	21.1	24.2	42	
DRIVING PATTERN	Urban Driving	¹ 302	17.5	.24	18.7	.28	4.9	10	13.4	14.2	15.2	16.1	17.0	18.0	19.4	21.4	24.9	37	
		² 41	17.9	.67	19.1	.82	5.3	12	14.4	14.2	15.4	16.0	16.5	17.7	19.6	22.5	27.0	32	
	Non-Urban Driving	¹ 956	17.2	.15	18.5	.17	5.4	8	12.5	14.0	14.9	16.0	17.1	18.1	19.3	21.4	25.5	43	
		² 178	17.3	.37	18.6	.38	5.1	8	12.7	13.9	15.1	16.4	17.4	18.3	19.6	22.1	26.4	32	
	55/45 Mix	¹ 171	17.8	.34	19.0	.41	5.3	10	13.1	14.5	15.7	16.7	17.6	18.3	19.2	21.3	26.1	42	
		² 31	17.5	.66	18.4	.81	4.5	12	13.1	13.9	15.2	16.5	17.0	17.5	18.8	19.9	24.4	30	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-30D

DISTRIBUTION In-Use Fuel Economy of Replaced Vehicle
(highway driving)

SOURCES Question 9(c)

GROUP 1979 Truck (October 1978 Purchase)

UNITS Miles Per Gallon

SAMPLE SIZE 752 **NOT REPORTED** 176

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		752	15.9	.17	17.4	.21	5.7	8	10.8	12.4	13.6	14.6	15.7	16.8	18.5	21.0	25.1	42	
RECORD KEEPING BEHAVIOR	Based on Records	139	16.2	.45	18.1	.54	6.4	8	11.3	11.9	13.6	14.5	15.6	17.5	20.0	23.2	27.4	36	
	Based on Checks	485	15.8	.21	17.3	.25	5.4	8	10.7	12.5	13.8	14.7	15.6	16.8	18.2	20.3	24.3	40	
	Based on Perception	128	15.7	.43	17.4	.53	6.0	8	10.8	12.2	13.3	14.3	15.3	16.7	18.6	21.1	24.5	42	
DRIVING PATTERN	Urban Driving	1 30	17.5	.91	18.9	1.03	5.6	10	12.0	14.1	15.1	16.4	17.7	18.8	20.0	21.9	23.7	37	
		2 9	15.4	1.57	16.7	1.62	4.9	10	--	--	--	--	--	--	--	--	--	24	
	Non-Urban Driving	1 308	16.0	.26	17.5	.32	5.6	9	11.0	12.4	13.6	14.5	15.6	16.9	18.6	21.0	25.1	42	
		2 63	16.5	.70	18.5	.79	6.3	10	12.5	11.1	13.7	14.5	16.2	19.1	22.0	24.3	26.8	33	
	55/45 Mix	1 37	16.4	.92	18.4	1.09	6.6	8	10.7	12.4	13.8	15.6	16.9	17.6	18.6	21.6	27.3	36	
		2 7	17.9	1.68	19.1	2.24	5.9	14	--	--	--	--	--	--	--	--	--	31	

1. All Respondents with Given Driving Pattern

2. Respondents Keeping Accurate Fuel Economy Records

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-31A

DISTRIBUTION Comparison of EPA City Fuel Economies:
Owner Reported Minus True FE
SOURCES Question 24 and Gas Mileage Guide
GROUP 1978 Cars (August 1978 Purchase)
UNITS Miles per Gallon (except as noted)
SAMPLE SIZE 1586 NOT REPORTED 2828

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC *		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD ERROR	MEAN	STD. ERROR	STD. DEV.		0	10	20	30	40	50	60	70	80	90	
ALL RESPONDENTS		1586	-1.0	.63	.5	.09	3.5	-14	-3.3	-1.9	-1.1	-0.7	-0.5	-0.1	0.6	1.6	3.6	30	
RECORD KEEPING BEHAVIOR	Based on Records	348	-.8	.41	.9	.23	4.2	-10	-3.2	-1.9	-1.0	-0.5	-0.3	-0.1	0.5	1.8	4.0	21	
	Based on Checks	999	-1.2	.98	.3	.10	3.2	-14	-3.2	-1.9	-1.2	-0.8	-0.4	-0.1	0.5	1.5	3.4	18	
	Based on Perception	239	-.9	.64	.6	.24	3.7	-11	-3.6	-1.8	-1.0	-0.6	-0.3	0.2	0.9	2.1	3.8	30	
DRIVING PATTERN	Urban Driving	1 143	-0.5	.69	.3	.28	3.3	-11	-3.6	-1.8	-0.9	-0.5	-0.2	0.0	0.5	1.5	3.4	14	
		2 25	1.5	1.32	-.2	.70	3.5	-6	--	--	--	--	--	--	--	--	--	14	
	Non-Urban Driving	1 372	-1.3	.40	.9	.18	3.5	-9	-2.7	-1.6	-0.9	-0.5	-0.2	0.2	0.9	2.1	3.9	21	
		2 81	-2.1	1.01	2.1	.59	5.3	-6	-3.1	-1.7	-1.1	-0.9	-0.3	0.8	2.0	3.3	7.9	21	
	55/45 Mix	1 85	-1.3	.94	.6	.33	3.0	-10	-3.5	-1.8	-0.9	-0.6	-0.3	0.1	0.9	2.0	3.9	9	
		2 21	-1.9	1.13	.8	.40	1.8	-3	-2.4	-1.3	-0.8	-0.5	-0.2	0.6	2.0	4.0	--	5	

1. All Respondents with Given Driving Pattern

2. Respondents Keeping Accurate Fuel Economy Records

*Difference in fuel consumption rates, (units of 10^{-3} gallons per mile).

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-31B

DISTRIBUTION	Comparison of EPA City Fuel Economies:	
	Owner Reported Minus True FE	
SOURCES	Question 24 and Gas Mileage Guide	
GROUP	1978 Trucks	(August 1978 Purchase)
UNITS	Miles per Gallon (except as noted)	
SAMPLE SIZE	235	NOT REPORTED 726

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC *		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		235	2.1	.87	-.2	.18	2.7	-11	-3.5	-2.5	-1.8	-1.1	-0.6	-0.3	-0.1	1.1	3.1	8	
RECORD KEEPING BEHAVIOR	Based on Records	47	1.6	1.85	-.1	.45	3.1	-10	-3.5	-2.5	-1.7	-0.7	-0.2	0.1	0.6	0.8	3.4	8	
	Based on Checks	156	2.7	1.12	-.3	.21	2.7	-11	-3.6	-2.6	-2.0	-1.3	-0.7	-0.4	0.0	1.0	2.8	6	
	Based on Perception	32	-.1	1.91	.5	.45	2.6	-4	--	--	--	--	--	--	--	--	--	7	
DRIVING PATTERN	Urban Driving	1	15	1.9	2.69	0	.72	2.8	-4	--	--	--	--	--	--	--	--	6	
		2	5	-3.5	5.71	1.8	1.53	3.4	-3	--	--	--	--	--	--	--	--	6	
	Non-Urban Driving	1	80	2.8	2.03	-.1	.31	2.8	-11	-3.5	-2.5	-1.6	-0.8	-0.4	-0.1	0.6	1.7	2.6	5
		2	17	2.4	3.31	-.1	.64	2.6	-6	--	--	--	--	--	--	--	--	--	5
	55/45 Max	1	9	.2	2.79	.1	1.21	3.6	-6	--	--	--	--	--	--	--	--	--	6
		2	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Difference in fuel consumption rates,
(units of 10^{-3} gallons per mile).

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-32A

DISTRIBUTION	Comparison of EPA Highway Fuel Economies: Owner Reported Minus True FE	
SOURCES	Question 24 and Gas Mileage Guide	
GROUP	1978 Cars	(August 1978 Purchase)
UNITS	Miles per Gallon (except as noted)	
SAMPLE SIZE	1623	NOT REPORTED 2791

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC *		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		1623	1.6	.60	-.9	.10	4.0	-18	-5.7	-4.2	-3.0	-1.9	-1.1	-0.6	-0.3	0.3	2.4	33	
RECORD KEEPING BEHAVIOR	Based on Records	345	1.3	.31	-.3	.25	4.6	-15	-5.6	-4.0	-2.7	-1.4	-0.5	-0.2	-0.1	0.8	5.4	19	
	Based on Checks	1038	1.6	.93	-1.1	.11	3.7	-18	-5.7	-4.3	-3.1	-2.1	-1.2	-0.7	-0.4	0.1	1.8	18	
	Based on Perception	240	2.4	.46	-.9	.28	4.3	-17	-5.8	-4.3	-2.9	-1.7	-1.0	-0.6	-0.3	0.5	2.3	33	
DRIVING PATTERN	Urban Driving	1	142	2.0	.46	-1.1	.33	3.9	-16	-5.7	-4.2	-2.9	-1.7	-0.8	-0.5	-0.3	0.3	2.0	13
		2	26	2.4	.97	-1.0	.83	4.2	-11	--	--	--	--	--	--	--	--	13	
	Non-Urban Driving	1	398	-.6	2.39	-.6	.19	3.7	-12	-5.3	-3.8	-2.5	-1.5	-0.9	-0.5	-0.2	0.3	2.5	17
		2	81	.2	.59	.7	.52	4.7	-8	-4.7	-3.1	-1.7	-1.0	-0.8	-0.6	0.1	2.1	10.0	13
	55/45 Mix	1	86	1.6	.63	-.5	.39	3.6	-10	-4.7	-3.6	-2.8	-1.8	-0.9	-0.3	0.0	0.7	3.2	13
		2	20	1.3	.86	-.4	.61	2.7	-3	--	--	--	--	--	--	--	--	--	8

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Difference in Fuel Consumption Rates
(units of 10^{-3} gallons per mile).

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-32B

DISTRIBUTION Comparison of EPA Highway Fuel Economies:

Owner Reported Minus True FE

SOURCES Question 24 and Gas Mileage Guide

GROUP 1978 Trucks (August 1978 Purchase)

UNITS Miles per Gallon (except as noted)

SAMPLE SIZE 274 NOT REPORTED 687

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC*		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		274	3.0	.51	-1.1	.23	3.8	-13	-6.2	-4.4	-3.1	-2.1	-1.4	-0.8	-0.2	0.8	2.6	11	
RECORD KEEPING BEHAVIOR	Based on Records	56	1.7	1.03	-.6	.48	3.6	-11	-5.0	-3.6	-2.1	-1.4	-1.0	-0.6	0.1	0.9	2.7	10	
	Based on Checks	178	3.4	.67	-1.3	.29	3.9	-13	-6.7	-4.9	-3.4	-2.3	-1.5	-1.0	-0.4	0.7	2.4	11	
	Based on Perception	40	2.9	1.26	-.9	.56	3.5	-9	-5.0	-3.8	-3.0	-2.3	-1.7	-1.0	-0.2	0.7	3.0	8	
DRIVING PATTERN	Urban Driving	1 19	2.9	1.56	-1.0	.61	2.7	-5	--	--	--	--	--	--	--	--	--	4	
		2 7	.8	2.17	-.3	1.06	2.8	-5	--	--	--	--	--	--	--	--	--	4	
	Non-Urban Driving	1 96	3.0	.90	-1.1	.37	3.6	-13	-5.3	-4.5	-3.4	-2.3	-1.4	-0.9	-0.4	0.8	2.9	8	
		2 20	2.6	1.70	-.8	.64	2.9	-6	--	--	--	--	--	--	--	--	--	5	
	55/45 Mix	1 11	.4	2.47	-.3	1.31	4.3	-7	--	--	--	--	--	--	--	--	--	8	
		2 0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Difference in fuel consumption rates,
(units of 10⁻³ gallons per mile)

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-33A

DISTRIBUTION Perceived Shortfall: Overall In-Use Fuel Economy
versus Owner Reported EPA City Rating

SOURCES Questions 6b and 24

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 1671 NOT REPORTED 2743

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		1671	0.0	0.10	4.0	.0008	.00032	.0129	.01293	.00120	.77379	.02160
RECORD KEEPING BEHAVIOR	Based on Records	381	-1.4	0.26	5.0	.0045	.00073	.0142	.01366	.00250	.81888	.04746
	Based on Checks	1051	0.3	0.11	3.7	.0000	.00040	.0128	.01350	.00156	.75123	.02773
	Based on Perception	239	0.8	0.22	3.3	-.0012	.00064	.0098	.00503	.00252	.88537	.04500
DRIVING PATTERN	Urban Driving	1 ¹ 149	-0.7	0.26	3.2	.0025	.00080	.0098	.00780	.00366	.90144	.06012
		2 ² 28	-2.3	0.64	3.4	.0096	.00218	.0115	.00488*	.00922	1.08334	.17214
	Non-Urban Driving	1 ¹ 406	0.4	0.21	4.3	-.0006	.00072	.0145	.01489	.00265	.70669	.04856
		2 ² 96	-1.2	0.60	5.9	.0026	.00142	.0139	.01874	.00392	.67446	.07430
	55/45 Mix	1 ¹ 86	0.0	0.43	4.0	.0018	.00163	.0151	.00850*	.00695	.87584	.12494
		2 ² 21	-2.1	0.93	4.2	.0102	.00492	.0225	.01790*	.02255	.85517*	.41326

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-33B.

DISTRIBUTION Perceived Shortfall: Overall In-Use Fuel Economy
versus Owner Reported EPA City Rating

SOURCES Questions 6b and 24

GROUP 1978 Trucks (August 1978 Purchase)

SAMPLE SIZE 281 NOT REPORTED 680

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD ERROR
ALL RESPONDENTS		281	-0.5	0.19	3.1	.0024	.00084	.0140	.01906	.00277	.71955	.04464
RECORD KEEPING BEHAVIOR	Based on Records	53	-1.9	0.53	3.8	.0062	.00189	.0138	.02448	.00628	.69766	.09942
	Based on Checks	191	-0.2	0.21	2.9	.0019	.00106	.0147	.02037	.00346	.68853	.05591
	Based on Perception	37	0.3	0.40	2.4	-.0006	.00149	.0090	.00506*	.00545	.90375	.08877
DRIVING PATTERN	Urban Driving ¹	18	-1.1	0.99	4.2	.0036	.00236	.0100	.01005*	.00850	.88848	.14172
	Urban Driving ²	5	-5.0	2.45	5.5	.0109	.00553	.0124	.03582*	.01453	.50901*	.27290
	Non-Urban Driving ¹	98	-0.5	0.34	3.3	.0016	.00183	.0181	.03172	.00437	.49089	.06958
	Non-Urban Driving ²	20	-1.7	0.68	3.0	.0046	.00333	.0149	.03729	.00860	.46796	.13382
	55/45 Mix ¹	11	1.5	0.99	3.3	-.0043	.00274	.0091	.01381*	.00815	.67262	.14146
	55/45 Mix ²	1	--	--	--	--	--	--	--	--	--	--

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-34A

DISTRIBUTION Perceived Shortfall: Overall In-Use Fuel Economy versus Owner Reported EPA Highway Rating

SOURCES Questions 6b and 24

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 1722 NOT REPORTED 2692

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		1722	-6.6	0.11	4.7	.0137	.00029	.0122	.01153	.00114	1.05472	.02756
RECORD KEEPING BEHAVIOR	Based on Records	379	-8.4	0.29	5.6	.0166	.00069	.0135	.01115	.00244	1.14526	.06279
	Based on Checks	1102	-6.2	0.13	4.4	.0133	.00036	.0120	.01145	.00150	1.04516	.03556
	Based on Perception	241	-5.4	0.25	3.9	.0113	.00061	.0095	.00727	.00232	1.09663	.05425
DRIVING PATTERN	Urban Driving	1/ 147	-7.4	0.36	4.3	.0162	.00087	.0106	.01006	.00381	1.15387	.09224
		2/ 29	-8.8	0.76	4.1	.0230	.00251	.0141	.00831*	.01068	1.35696	.25321
	Non-Urban Driving	1/ 436	-6.1	0.23	4.9	.0121	.00064	.0134	.01220	.00247	.99724	.05973
		2/ 98	-8.3	0.62	6.1	.0155	.00117	.0116	.00912	.00396	1.17101	.10234
	55/45 Mix	1/ 88	-6.7	0.47	4.4	.0151	.00159	.0149	.00838*	.00640	1.16831	.15569
		2/ 20	-9.2	1.06	4.7	.0240	.00502	.0225	.01369*	.02178	1.26165	.53940

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-34B

DISTRIBUTION Perceived Shortfall: Overall In-Use Fuel Economy
versus Owner Reported EPA Highway Rating

SOURCES Questions 6b and 24

GROUP 1978 Trucks (August 1978 Purchase)

SAMPLE SIZE 321 NOT REPORTED 640

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		321	-5.9	0.22	4.0	.0160	.00070	.0135	.01214	.00261	1.08411	.05488
RECORD KEEPING BEHAVIOR	Based on Records	62	-8.0	0.62	4.9	.0211	.00161	.0124	.01883	.00578	1.05029	.12550
	Based on Checks	216	-5.7	0.24	3.5	.0158	.00084	.0124	.00914	.00314	1.14451	.06601
	Based on Perception	43	-3.8	0.50	3.3	.0099	.00161	.0105	.01040*	.00628	.98848	.12666
DRIVING PATTERN	Urban Driving ¹	20	-7.3	1.18	5.3	.0179	.00255	.0114	.02067	.00879	.93880	.18831
	Urban Driving ²	6	-11.2	2.02	5.0	.0226	.00282	.0071	.02565*	.01260	.91989	.32565
	Non-Urban Driving ¹	115	-5.9	0.38	4.0	.0151	.00119	.0134	.01786	.00427	.93841	.09138
	Non-Urban Driving ²	23	-7.7	0.83	4.0	.0191	.00232	.0111	.02645	.00771	.83322	.16588
	SS/45 Mix ¹	14	-4.8	1.08	4.0	.0108	.00300	.0111	.00439*	.01092	1.15110	.24844
	SS/45 Mix ²	1	--	--	--	--	--	--	--	--	--	--

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-35A

DISTRIBUTION Perceived Shortfall: In-Use Fuel Economy
in City Driving versus Owner Reported EPA City Rating

SOURCES Questions 25 and 24

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 1293 **NOT REPORTED** 3121

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		1293	-2.4	0.09	3.2	.0087	.00041	.0130	.00535	.00143	1.06194	.02592
RECORD KEEPING BEHAVIOR	Based on Records	313	-3.3	0.22	3.9	.0113	.00086	.0152	.00881	.00308	1.04806	.05789
	Based on Checks	821	-2.2	0.10	2.9	.0084	.00044	.0127	.00442	.00183	1.07143	.03275
	Based on Perception	159	-1.6	0.20	2.4	.0054	.00064	.0081	-.00049*	.00250	1.11079	.04584
DRIVING PATTERN	Urban Driving	1 ¹ 129	-2.3	0.26	2.9	.0084	.00095	.0107	.00461*	.00381	1.07091	.06864
		2 ² 29	-3.0	0.62	3.3	.0137	.00242	.0130	.00402*	.01073	1.17034	.18377
	Non-Urban Driving	1 ¹ 250	-2.4	0.21	3.3	.0073	.00071	.0106	.00975	.00266	.95414	.04839
		2 ² 66	-3.5	0.57	4.6	.0100	.00155	.0126	.01687	.00501	.86755	.09230
	55/45 Mix	1 ¹ 77	-2.4	0.40	3.5	.0102	.00202	.0177	.00576*	.00879	1.08242	.15930
		2 ² 20	-4.6	0.76	3.4	.0194	.00561	.0249	.01056*	.02897	1.17025	.54962

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-35B

DISTRIBUTION Perceived Shortfall: In-Use Fuel Economy
in City Driving versus Owner Reported EPA City Rating

SOURCES Questions 25 and 24

GROUP 1978 Trucks (August 1978 Purchase)

SAMPLE SIZE 210 **NOT REPORTED** 751

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		210	-2.6	0.19	2.8	.0121	.00106	.0154	.01784	.00369	.90623	.05725
RECORD KEEPING BEHAVIOR	Based on Records	41	-3.4	0.52	3.3	.0159	.00219	.0140	.01681	.00821	.98581	.12474
	Based on Checks	141	-2.5	0.21	2.5	.0125	.00138	.0164	.02044	.00476	.87144	.07333
	Based on Perception	28	-1.6	0.49	2.6	.0043	.00151	.0080	.01281	.00492	.85338	.08126
DRIVING PATTERN	Urban Driving	1/ 15	-2.0	1.18	4.6	.0094	.00491	.0190	.01867*	.01871	.84505	.30000
		2/ 4	-5.5	3.62	7.2	.0175	.01119	.0224	.06901*	.03425	.06355*	.59917
	Non-Urban Driving	1/ 55	-2.8	0.35	2.6	.0113	.00233	.0173	.03203	.00552	.67096	.08140
		2/ 13	-3.5	0.70	2.5	.0150	.00315	.0113	.03052	.01000	.76085	.14704
	SS/45 Mix	1/ 10	-1.3	0.52	1.6	.0044	.00209	.0070	.00628*	.00822	.96745	.13880
		2/ 0	--	--	--	--	--	--	--	--	--	--

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-36A

DISTRIBUTION Perceived Shortfall: In-Use Fuel Economy in Highway Driving versus Owner Reported Highway Rating
 SOURCES Questions 25 and 24
 GROUP 1978 Cars (August 1978 Purchase)
 SAMPLE SIZE 1345 NOT REPORTED 3069

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		1345	-3.6	0.11	4.1	.0068	.00024	.0090	.00745	.00095	.98236	.02298
RECORD KEEPING BEHAVIOR	Based on Records	303	-4.8	0.28	4.8	.0086	.00070	.0121	.00781	.00244	1.02161	.06224
	Based on Checks	891	-3.3	0.13	3.9	.0064	.00027	.0080	.00727	.00110	.97872	.02600
	Based on Perception	151	-2.8	0.27	3.3	.0051	.00050	.0061	.00423	.00194	1.02036	.04603
DRIVING PATTERN	Urban Driving 1	102	-3.2	0.35	3.6	.0067	.00077	.0078	.00701*	.00363	.99153	.08592
	Urban Driving 2	23	-4.1	0.84	4.0	.0100	.00221	.0104	.01621*	.01137	.85661	.25658
	Non-Urban Driving 1	330	-4.1	0.24	4.3	.0075	.00046	.0084	.00848	.00180	.97420	.04348
	Non-Urban Driving 2	80	-5.8	0.54	4.8	.0105	.00111	.0100	.00633*	.00395	1.10896	.10003
	55/45 Mix 1	75	-3.6	0.49	4.2	.0080	.00188	.0164	.01018*	.00770	.94442	.18557
	55/45 Mix 2	16	-6.3	1.29	5.1	.0182	.00783	.0313	.00754*	.03314	1.27716*	.83691

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-36B

DISTRIBUTION Perceived Shortfall: In-Use Fuel Economy in Highway Driving versus Owner Reported Highway Rating

SOURCES Questions 25 and 24

GROUP 1978 Trucks (August 1978 Purchase)

SAMPLE SIZE 249 NOT REPORTED 712

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		249	-3.8	0.23	3.6	.0100	.00072	.0114	.01084	.00274	.98259	.05595
RECORD KEEPING BEHAVIOR	Based on Records	46	-5.0	0.53	3.6	.0138	.00160	.0108	.01543	.00653	.96528	.13379
	Based on Checks	174	-3.7	0.26	3.5	.0100	.00086	.0114	.00877	.00328	1.02659	.06692
	Based on Perception	29	-2.2	0.76	4.1	.0040	.00173	.0093	.01477	.00605	.77403	.12215
DRIVING PATTERN	Urban Driving 1	14	-3.3	1.22	4.6	.0078	.00300	.0112	.02059*	.01075	.73037	.21574
	2	2	-5.0	--	--	.0120	--	--	--	--	--	--
	Non-Urban Driving 1	90	-4.2	0.41	3.9	.0101	.00122	.0116	.01608	.00432	.87109	.08964
	2	44	-5.4	0.94	4.0	.0127	.00234	.0101	.01944	.00782	.85558	.16027
	55/45 Mix 1	12	-3.1	0.96	3.3	.0079	.00370	.0131	.00344*	.01395	1.10151	.30590
	2	0	--	--	--	--	--	--	--	--	--	--

1: All Respondents with Given Driving Pattern

2: Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-37A

DISTRIBUTION Shortfall: Overall In-Use Fuel Economy
versus EPA City Rating

SOURCES Question 6b and Gas Mileage Guide

GROUP 1978 Cars (August 1978 Purchase)

SAMPLE SIZE 3554 NOT REPORTED 860

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		3554	.55	.075	4.48	-.0003	.00034	.0203	.03770	.00074	.32028	.01249
RECORD KEEPING BEHAVIOR	Based on Records	603	.08	.220	5.40	.0086	.00055	.0135	.00426*	.00225	.97190	.04170
	Based on Checks	2198	.66	.085	3.99	-.0010	.00051	.0238	.04267	.00084	.22662	.01371
	Based on Perception	753	.76	.180	4.95	.0028	.00044	.0120	.01006	.00218	.80784	.03725
DRIVING PATTERN	Urban Driving	1 336	-.46	.215	3.94	.0031	.00071	.0130	.00846	.00357	.90269	.06283
		2 51	-1.94	.571	4.08	.0005	.00184	.0132	.00240*	.00867	1.11243	.15369
	Non-Urban Driving	1 880	1.37	.144	4.29	-.0023	.00044	.0129	.00932	.00192	.78998	.03382
		2 147	.75	.450	5.46	.0005	.00099	.0120	.00336*	.00403	.94622	.07407
	55/45 Mix	1 207	.81	.304	4.38	-.0009	.00095	.0136	.00750*	.00422	.85582	.07537
		2 41	-.20	.841	5.39	.0049	.00296	.0189	-.00069*	.01253	1.10612	.23375

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-37B

DISTRIBUTION Shortfall: Overall In-Use Fuel Economy
versus EPA City Rating

SOURCES Question 6b and Gas Mileage Guide

GROUP 1978 Trucks (August 1978 Purchase)

SAMPLE SIZE 747 NOT REPORTED 214

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD ERROR	STD DEV.	MEAN	STD ERROR	STD DEV.	INTERCEPT	STD ERROR	SLOPE	STD ERROR
ALL RESPONDENTS		747	-.78	.117	3.19	.0058	.00054	.0149	-.00655	.00268	1.20889	.04466
RECORD KEEPING BEHAVIOR	Based on Records	130	-1.48	.308	3.51	.0079	.00150	.0171	-.00135*	.00666	1.16049	.11248
	Based on Checks	475	-.73	.140	3.06	.0056	.00065	.0141	-.00890	.00323	1.24728	.05412
	Based on Perception	142	-.32	.272	3.24	.0044	.00127	.0151	-.00719*	.00685	1.18856	.10975
DRIVING PATTERN	Urban Driving	1 40	-1.95	.558	3.53	.0108	.00275	.0174	-.00338*	.01308	1.12108	.20945
		2 9	-3.56	1.069	3.21	.0153	.00519	.0156	-.00197*	.02031	1.22155	.32855
	Non Urban Driving	1 268	-.70	.193	3.17	.0054	.00100	.0164	-.00555*	.00520	1.18635	.08647
		2 55	-1.22	.472	3.50	.0068	.00265	.0197	-.00074*	.01204	1.13217	.20725
	55/45 Mix	1 31	.32	.633	3.53	.0019	.00222	.0123	-.01006*	.01127	1.20591	.18984
		2 4	.50	2.102	4.20	-.0034	.00600	.0120	.02139*	.02509	.60694*	.38598

1: All Respondents with Given Driving Pattern
2: Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-38A

DISTRIBUTION Shortfall: Overall In-Use Fuel Economy
versus EPA Composite Rating
 SOURCES Question 6b and Gas Mileage Guide
 GROUP 1979 Cars (October 1978 Purchase)
 SAMPLE SIZE 3476 NOT REPORTED 843

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		3476	-1.76	.076	4.48	.0076	.00025	.0148	.02061	.00148	.75133	.02784
RECORD KEEPING BEHAVIOR	Based on Records	633	-2.25	.188	4.74	.0101	.00066	.0167	.01339	.00375	.93523	.07173
	Based on Checks	2104	-1.48	.095	4.37	.0065	.00031	.0141	.02012	.00187	.74139	.03513
	Based on Perception	739	-2.14	.164	4.47	.0084	.00055	.0148	.02734	.00305	.64314	.05675
DRIVING PATTERN	Urban Driving ¹	328	-3.05	.246	4.46	.0119	.00090	.0163	.03313	.00531	.59351	.10017
	Urban Driving ²	48	-4.04	.542	3.75	.0167	.00204	.0141	.01409*	.01492	1.04953	.27877
	Non-Urban Driving ¹	973	-.83	.145	4.51	.0043	.00041	.0129	.01696	.00238	.75811	.04503
	Non-Urban Driving ²	182	-1.08	.337	4.56	.0056	.00096	.0130	.00514*	.00566	.00854	.11115
	55/45 Mix ¹	173	-1.86	.360	4.74	.0084	.00108	.0143	.01235*	.00629	.92575	.11730
	55/45 Mix ²	34	-3.29	.680	3.97	.0130	.00252	.0147	.01200*	.01269	1.01894	.23767

1: All Respondents with Given Driving Pattern

2: Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-38B

DISTRIBUTION	Shortfall: Overall In-Use Fuel Economy	
	versus EPA Composite Rating	
SOURCES	Question 6b and Gas Mileage Guide	
GROUP	1979 Trucks	(October 1978 Purchase)
SAMPLE SIZE	722	NOT REPORTED 206

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		722	-1.14	.153	4.11	.0054	.00119	.0319	.05968	.00215	.12217	.03204
RECORD KEEPING BEHAVIOR	Based on Records	126	-1.30	.421	4.73	.0023	.00389	.0436	.06546	.00362	.02952*	.04765
	Based on Checks	482	-1.18	.170	3.74	.0057	.00120	.0264	.05502	.00256	.19134	.03946
	Based on Perception	114	-.80	.453	4.84	.0078	.00351	.0375	.06008	.00956	.15076*	.14691
DRIVING PATTERN	Urban Driving 1	32	-2.16	.613	3.47	.0107	.00266	.0150	.00208*	.01425	1.14813	.24014
	Urban Driving 2	9	-3.22	1.278	3.83	.0177	.00755	.0226	-.00195*	.04584	1.34119*	.78593
	Non-Urban Driving 1	290	-.96	.207	3.52	.0056	.00136	.0232	.04346	.00375	.36945	.05951
	Non-Urban Driving 2	54	-1.17	.655	4.81	.0027	.00584	.0429	.06515	.00595	.03944*	.07895
	55/45 Mix 1	36	-.89	.662	3.97	.0077	.00278	.0167	-.00837*	.01618	1.26363	.26159
	55/45 Mix 2	6	-1.83	.833	2.04	.0106	.00519	.0127	-.00027*	.04173	1.16691*	.63414

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-39A

DISTRIBUTION	Shortfall: Overall In-Use Fuel Economy versus EPA Highway Rating		
SOURCES	Question 6b and Gas Mileage Guide		
GROUP	1978 Cars	(August 1978 Purchase)	
SAMPLE SIZE	3552	NOT REPORTED	862

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		3552	-7.22	.078	4.62	.0140	.00084	.0500	.05376	.00035	.04404	.00549
RECORD KEEPING BEHAVIOR	Based on Records	603	-8.35	.219	5.38	.0167	.00167	.0410	.05193	.00103	.08518	.01854
	Based on Checks	2197	-7.10	.094	4.40	.0131	.0012	.0554	.05387	.00043	.03677	.00620
	Based on Perception	752	-6.65	.163	4.47	.0145	.00140	.0383	.05421	.00082	.05186	.01457
DRIVING PATTERN	Urban Driving	1 336	-8.26	.230	4.22	.0197	.00072	.0132	.00268*	.00387	1.43615	.09758
		2 51	-9.98	.565	4.04	.0251	.00192	.0137	-.00370*	.00850	1.74718	.21553
	Non-Urban Driving	1 880	-6.40	.159	4.70	.0106	.00195	.0579	.05175	.00067	.03215	.00938
		2 147	-7.41	.446	5.41	.0160	.00105	.0128	-.00028*	.00442	1.43605	.11554
	55/45 Mix	1 207	-7.05	.341	4.90	.0113	.00479	.0674	.05290	.00141	.03081*	.01773
		2 41	-8.59	.805	5.16	.0204	.00307	.0197	.00808*	.01342	1.78080	.35907

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-39B

DISTRIBUTION	Shortfall: Overall In-Use Fuel Economy versus EPA Highway Rating	
SOURCES	Question 6b and Gas Mileage Guide	
GROUP	1978 Trucks	(August 1978 Purchase)
SAMPLE SIZE	747	NOT REPORTED 214

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		747	-6.94	.133	3.64	.0208	.00058	.0158	-.00210*	.00266	1.52049	.05938
RECORD KEEPING BEHAVIOR	Based on Records	130	-8.15	.368	4.19	.0233	.00161	.0183	.00340*	.00697	1.46996	.16043
	Based on Checks	475	-6.86	.156	3.41	.0203	.00068	.0149	-.00435*	.00308	1.56300	.06892
	Based on Perception	142	-6.09	.302	3.60	.0200	.00136	.0162	-.00404*	.00720	1.52395	.15469
DRIVING PATTERN	Urban Driving	40	-8.17	.680	4.30	.0269	.00286	.0181	.00479*	.01299	1.49168	.28224
	2/ Urban Driving	9	-10.7	1.384	4.15	.0329	.00596	.0178	-.00960*	.02134	2.00635	.49079
	Non-Urban Driving	268	-6.82	.229	3.75	.0203	.00105	.0172	.00154*	.00500	1.42598	.11104
	2/ Non-Urban Driving	55	-8.11	.601	4.46	.0219	.00286	.0212	.01083*	.01257	1.26768	.29519
	55/45 Mix	31	-6.06	.689	3.84	.0172	.00247	.0138	-.00642*	.01198	1.55028	.27356
	2/ 55/45 Mix	4	-6.25	3.326	6.65	0.147	.00661	.0132	.03141*	.03348	.62797*	.72369

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

* Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-39C

DISTRIBUTION Shortfall: Overall In-Use Fuel Economy
versus EPA Highway Rating

SOURCES Question 6(b) and Gas Mileage Guide

GROUP 1979 Cars (October 1978 Purchase)

SAMPLE SIZE 3478 NOT REPORTED 841

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD ERROR	STD DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		3478	-6.29	.081	4.79	.0174	.00025	.0148	.02162	.00151	.90017	.03489
RECORD KEEPING BEHAVIOR	Based on Records	633	-6.94	.193	4.86	.0197	.00067	.0168	.01632	.00364	1.08080	.08558
	Based on Checks	2106	-5.99	.103	4.72	.0163	.00031	.0141	.02113	.00190	.88749	.04386
	Based on Perception	739	-6.57	.178	4.85	.0184	.00054	.0147	.02780	.00329	.78089	.07535
DRIVING PATTERN	Urban Driving	1 328	-7.47	.271	4.91	.0215	.00089	.0162	.03495	.00550	.68466	.12743
		2 48	-8.58	.614	4.25	.0267	.00202	.0140	.01437*	.01393	1.28520	.32005
	Non-Urban Driving	1 974	-5.37	.154	4.80	.0140	.00041	.0128	.01734	.00242	.92230	.05618
		2 183	-5.93	.335	4.53	.0150	.00954	.0129	.00524*	.00541	1.24014	.13066
	55/45 Mix	1 173	-6.46	.384	5.05	.0184	.00111	.0145	.01548	.00638	1.06829	.14680
		2 34	-7.74	.728	4.25	.0226	.00256	.0149	.00762*	.01354	1.35097	.31157

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-39D

DISTRIBUTION Shortfall: Overall In-Use Fuel Economy
versus EPA Highway Rating

SOURCES Question 6b and Gas Mileage Guide

GROUP 1979 Trucks (October 1978 Purchase)

SAMPLE SIZE 722 NOT REPORTED 206

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		722	-4.42	.143	3.84	.0159	.00069	3.84	.01400	.00295	1.03583	.05583
RECORD KEEPING BEHAVIOR	Based on Records	126	-5.24	.347	3.90	.0177	.00133	3.90	.00884*	.00536	1.17923	.10458
	Based on Checks	482	-4.39	.164	3.59	.0123	.00069	3.59	.01316	.00297	1.04020	.05606
	Based on Perception	114	-3.60	.425	4.54	.0164	.00293	4.54	.02307*	.01293	.87369	.23767
DRIVING PATTERN	Urban Driving 1	32	-5.50	.738	4.17	.0185	.00277	4.17	.02117*	.01158	.94750	.22255
	2	9	-7.00	1.546	4.64	.0264	.00777	4.64	.02506*	.03543	1.02690*	.70700
	Non-Urban Driving 1	290	-3.97	.219	3.73	.0141	.00093	3.73	.00818	.00398	1.11408	.07504
	2	54	-4.74	.581	4.27	.0170	.00224	4.27	.01068*	.00919	1.12349	.17539
	55/45 Mix 1	36	-3.56	.696	4.18	.0150	.00272	4.18	.00378*	.01305	1.20907	.23780
	2	6	-4.00	.516	1.27	.0185	.00411	1.27	0.02271*	.02544	1.71889	.43951

1 All Respondents with Given Driving Pattern
2 Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-40A

DISTRIBUTION Shortfall: In-Use Fuel Economy in City
Driving versus EPA City Rating
 SOURCES Question 25 and Gas Mileage Guide
 GROUP 1978 Cars (August 1978 Purchase)
 SAMPLE SIZE 2287 NOT REPORTED 2127

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR ²
ALL RESPONDENTS		2287	-1.75	.092	4.41	.0075	.00051	.0246	.04640	.00098	.30187	.01625
RECORD KEEPING BEHAVIOR	Based on Records	451	-2.23	.226	4.81	.0100	.00075	.0158	.00148*	.00308	1.16179	.05684
	Based on Checks	1473	-1.77	.099	3.81	.0073	.00074	.0285	.05161	.00108	.21244	.01729
	Based on Perception	363	-1.05	.306	5.83	.0053	.00072	.0138	.00833	.00343	.94716	.05855
DRIVING PATTERN	Urban Driving	1 242	-2.11	.228	3.55	.0093	.00086	.0133	.00231*	.00411	1.12564	.07213
		2 49	-2.92	.577	4.04	.0137	.00198	.0139	.00660*	.00607	1.02225	.10987
	Non-Urban Driving	1 433	-1.25	.186	3.88	.0057	.00062	.0129	.00921	.00283	.93728	.04987
		2 84	-1.77	.471	4.31	.0070	.00148	.0135	.00955*	.00628	.95160	.11425
	SS/45 Mix	1 152	-1.66	.342	4.22	.0098	.00136	.0168	-.00338*	.00943	1.30698	.16629
		2 33	-3.06	.714	4.10	0.135	.00374	.0215	-.00231*	.01639	1.30811	.31131

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-408

DISTRIBUTION Shortfall: In-Use Fuel Economy in City
Driving versus EPA City Rating

SOURCES Question 25 and Gas Mileage Guide

GROUP 1978 Trucks (August 1978 Purchase)

SAMPLE SIZE 442 NOT REPORTED 519

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		442	-3.01	.143	3.01	.0171	.00097	.0205	-.01279	.00464	1.50265	.07665
RECORD KEEPING BEHAVIOR	Based on Records	89	-3.56	.341	3.22	.0185	.00210	.0198	-.00550*	.00932	1.40826	.15464
	Based on Checks	292	-3.03	.169	2.89	.0177	.00124	.0212	-.02130	.00601	1.66065	.09996
	Based on Perception	61	-2.15	.396	3.09	.0118	.00223	.0174	.00244*	.01084	1.15224	.17165
DRIVING PATTERN	Urban Driving 1	34	-3.03	.525	3.06	.0168	.00308	.0180	-.00108*	.01473	1.29304	.23668
	Urban Driving 2	9	-3.33	.080	3.24	.0161	.00409	.0123	-.01006*	.02063	1.09438	.31749
	Non-Urban Driving 1	113	-3.40	.294	3.12	.0210	.00257	.0273	-.01862*	.01253	1.66340	.20581
	Non-Urban Driving 2	30	-3.90	.578	3.17	.0191	.00455	.0249	-.01274*	.01936	1.56829	.33704
	55/45 Mix 1	23	-1.35	.745	3.58	.0086	.00363	.0174	-.02001*	.01712	1.49490	.29000
		2	1.50	4.50	3.36	.0044	.0234	.0331	-.20635	---	3.80952	---

1/ All Respondents with Given Driving Pattern
2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at the .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-41A

DISTRIBUTION Shortfall: In-Use Fuel Economy in Highway
Driving versus EPA Highway Rating
 SOURCES Question 25 and Gas Mileage Guide
 GROUP 1978 Cars (August 1978 Purchase)
 SAMPLE SIZE 2364 NOT REPORTED 2050

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		2364	-4.39	.094	4.57	.0076	.00083	.0406	.04575	.00039	.05991	.00669
RECORD KEEPING BEHAVIOR	Based on Records	434	-4.98	.237	4.93	.0101	.00056	.0116	.00070*	.00240	1.29190	.06317
	Based on Checks	1568	-4.36	.109	4.32	.0068	.00123	.0486	.04643	.00042	.04521	.00647
	Based on Perception	362	-3.80	.267	5.08	.0081	.00099	.01886	.04116	.00175	.19266	.03958
DRIVING PATTERN	Urban Driving ¹	188	-4.22	.286	3.93	.0091	.00061	.0084	.00429*	.00345	1.12044	.08472
	Urban Driving ²	31	-5.39	5.93	3.30	.0132	.00171	.0095	-.00067*	.01186	1.33698	.28642
	Non-Urban Driving ¹	574	-4.29	.196	4.71	.0053	.00242	.0580	.04671	.00067	.03365	.00927
	Non-Urban Driving ²	105	-5.43	.490	5.02	.0106	.00108	.0111	.00455*	.00482	1.16086	.12559
	SS/45 Mix ¹	144	-4.04	.402	4.82	.0088	.00113	.0135	.00240*	.00548	1.16600	.13973
	SS/45 Mix ²	29	-5.17	.899	4.84	.0132	.00451	.0243	-.01468*	.01955	1.77822	.54360

¹ All Respondents with Given Driving Pattern

² Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at .05 level.

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 7-41B

DISTRIBUTION	Shortfall: In-Use Fuel Economy in Highway Driving versus EPA Highway Rating	
SOURCES	Question 25 and Gas Mileage Guide	
GROUP	1978 Trucks	(August 1978 Purchase)
SAMPLE SIZE	497	NOT REPORTED 464

SHORTFALL STATISTICS

		SAMPLE SIZE	MPG SPACE			GPM SPACE			SHORTFALL REGRESSION (GPM SPACE)			
			MEAN	STD. ERROR	STD. DEV.	MEAN	STD. ERROR	STD. DEV.	INTERCEPT	STD. ERROR	SLOPE	STD. ERROR
ALL RESPONDENTS		497	-5.01	.167	3.73	.0142	.00059	.0132	-.00122*	.00282	1.34816	.06220
RECORD KEEPING BEHAVIOR	Based on Records	92	-5.74	.407	3.91	.0150	.00126	.0121	.00067*	.00544	1.33307	.12340
	Based on Checks	261	-5.07	.199	3.65	.0147	.00076	.0138	-.00339*	.00358	1.40830	.07932
	Based on Perception	70	-3.74	.432	3.61	.0109	.00136	.0114	.00237*	.00753	1.18480	.15975
DRIVING PATTERN	Urban Driving 1	26	-4.19	.682	3.48	.0126	.00218	.0111	.00320*	.01163	1.19877	.24246
	Urban Driving 2	5	-4.20	1.393	3.11	.0167	.00593	.0133	-.08576*	.04395	3.05944	.87601
	Non-Urban Driving 1	172	-5.47	.277	3.63	.0153	.00112	.0147	.00204*	.00535	1.29886	.11789
	Non-Urban Driving 2	39	-6.64	.623	3.89	.0156	.00218	.0136	.00287*	.00876	1.31276	.20887
	55/45 Mix 1	22	-4.18	.797	3.74	.0102	.00203	.0095	.00534*	.01080	1.11329	.24912
	55/45 Mix 2	2	1.00	4.000	5.66	.0001	.01104	.0156	-.40833	----	8.55000	----

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

*Not significantly different from zero at .05 level.

8. VEHICLE USE PATTERNS

The owner surveys contain information relevant both to vehicle travel and to fuel economy studies. Reported here are the first survey's responses to questions on vehicle miles traveled, trip length, and a typical week's type of driving. In addition, the average miles per day has been calculated for each vehicle as a measure of intensity of use. The data base therefore permits many analyses in relating travel demand and vehicle use to demographic variables (see Section 9) or to vehicle characteristics such as size class (see Section 6). The owner-reported driving patterns and the intensity of vehicle use also are important explanatory variables for variations in fuel economy. In fact, vehicle use patterns reported in this section have been used to define driving pattern subsets for the Section 7 tables of fuel economy and shortfall data.

8.1 PRESENTATION

The following vehicle use data are presented in this section:

- Odometer Reading at Time of Survey (Figures 8-1 A/D)
- Imputed Average Miles per Day (Figures 8-2 A/D and Tables 8-2A and D)
- Expected Length of Service before Replacement of New Vehicle (Table 8-3)
- Average One-way Trip Length (Figures 8-3 A/D)
- Expected Annual Mileage (Figures 8-4 A/D)
- Percentage of Typical Weekly Driving
 - in the city (Table 8-4)

- on expressways (Table 8-5)
- on rural roads (Table 8-6)
- without passengers (Table 8-7)
- with passengers (Table 8-8).

The first survey findings are reported here using formats introduced in previous chapters. Histograms display the distributions of reported odometer readings, for example, and tabulate frequencies and cumulative statistics. Each figure presents its information for one of the four survey groups of 1978 and 1979 car and light-duty truck buyers. Cross-tabulation tables also are found here and report the findings of many questions, such as the expected length of service and the typical driving conditions. These tables incorporate all four survey groups and show the frequency of each response and the percentage distribution by survey group.

The data table format introduced in the Section 7 distributions of fuel economy data also is found here for the distributions of average miles per day (AMPD). Because the intensity of vehicle use, measured as AMPD, typically is related inversely to the percentage of non-urban driving, this factor is important in understanding the variations in in-use fuel economy by driving mode. For this purpose, the AMPD of each vehicle has been imputed from reported odometer readings and the estimated length of service. As shown in Table 8-1, the calculation assumes that vehicles were purchased at mid-month and had accumulated the reported mileage at the closing date of each survey wave. The data tables for AMPD present summary statistics and estimated percentiles for the several record-keeping and driving pattern subsets used in Section 7, permitting the comparison of AMPD with the tables of fuel economy and shortfall data. The reader should refer to Sections 7.2 and B.2 for a fuller explanation of the tables.

Figure 8-2A and Table 8-2A present information on the intensity of vehicle use for the August 1978 group of new car buyers. The histogram illustrates that driving patterns fall predominantly into one of two groups: lower intensity "city" driving and higher intensity "highway" driving, distinguished by the average number of miles traveled per day. The statistics of Table 8-2A also bear this out. Mean miles per day (mpd) among those classified as urban drivers is 29.3 mpd, compared to 52.3 mpd for non-urban drivers. Consumers reporting a 55/45 mix of city and highway driving are average in terms of vehicle use (42.8 mpd compared to the aggregate average of 43.2 mpd) but, as shown in the figure, are not typical of either the city or highway travel mode.

TABLE 8-1

SURVEY AND WAVE DATES FOR CALCULATION OF AVERAGE MILES PER DAY VARIABLE
(First Survey Only)

<u>MODEL YEAR</u>	<u>PURCHASE MONTH</u>	<u>WAVE NUMBER</u>	<u>DATE QUESTIONNAIRES RETURNED</u>	<u>ELAPSED DAYS FROM MID-MONTH OF PURCHASE</u>
1978	August 1978	1	February 15, 1979	184
		2	March 20, 1979	217
		3	May 5, 1979	263
1979	October 1978	1	February 15, 1979	123
		2	March 20, 1979	156
		3	May 5, 1979	202

FIGURE 8-1A: DISTRIBUTION OF ODOMETER READINGS AT TIME OF SURVEY

(SOURCE: QUESTION 6A)

SURVEY = MY78 CAR (AUG)

FREQUENCY BAR CHART

ODOMETER		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
< 1,000	*****	40	40	0.94	0.94
1,001- 2,000	*****	133	173	3.13	4.06
2,001- 3,000	*****	217	390	5.10	9.16
3,001- 4,000	*****	368	758	8.65	17.81
4,001- 5,000	*****	400	1158	9.40	27.21
5,001- 6,000	*****	413	1571	9.70	36.91
6,001- 7,000	*****	441	2012	10.36	47.27
7,001- 8,000	*****	422	2434	9.92	57.19
8,001- 9,000	*****	324	2758	7.61	64.80
9,001-10,000	*****	317	3075	7.45	72.25
10,001-11,000	*****	225	3300	5.29	77.54
11,001-12,000	*****	227	3527	5.33	82.87
12,001-13,000	*****	160	3687	3.76	86.63
13,001-14,000	*****	121	3808	2.84	89.47
14,001-15,000	*****	97	3905	2.28	91.75
15,001-17,500	*****	78	3983	1.83	93.59
17,501-20,000	*****	38	4021	0.89	94.48
20,001-22,500	*****	45	4066	1.06	95.54
22,501-25,000	*****	40	4106	0.94	96.48
25,001-30,000	****	33	4139	0.78	97.25
30,001-35,000	*****	64	4203	1.50	98.75
>35,000	*****	53	4256	1.25	100.00

30 60 90 120 150 180 210 240 270 300 330 360 390 420

FIGURE 8-1B: DISTRIBUTION OF ODOMETER READINGS AT TIME OF SURVEY

(SOURCE: QUESTION 6A)

SURVEY = MY78 TRUCK (AUG)

FREQUENCY BAR CHART

ODOMETER		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
< 1 000	****	8	8	0.86	0.86
1,001- 2,000	*****	19	27	2.04	2.90
2,001- 3,000	*****	39	66	4.19	7.10
3,001- 4,000	*****	70	136	7.53	14.62
4,001- 5,000	*****	71	207	7.63	22.26
5,001- 6,000	*****	95	302	10.22	32.47
6,001- 7,000	*****	81	383	8.71	41.18
7,001- 8,000	*****	90	473	9.68	50.86
8,001- 9,000	*****	79	552	8.49	59.35
9,001-10,000	*****	81	633	8.71	68.06
10,001-11,000	*****	57	690	6.13	74.19
11,001-12,000	*****	43	733	4.62	78.82
12,001-13,000	*****	44	777	4.73	83.55
13,001-14,000	*****	27	804	2.90	86.45
14,001-15,000	*****	25	829	2.69	89.14
15,001-17,500	*****	20	849	2.15	91.29
17,501-20,000	*****	13	862	1.40	92.69
20,001-22,500	*****	15	877	1.61	94.30
22,501-25,000	**	4	881	0.43	94.73
25,001-30,000	*****	12	893	1.29	96.02
30,001-35,000	*****	17	910	1.83	97.85
>35,000	*****	20	930	2.15	100.00

10 20 30 40 50 60 70 80 90

FIGURE 8-1C: DISTRIBUTION OF ODOMETER READINGS AT TIME OF SURVEY

(SOURCE: QUESTION 6A)

SURVEY = MY79 CAR (OCT)

FREQUENCY BAR CHART

FIGURE 8-1D: DISTRIBUTION OF ODOMETER READINGS AT TIME OF SURVEY

(SOURCE: QUESTION 6A)

SURVEY = MY79 TRUCK (OCT)

FREQUENCY BAR CHART

FIGURE 8 -2A: DISTRIBUTION OF AVERAGE MILES PER DAY

(SOURCE: QUESTION 6A AND SURVEY WAVE DATE)

SURVEY = MY78 CAR (AUG)

FREQUENCY BAR CHART

MILES PER DAY

		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1- 5 AMPD	*****	40	40	0.94	0.94
6- 10 AMPD	*****	150	190	3.52	4.46
11- 15 AMPD	*****	223	413	5.24	9.70
16- 20 AMPD	*****	368	781	8.65	18.35
21- 25 AMPD	*****	444	1225	10.43	28.78
26- 30 AMPD	*****	512	1737	12.03	40.81
31- 35 AMPD	*****	136	1873	3.20	44.01
36- 40 AMPD	*****	442	2315	10.39	54.39
41- 45 AMPD	*****	394	2709	9.26	63.65
46- 50 AMPD	*****	307	3016	7.21	70.86
51- 60 AMPD	*****	473	3489	11.11	81.98
61- 70 AMPD	*****	306	3795	7.19	89.17
71- 80 AMPD	*****	154	3949	3.62	92.79
81- 90 AMPD	*****	55	4004	1.29	94.08
91-100 AMPD	***	23	4027	0.54	94.62
101-125 AMPD	*****	81	4108	1.90	96.52
126-150 AMPD	*****	75	4183	1.76	98.28
151-175 AMPD	**	17	4200	0.40	98.68
176-200 AMPD	*****	56	4256	1.32	100.00

30 60 90 120 150 180 210 240 270 300 330 360 390 420 450 480 510

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE <u>8-2A</u>	
DISTRIBUTION	<u>Average Miles Per Day for New Vehicle</u>
SOURCES	<u>Estimated from Question 6(a) and Survey Wave</u>
GROUP	<u>1978 Car</u> <u>(August 1978 Purchase)</u>
UNITS	<u>Miles Per Day</u>
SAMPLE SIZE	<u>4256</u> NOT REPORTED <u>158</u>

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		4256	NA	NA	43.2	.47	30.5	1.9	14.1	20.4	25.7	30.4	35.3	40.9	47.5	55.4	70.6	190.2	
RECORD KEEPING BEHAVIOR	Based on Records	700	NA	NA	43.1	1.16	30.6	1.9	14.5	20.5	25.9	30.7	35.2	40.2	46.2	53.6	68.0	190.2	
	Based on Checks	2460	NA	NA	45.3	.62	30.6	1.9	15.6	22.3	27.9	32.2	36.9	42.8	49.8	57.5	72.8	190.2	
	Based on Perception	1096	NA	NA	38.7	.89	29.6	1.9	10.5	16.5	21.3	25.9	30.9	36.5	43.0	51.1	66.0	190.2	
DRIVING PATTERN	Urban Driving	1 435	NA	NA	29.3	1.04	21.7	1.9	8.2	12.9	16.6	20.1	23.8	27.8	32.5	38.6	48.8	190.2	
		2 56	NA	NA	31.0	3.27	24.5	2.7	9.3	14.2	16.8	21.7	26.7	29.9	32.5	38.5	48.8	176.6	
	Non-Urban Driving	1 1039	NA	NA	53.3	1.12	36.0	1.9	19.4	26.9	32.4	37.5	43.2	49.7	56.5	65.4	92.9	190.2	
		2 174	NA	NA	52.4	2.84	37.4	1.9	18.3	25.9	32.3	37.0	40.5	44.7	52.0	64.8	91.6	190.2	
	55/45 Mix	1 228	NA	NA	42.8	1.74	26.3	2.7	15.5	19.6	25.1	31.8	37.8	42.9	48.2	55.9	68.4	161.3	
		2 45	NA	NA	41.4	4.22	28.3	11.5	19.1	18.7	22.7	29.0	34.6	38.9	43.2	48.6	56.7	161.3	

1/ All Respondents with Given Driving Pattern .

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 8 -2B: DISTRIBUTION OF AVERAGE MILES PER DAY

(SOURCE: QUESTION 6A AND SURVEY WAVE DATE)

SURVEY = MY78 TRUCK (AUG)

FREQUENCY BAR CHART

MILES PER DAY

		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1- 5 AMPD	****	8	8	0.86	0.86
6- 10 AMPD	*****	23	31	2.47	3.33
11- 15 AMPD	*****	36	67	3.87	7.20
16- 20 AMPD	*****	69	136	7.42	14.62
21- 25 AMPD	*****	74	210	7.96	22.58
26- 30 AMPD	*****	116	326	12.47	35.05
31- 35 AMPD	*****	24	350	2.58	37.63
36- 40 AMPD	*****	91	441	9.78	47.42
41- 45 AMPD	*****	89	530	9.57	56.99
46- 50 AMPD	*****	76	606	8.17	65.16
51- 60 AMPD	*****	122	728	13.12	78.28
61- 70 AMPD	*****	68	796	7.31	85.59
71- 80 AMPD	*****	43	839	4.62	90.22
81- 90 AMPD	*****	20	859	2.15	92.37
91-100 AMPD	*	1	860	0.11	92.47
101-125 AMPD	*****	22	882	2.37	94.84
126-150 AMPD	*****	25	907	2.69	97.53
151-175 AMPD	***	5	912	0.54	98.06
176-200 AMPD	*****	18	930	1.94	100.00

10 20 30 40 50 60 70 80 90 100 110 120

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

8-2B

TABLE

DISTRIBUTION Average Miles Per Day for New Vehicle

SOURCES Estimated from Question 6(a) and Survey Wave

GROUP 1979 Car (October 1978 Purchase)

UNITS Miles Per Day

SAMPLE SIZE 4189 NOT REPORTED 130

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		4189	NA	NA	35.1	.41	26.6	2.5	9.8	14.6	19.4	23.7	28.0	32.9	38.6	45.9	58.5	285	
RECORD KEEPING BEHAVIOR	Based on Records	698	NA	NA	35.4	.99	26.1	2.5	7.2	13.8	18.7	22.8	27.3	32.4	38.3	45.8	60.2	264	
	Based on Checks	2358	NA	NA	36.8	.56	27.3	2.5	11.7	16.1	21.5	25.8	29.7	34.3	40.2	47.6	59.4	285	
	Based on Perception	1133	NA	NA	31.4	.75	25.2	2.5	9.8	12.1	15.8	20.0	24.4	29.4	35.2	42.3	54.2	285	
DRIVING PATTERN	Urban Driving	1 435	NA	NA	25.8	1.18	24.7	2.5	10.3	6.3	12.6	17.4	19.6	22.3	27.5	33.3	40.5	264	
		2 56	NA	NA	27.4	2.28	17.0	2.5	--	4.2	14.8	19.0	20.4	23.3	28.9	36.4	49.7	77	
	Non-Urban Driving	1 1123	NA	NA	42.8	.91	30.5	3.2	12.9	19.2	25.0	30.1	35.0	40.1	46.6	55.9	70.8	285	
		2 203	NA	NA	44.0	2.27	32.3	3.2	11.0	18.8	23.6	29.2	35.2	40.8	47.1	57.7	77.4	264	
	55/45 Mix	1 203	NA	NA	37.6	2.30	32.7	4.1	0.4	19.1	21.0	22.8	27.5	33.8	39.8	46.5	59.7	285	
		2 36	NA	NA	30.0	2.93	17.6	9.6	--	10.4	13.7	16.0	21.4	25.8	34.1	42.3	48.9	85	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 8 -2C: DISTRIBUTION OF AVERAGE MILES PER DAY

(SOURCE: QUESTION 6A AND SURVEY WAVE DATE)

SURVEY = MY79 CAR (OCT)

FREQUENCY BAR CHART

MILES PER DAY

		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1- 5 AMPD	*****	147	147	3.51	3.51
6- 10 AMPD	*****	95	242	2.27	5.78
11- 15 AMPD	*****	465	707	11.10	16.88
16- 20 AMPD	*****	145	852	3.46	20.34
21- 25 AMPD	*****	698	1550	16.66	37.00
26- 30 AMPD	*****	719	2269	17.16	54.17
31- 35 AMPD	****	42	2311	1.00	55.17
36- 40 AMPD	*****	586	2897	13.99	69.16
41- 45 AMPD	*****	420	3317	10.03	79.18
46- 50 AMPD	*****	99	3416	2.36	81.55
51- 60 AMPD	*****	272	3688	6.49	88.04
61- 70 AMPD	*****	269	3957	6.42	94.46
71- 80 AMPD	*****	84	4041	2.01	96.47
81- 90 AMPD	****	38	4079	0.91	97.37
91-100 AMPD	****	43	4122	1.03	98.40
101-125 AMPD	**	22	4144	0.53	98.93
126-150 AMPD	*	10	4154	0.24	99.16
151-175 AMPD	*	13	4167	0.31	99.47
176-200 AMPD		2	4169	0.05	99.52
>200 AMPD	**	20	4189	0.48	100.00

50 100 150 200 250 300 350 400 450 500 550 600 650 700

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

8-2C

TABLE

DISTRIBUTION Average Miles Per Day for New Vehicle

SOURCES Estimated from Question 6(a) and Survey Wave

GROUP 1978 Truck (August 1978 Purchase)

UNITS Miles Per Day

SAMPLE SIZE 930 **NOT REPORTED** 31

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		930	NA	NA	48.0	1.10	33.5	2.3	15.7	22.8	28.8	33.6	38.7	44.7	51.5	59.8	80.5	190	
RECORD KEEPING BEHAVIOR	Based on Records	153	NA	NA	46.2	2.69	33.2	2.7	15.4	21.3	27.0	31.9	35.9	40.3	47.2	58.3	76.2	190	
	Based on Checks	582	NA	NA	49.3	1.42	34.2	2.3	17.1	24.3	29.8	34.7	39.9	45.7	52.0	60.3	83.0	190	
	Based on Perception	195	NA	NA	45.4	2.28	31.9	2.3	14.1	19.6	25.3	31.3	37.9	44.7	51.5	58.5	75.2	190	
DRIVING PATTERN	Urban Driving	¹ 50	NA	NA	36.2	4.54	32.1	2.7	12.6	17.6	20.5	24.3	28.2	31.2	34.2	39.5	53.2	190	
		² 10	NA	NA	26.7	4.22	13.3	2.7	--	--	--	--	--	--	--	--	--	46	
	Non-Urban Driving	¹ 332	NA	NA	56.7	2.10	38.2	5.7	18.6	26.5	32.8	38.7	45.4	52.6	60.3	72.1	96.7	190	
		² 62	NA	NA	55.8	4.37	34.4	13.6	26.9	25.4	33.5	39.7	44.8	52.0	61.6	69.9	83.2	190	
	55/45 Mix	¹ 45	NA	NA	45.6	4.23	28.4	2.7	16.6	25.2	29.2	33.1	37.9	43.9	51.7	68.9	68.9	176	
		² 7	NA	NA	44.5	8.27	21.9	24.5	--	--	--	--	--	--	--	--	--	88	

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

FIGURE 8-2D: DISTRIBUTION OF AVERAGE MILES PER DAY

(SOURCE: QUESTION 6A AND SURVEY WAVE DATE)

SURVEY = MY79 TRUCK (OCT)

FREQUENCY BAR CHART

MILES PER DAY

FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
20	20	2.22	2.22
13	33	1.44	3.66
58	91	6.44	10.10
25	116	2.77	12.87
124	240	13.76	26.64
162	402	17.98	44.62
9	411	1.00	45.62
132	543	14.65	60.27
98	641	10.88	71.14
17	658	1.89	73.03
64	722	7.10	80.13
80	802	8.88	89.01
23	825	2.55	91.56
27	852	3.00	94.56
5	857	0.55	95.12
12	869	1.33	96.45
1	870	0.11	96.56
11	881	1.22	97.78
1	882	0.11	97.89
19	901	2.11	100.00

1- 5 AMPD
6- 10 AMPD
11- 15 AMPD
16- 20 AMPD
21- 25 AMPD
26- 30 AMPD
31- 35 AMPD
36- 40 AMPD
41- 45 AMPD
46- 50 AMPD
51- 60 AMPD
61- 70 AMPD
71- 80 AMPD
81- 90 AMPD
91-100 AMPD
101-125 AMPD
126-150 AMPD
151-175 AMPD
176-200 AMPD
>200 AMPD

EXAMPLE DISTRIBUTION

J. D. POWER /DOE NEW VEHICLE OWNER SURVEY

TABLE 8-20

DISTRIBUTION Average Miles Per Day for New Vehicle

SOURCES Estimated from Question 6(a) and Survey Wave

GROUP 1979 Truck (October 1979 Purchase)

UNITS Miles Per Day

SAMPLE SIZE 901 NOT REPORTED 27

DISTRIBUTION STATISTICS

		SAMPLE SIZE	HARMONIC		ARITHMETIC			MIN	ESTIMATED PERCENTILES										MAX
			MEAN	STD. ERROR	MEAN	STD. ERROR	STD. DEV.	0	10	20	30	40	50	60	70	80	90	100	
ALL RESPONDENTS		901	NA	NA	44.8	1.41	42.4	3.2	12.9	19.9	23.9	28.1	32.7	37.9	44.4	54.6	71.2	285	
RECORD KEEPING BEHAVIOR	Based on Records	154	NA	NA	47.0	4.19	52.0	3.2	1.8	19.2	19.8	26.1	32.2	35.8	41.7	56.3	70.6	285	
	Based on Checks	574	NA	NA	44.8	1.63	38.9	3.2	15.7	21.7	25.3	29.4	33.7	38.6	44.9	54.5	70.4	285	
	Based on Perception	173	NA	NA	43.1	3.37	44.3	3.2	11.5	14.9	20.2	25.5	30.1	35.2	42.8	54.3	69.6	285	
DRIVING PATTERN	Urban Driving	1 45	NA	NA	27.1	2.17	14.5	3.2	--	12.0	17.5	21.4	22.8	23.2	30.0	44.7	--	72	
		2 9	NA	NA	23.5	5.98	17.9	4.11	--	--	--	--	--	--	--	--	--	53	
	Non-Urban Driving	1 359	NA	NA	47.9	2.25	42.7	3.2	15.6	21.9	26.5	30.9	35.5	41.1	48.5	58.9	76.4	285	
		2 67	NA	NA	46.5	5.79	47.4	3.2	15.5	20.7	22.3	25.9	32.0	39.1	46.2	55.7	75.4	285	
	55/45 Mix	1 47	NA	NA	39.9	3.81	26.1	4.1	10.8	14.1	19.1	27.5	36.0	42.7	48.5	55.5	61.1	152	
		2 9	NA	NA	39.7	9.42	28.3	12.2	--	--	--	--	--	--	--	--	--	--	85

1/ All Respondents with Given Driving Pattern

2/ Respondents Keeping Accurate Fuel Economy Records

TABLE 8-3: EXPECTED NUMBER OF YEARS BEFORE REPLACEMENT OF NEW VEHICLE

(SOURCE: QUESTION 7)

FREQUENCY PERCENT ROW PCT	NO ANSWER	1	2	3	4	5	TOTAL
MY78 CAR (AUG)	479	131	357	595	699	944	3935
	.	1.39	3.78	6.31	7.41	10.01	41.71
	.	3.33	9.07	15.12	17.76	23.99	
MY78 TRUCK (AUG)	142	58	58	95	123	176	819
	.	0.61	0.61	1.01	1.30	1.87	8.68
	.	7.08	7.08	11.60	15.02	21.49	
MY79 CAR (OCT)	441	605	578	687	625	659	3878
	.	6.41	6.13	7.28	6.62	6.98	41.10
	.	15.60	14.90	17.72	16.12	16.99	
MY79 TRUCK (OCT)	125	94	66	105	129	164	803
	.	1.00	0.70	1.11	1.37	1.74	8.51
	.	11.71	8.22	13.08	16.06	20.42	
TOTAL	.	888	1059	1482	1576	1943	9435
	.	9.41	11.22	15.71	16.70	20.59	100.00

(CONTINUED)

TABLE 8-3: EXPECTED NUMBER OF YEARS BEFORE REPLACEMENT OF NEW VEHICLE

(SOURCE: QUESTION 7)

FREQUENCY PERCENT ROW PCT		6	7	8	9	10+	TOTAL
MY78 CAR (AUG)		359	173	150	49	478	3935
		3.80	1.83	1.59	0.52	5.07	41.71
		9.12	4.40	3.81	1.25	12.15	
MY78 TRUCK (AUG)		63	43	36	13	154	819
		0.67	0.46	0.38	0.14	1.63	8.68
		7.69	5.25	4.40	1.59	18.80	
MY79 CAR (OCT)		228	111	80	26	279	3878
		2.42	1.18	0.85	0.28	2.96	41.10
		5.88	2.86	2.06	0.67	7.19	
MY79 TRUCK (OCT)		57	37	28	5	118	803
		0.60	0.39	0.30	0.05	1.25	8.51
		7.10	4.61	3.49	0.62	14.69	
TOTAL		707	364	294	93	1029	9435
		7.49	3.86	3.12	0.99	10.91	100.00

FIGURE 8-3A: DISTRIBUTION OF AVERAGE ONE-WAY TRIP LENGTH

(SOURCE: QUESTION 22)

SURVEY = MY78 CAR (AUG)

FREQUENCY BAR CHART

TRIP LENGTH		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1- 5 MILES	*****	711	711	17.94	17.94
6- 10 MILES	*****	766	1477	19.32	37.26
11- 15 MILES	*****	470	1947	11.86	49.12
16- 20 MILES	*****	408	2355	10.29	59.41
21- 25 MILES	*****	245	2600	6.18	65.59
26- 30 MILES	*****	209	2809	5.27	70.86
31- 35 MILES	****	87	2896	2.19	73.06
36- 40 MILES	*****	109	3005	2.75	75.81
41- 45 MILES	*	27	3032	0.68	76.49
46- 50 MILES	*****	142	3174	3.58	80.07
51- 60 MILES	*****	100	3274	2.52	82.59
61- 70 MILES	***	50	3324	1.26	83.85
71- 80 MILES	***	59	3383	1.49	85.34
81- 90 MILES	*	18	3401	0.45	85.80
91-100 MILES	*****	112	3513	2.83	88.62
101-150 MILES	*****	156	3669	3.94	92.56
151-200 MILES	*****	105	3774	2.65	95.21
201-250 MILES	***	57	3831	1.44	96.64
251-300 MILES	***	51	3882	1.29	97.93
301-400 MILES	*	26	3908	0.66	98.59
401-500 MILES	*	26	3934	0.66	99.24
>500 MILES	**	30	3964	0.76	100.00

100 200 300 400 500 600 700

FIGURE 8-3B: DISTRIBUTION OF AVERAGE ONE-WAY TRIP LENGTH

(SOURCE: QUESTION 22)

SURVEY = MY78 TRUCK (AUG)

FREQUENCY BAR CHART

FIGURE 8-3C: DISTRIBUTION OF AVERAGE ONE-WAY TRIP LENGTH

(SOURCE: QUESTION 22)

SURVEY = MY79 CAR (OCT)

FREQUENCY BAR CHART

TRIP LENGTH		FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
1- 5 MILES	*****	714	714	18.36	18.36
6- 10 MILES	*****	749	1463	19.26	37.62
11- 15 MILES	*****	470	1933	12.09	49.70
16- 20 MILES	*****	374	2307	9.62	59.32
21- 25 MILES	*****	240	2547	6.17	65.49
26- 30 MILES	*****	187	2734	4.81	70.30
31- 35 MILES	***	65	2799	1.67	71.97
36- 40 MILES	*****	104	2903	2.67	74.65
41- 45 MILES	**	43	2946	1.11	75.75
46- 50 MILES	*****	155	3101	3.99	79.74
51- 60 MILES	****	77	3178	1.98	81.72
61- 70 MILES	**	45	3223	1.16	82.87
71- 80 MILES	***	63	3286	1.62	84.49
81- 90 MILES	*	22	3308	0.57	85.06
91-100 MILES	*****	147	3455	3.78	88.84
101-150 MILES	*****	138	3593	3.55	92.39
151-200 MILES	*****	112	3705	2.88	95.27
201-250 MILES	***	63	3768	1.62	96.89
251-300 MILES	**	38	3806	0.98	97.87
301-400 MILES	*	27	3833	0.69	98.56
401-500 MILES	**	31	3864	0.80	99.36
>500 MILES	*	25	3889	0.64	100.00

100 200 300 400 500 600 700

FIGURE 8-3D: DISTRIBUTION OF AVERAGE ONE-WAY TRIP LENGTH

(SOURCE: QUESTION 22)

SURVEY = MY79 TRUCK (OCT)

FREQUENCY BAR CHART

FIGURE 8-4A: DISTRIBUTION OF EXPECTED ANNUAL MILEAGE

(SOURCE: QUESTION 30)

SURVEY = MY78 CAR. (AUG)

FREQUENCY BAR CHART

ANNUAL MILEAGE		FREQ	CUM-FREQ	PERCENT	CUM-PERCENT
< 1,000	*****	37	37	0.89	0.89
1 001- 2,000	*****	79	116	1.91	2.80
2,001- 3,000	*****	68	184	1.64	4.45
3,001- 4 000	*****	54	238	1.30	5.75
4 001- 5,000	*****	149	387	3.60	9.35
5,001- 6,000	*****	151	538	3.65	13.00
6,001- 7 000	*****	113	651	2.73	15.73
7,001- 8 000	*****	274	925	6.62	22.35
8,001- 9 000	*****	135	1060	3.26	25.62
9,001-10,000	*****	667	1727	16.12	41.74
10 001-11,000	*****	105	1832	2.54	44.27
11 001-12,000	*****	611	2443	14.77	59.04
12,001-13,000	*****	116	2559	2.80	61.84
13,001-14,000	*****	146	2705	3.53	65.37
14 001-15,000	*****	403	3108	9.74	75.11
15 001-17,500	*****	129	3237	3.12	78.23
17,501-20 000	*****	450	3687	10.87	89.10
20,001-22,500	*****	38	3725	0.92	90.02
22,501-25 000	*****	184	3909	4.45	94.47
25,001-30 000	*****	124	4033	3.00	97.46
30,001-35,000	***	29	4062	0.70	98.16
>35,000	*****	76	4138	1.84	100.00

50 100 150 200 250 300 350 400 450 500 550 600 650

FIGURE 8-4B: DISTRIBUTION OF EXPECTED ANNUAL MILEAGE

(SOURCE: QUESTION 30)

SURVEY = MY78 TRUCK (AUG)

FREQUENCY BAR CHART

(SOURCE: QUESTION 30)

FREQUENCY BAR CHART

	FREQ	CUM-FREQ	PERCENT	CUM-PERCENT
< 1,000	57	57	1.41	1.41
1,001- 2,000	63	120	1.56	2.97
2,001- 3,000	63	183	1.56	4.53
3,001- 4,000	74	257	1.83	6.37
4,001- 5,000	180	437	4.46	10.83
5,001- 6,000	171	608	4.24	15.06
6,001- 7,000	135	743	3.34	18.41
7,001- 8,000	278	1021	6.89	25.30
8,001- 9,000	106	1127	2.63	27.92
9,001-10,000	649	1776	16.08	44.00
10,001-11,000	98	1874	2.43	46.43
11,001-12,000	638	2512	15.81	62.24
12,001-13,000	92	2604	2.28	64.52
13,001-14,000	138	2742	3.42	67.94
14,001-15,000	465	3207	11.52	79.46
15,001-17,500	99	3306	2.45	81.91
17,501-20,000	334	3640	8.28	90.19
20,001-22,500	45	3685	1.11	91.30
22,501-25,000	148	3833	3.67	94.97
25,001-30,000	99	3932	2.45	97.42
30,001-35,000	39	3971	0.97	98.39
>35,000	65	4036	1.61	100.00

FIGURE 8-4D: DISTRIBUTION OF EXPECTED ANNUAL MILEAGE

(SOURCE: QUESTION 30)

SURVEY = MY79 TRUCK (OCT)

FREQUENCY BAR CHART

ANNUAL MILEAGE

		FREQ	CUM-FREQ	PERCENT	CUM-PERCENT
< 1,000	***	5	5	0.57	0.57
1,001- 2,000	****	7	12	0.80	1.37
2,001- 3,000	****	7	19	0.80	2.17
3,001- 4,000	**	4	23	0.46	2.62
4,001- 5,000	*****	25	48	2.85	5.47
5,001- 6,000	*****	36	84	4.10	9.58
6,001- 7,000	*****	19	103	2.17	11.74
7,001- 8,000	*****	46	149	5.25	16.99
8,001- 9,000	*****	24	173	2.74	19.73
9,001-10,000	*****	142	315	16.19	35.92
10,001-11,000	*****	16	331	1.82	37.74
11,001-12,000	*****	134	465	15.28	53.02
12,001-13,000	*****	19	484	2.17	55.19
13,001-14,000	*****	24	508	2.74	57.92
14,001-15,000	*****	94	602	10.72	68.64
15,001-17,500	*****	18	620	2.05	70.70
17,501-20,000	*****	110	730	12.54	83.24
20,001-22,500	*****	15	745	1.71	84.95
22,501-25,000	*****	49	794	5.59	90.54
25,001-30,000	*****	37	831	4.22	94.75
30,001-35,000	*****	15	846	1.71	96.47
>35,000	*****	31	877	3.53	100.00

10 20 30 40 50 60 70 80 90 100 110 120 130 140

TABLE 8-4: PERCENTAGE OF WEEKLY DRIVING IN CITY CONDITIONS

(SOURCE: QUESTION 31A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	0 %	1- 10 %	11- 20 %	21- 30 %	31- 40 %	TOTAL
MY78 CAR (AUG)	163	93	582	391	424	288	4251
	.	0.91	5.68	3.81	4.13	2.81	41.46
	.	2.19	13.69	9.20	9.97	6.77	
MY78 TRUCK (AUG)	29	37	187	117	114	52	932
	.	0.36	1.82	1.14	1.11	0.51	9.09
	.	3.97	20.06	12.55	12.23	5.58	
MY79 CAR (OCT)	150	121	591	433	397	240	4169
	.	1.18	5.76	4.22	3.87	2.34	40.66
	.	2.90	14.18	10.39	9.52	5.76	
MY79 TRUCK (OCT)	26	28	206	130	89	49	902
	.	0.27	2.01	1.27	0.87	0.48	8.80
	.	3.10	22.84	14.41	9.87	5.43	
TOTAL	.	279	1566	1071	1024	629	10254
	.	2.72	15.27	10.44	9.99	6.13	100.00

(CONTINUED)

TABLE 8-4: PERCENTAGE OF WEEKLY DRIVING IN CITY CONDITIONS

(SOURCE: QUESTION 31A)

FREQUENCY PERCENT ROW PCT							TOTAL
	41- 50 %	51- 60 %	61- 70 %	71- 80 %	81- 90 %	91-100 %	
MY78 CAR (AUG)	498 4.86 11.71	237 2.31 5.58	237 2.31 5.58	572 5.58 13.46	473 4.61 11.13	456 4.45 10.73	4251 41.46
MY78 TRUCK (AUG)	105 1.02 11.27	45 0.44 4.83	40 0.39 4.29	108 1.05 11.59	72 0.70 7.73	55 0.54 5.90	932 9.09
MY79 CAR (OCT)	500 4.88 11.99	207 2.02 4.97	198 1.93 4.75	532 5.19 12.76	491 4.79 11.78	459 4.48 11.01	4169 40.66
MY79 TRUCK (OCT)	113 1.10 12.53	48 0.47 5.32	33 0.32 3.66	97 0.95 10.75	62 0.60 6.87	47 0.46 5.21	902 8.80
TOTAL	1216 11.86	537 5.24	508 4.95	1309 12.77	1098 10.71	1017 9.92	10254 100.00

TABLE 8-5: PERCENTAGE OF WEEKLY DRIVING ON EXPRESSWAYS

(SOURCE: QUESTION 31B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	0 %	1- 10 %	11- 20 %	21- 30 %	31- 40 %	TOTAL
MY78 CAR (AUG)	230	724	1111	577	491	322	4184
	.	7.12	10.93	5.67	4.83	3.17	41.14
	.	17.30	26.55	13.79	11.74	7.70	
MY78 TRUCK (AUG)	31	186	242	117	104	56	930
	.	1.83	2.38	1.15	1.02	0.55	9.15
	.	20.00	26.02	12.58	11.18	6.02	
MY79 CAR (OCT)	164	783	1121	519	481	274	4155
	.	7.70	11.02	5.10	4.73	2.69	40.86
	.	18.84	26.98	12.49	11.58	6.59	
MY79 TRUCK (OCT)	28	180	230	113	108	62	900
	.	1.77	2.26	1.11	1.06	0.61	8.85
	.	20.00	25.56	12.56	12.00	6.89	
TOTAL	.	1873	2704	1326	1184	714	10169
	.	18.42	26.59	13.04	11.64	7.02	100.00

(CONTINUED)

TABLE 8-5: PERCENTAGE OF WEEKLY DRIVING ON EXPRESSWAYS

(SOURCE: QUESTION 31B)

FREQUENCY PERCENT ROW PCT							TOTAL
	41- 50 %	51- 60 %	61- 70 %	71- 80 %	81- 90 %	91-100 %	
MY78 CAR (AUG)	334	157	130	192	104	42	4184
	3.28	1.54	1.28	1.89	1.02	0.41	41.14
	7.98	3.75	3.11	4.59	2.49	1.00	
MY78 TRUCK (AUG)	79	40	26	47	19	14	930
	0.78	0.39	0.26	0.46	0.19	0.14	9.15
	8.49	4.30	2.80	5.05	2.04	1.51	
MY79 CAR (OCT)	378	154	149	178	92	26	4155
	3.72	1.51	1.47	1.75	0.90	0.26	40.86
	9.10	3.71	3.59	4.28	2.21	0.63	
MY79 TRUCK (OCT)	66	37	23	44	30	7	900
	0.65	0.36	0.23	0.43	0.30	0.07	8.85
	7.33	4.11	2.56	4.89	3.33	0.78	
TOTAL	857	388	328	461	245	89	10169
	8.43	3.82	3.23	4.53	2.41	0.88	100.00

TABLE 8-6: PERCENTAGE OF WEEKLY DRIVING ON RURAL ROADS

(SOURCE: QUESTION 31C)

FREQUENCY PERCENT ROW PCT	NO ANSWER	0 %	1- 10 %	11- 20 %	21- 30 %	31- 40 %	TOTAL
MY78 CAR (AUG)	281	1111	1108	447	343	200	4133
	.	10.99	10.96	4.42	3.39	1.98	40.88
	.	26.88	26.81	10.82	8.30	4.84	
MY78 TRUCK (AUG)	32	181	198	91	96	54	929
	.	1.79	1.96	0.90	0.95	0.53	9.19
	.	19.48	21.31	9.80	10.33	5.81	
MY79 CAR (OCT)	171	1174	1026	444	331	240	4148
	.	11.61	10.15	4.39	3.27	2.37	41.03
	.	28.30	24.73	10.70	7.98	5.79	
MY79 TRUCK (OCT)	28	136	214	93	80	61	900
	.	1.35	2.12	0.92	0.79	0.60	8.90
	.	15.11	23.78	10.33	8.89	6.78	
TOTAL	.	2602	2546	1075	850	555	10110
	.	25.74	25.18	10.63	8.41	5.49	100.00

(CONTINUED)

TABLE 8-6: PERCENTAGE OF WEEKLY DRIVING ON RURAL ROADS

(SOURCE: QUESTION 31C)

FREQUENCY PERCENT ROW PCT							TOTAL
	41- 50 %	51- 60 %	61- 70 %	71- 80 %	81- 90 %	91-100 %	
MY78 CAR (AUG)	266	104	120	199	134	101	4133
	2.63	1.03	1.19	1.97	1.33	1.00	40.88
	6.44	2.52	2.90	4.81	3.24	2.44	
MY78 TRUCK (AUG)	76	37	38	57	53	48	929
	0.75	0.37	0.38	0.56	0.52	0.47	9.19
	8.18	3.98	4.09	6.14	5.71	5.17	
MY79 CAR (OCT)	259	118	116	174	136	130	4148
	2.56	1.17	1.15	1.72	1.35	1.29	41.03
	6.24	2.84	2.80	4.19	3.28	3.13	
MY79 TRUCK (OCT)	76	31	42	70	55	42	900
	0.75	0.31	0.42	0.69	0.54	0.42	8.90
	8.44	3.44	4.67	7.78	6.11	4.67	
TOTAL	677	290	316	500	378	321	10110
	6.70	2.87	3.13	4.95	3.74	3.18	100.00

TABLE 8-7: PERCENTAGE OF WEEKLY DRIVING WITH NO PASSENGERS

(SOURCE: QUESTION 32A)

FREQUENCY PERCENT ROW PCT	NO ANSWER	0 %	1- 10 %	11- 20 %	21- 30 %	31- 40 %	TOTAL
MY78 CAR (AUG)	103	130	462	196	228	131	4311
	.	1.26	4.46	1.89	2.20	1.27	41.64
	.	3.02	10.72	4.55	5.29	3.04	
MY78 TRUCK (AUG)	29	49	44	18	26	25	932
	.	0.47	0.42	0.17	0.25	0.24	9.00
	.	5.26	4.72	1.93	2.79	2.68	
MY79 CAR (OCT)	108	137	481	186	220	134	4211
	.	1.32	4.65	1.80	2.12	1.29	40.67
	.	3.25	11.42	4.42	5.22	3.18	
MY79 TRUCK (OCT)	28	36	31	22	30	12	900
	.	0.35	0.30	0.21	0.29	0.12	8.69
	.	4.00	3.44	2.44	3.33	1.33	
TOTAL	.	352	1018	422	504	302	10354
	.	3.40	9.83	4.08	4.87	2.92	100.00

(CONTINUED)

TABLE 8-7: PERCENTAGE OF WEEKLY DRIVING WITH NO PASSENGERS

(SOURCE: QUESTION 32A)

FREQUENCY PERCENT ROW PCT							TOTAL
	41- 50 %	51- 60 %	61- 70 %	71- 80 %	81- 90 %	91-100 %	
MY78 CAR (AUG)	547	286	281	773	715	562	4311
	5.28	2.76	2.71	7.47	6.91	5.43	41.64
	12.69	6.63	6.52	17.93	16.59	13.04	
MY78 TRUCK (AUG)	79	27	49	137	161	317	932
	0.76	0.26	0.47	1.32	1.55	3.06	9.00
	8.48	2.90	5.26	14.70	17.27	34.01	
MY79 CAR (OCT)	585	247	271	727	690	533	4211
	5.65	2.39	2.62	7.02	6.66	5.15	40.67
	13.89	5.87	6.44	17.26	16.39	12.66	
MY79 TRUCK (OCT)	73	38	41	136	171	310	900
	0.71	0.37	0.40	1.31	1.65	2.99	8.69
	8.11	4.22	4.56	15.11	19.00	34.44	
TOTAL	1284	598	642	1773	1737	1722	10354
	12.40	5.78	6.20	17.12	16.78	16.63	100.00

TABLE 8 -8: PERCENTAGE OF WEEKLY DRIVING WITH AT LEAST ONE PASSENGER

(SOURCE: QUESTION 32B)

FREQUENCY PERCENT ROW PCT	NO ANSWER	0 %	1- 10 %	11- 20 %	21- 30 %	31- 40 %	TOTAL
MY78 CAR (AUG)	105	122	1037	542	556	340	4309
	.	1.18	10.02	5.24	5.37	3.28	41.63
	.	2.83	24.07	12.58	12.90	7.89	
MY78 TRUCK (AUG)	30	239	306	118	88	40	931
	.	2.31	2.96	1.14	0.85	0.39	8.99
	.	25.67	32.87	12.67	9.45	4.30	
MY79 CAR (OCT)	105	139	975	512	544	285	4214
	.	1.34	9.42	4.95	5.26	2.75	40.71
	.	3.30	23.14	12.15	12.91	6.76	
MY79 TRUCK (OCT)	31	225	313	114	82	38	897
	.	2.17	3.02	1.10	0.79	0.37	8.67
	.	25.08	34.89	12.71	9.14	4.24	
TOTAL	.	725	2631	1286	1270	703	10351
	.	7.00	25.42	12.42	12.27	6.79	100.00

(CONTINUED)

TABLE 8-8: PERCENTAGE OF WEEKLY DRIVING WITH AT LEAST ONE PASSENGER

(SOURCE: QUESTION 32B)

FREQUENCY PERCENT ROW PCT		41- 50 %	51- 60 %	61- 70 %	71- 80 %	81- 90 %	91-100 %	TOTAL
MY78 CAR (AUG)		546	114	151	262	307	332	4309
		5.27	1.10	1.46	2.53	2.97	3.21	41.63
		12.67	2.65	3.50	6.08	7.12	7.70	
MY78 TRUCK (AUG)		61	18	12	16	10	23	931
		0.59	0.17	0.12	0.15	0.10	0.22	8.99
		6.55	1.93	1.29	1.72	1.07	2.47	
MY79 CAR (OCT)		591	129	116	262	345	316	4214
		5.71	1.25	1.12	2.53	3.33	3.05	40.71
		14.02	3.06	2.75	6.22	8.19	7.50	
MY79 TRUCK (OCT)		51	10	12	20	10	22	897
		0.49	0.10	0.12	0.19	0.10	0.21	8.67
		5.69	1.11	1.34	2.23	1.11	2.45	
TOTAL		1249	271	291	560	672	693	10351
		12.07	2.62	2.81	5.41	6.49	6.70	100.00

9. DEMOGRAPHIC INFORMATION

This section summarizes the basic demographic information for participants in the first and second owner surveys. Its information is presented as tables which cross-tabulate demographic characteristics of respondents and their families with the six survey groups defined in Table 2-4. The characteristics include the following:

- Gender of respondent (Table 9-1)
- Age group (Table 9-2)
- Marital status (Table 9-3A)
- Number of children in the household (Table 9-3B)
- Educational level (Table 9-4)
- Annual Income (Table 9-5).

TABLE 9-1: GENDER OF RESPONDENT

(SOURCE: QUESTION 34)

FREQUENCY PERCENT ROW PCT		NO	FEMALE	MALE	TOTAL
		ANSWER			
MY78 CAR (AUG)		370	1333	2711	4044
		.	13.66	27.78	41.43
		.	32.96	67.04	
MY78 TRUCK (AUG)		77	78	806	884
		.	0.80	8.26	9.06
		.	8.82	91.18	
MY79 CAR (OCT)		349	1195	2775	3970
		.	12.24	28.43	40.68
		.	30.10	69.90	
MY79 TRUCK (OCT)		66	63	799	862
		.	0.65	8.19	8.83
		.	7.31	92.69	
TOTAL		.	2669	7091	9760
		.	27.35	72.65	100.00

TABLE 9-2: AGE GROUP OF RESPONDENTS

(SOURCE: QUESTION 37)

FREQUENCY PERCENT ROW PCT	NO ANSWER	<20	20-24	25-29	30-34	35-39	TOTAL
MY78 CAR (AUG)	339	87	457	586	512	375	4075
	.	0.89	4.66	5.97	5.22	3.82	41.51
	.	2.13	11.21	14.38	12.56	9.20	
MY78 TRUCK (AUG)	60	7	112	150	140	95	901
	.	0.07	1.14	1.53	1.43	0.97	9.18
	.	0.78	12.43	16.65	15.54	10.54	
MY79 CAR (OCT)	346	75	355	485	479	384	3973
	.	0.76	3.62	4.94	4.88	3.91	40.47
	.	1.89	8.94	12.21	12.06	9.67	
MY79 TRUCK (OCT)	60	22	92	138	143	102	868
	.	0.22	0.94	1.41	1.46	1.04	8.84
	.	2.53	10.60	15.90	16.47	11.75	
TOTAL	.	191	1016	1359	1274	956	9817
	.	1.95	10.35	13.84	12.98	9.74	100.00

(CONTINUED)

TABLE 9-2: AGE GROUP OF RESPONDENTS

(SOURCE: QUESTION 37)

FREQUENCY PERCENT ROW PCT						TOTAL
	40-44	45-49	50-54	55-59	60+	
MY78 CAR (AUG)	339	297	355	376	691	4075
	3.45	3.03	3.62	3.83	7.04	41.51
	8.32	7.29	8.71	9.23	16.96	
MY78 TRUCK (AUG)	91	60	83	72	91	901
	0.93	0.61	0.85	0.73	0.93	9.18
	10.10	6.66	9.21	7.99	10.10	
MY79 CAR (OCT)	313	350	417	368	747	3973
	3.19	3.57	4.25	3.75	7.61	40.47
	7.88	8.81	10.50	9.26	18.80	
MY79 TRUCK (OCT)	79	78	79	57	78	868
	0.80	0.79	0.80	0.58	0.79	8.84
	9.10	8.99	9.10	6.57	8.99	
TOTAL	822	785	934	873	1607	9817
	8.37	8.00	9.51	8.89	16.37	100.00

TABLE 9-3A: MARITAL STATUS OF RESPONDENTS

(SOURCE: QUESTION 38A)

FREQUENCY PERCENT ROW PCT		NO	SINGLE	MARRIED	FORMERLY	TOTAL
		ANSWER			MARRIED	
MY78 CAR (AUG)		415	713	2905	381	3999
		.	7.41	30.18	3.96	41.55
		.	17.83	72.64	9.53	
MY78 TRUCK (AUG)		86	114	727	34	875
		.	1.18	7.55	0.35	9.09
		.	13.03	83.09	3.89	
MY79 CAR (OCT)		412	645	2920	342	3907
		.	6.70	30.34	3.55	40.59
		.	16.51	74.74	8.75	
MY79 TRUCK (OCT)		84	119	672	53	844
		.	1.24	6.98	0.55	8.77
		.	14.10	79.62	6.28	
TOTAL		.	1591	7224	810	9625
		.	16.53	75.05	8.42	100.00

TABLE 9-3B: NUMBER OF CHILDREN AT HOME

(SOURCE: QUESTION 38A)

FREQUENCY PERCENT ROW PCT						TOTAL
	NO ANSWER	NONE	ONE	TWO	THREE OR MORE	
MY78 CAR (AUG)	1128	1550	677	684	375	3286
	.	19.29	8.43	8.51	4.67	40.90
	.	47.17	20.60	20.82	11.41	
MY78 TRUCK (AUG)	200	301	163	180	117	761
	.	3.75	2.03	2.24	1.46	9.47
	.	39.55	21.42	23.65	15.37	
MY79 CAR (OCT)	1057	1566	651	674	371	3262
	.	19.49	8.10	8.39	4.62	40.60
	.	48.01	19.96	20.66	11.37	
MY79 TRUCK (OCT)	203	273	163	175	114	725
	.	3.40	2.03	2.18	1.42	9.02
	.	37.66	22.48	24.14	15.72	
TOTAL	.	3690	1654	1713	977	8034
	.	45.93	20.59	21.32	12.16	100.00

TABLE 9-4: EDUCATIONAL LEVEL OF RESPONDENTS

(SOURCE: QUESTION 39)

FREQUENCY PERCENT ROW PCT	NO ANSWER	GRADE SCHOOL	HIGH SCHOOL	COLLEGE	GRADUATE SCHOOL	TOTAL
MY78 CAR (AUG)	389	209	1657	1521	638	4025
	.	2.16	17.09	15.69	6.58	41.52
	.	5.19	41.17	37.79	15.85	
MY78 TRUCK (AUG)	76	70	469	264	82	885
	.	0.72	4.84	2.72	0.85	9.13
	.	7.91	52.99	29.83	9.27	
MY79 CAR (OCT)	398	241	1741	1427	512	3921
	.	2.49	17.96	14.72	5.28	40.45
	.	6.15	44.40	36.39	13.06	
MY79 TRUCK (OCT)	65	77	463	272	51	863
	.	0.79	4.78	2.81	0.53	8.90
	.	8.92	53.65	31.52	5.91	
TOTAL	.	597	4330	3484	1283	9694
	.	6.16	44.67	35.94	13.23	100.00

TABLE 9-5: ANNUAL INCOME OF RESPONDENTS

(SOURCE: QUESTION 40)

FREQUENCY PERCENT ROW PCT	NO ANSWER	<\$5,000	\$5,000 - \$9,999	\$10,000- \$14,999	\$15,000- \$19,999	\$20,000- \$29,999	\$30,000- \$39,999	\$40,000+	TOTAL
MY78 CAR (AUG)	574	84	309	607	635	1101	579	525	3840
	.	0.91	3.35	6.59	6.89	11.95	6.28	5.70	41.66
	.	2.19	8.05	15.81	16.54	28.67	15.08	13.67	
MY78 TRUCK (AUG)	106	11	64	130	179	289	114	68	855
	.	0.12	0.69	1.41	1.94	3.14	1.24	0.74	9.28
	.	1.29	7.49	15.20	20.94	33.80	13.33	7.95	
MY79 CAR (OCT)	609	55	237	481	562	1103	639	633	3710
	.	0.60	2.57	5.22	6.10	11.97	6.93	6.87	40.25
	.	1.48	6.39	12.96	15.15	29.73	17.22	17.06	
MY79 TRUCK (OCT)	116	16	50	127	142	272	134	71	812
	.	0.17	0.54	1.38	1.54	2.95	1.45	0.77	8.81
	.	1.97	6.16	15.64	17.49	33.50	16.50	8.74	
TOTAL	.	166	660	1345	1518	2765	1466	1297	9217
	.	1.80	7.16	14.59	16.47	30.00	15.91	14.07	100.00

APPENDIX A

SPECIMEN QUESTIONNAIRES

This appendix contains specimens of the questionnaires mailed to new car buyers in the J. D. Power/DOE New Vehicle Owner Surveys. Truck buyers received questionnaires which differ only in the information requested on body style of the new vehicle.

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<u>Question (First Survey)</u>	<u>Table</u>	<u>Figure</u>
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4	6-6	
5 a,b	6-4, 6-5	
6 a	8-2	8-1, 8-2
6 b	7-4	7-1
6 c	Not Included	
7	8-3	
8	5-1	
9 a, b, d, e	Not Included	
9 c	7-11	
10	5-2, 5-3	
11	5-4, 5-5, 5-6	
12	Not Included	
13 a, b	5-7, 5-8, 5-9	
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15 a, b	4-3 through 4-6	
16 a, b	4-7, 4-8	
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18 a, b, c	4-9, 4-10, 4-11	
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19 c	Not Included	
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<u>Question (First Survey)</u>	<u>Table</u>	<u>Figure</u>
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32 a, b	8-7, 8-8	
33 a-g	5-14, 5-15	
34	9-1	
35		Not Included
36		Not Included
37	9-2	
38 a, b	9-3A, 9-3B	
39	9-4	
40	9-5	
41 a, b		Not Included

Department of Energy
Washington, D.C. 20461

March, 1979

Dear 1978 New Car Buyer:

Approximately one month ago we sent you a copy of this questionnaire which is part of a nationwide survey that the Department of Energy (DOE) is conducting among people who recently purchased a new car. The purpose of this survey is to help the DOE evaluate its energy conservation efforts.

If you did not receive the first questionnaire or if you have not yet had a chance to send it in, we would appreciate your completing this questionnaire as soon as possible. Please return it, using the postage-paid envelope provided, to J. D. Power & Associates, the Los Angeles based research company that has been assigned to compile the survey results.

We need your comments in order to make this survey as representative and the DOE program as effective as possible. If you feel this questionnaire does not adequately cover the topic of fuel economy, please feel free to enclose additional comments or information. Thank you.

Sincerely,

Clark Bullard
Director
Office Of Conservation And Advanced
Energy Systems Policy

Enclosures

NEW 1978 VEHICLE OWNER STUDY

(To Be Completed By Principal Purchaser)

PLEASE ENTER THE FOLLOWING INFORMATION ABOUT THE NEW 1978 VEHICLE YOU PURCHASED.

1. Make: _____ (e.g., Ford, Chevrolet, Toyota, Etc.)		Model: _____ (e.g., LTD, Nova, Corolla, Etc.)		CD 1
2. Body Style:	74-1 ☐ 2-Door Sedan/Hard Top	-3 ☐ 4-Door Sedan/Hard Top	-5 ☐ 8-9 Passenger Wagon	
	-2 ☐ 3-Door Hatchback	-4 ☐ 5-6 Passenger Station Wagon	-6 ☐ Convertible	
3. Number Of Cylinders:	76-1 ☐ 4-Cylinders	-2 ☐ 6-Cylinders	-3 ☐ 8-Cylinders	-4 ☐ Rotary -5 ☐ Other
4. Transmission:	77-1 ☐ Automatic	-2 ☐ 3-Speed Manual	-3 ☐ 4-Speed Manual	-4 ☐ 5-Speed Manual
5. a. Does this vehicle have air conditioning?	78-1 ☐ Yes		-2 ☐ No	
b. Does this vehicle have radial tires?	79-1 ☐ Yes		-2 ☐ No	

CD II

6. a. How many miles do you presently have on your vehicle? _____ Miles (odometer reading) 6- 7-

b. What fuel economy do you get with this vehicle? _____ MPG 8- 9-

c. What do you base this figure on? _____ 10-
 _____ 11-
 _____ 12-

7. How many years do you expect to keep this vehicle before replacing it? _____ Years 13-

8. Which of the following statements best describes the reason you bought this vehicle when you did?

14-1 ☐ I never owned a vehicle before but needed one now. _____ (SKIP TO QUESTION 10)

2 ☐ I needed an additional vehicle in my family. _____

3 ☐ I wanted to replace another vehicle that was no longer operating properly. _____

4 ☐ I wanted to replace another vehicle that used too much gasoline. _____

5 ☐ I wanted to drive a current model, so I replaced another vehicle. _____ (CONTINUE WITH QUESTION 9)

6 ☐ Other reasons (PLEASE SPECIFY): _____ 15- 16-

CD III

9. Please enter the following information about the vehicle you disposed of:

Make _____ Vehicle Type _____ Model _____ Purchased: _____

a. (Mfg.): _____ Series Or. Model: _____ Year: _____ 69-1 ☐ New -2 ☐ Used
 67- 68-

b. Body Style:

Automobile: 70-1 ☐ 2-Door Sedan/Hard Top -3 ☐ 4-Door Sedan/Hard Top -5 ☐ 8-9 Passenger Wagon
 -2 ☐ 3-Door Hatchback -4 ☐ 5-6 Passenger Station Wagon -6 ☐ Convertible

Truck/Van: 71-1 ☐ Passenger/Window Van -3 ☐ Standard Van -5 ☐ Camper Van -7 ☐ Other (SPECIFY):
 -2 ☐ Mini-Pickup Truck -4 ☐ Pickup Truck -6 ☐ Jeep Type _____

c. What was the gas mileage you got with this vehicle? (IN MILES PER GALLON)

City Driving: _____ MPG 72- Combined City And Highway Driving: _____ MPG 74- Highway Driving: _____ MPG 76-
 73- 75- 77-

d. Number Of Cylinders: 78-1 ☐ 4-Cylinders -2 ☐ 6-Cylinders -3 ☐ 8-Cylinders -4 ☐ Rotary -5 ☐ Other

e. Transmission: 79-1 ☐ Automatic -2 ☐ 3-Speed Manual -3 ☐ 4-Speed Manual -4 ☐ 5-Speed Manual

CD IV

10. Below is a list of items which must be decided upon when buying a new vehicle. Looking back to the time you were thinking about buying your new vehicle, when did you actually decide upon the items listed? Did you: A.) decide before visiting any dealerships, B.) decide before visiting dealerships but modified or changed your decision while shopping, or did you C.) wait until after visiting dealerships before making any decisions?

When Did You Decide Upon The:	Decision Was Made:		
	A. Before Visiting Any Dealerships	B. Before Visiting Dealerships But Changed Decision While Shopping	C. After Visiting Dealerships
Size Of Vehicle You Wanted	6-1 ☐	-2 ☐	-3 ☐
Engine Size You Wanted	7- ☐	☐	☐
Transmission Type: (manual, automatic)	8- ☐	☐	☐
Fuel Economy Range You Wanted	9- ☐	☐	☐
Model You Wanted	10- ☐	☐	☐

11. a. Still thinking back to the time you selected this vehicle for purchase, how important would you say the following items were in your decision to buy the particular 1978 vehicle you did instead of some other vehicles you might have considered?

How Important Was:	Extremely Important	Very Important	Somewhat Important	Not Too Important	Not At All Important
a. Engineering/Design Features	12- 1 ☐	-2 ☐	-3 ☐	-4 ☐	-5 ☐
b. Cargo Capacity	13- ☐	☐	☐	☐	☐
c. Ease Of Handling/Driving	14- ☐	☐	☐	☐	☐
d. Passenger Capacity	15- ☐	☐	☐	☐	☐
e. Interior Roominess	16- ☐	☐	☐	☐	☐
f. Fuel Economy	17- ☐	☐	☐	☐	☐
g. Engine Horsepower/Acceleration/Performance	18- ☐	☐	☐	☐	☐
h. Overall Size Of Vehicle	19- ☐	☐	☐	☐	☐
i. Purchase Price Range	20- ☐	☐	☐	☐	☐
j. Quality Of Workmanship	21- ☐	☐	☐	☐	☐
k. EPA Gas Mileage Figures	22- ☐	☐	☐	☐	☐
l. Riding Comfort	23- ☐	☐	☐	☐	☐
m. Styling/Appearance	24- ☐	☐	☐	☐	☐
n. Safety In Case Of Accidents	25- ☐	☐	☐	☐	☐
o. Trailer Towing Ability	26- ☐	☐	☐	☐	☐
p. Other (SPECIFY): _____	27- ☐	☐	☐	☐	☐

b. Of all the features listed above, which ONE was the most important to you? ENTER LETTER: _____ 28- 29-

12. What other makes and models of vehicles, besides the one you bought, did you seriously consider for purchase? (PLEASE WRITE-IN APPROPRIATE MAKES AND MODELS UNLESS YOU DID NOT CONSIDER ANY OTHER. IF THIS IS THE CASE, PLEASE CHECK BOX.)

6- 1 ☐ No Other Makes And Models Considered → (SKIP TO QUESTION 13) CD V

Make	Model	What Was The Approximate Fuel Economy Of These Vehicles In Miles Per Gallon
1. _____	_____	_____ MPG
2. _____	_____	_____ MPG
3. _____	_____	_____ MPG

CD VI

13. a. Did you actually compare the gas mileage of the vehicle(s) you were considering for purchase? 6- 1 ☐ Yes -2 ☐ No

b. Why/Why Not? _____ 7- 8-
 _____ 9-
 _____ 10-

14. a. At the time you bought your 1978 vehicle, did you see an EPA gas mileage label on it or on a similar display model?
 11- 1 ☐ Yes -2 ☐ No -3 ☐ Don't Remember → (SKIP TO QUESTION 17)

b. Did you actually use the information on this label to compare it with the labels on the different vehicles you were considering for purchase?
 12- 1 ☐ Yes -2 ☐ No

15. a. How useful do you feel the label's gas mileage figures on the vehicles themselves were in your decision to buy the make/model vehicle you purchased? (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)

13- Not At All Useful ← 1 2 3 4 5 6 7 → Very Useful

b. Why do you feel that way? _____ 14-
 _____ 15-
 _____ 16-

16. a. Is there any other information not contained on the Gas Mileage Label that you feel should be?

17-1 ☐ Yes -2 ☐ No, It's Fine As Is (SKIP TO QUESTION 17)
-3 ☐ No, It Has Too Much Information

b. What other information do you feel should be included on the gas mileage label? 18-
19-
20-

17. a. Where did you learn about the gas mileage of the models you were considering for purchase? (CHECK ALL THAT APPLY)

a. 21-1 ☐ Magazine Article e. -5 ☐ Mfr's Television Ad i. -9 ☐ EPA Gas Mileage Guide Booklet
b. -2 ☐ Newspaper Article f. -6 ☐ Friend/Relative/Associate j. -0 ☐ Car Dealer/Salesman
c. -3 ☐ Mfr's Magazine Ad g. -7 ☐ Automotive Magazine k. -X ☐ Labels On Vehicle At Dealership
d. -4 ☐ Mfr's Newspaper Ad h. -8 ☐ Consumer's Report l. -Y ☐ Other (Specify):

b. Which ONE of the above sources of gas mileage information did you find to be the most helpful in your vehicle purchase decision?
ENTER LETTER: 22-

Beginning with the 1977 model year, the U. S. Government published a booklet called The Gas Mileage Guide For New Car Buyers. Would you please answer the following questions about this booklet to the best of your recollection.

18. a. At the time you were shopping for your vehicle were you aware of this booklet? 23-1 ☐ Yes -2 ☐ No (SKIP TO QUES. 21)
b. Was this Gas Mileage Booklet available at the dealerships you visited while shopping for your vehicle?
24-1 ☐ Yes, All Of Them -2 ☐ Yes, Some Of Them -3 ☐ No, Never Saw It -4 ☐ Don't Know
c. Did you know that dealers are required to have these booklets readily available? 25-1 ☐ Yes -2 ☐ No

19. a. Had you heard about this booklet before you purchased your vehicle? 26-1 ☐ Yes -2 ☐ No (SKIP TO QUESTION 21)
b. Did you make an attempt to locate the booklet before buying your vehicle? 27-1 ☐ Yes -2 ☐ No (SKIP TO QUESTION 20)
c. What sources did you use? 28-
29-

20. a. Did you actually consult a copy of the booklet before buying your vehicle? 30-1 ☐ Yes -2 ☐ No (SKIP TO QUESTION 22)
b. How useful would you say the Gas Mileage Guide Booklet was in helping you decide which make and model 1978 vehicle to purchase? (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)
31- Not At All Useful ← 1 2 3 4 5 6 7 → Very Useful
c. Did you actually select or eliminate any vehicle you were considering based on information in this booklet?
32-1 ☐ Yes (SKIP TO QUESTION 22) -2 ☐ No (SKIP TO QUESTION 22)

21. Have you heard about the EPA Gas Mileage Guide Booklet since buying your new vehicle? 33-1 ☐ Yes -2 ☐ No

22. Below is a list of the different types of information about new vehicles contained in the EPA Gas Mileage Guide For New Car Buyers. For each type of information listed please indicate how useful to you this information is.

	Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful
a. Interior Volume Index (passenger and trunk space) 34-	1 ☐	-2 ☐	-3 ☐	-4 ☐
b. City (MPG) 35-	☐	☐	☐	☐
c. Highway (MPG) 36-	☐	☐	☐	☐
d. Combined (MPG) 37-	☐	☐	☐	☐
e. Average Annual Fuel Cost 38-	☐	☐	☐	☐
f. Factors Affecting Fuel Economy 39-	☐	☐	☐	☐
g. Description Of Fuel Economy Testing Procedures 40-	☐	☐	☐	☐

23. a. Is there any other information not listed above that you feel should be included in the Gas Mileage Guide?
41-1 ☐ Yes -2 ☐ No (SKIP TO QUESTION 24)
b. If yes, what is that other information? 42-
43-
44-

24. What is the published EPA gas mileage for your 1978 vehicle?
 City Driving: _____ MPG 45- Combined City And Highway Driving: _____ MPG 47- Highway Driving: _____ MPG 49-
 46- X ☐ Don't Know 48- X ☐ Don't Know 48- 50- X ☐ Don't Know 50-

25. What is the actual gas mileage you are getting with your 1978 vehicle?
 City Driving: _____ MPG 51- Combined City And Highway Driving: _____ MPG 53- Highway Driving: _____ MPG 55-
 52- X ☐ Don't Know 52- 54- X ☐ Don't Know 54- 56- X ☐ Don't Know 56-

26. Would you say the gas mileage you're getting with your 1978 vehicle is: (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)
 57- About The Same
 Much Less Than You Expected 1 2 3 4 5 6 7 Much More Than You Expected

27. Which of the following five statements best describes your gas mileage record keeping practices with regard to your 1978 vehicle? (CHECK ONLY ONE)
 58- 1 ☐ Keep Accurate Records All The Time -4 ☐ I Know Fairly Well By What Gasoline I Have Put In, But Do Not Keep Formal Records
 -2 ☐ Make Frequent Checks Of Gas Mileage
 -3 ☐ Make Occasional Checks Of Gas Mileage -5 ☐ Do Not Make Any Checks

28. a. Under normal driving conditions, does the gas mileage you are getting from your vehicle match the figures presented by the EPA or is your gas mileage lower or higher than the EPA figures? (CHECK ONE)
 59- 1 ☐ My vehicle Gets Lower Results Than The EPA Figures -2 ☐ My Vehicle Gets About The Same Results As The EPA Figures -3 ☐ My Vehicle Gets Higher Results Than The EPA Figures
 → (ANSWER QUESTION 28b) → (SKIP TO QUESTION 29) ←

b. Which of the following statements best describes your feelings about why your gas mileage is less than the EPA figures? (CHECK ALL THAT APPLY)
 60- 1 ☐ The engine in my particular vehicle does not meet the performance standards of the EPA or the manufacturer due to faulty manufacturing.
 -2 ☐ My type of driving, which reduces fuel efficiency, is not typical of the average driver.
 -3 ☐ My vehicle is not always tuned properly; therefore, the engine does not run as efficiently.
 -4 ☐ The EPA mileage figures overstate the gas mileage the average driver can expect to get under normal driving conditions.
 → (CONTINUE WITH QUESTION 28c)
 -5 ☐ Other reasons (PLEASE SPECIFY): _____

c. Why do you feel the EPA figures overstate gas mileage? (CHECK ALL THAT APPLY)
 61- 1 ☐ The EPA procedures use laboratory testing which do not reflect real world driving conditions.
 -2 ☐ The EPA only tests one vehicle for each model manufactured when gas mileage can vary from one vehicle to the next.
 -3 ☐ The EPA only tests brand-new vehicles instead of vehicles which have been driven awhile.
 -4 ☐ The test procedures of the EPA are valid, but the actual testing probably does not follow the prescribed procedures closely enough.
 -5 ☐ Other reasons (PLEASE SPECIFY): _____

29. In a typical week, what would you say is the length (in miles) of your average one way trip? _____ Miles 62- 63-

30. How many miles would you estimate you will put on this vehicle in the period of a year? _____ Miles 64- 65-

31. a. What percentage of your usual weekly driving is spent in city driving conditions (low speed with frequent stops and starts)? _____ % Miles 66-
 b. What percentage of your usual weekly driving is spent on expressway driving (highway speeds with few stops)? _____ % Miles 67-
 c. What percentage of your usual weekly driving is spent on rural driving (between towns/cities on state highways)? _____ % Miles 68-
 Total Of Three Types Of Driving Should Add To: 100%

32. In the average month, what percentage of this vehicle's mileage is driven with the driver and no passengers, and what percentage of the mileage is driven with one or more passengers?
 a. Driver Only (No Passengers) _____ % 69-
 b. Driver With One Or More Passengers _____ % 70-
 Total Should Add To: 100%

33. Please indicate how much you agree or disagree with the following statements.

	Agree Very Much	Agree Somewhat	Neither Agree Or Disagree	Disagree Somewhat	Disagree Very Much
a. The national 55 MPH speed limit should be enforced more vigorously by police.	71- ☐	-2 ☐	-3 ☐	-4 ☐	-5 ☐
b. One of the principal advantages of having the 55 MPH speed limit is that it saves a significant amount of fuel.	72- ☐	☐	☐	☐	☐
c. There is a serious long-term petroleum shortage facing the United States.	73- ☐	☐	☐	☐	☐
d. The Government should continue to demand that the automotive manufacturers build more fuel efficient vehicles.	74- ☐	☐	☐	☐	☐
e. The EPA gas mileage figures overstate what owners actually get.	75- ☐	☐	☐	☐	☐
f. Even though they are criticized, the EPA gas mileage figures do serve a useful purpose by putting all models and manufacturers on the same measurement system for comparisons.	76- ☐	☐	☐	☐	☐
g. The way a person drives a vehicle (driving style) affects gas mileage.	77- ☐	☐	☐	☐	☐

CLASSIFICATION DATA FOR TABULATION PURPOSES ONLY

34. Are you: 78-1 ☐ Male -OR- -2 ☐ Female

35. Are you the principal driver as well as the principal purchaser of this vehicle? 79- 1 ☐ Yes -2 ☐ No

36. What other cars or vehicles do you or your family living with you own? 8- 1 ☐ None CD VII

Make	Vehicle Type Series Or Model	Model Year	Purchased	
			New	Used
a. _____	_____	_____	67- 70- 1 ☐	-2 ☐
b. _____	_____	_____	68- 71- 1 ☐	-2 ☐
c. _____	_____	_____	69- 72- 1 ☐	-2 ☐

37. Into which of the following age groups do you fall?

73- 1 ☐ Under 20 Years	-3 ☐ 25 - 29	-5 ☐ 35 - 39	-7 ☐ 45 - 49	-9 ☐ 55 - 59
-2 ☐ 20 - 24	-4 ☐ 30 - 34	-6 ☐ 40 - 44	-8 ☐ 50 - 54	-0 ☐ 60 Or Over

38. a. Are you: 74- 1 ☐ Single → Do you live by yourself, with your family or share with other unrelated adults?
 -7 ☐ Married → (CONTINUE WITH QUESTION 38b) -3 ☐ By Myself
 -8 ☐ Widowed/Divorced -4 ☐ With Family
 -5 ☐ Share With Unrelated Adults

b. How many children do you have living at home? _____ 75-

39. What is the highest level of schooling completed by the head of your household?

76- 1 ☐ Grade School	-2 ☐ High School	-3 ☐ College	-4 ☐ Master's Degree Or Higher
---	---	-------------------------------------	---

40. Which of the following groups best describes your family's expected total income for 1979?

77- 1 ☐ Under \$5,000	-3 ☐ \$10,000 - \$14,999	-5 ☐ \$20,000 - \$29,999	-7 ☐ \$40,000 Or More
-2 ☐ \$5,000 - \$9,999	-4 ☐ \$15,000 - \$19,999	-6 ☐ \$30,000 - \$39,999	

41. a. What is your principal occupation? (Example: nurse, welder, etc.) _____ 78-

b. What type of company or organization do you work for:

79- 1 ☐ Professional, Technical Or Managerial (i.e., education, religion, museum, medicine, etc.)	-5 ☐ Clerical And Sales
-2 ☐ Service Occupations (i.e., restaurant, barbering, protective service, lodgings, etc.)	-6 ☐ Government
-3 ☐ Operatives (i.e., truck/tractor driver, bus driver, boatmen, etc.)	-7 ☐ Agricultural, Fishery, Or Forestry
-4 ☐ Manufacturing	-8 ☐ Student
	-9 ☐ Retired
	-0 ☐ Other (SPECIFY): _____

THANK YOU VERY MUCH FOR YOUR HELP AND COOPERATION.

Department of Energy
Washington, D.C. 20461

January, 1979

Dear 1979 New Car Buyer:

The Department Of Energy (DOE) is conducting a nationwide survey among people who recently purchased a new car. The purpose of this survey is to help the DOE measure the progress of its energy conservation efforts and to find out how you feel about energy-related issues. We hope that you will take this opportunity to express your views by filling out the enclosed questionnaire and returning it to us in the postage-paid envelope provided.

Your response will also help us evaluate the usefulness of the fuel economy information compiled for consumers by the U. S. Government. Therefore, it is important that you fill out and return the questionnaire since the accuracy of our study depends on a large percentage of consumers returning this questionnaire. Your responses will be held in the strictest confidence and reported in statistical form only. Your cooperation will be greatly appreciated.

If you feel this questionnaire does not adequately cover the topic of fuel economy, please feel free to enclose additional comments or information. Thank you.

Sincerely,

Clark Bullard
Director
Office Of Conservation And
Advanced Energy Systems Policy

Enclosures

P. S. Please accept the attached quarter as a small token of our appreciation. Possibly you can use it to brighten the day of a young friend.

NEW 1979 VEHICLE OWNER STUDY

(To Be Completed By Principal Purchaser)

PLEASE ENTER THE FOLLOWING INFORMATION ABOUT THE NEW 1979 VEHICLE YOU PURCHASED.

1. Make: _____ → Model: _____ (e.g., Ford, Chevrolet, Toyota, Etc.) (e.g., LTD, Nova, Corolla, Etc.)		CD 1
2. Body Style: 74-1 ☐ 2-Door Sedan/Hard Top -3 ☐ 4-Door Sedan/Hard Top -5 ☐ 8-9 Passenger Wagon -2 ☐ 3-Door Hatchback -4 ☐ 5-6 Passenger Station Wagon -6 ☐ Convertible		
3. Number Of Cylinders: 76-1 ☐ 4-Cylinders -2 ☐ 6-Cylinders -3 ☐ 8-Cylinders -4 ☐ Rotary -5 ☐ Other		
4. Transmission: 77-1 ☐ Automatic -2 ☐ 3-Speed Manual -3 ☐ 4-Speed Manual -4 ☐ 5-Speed Manual		
5. a. Does this vehicle have air conditioning? 78-1 ☐ Yes -2 ☐ No		
b. Does this vehicle have radial tires? 79-1 ☐ Yes -2 ☐ No		

6. a. How many miles do you presently have on your vehicle? _____ Miles (odometer reading) 6- 7-

b. What fuel economy do you get with this vehicle? _____ MPG 8- 9-

c. What do you base this figure on? _____ 10-
 _____ 11-
 _____ 12-

7. How many years do you expect to keep this vehicle before replacing it? _____ Years 13-

8. Which of the following statements best describes the reason you bought this vehicle when you did?

14-1 ☐ I never owned a vehicle before but needed one now. _____ (SKIP TO QUESTION 10)

-2 ☐ I needed an additional vehicle in my family. _____

-3 ☐ I wanted to replace another vehicle that was no longer operating properly. _____

-4 ☐ I wanted to replace another vehicle that used too much gasoline. _____

-5 ☐ I wanted to drive a current model, so I replaced another vehicle. _____ (CONTINUE WITH QUESTION 9)

-6 ☐ Other reasons (PLEASE SPECIFY): _____ 15- 16-

9. Please enter the following information about the vehicle you disposed of:

a. Make _____ Vehicle Type _____ Model _____ Purchased: _____
 (Mfg.): _____ Series Or Model: _____ Year: _____ 69-1 ☐ New -2 ☐ Used
 67- 68-

b. Body Style:

Automobile: 70-1 ☐ 2-Door Sedan/Hard Top -3 ☐ 4-Door Sedan/Hard Top -5 ☐ 8-9 Passenger Wagon
 -2 ☐ 3-Door Hatchback -4 ☐ 5-6 Passenger Station Wagon -6 ☐ Convertible

Truck/Van: 71-1 ☐ Passenger/Window Van -3 ☐ Standard Van -5 ☐ Camper Van -7 ☐ Other (SPECIFY): _____
 -2 ☐ Mini-Pickup Truck -4 ☐ Pickup Truck -6 ☐ Jeep Type _____

c. What was the gas mileage you got with this vehicle? (IN MILES PER GALLON)

City Driving: _____ MPG 72- Combined City And Highway Driving: _____ MPG 74- Highway Driving: _____ MPG 76-
 73- 75- 77-

d. Number Of Cylinders: 78-1 ☐ 4-Cylinders -2 ☐ 6-Cylinders -3 ☐ 8-Cylinders -4 ☐ Rotary -5 ☐ Other

e. Transmission: 79-1 ☐ Automatic -2 ☐ 3-Speed Manual -3 ☐ 4-Speed Manual -4 ☐ 5-Speed Manual

10. Below is a list of items which must be decided upon when buying a new vehicle. Looking back to the time you were thinking about buying your new vehicle, when did you actually decide upon the items listed? Did you: A.) decide before visiting any dealerships, B.) decide before visiting dealerships but modified or changed your decision while shopping, or did you C.) wait until after visiting dealerships before making any decisions?

When Did You Decide Upon The:	Decision Was Made:		
	A. Before Visiting Any Dealerships	B. Before Visiting Dealerships But Changed Decision While Shopping	C. After Visiting Dealerships
Size Of Vehicle You Wanted	6-1 ☐	-2 ☐	-3 ☐
Engine Size You Wanted	7- ☐	☐	☐
Transmission Type: (manual, automatic)	8- ☐	☐	☐
Fuel Economy Range You Wanted	9- ☐	☐	☐
Model You Wanted	10- ☐	☐	☐

11. a. Still thinking back to the time you selected this vehicle for purchase, how important would you say the following items were in your decision to buy the particular 1979 vehicle you did instead of some other vehicles you might have considered?

How Important Was:	Extremely Important	Very Important	Somewhat Important	Not Too Important	Not At All Important
a. Engineering/Design Features	12- ☐	-2 ☐	-3 ☐	-4 ☐	-5 ☐
b. Cargo Capacity	13- ☐	☐	☐	☐	☐
c. Ease Of Handling/Driving	14- ☐	☐	☐	☐	☐
d. Passenger Capacity	15- ☐	☐	☐	☐	☐
e. Interior Roominess	16- ☐	☐	☐	☐	☐
f. Fuel Economy	17- ☐	☐	☐	☐	☐
g. Engine Horsepower/Acceleration/Performance	18- ☐	☐	☐	☐	☐
h. Overall Size Of Vehicle	19- ☐	☐	☐	☐	☐
i. Purchase Price Range	20- ☐	☐	☐	☐	☐
j. Quality Of Workmanship	21- ☐	☐	☐	☐	☐
k. EPA Gas Mileage Figures	22- ☐	☐	☐	☐	☐
l. Riding Comfort	23- ☐	☐	☐	☐	☐
m. Styling/Appearance	24- ☐	☐	☐	☐	☐
n. Safety In Case Of Accidents	25- ☐	☐	☐	☐	☐
o. Trailer Towing Ability	26- ☐	☐	☐	☐	☐
p. Other (SPECIFY):	27- ☐	☐	☐	☐	☐

b. Of all the features listed above, which ONE was the most important to you? ENTER LETTER: _____ 28- 29-

12. What other makes and models of vehicles, besides the one you bought, did you seriously consider for purchase? (PLEASE WRITE-IN APPROPRIATE MAKES AND MODELS UNLESS YOU DID NOT CONSIDER ANY OTHER. IF THIS IS THE CASE, PLEASE CHECK BOX.)

6- 1 ☐ No Other Makes And Models Considered → (SKIP TO QUESTION 13)

CD V

Make	Model	What Was The Approximate Fuel Economy Of These Vehicles In Miles Per Gallon
1. _____	_____	_____ MPG
2. _____	_____	_____ MPG
3. _____	_____	_____ MPG

CD VI

13. a. Did you actually compare the gas mileage of the vehicle(s) you were considering for purchase? 6- 1 ☐ Yes -2 ☐ No

b. Why/Why Not? _____ 7- 8-
 _____ 9-
 _____ 10-

14. a. At the time you bought your 1979 vehicle, did you see an EPA gas mileage label on it or on a similar display model?

11- 1 ☐ Yes

-2 ☐ No

-3 ☐ Don't Remember

→ (SKIP TO QUESTION 17)

- b. Did you actually use the information on this label to compare it with the labels on the different vehicles you were considering for purchase?

12- 1 ☐ Yes

-2 ☐ No

15. a. How useful do you feel the label's gas mileage figures on the vehicles themselves were in your decision to buy the make/model vehicle you purchased? (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)

13- Not At All Useful ← 1 2 3 4 5 6 7 → Very Useful

b. Why do you feel that way? _____ 14-
 _____ 15-
 _____ 16-

16. a. Is there any other information not contained on the Gas Mileage Label that you feel should be?

17-1 ☐ Yes -2 ☐ No, It's Fine As Is -3 ☐ No, It Has Too Much Information → (SKIP TO QUESTION 17)

b. What other information do you feel should be included on the gas mileage label? _____ 18-
 _____ 19-
 _____ 20-

17. a. Where did you learn about the gas mileage of the models you were considering for purchase? (CHECK ALL THAT APPLY)

a. 21-1 ☐ Magazine Article e. -5 ☐ Mfr's Television Ad i. -9 ☐ EPA Gas Mileage Guide Booklet
 b. -2 ☐ Newspaper Article f. -6 ☐ Friend/Relative/Associate j. -0 ☐ Car Dealer/Salesman
 c. -3 ☐ Mfr's Magazine Ad g. -7 ☐ Automotive Magazine k. -X ☐ Labels On Vehicle At Dealership
 d. -4 ☐ Mfr's Newspaper Ad h. -8 ☐ Consumer's Report l. -Y ☐ Other (Specify): _____

b. Which ONE of the above sources of gas mileage information did you find to be the most helpful in your vehicle purchase decision?
 ENTER LETTER: _____ 22-

Beginning with the 1977 model year, the U. S. Government published a booklet called The Gas Mileage Guide For New Car Buyers. Would you please answer the following questions about this booklet to the best of your recollection.

18. a. At the time you were shopping for your vehicle were you aware of this booklet? 23-1 ☐ Yes -2 ☐ No → (SKIP TO QUES. 21)

b. Was this Gas Mileage Booklet available at the dealerships you visited while shopping for your vehicle?
 24-1 ☐ Yes, All Of Them -2 ☐ Yes, Some Of Them -3 ☐ No, Never Saw It -4 ☐ Don't Know

c. Did you know that dealers are required to have these booklets readily available? 25-1 ☐ Yes -2 ☐ No

19. a. Had you heard about this booklet before you purchased your vehicle? 26-1 ☐ Yes -2 ☐ No → (SKIP TO QUESTION 21)

b. Did you make an attempt to locate the booklet before buying your vehicle? 27-1 ☐ Yes -2 ☐ No → (SKIP TO QUESTION 20)

c. What sources did you use? _____ 28-
 _____ 29-

20. a. Did you actually consult a copy of the booklet before buying your vehicle? 30-1 ☐ Yes -2 ☐ No → (SKIP TO QUESTION 22)

b. How useful would you say the Gas Mileage Guide Booklet was in helping you decide which make and model 1979 vehicle to purchase? (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)
 31- Not At All Useful ← 1 2 3 4 5 6 7 → Very Useful

c. Did you actually select or eliminate any vehicle you were considering based on information in this booklet?
 32-1 ☐ Yes → (SKIP TO QUESTION 22) -2 ☐ No → (SKIP TO QUESTION 22)

21. Have you heard about the EPA Gas Mileage Guide Booklet since buying your new vehicle? 33-1 ☐ Yes -2 ☐ No

22. Below is a list of the different types of information about new vehicles contained in the EPA Gas Mileage Guide For New Car Buyers. For each type of information listed please indicate how useful to you this information is.

		Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful
a. Interior Volume Index (passenger and trunk space)	34-1	☐	-2 ☐	-3 ☐	-4 ☐
b. Estimated MPG	35-	☐	☐	☐	☐
c. Average Annual Fuel Cost	36-	☐	☐	☐	☐
d. Factors Affecting Fuel Economy	37-	☐	☐	☐	☐
e. Description Of Fuel Economy Testing Procedures	40-	☐	☐	☐	☐

23. a. Is there any other information not listed above that you feel should be included in the Gas Mileage Guide?
 41-1 ☐ Yes -2 ☐ No → (SKIP TO QUESTION 24)

b. If yes, what is that other information? _____ 42-
 _____ 43-
 _____ 44-

24.

What is the published EPA gas mileage for your 1979 vehicle?

Estimated MPG: _____ MPG

45-

46-

46- X ☐ Don't Know

25.

What is the actual gas mileage you are getting with your 1979 vehicle?

Actual MPG: _____ MPG

51-

52-

52- X ☐ Don't Know

26.

Would you say the gas mileage you're getting with your 1979 vehicle is: (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)

37-

Much Less Than You Expected

1

2

3

4

5

6

7

Much More Than You Expected

About The Same

27.

Which of the following five statements best describes your gas mileage record keeping practices with regard to your 1979 vehicle? (CHECK ONLY ONE)

58- 1 ☐ Keep Accurate Records All The Time

-4 ☐ I Know Fairly Well By What Gasoline I Have Put In, But Do Not Keep Formal Records

-2 ☐ Make Frequent Checks Of Gas Mileage

-3 ☐ Make Occasional Checks Of Gas Mileage

-5 ☐ Do Not Make Any Checks

28.

a. Under normal driving conditions, does the gas mileage you are getting from your vehicle match the figure presented by the EPA or is your gas mileage lower or higher than the EPA figure? (CHECK ONE)

59- 1 ☐ My vehicle Gets Lower Results Than The EPA Figure

-2 ☐ My Vehicle Gets About The Same Results As The EPA Figure

-3 ☐ My Vehicle Gets Higher Results Than The EPA Figure

→ (ANSWER QUESTION 28b)

→ (SKIP TO QUESTION 29)

b. Which of the following statements best describes your feelings about why your gas mileage is less than the EPA figure? (CHECK ALL THAT APPLY)

60- 1 ☐ The engine in my particular vehicle does not meet the performance standards of the EPA or the manufacturer due to faulty manufacturing.

-2 ☐ My type of driving, which reduces fuel efficiency, is not typical of the average driver.

-3 ☐ My vehicle is not always tuned properly; therefore, the engine does not run as efficiently.

-4 ☐ The EPA mileage figures overstates the gas mileage the average driver can expect to get under normal driving conditions.

→ (CONTINUE WITH QUESTION 28c)

-5 ☐ Other reasons (PLEASE SPECIFY): _____

c. Why do you feel the EPA figures overstate gas mileage? (CHECK ALL THAT APPLY)

61- 1 ☐ The EPA procedures use laboratory testing which do not reflect real world driving conditions.

-2 ☐ The EPA only tests one vehicle for each model manufactured when gas mileage can vary from one vehicle to the next.

-3 ☐ The EPA only tests brand-new vehicles instead of vehicles which have been driven awhile

-4 ☐ The test procedures of the EPA are valid, but the actual testing probably does not follow the prescribed procedures closely enough.

-5 ☐ Other reasons (PLEASE SPECIFY): _____

29.

In a typical week, what would you say is the length (in miles) of your average one way trip? _____ Miles

62-

63-

30.

How many miles would you estimate you will put on this vehicle in the period of a year? _____ Miles

64-

65-

31.

a. What percentage of your usual weekly driving is spent in city driving conditions (low speed with frequent stops and starts)? _____ % Miles

66-

b. What percentage of your usual weekly driving is spent on expressway driving (highway speeds with few stops)? _____ % Miles

67-

c. What percentage of your usual weekly driving is spent on rural driving (between towns/cities on state highways)? _____ % Miles

68-

Total Of Three Types Of Driving Should Add To: 100%

32.

In the average month, what percentage of this vehicle's mileage is driven with the driver and no passengers, and what percentage of the mileage is driven with one or more passengers?

a. Driver Only (No Passengers) _____ %

69-

b. Driver With One Or More Passengers _____ %

70-

Total Should Add To: 100%

33. Please indicate how much you agree or disagree with the following statements.

	Agree Very Much	Agree Somewhat	Neither Agree Or Disagree	Disagree Somewhat	Disagree Very Much
a. The national 55 MPH speed limit should be enforced more vigorously by police.	71-1 ☐	-2 ☐	-3 ☐	-4 ☐	-5 ☐
b. One of the principal advantages of having the 55 MPH speed limit is that it saves a significant amount of fuel.	72- ☐	☐	☐	☐	☐
c. There is a serious long-term petroleum shortage facing the United States.	73- ☐	☐	☐	☐	☐
d. The Government should continue to demand that the automotive manufacturers build more fuel efficient vehicles.	74- ☐	☐	☐	☐	☐
e. The EPA gas mileage figures overstate what owners actually get.	75- ☐	☐	☐	☐	☐
f. Even though they are criticized, the EPA gas mileage figures do serve a useful purpose by putting all models and manufacturers on the same measurement system for comparisons.	76- ☐	☐	☐	☐	☐
g. The way a person drives a vehicle (driving style) affects gas mileage.	77- ☐	☐	☐	☐	☐

CLASSIFICATION DATA FOR TABULATION PURPOSES ONLY

34. Are you: 78-1 ☐ Male -OR- -2 ☐ Female

35. Are you the principal driver as well as the principal purchaser of this vehicle? 79-1 ☐ Yes -2 ☐ No

36. What other cars or vehicles do you or your family living with you own? 6-1 ☐ None CD VII

	Make	Vehicle Type Series Or Model	Model Year	Purchased	
				New	Used
a.	_____	_____	_____	67- 70-1 ☐	-2 ☐
b.	_____	_____	_____	68- 71-1 ☐	-2 ☐
c.	_____	_____	_____	69- 72-1 ☐	-2 ☐

37. Into which of the following age groups do you fall?

73-1 ☐ Under 20 Years	-3 ☐ 25 - 29	-5 ☐ 35 - 39	-7 ☐ 45 - 49	-9 ☐ 55 - 59
-2 ☐ 20 - 24	-4 ☐ 30 - 34	-6 ☐ 40 - 44	-8 ☐ 50 - 54	-0 ☐ 60 Or Over

38. a. Are you: 74-1 ☐ Single → Do you live by yourself, with your family or share with other unrelated adults?
-7 ☐ Married → (CONTINUE WITH QUESTION 38b) -3 ☐ By Myself
-8 ☐ Widowed/Divorced -4 ☐ With Family
-5 ☐ Share With Unrelated Adults

b. How many children do you have living at home? 75- _____

39. What is the highest level of schooling completed by the head of your household?

76-1 ☐ Grade School	-2 ☐ High School	-3 ☐ College	-4 ☐ Master's Degree Or Higher
--	---	-------------------------------------	---

40. Which of the following groups best describes your family's expected total income for 1979?

77-1 ☐ Under \$5,000	-3 ☐ \$10,000 - \$14,999	-5 ☐ \$20,000 - \$29,999	-7 ☐ \$40,000 Or More
-2 ☐ \$5,000 - \$9,999	-4 ☐ \$15,000 - \$19,999	-6 ☐ \$30,000 - \$39,999	

41. a. What is your principal occupation? (Example: nurse, welder, etc.) 78- _____

b. What type of company or organization do you work for:

79-1 ☐ Professional, Technical Or Managerial (i.e., education, religion, museum, medicine, etc.)	-3 ☐ Clerical And Sales
-2 ☐ Service Occupations (i.e., restaurant, barbering, protective service, lodgings, etc.)	-6 ☐ Government
-3 ☐ Operatives (i.e., truck/tractor driver, bus driver, boatmen, etc.)	-7 ☐ Agricultural, Fishery, Or Forestry
-4 ☐ Manufacturing	-8 ☐ Student
	-9 ☐ Retired
	-0 ☐ Other (SPECIFY): _____

THANK YOU VERY MUCH FOR YOUR HELP AND COOPERATION.

Department of Energy
Washington, D.C. 20461

October, 1979

Dear 1979 New Vehicle Buyer:

The Department Of Energy (DOE) is conducting a nationwide survey among people who recently purchased a new car. The purpose of this survey is to help the DOE measure the progress of its energy conservation efforts and to find out how you feel about energy-related issues. We hope that you will take this opportunity to express your views by filling out the enclosed questionnaire and returning it to us in the postage-paid envelope provided.

Your response will also help us evaluate the usefulness of the fuel economy information compiled for consumers by the U. S. Government. Therefore, it is important that you fill out and return the questionnaire since the accuracy of our study depends on a large percentage of consumers returning this questionnaire. Your responses will be held in the strictest confidence and reported in statistical form only. Your cooperation will be greatly appreciated.

If you feel this questionnaire does not adequately cover the topic of fuel economy, please feel free to enclose additional comments or information. Thank you.

Sincerely,

Clark Bullard
Director
Office Of Conservation And
Advanced Energy Systems Policy

Enclosures

NEW 1979 VEHICLE OWNER STUDY

(To Be Completed By Principal Purchaser)

PLEASE ENTER THE FOLLOWING INFORMATION ABOUT THE NEW 1979 VEHICLE YOU PURCHASED.

1. Make: _____		Model: _____		CD 1
(e.g., Ford, Chevrolet, Toyota, Etc.)		(e.g., LTD, Nova, Corolla, Etc.) (e.g., F-100, C-10, Hi-Lux, Etc.)		
2. Body Style:				
74-1 ☐ 2-Door Sedan/Hard Top	-3 ☐ 4-Door Sedan/Hard Top	-5 ☐ 8-9 Passenger Wagon		
-2 ☐ 3-Door Hatchback	-4 ☐ 5-6 Passenger Station Wagon	-6 ☐ Convertible		
75-1 ☐ Passenger/Window Van	-3 ☐ Standard Van	-5 ☐ Camper Van	-7 ☐ Other (SPECIFY): _____	
-2 ☐ Mini-Pickup Truck	-4 ☐ Pickup Truck	-6 ☐ Jeep Type		
3. Number Of Cylinders:				
76-1 ☐ 4-Cylinders	-2 ☐ 6-Cylinders	-3 ☐ 8-Cylinders	-4 ☐ Rotary	-5 ☐ Other
4. Transmission:				
77-1 ☐ Automatic	-2 ☐ 3-Speed Manual	-3 ☐ 4-Speed Manual	-4 ☐ 5-Speed Manual	
5. a. Does this vehicle have air conditioning?				
78-1 ☐ Yes		-2 ☐ No		
b. Does this vehicle have radial tires?				
79-1 ☐ Yes		-2 ☐ No		

6. a. How many miles do you presently have on your vehicle? _____ Miles (odometer reading) 6- 7-
- b. What fuel economy do you get with this vehicle? _____ MPG 8- 9-

7. How influential would you say the current fuel crisis was in your decision to purchase this vehicle? (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)

12- NOT AT ALL INFLUENTIAL ← 1 2 3 4 5 6 7 → VERY INFLUENTIAL

8. a. Did you trade-in or otherwise dispose of another vehicle when you purchased this one?
7-1 ☐ Yes -2 ☐ No → (SKIP TO QUESTION 9)
- Please enter the following information about the vehicle you disposed of:
- b. Make (Mfg.): _____ Vehicle Type _____ Model _____ Purchased: _____
Series Or Model: _____ Year: _____ 69-1 ☐ New -2 ☐ Used
67- 68-
- c. Body Style:
Automobile: 70-1 ☐ 2-Door Sedan/Hard Top -3 ☐ 4-Door Sedan/Hard Top -5 ☐ 8-9 Passenger Wagon
-2 ☐ 3-Door Hatchback -4 ☐ 5-6 Passenger Station Wagon -6 ☐ Convertible
Truck/Van: 71-1 ☐ Passenger/Window Van -3 ☐ Standard Van -5 ☐ Camper Van -7 ☐ Other (SPECIFY): _____
-2 ☐ Mini-Pickup Truck -4 ☐ Pickup Truck -6 ☐ Jeep Type _____
- d. What was the gas mileage you got with this vehicle? (IN MILES PER GALLON)
City Driving: _____ MPG 72- Combined City And Highway Driving: _____ MPG 74- Highway Driving: _____ MPG 76-
73- 75- 77-
- e. Number Of Cylinders: 78-1 ☐ 4-Cylinders -2 ☐ 6-Cylinders -3 ☐ 8-Cylinders -4 ☐ Rotary -5 ☐ Other

9. a. Still thinking back to the time you selected this vehicle for purchase, how important would you say the following items were in your decision to buy the particular 1979 vehicle you did instead of some other vehicles you might have considered?
How Important Was:	Extremely Important	Very Important	Somewhat Important	Not Too Important	Not At All Important
a. Engineering/Design Features	12-1 ☐	-2 ☐	-3 ☐	-4 ☐	-5 ☐
b. Ease Of Handling/Driving	13- ☐	☐	☐	☐	☐
c. Fuel Economy	14- ☐	☐	☐	☐	☐
d. Purchase Price Range	15- ☐	☐	☐	☐	☐
e. Quality Of Workmanship	16- ☐	☐	☐	☐	☐
f. EPA Gas Mileage Figures	17- ☐	☐	☐	☐	☐
g. Styling/Appearance	18- ☐	☐	☐	☐	☐
h. Safety In Case Of Accidents	19- ☐	☐	☐	☐	☐
- b. Of all the features listed above, which ONE was the most important to you? ENTER LETTER: _____ 28- 29-

10. What other makes and models of vehicles, besides the one you bought, did you seriously consider for purchase? (PLEASE WRITE IN APPROPRIATE MAKES AND MODELS UNLESS YOU DID NOT CONSIDER ANY OTHER. IF THIS IS THE CASE, PLEASE CHECK BOX.)

6-1 ☐ No Other Makes And Models Considered → (SKIP TO QUESTION 12)

Make	Model	What Was The Approximate Fuel Economy Of These Vehicles In Miles Per Gallon
1. _____	_____	_____ MPG
2. _____	_____	_____ MPG
3. _____	_____	_____ MPG

11. a. Did you actually compare the gas mileage of the vehicle(s) you were considering for purchase? 6-1 ☐ Yes -2 ☐ No

12. a. At the time you bought your 1979 vehicle, did you see an EPA gas mileage label on it or on a similar display model?
 11- 1 ☐ Yes -2 ☐ No -3 ☐ Don't Remember (SKIP TO QUESTION 14)

b. Did you actually use the information on this label to compare it with the labels on the different vehicles you were considering for purchase?
 12- 1 ☐ Yes -2 ☐ No

13. How useful do you feel the label's gas mileage figures on the vehicles themselves were in your decision to buy the make/model vehicle you purchased? (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)
 13- Not At All Useful ← 1 2 3 4 5 6 7 → Very Useful

14. a. Where did you learn about the gas mileage of the models you were considering for purchase? (CHECK ALL THAT APPLY)
 a. 21- 1 ☐ Magazine Article e. -3 ☐ Mfr's Television Ad i. -9 ☐ EPA Gas Mileage Guide Booklet
 b. -2 ☐ Newspaper Article f. -4 ☐ Friend/Relative/Associate j. -0 ☐ Car Dealer/Salesman
 c. -3 ☐ Mfr's Magazine Ad g. -7 ☐ Automotive Magazine k. -X ☐ Labels On Vehicle At Dealership
 d. -4 ☐ Mfr's Newspaper Ad h. -8 ☐ Consumer's Report l. -Y ☐ Other (Specify): _____

b. Which ONE of the above sources of gas mileage information did you find to be the most helpful in your vehicle purchase decision?
 ENTER LETTER: _____ 22-

Beginning with the 1977 model year, the U. S. Government published a booklet called The Gas Mileage Guide For New Car Buyers. Would you please answer the following questions about this booklet to the best of your recollection.

15. At the time you were shopping for your vehicle were you aware of this booklet? 23- 1 ☐ Yes -2 ☐ No (SKIP TO QUES. 17)

16. a. Did you actually consult a copy of the booklet before buying your vehicle? 30- 1 ☐ Yes -2 ☐ No (SKIP TO QUESTION 18)
 b. How useful would you say the Gas Mileage Guide Booklet was in helping you decide which make and model 1979 vehicle to purchase? (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)
 31- Not At All Useful ← 1 2 3 4 5 6 7 → Very Useful
 c. Did you actually select or eliminate any vehicle you were considering based on information in this booklet?
 32- 1 ☐ Yes (SKIP TO QUESTION 18) -2 ☐ No (SKIP TO QUESTION 18)

17. Have you heard about the EPA Gas Mileage Guide Booklet since buying your new vehicle? 33- 1 ☐ Yes -2 ☐ No

18. What is the published EPA gas mileage for your 1979 vehicle?
 Estimated MPG: _____ MPG 45- 46- 46- X ☐ Don't Know

19. What is the actual gas mileage you are getting with your 1979 vehicle?
 Actual MPG: _____ MPG 51- 52- 52- X ☐ Don't Know

20. Would you say the gas mileage you're getting with your 1979 vehicle is: (PLEASE CIRCLE A NUMBER FROM 1 TO 7 TO INDICATE HOW YOU FEEL)
 37- About The Same
 Much Less Than You Expected 1 2 3 4 5 6 7 Much More Than You Expected

21. Which of the following five statements best describes your gas mileage record keeping practices with regard to your 1979 vehicle? (CHECK ONLY ONE)
 38- 1 ☐ Keep Accurate Records All The Time -4 ☐ I Know Fairly Well By What Gasoline I Have Put In, But Do Not Keep Formal Records
 -2 ☐ Make Frequent Checks Of Gas Mileage
 -3 ☐ Make Occasional Checks Of Gas Mileage -5 ☐ Do Not Make Any Checks

22. In a typical week, what would you say is the length (in miles) of your average one way trip? _____ Miles 62- 63-

23. How many miles would you estimate you will put on this vehicle in the period of a year? _____ Miles 64- 65-

24. a. What percentage of your usual weekly driving is spent in city driving conditions (low speed with frequent stops and starts)? _____ % Miles 66-

b. What percentage of your usual weekly driving is spent on expressway driving (highway speeds with few stops)? _____ % Miles 67-

c. What percentage of your usual weekly driving is spent on rural driving (between towns/cities on state highways)? _____ % Miles 68-

Total Of Three Types Of Driving Should Add To: 100%

25. Please indicate how much you agree or disagree with the following statements.

	Agree Very Much	Agree Somewhat	Neither Agree Or Disagree	Disagree Somewhat	Disagree Very Much
a. The national 55 MPH speed limit should be enforced more vigorously by police.	71- ☐	-2 ☐	-3 ☐	-4 ☐	-5 ☐
b. One of the principal advantages of having the 55 MPH speed limit is that it saves a significant amount of fuel.	72- ☐	☐	☐	☐	☐
c. There is a serious long-term petroleum shortage facing the United States.	73- ☐	☐	☐	☐	☐
d. The Government should continue to demand that the automotive manufacturers build more fuel efficient vehicles.	74- ☐	☐	☐	☐	☐
e. The EPA gas mileage figures overstate what owners actually get.	75- ☐	☐	☐	☐	☐
f. Even though they are criticized, the EPA gas mileage figures do serve a useful purpose by putting all models and manufacturers on the same measurement system for comparisons.	76- ☐	☐	☐	☐	☐
g. The way a person drives a vehicle (driving style) affects gas mileage.	77- ☐	☐	☐	☐	☐

CLASSIFICATION DATA FOR TABULATION PURPOSES ONLY

28. Are you: 78-1 ☐ Male -OR- -2 ☐ Female

27. Are you the principal driver as well as the principal purchaser of this vehicle? 79- 1 ☐ Yes -2 ☐ No

28. What other cars or vehicles do you or your family living with you own? 6- 1 ☐ None

	Make	Vehicle Type Series Or Model	Model Year	Purchased	
				New	Used
a.	_____	_____	_____	67- 70- 1 ☐	-2 ☐
b.	_____	_____	_____	68- 71- 1 ☐	-2 ☐
c.	_____	_____	_____	69- 72- 1 ☐	-2 ☐

29. Into which of the following age groups do you fall?

73- 1 ☐ Under 20 Years	-3 ☐ 25 - 29	-5 ☐ 35 - 39	-7 ☐ 45 - 49	-9 ☐ 55 - 59
-2 ☐ 20 - 24	-4 ☐ 30 - 34	-6 ☐ 40 - 44	-8 ☐ 50 - 54	-0 ☐ 60 Or Over

30. a. Are you: 74- 1 ☐ Single → Do you live by yourself, with your family or share with other unrelated adults?

-7 ☐ Married → (CONTINUE WITH QUESTION 30b) -3 ☐ By Myself

-8 ☐ Widowed/Divorced -4 ☐ With Family

-5 ☐ Share With Unrelated Adults

b. How many children do you have living at home? _____ 75-

31. What is the highest level of schooling completed by the head of your household?

76- 1 ☐ Grade School -2 ☐ High School -3 ☐ College -4 ☐ Master's Degree Or Higher

32. Which of the following groups best describes your family's expected total income for 1979?

77- 1 ☐ Under \$5,000	-3 ☐ \$10,000 - \$14,999	-5 ☐ \$20,000 - \$29,999	-7 ☐ \$40,000 Or More
-2 ☐ \$5,000 - \$9,999	-4 ☐ \$15,000 - \$19,999	-6 ☐ \$30,000 - \$39,999	

33. In what town/city and state do you live?

City: _____ State: _____ Zip Code: _____

20- 21- 22- 23- 24- 25- 26- 27- 28- 29-

THANK YOU VERY MUCH FOR YOUR COOPERATION.

APPENDIX B

COMPUTER TECHNIQUES

Specialized computer techniques have been used in the analysis of the owner survey data base. The techniques include both methods for accessing the survey data tapes and calculational tools for analyzing the statistical distributions of fuel economy variables. Because the computer software can be implemented in many ways, the following discussion deals with the concepts and methodology.

Readers interested in acquiring the survey data for additional analysis should consider carefully the translation requirements highlighted in Section B.1. While the survey data are available on magnetic tape, the coding format is relatively uncommon and is incompatible with most statistical software. The machine-readable format requires further processing before data may be represented in standard computer character sets.

Section B.2 describes the methodology of a computer technique developed for estimating percentiles in the distributions of fuel economy and vehicle travel information. The basis of the technique is the automated construction and analysis of cumulative distribution functions (CDF's) for many subsets of each distribution. The calculated percentiles then may be used to reconstruct the CDF's for special purpose analyses. While similar information can be displayed in histograms, the large number of variables and subsets examined in this report make the publication of histograms impractical, except for the aggregate distributions.

B.1 FORMAT OF THE DATA TAPES

The owner survey data tapes are coded in column binary format, which is a data representation now employed only in reporting survey data. This format dates from early periods in machine data processing when paper cards were the primary storage medium. Column binary permitted significant reduction in card storage requirements, but is currently used primarily for convenient coding of survey questions which allow multiple responses. Several such questions are included in the owner surveys.

Paper cards typically code one character per column as punches in one or more of 12 possible positions. Column binary extends the capacity of cards by allowing each punch position to represent information. The standard card then can be viewed as a matrix consisting of 12 rows and 80 columns. For example, responses to a survey question with possible answers of "yes" and "no" can be coded in a single matrix position, with a punch indicating "yes" and its absence meaning "no." Alternately, a question with 10 possible responses can use 10 consecutive positions within one or more columns of the card matrix. Multiple responses to a question then are represented as a sequence of punches. The power of column binary in reducing card storage volume is obvious, as is its utility for survey data. However, this representation has no correspondence with standard computer character sets, so that accessing the survey data tapes requires transformation of the column binary format to expanded form as EBCDIC or ASCII characters.

The survey data actually are stored on magnetic tape in a card image form, using two bytes to code each card column. Translation involves three basic steps: 1) reading the two-byte fields for each column, 2) interpreting the bytes as a bit string indicating punch positions, and 3) decoding punch positions into standard characters. While the programming to accomplish these steps is straight-forward, it is time consuming and requires data processing not commonly done. EEA has used a commercial

software package that provides input formats to perform automatically the necessary translation. The flexibility of this package eliminates specialized programming to access the data and also contains many standard statistical analysis procedures. The software package is SAS (Statistical Analysis System, SAS Institute Inc., SAS Circle, Box 8000, Cary, NC 27511) and has been used to perform all summary analysis for this report, including the construction of cross-tabulation tables and histograms.

The column binary format somewhat limits access to the owner survey data and places special requirements upon potential users. A resulting objective of this report has been to summarize the survey data base in a format that provides as many as possible of the basic findings and data. The estimating of percentiles for fuel economy distributions is a technique developed for this purpose and is discussed below.

B.2 DISTRIBUTIONAL ANALYSIS

The fuel economy data tables of Section 7 (and the Section 6 tables of the travel variable Average Miles Per Day) have included estimates of the distributions' percentiles. The percentiles are closely related to histograms and give information about the range of responses not adequately summarized by means and standard deviations. For example, Figure 7-1A has shown the distribution of in-use fuel economy (from question 6b) for buyers of 1978 cars. The shape of the distribution indicates that a majority of buyers achieve less than the average fuel economy, while some achieve much greater mileage. The distribution is, in fact, approximately log-normal. The estimated percentiles can be used to construct graphical displays and permit concise tabulation of the distributional information for each variable and its many subsets.

B.2.1 Methodology for Estimating Percentiles

The technique for estimating percentiles is a computerized method of constructing and analyzing cumulative probability graphs. This type of

TABLE B-1

USE OF LINEAR INTERPOLATION

EXAMPLE PROBLEM

Determine the fraction of 1978 car buyers reporting (Question 6b) in-use fuel economies between 19 and 20 mpg, inclusive.

PERCENTILES REQUIRED

20th pct.	is	14.5 mpg
30th pct.	is	15.6 mpg
60th pct.	is	19.0 mpg
70th pct.	is	20.8 mpg

CALCULATIONS

15 mpg is the 25th percentile:

$$20 \text{ pct.} + 10 \text{ pct.} \left(\frac{15 - 14.5}{15.6 - 14.5} \right) = 24.5$$

20 mpg is the 66th percentile:

$$60 \text{ pct.} + 10 \text{ pct.} \left(\frac{20 - 19.0}{20.8 - 19.0} \right) = 65.6$$

RESULT

41 percent report 16 to 10 mpg

graph draws the cumulative distribution function (CDF) observed in a sample and is a standard method for summarizing the properties of statistical distributions. Hand-drawn graphs typically use a specialized paper, which is scaled so that normal (or log-normal) CDF's plot as straight lines and are analyzed by fitting a smooth curve through the plotted points. Percentiles or, alternately, the fraction of the sample between specified values, may be read directly from the completed graph. The computerized technique is mathematically similar but applies a regression equation to determine the fitted curve and automates calculation of percentiles. The technique also does not require plotting the CDF on paper.

Figure B-1 is a sample cumulative probability graph, drawn for the 1978 car in-use fuel economy data of question 6b. The data points are plotted from the cumulative probabilities shown in the related histogram of Figure 7-1A. As can be seen, the CDF is almost linear, indicating a distribution which is approximately log-normal. (The Kolomogorov-Smirnov D-statistic reveals, however, that the deviations from linearity are too great to result from sampling fluctuations.) The use of a CDF plot also is illustrated in Figure B-1, which shows that 41 percent of the sample reports fuel economies between 16 and 20 mpg, inclusive. The computer technique exploits the near-linearity of fuel economy CDF's by fitting a polynomial function (instead of a straight line) to the observed cumulative frequencies. The linear portion of the equation reproduces the general CDF trend while non-linear terms force the curve to pass very near each data point. The technique is then a method of curve fitting based on regression analysis.

The regression equations used are of two forms:

$$\log (\text{MPG}) = a_0 + a_1 t + a_2 t^2 + \dots + a_{10} t^{10} \quad (\text{B-1})$$

$$\text{MPG} = a_0 + a_1 t + a_2 t^2 + \dots + a_{10} t^{10} \quad (\text{B-2})$$

FIGURE B-1 EXAMPLE CUMULATIVE
DISTRIBUTION FUNCTION FOR
IN-USE FUEL ECONOMY DATA

(SOURCE: QUESTION 6b RESPONSES
FROM 1978 CAR BUYERS)

B-8
In-Use Fuel Economy (mpg)

16-20 mpg, inclusive

41 percent

Percentiles

where t obeys the standardized normal distribution. The probability scale for cumulative graph paper is, in fact, linear in the t variable. The t value for each data point is calculated by evaluating the inverse normal CDF at the observed cumulative frequency. For example, because t measures (in units of standard deviations from the mean) positions within the normal distribution, a 50th percentile point is assigned a zero t value. If the sample is normally distributed, then the t -axis is linearly related to the sample values (in mpg- or log-space). Equations B-1 and B-2 allow generalized relationships for samples that deviate from normality. The logarithmic Equation B-1 has been used for fuel economy distributions, which are generally log-normal in shape. Equation B-2 provides an improved representation for the CDF's of differences between variables, such as between owner-reported and the correct EPA ratings; these distributions are more closely normal.

Use of high order polynomials and the approximate linearity of most CDF's combine to produce very high R^2 values (greater than 0.995) for the regressions. Empirical work demonstrated that the 11th order polynomials were required to fit the observed data to within ± 0.5 mpg in all cases. This tolerance represents the uncertainty in fuel economies reported as integer numbers in a survey and is an approximate bound for the precision needed to reproduce CDF's such as in Figure B-1. In practice, residuals are typically on the order of ± 0.2 to 0.3 mpg within the 5th through 95th percentiles. These results indicate that the regressions are successful representations of the CDF's. Percentiles then are estimated by evaluating the regression equations at t values corresponding to the desired percentile points, exercising care to avoid extrapolating the polynomials beyond the range of observed data. The use and limitations of the estimated percentiles are demonstrated in the following section.

8-g
In-Use Fuel Economy (mpg)

FIGURE B-2 RECONSTRUCTED CUMULATIVE
PROBABILITY FUNCTION FOR IN-USE
FUEL ECONOMY DATA

(SOURCE QUESTION 6b RESPONSES
FROM 1978 CAR BUYERS)

16-20 mpg, inclusive

42 percent

Percentiles

B.2.2 Use of Estimated Percentiles

The contribution of percentiles to the understanding of a fuel economy distribution is two-fold. First, in comparison with tabulated mean values, percentiles can indicate the direction and approximate magnitude of asymmetry. When the median value is less than the mean, as in log-normal distributions, the sample distribution is skewed toward greater fuel economies. The difference between mean and median values is a qualitative measure of the skewness. The fuel economy differences between pairs of percentiles (e.g., the 30th and 70th) also reveal very clearly how densely the sample population clusters about its center. Second, the estimated percentiles can be used to construct cumulative distribution functions (CDF's) for additional analysis. This section applies the distribution of in-use fuel economy data (question 6b) reported by 1978 car buyers to explain the use of percentiles in problem-solving and also discusses the limitations which apply.

Figure B-1 already has shown the CDF for question 6b data. The example problem solved on the graph is determination of the fraction of owners reporting fuel economy between 16 and 20 mpg inclusive. The estimated percentiles for this variable are found in Table 7-4A and can be used to reconstruct the CDF seen in Figure B-2. Comparison of Figures B-1 and B-2 reveals that the CDF's correspond very closely between the 5th and 95th percentiles. Note, however, that the sample CDF deviates at both extremes from the dashed trend lines in the second figure. The sample problem also can be solved using Figure B-2 and, in fact, produces a nearly identical result. The tabulated percentiles then may be used to perform specialized distributional analyses, including construction of histograms, for each of the many record-keeping and driving pattern subsets.

Linear interpolation also may be used to solve similar problems. This technique can be performed mentally and in most instances will produce

answers very close to those found through a graphical analysis. Table B-1 diagrams the solution of the example problem using linear interpolation. The result, 41 percent of the sample, is in excellent agreement with the 42 percent determined from Figure B-2 and the 41 percent actually observed.

Several limitations exist in the estimation and use of a distribution's percentiles. The computer technique described in Section B.2.1 is most appropriate when the sample is large and smoothly distributed across its range. When these requirements are met, as in the distributions of all respondents, the regression equation reproduces the observed CDF very closely. However, sample sizes can be small (10 to 30 responses) in the groups of record-keepers within each driving pattern. These small subsets are subject to large sampling fluctuations and may not be representative of the population from which they are drawn. In addition, the regression technique is not applicable in the smallest samples and can yield spurious results in others. Percentiles have not been tabulated under the following conditions:

- For subsets reporting 10 or fewer distinct fuel economies (a mathematical requirement of the 11th order regression polynomial)
- When estimated percentiles do not increase monotonically (a mathematical requirement of CDF's)
- For the EPA fuel economies of trucks.

The first and second conditions primarily result from small sample sizes. The observed percentiles for such subsets contain little reliable information and cannot accurately be estimated by the regression technique. The third condition reflects two general characteristics of truck EPA fuel economies.

Figure 7-4B shows the histogram of EPA composite fuel economy ratings for 1978 trucks. The distribution differs from passenger car EPA ratings

and in-use fuel economy data by its bi-modal nature and the dominance of one rating (16 mpg). The bi-modal nature results from the presence of compact pickups (primarily imported vehicles) which currently have higher fuel economy than domestic trucks. Above 20 mpg, the related CDF departs significantly from a linear trend and cannot be modeled by polynomial regression equations. Further, vehicles rated at 16 mpg constitute more than 30 percent of the entire sample, which introduces additional sharp changes in the CDF trend. As a result of the smaller sample size in the survey of truck owners, the bi-modal nature of the EPA distributions, and the dominance of single fuel economy ratings, the regression analysis has not been successful. Truck distributions of EPA fuel economy therefore are excluded from the distributional analysis. Note, however, that the owner-reported EPA ratings typically form smooth distributions and have been included in the analysis for subsets of sufficient size.

The tabulated percentiles summarize fuel economy distributions by estimating the mpg values separating 10 percent increments of the samples. This concise format displays useful information about the range and clustering of data which augments interpretation of the summary statistics. In addition, the percentiles define cumulative distribution functions and can be used to generate histograms or CDF's for special-purpose analyses. As a result, the distributional analysis performed for this report lends greater flexibility to the reader's use of owner survey data.

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