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FARS/BMCS ACCIDENT FILE MERGE AND ANALYSIS

John A. Green
Phyllis A. Gimotty
Charles P. Compton

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16. Abstract

Heavy truck fatal accidents are recorded in computer files maintained by the Bureau of Motor Carrier Safety and by the Fatal Accident Reporting System (FARS) of the National Center for Statistics and Analysis. Records from these two files were matched on selected data elements and the information for matched cases was merged to provide a composite data set. This resulting data set was analyzed in terms of completeness, reporting consistency, and bias.

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Section 1
INTRODUCTION

This report documents the results of a study entitled "FARS/BMCS Accident File Merge and Analysis" performed by the Highway Safety Research Institute (HSRI) at the University of Michigan for the National Highway Traffic Safety Administration (NHTSA) under Purchase Order NHTSA-9-6441.

The objective of the study was to compare and evaluate two independently constructed data sets that contain information on large trucks involved in traffic accidents during calendar years 1976 and 1977. One data set is maintained by the Bureau of Motor Carrier Safety (BMCS) and describes the accident involvements of heavy trucks in interstate commerce. The second data set is maintained by NHTSA's National Center for Statistics and Analysis (NCSA) as part of the Fatal Accident Reporting System (FARS). The FARS data describes all vehicles in any traffic accident where a fatality occurred.

To assist in the evaluation, a third data set was used. This data was obtained from the Telephone Survey of Fatal Accidents performed for NHTSA as part of contract DOT-HS-6-01286 "Fleet Accident Evaluation of FMVSS 121" by HSRI.

The basic procedure used in the study is simple although its implementation on the computer was quite complex and time consuming. Only the basic steps will be outlined here; a more detailed exposition may be found in the following Sections. From the simple data set descriptions given above it is evident that the data sets are not wholly overlapping. That is, while there is certainly an area of common reporting that is the subject of this study, there are also many accident types that are not common to the two bases. The first task, therefore, was to subset each of the data bases so that they contained a potentially compatible set of information. The next step was to convert both data sets to the same record structure. This step is necessary since the FARS data set is a hierarchically structured file with accident, vehicle, and person records that define all traffic units in

an accident. The BMCS data set, on the other hand, is a simple, fixed-block record that contains information relating primarily to the heavy truck involvement. To convert these data sets into a common format, the FARS person level information was summarized to produce vehicle-level summary data that could be related to the BMCS occupant information.

With both sets in a compatible format, it was next necessary to determine what variables (i.e., data fields) that the two data sets had in common, and what data transformations would be necessary to produce a common coding protocol for the variables. These common variables represent the only reporting overlap for the data sets, and are consequently of prime importance to the merge and analysis tasks. After both data sets were reduced to a common format, it was possible to merge information from each to produce a single record for heavy truck involvements that contained pertinent information from both data sets. Merging of cases was performed according to a well-defined algorithm that is presented in Section 3.2.

After the merge process, an analysis of similarities and differences in coding of the common variables was performed. At a descriptive level, the common variables were examined by means of scatter plots and contingency tables. A more detailed analysis of the completeness, reporting bias, and coding consistency of the data sets was also performed.

In the remainder of the report, Section 2.0 presents a brief description of the data sets that were utilized in this study. Section 3.0 describes the match process in detail and presents some of the descriptive results of the process. The more detailed evaluation of the data sets is described in Section 4.0, while Section 5.0 documents the final combined data set that was developed as a part of this study. Finally, Section 6.0 presents a brief summary of the study findings.

Section 2
DATA SET DESCRIPTIONS

In this Section, brief descriptions of the three data sets that were used in the course of the study are given. These descriptions are not intended to be complete, but are only intended to document those aspects of the data sets that are of importance to this study. For more detailed descriptions, the reader is referred to the sponsoring agencies (BMCS or NCSA).

2.1 The FARS Data Set

The FARS data set contains information on fatal motor vehicle traffic accidents that occur in the 50 states, the District of Columbia, and Puerto Rico.[1] Each accident in FARS includes at least one fatality that happened on a roadway. The data for FARS are provided by the states and are reported in a standard format. The data files made available to HSRI have been reformatted into a PERSON data set that contains information from the FARS accident, vehicle, and person records for each person involved in a fatal accident. These variables are contained in the final data file and are referenced by Variable numbers 3 through 221 (see Appendix A).

In order to produce a compatible file structure, The PERSON data set was subset to include all persons that were involved in any accident in which a large truck was also involved. A large truck is defined by Body Types 53 - 60 (see Variable 105, Appendix A).

Because the BMCS data set is a vehicle-level file, it was necessary to collapse the FARS PERSON file to a vehicle-level file prior to matching the two data sets. To accomplish this, the person-level information was summarized to provide the kind of occupant summary information found in the BMCS data set. This operation resulted in the creation of Variables 401 - 405 that provide information on driver

[1] FARS Master File Version 25 (1976) and 21 (1977) were used in this project.

injury as well as counts of the number of persons killed or injured in each vehicle and the number of persons killed or injured in the accident but not in the vehicle. After the occupant summarization process, the person-level file was subset again to include only drivers of large trucks. This produced a vehicle file that is compatible to the BMCS file for matching purposes.

After all the subsetting operations had been performed, the FARS data sets included 4,812 cases for calendar year 1976 and 4,954 cases for 1977.

2.2 The BMCS Data Set

All interstate motor carriers who are subject to the Department of Transportation Act are required to report to BMCS any accidents involving their vehicles that result in death, injury, or over $2,000 in property damage. Excluded are occurrences that involve only boarding and exiting a stationary motor vehicle, the loading or unloading of cargo, or farm-to-market agricultural transportation. The accident information is reported to BMCS by the carriers themselves on a standardized form.

The standard BMCS data set contains a large amount of alphanumeric information that is not suitable for analytic operations with most data analysis packages. HSRI consequently performed an extensive reformatting of the data to produce numeric information for all the important variables in the original data set. The resulting data set contains Variables 1001 through 1073 as documented in the codebook presented in Appendix A.

In order to produce a file structure that is compatible with the FARS subset, the reformatted BMCS data were subset to include accident involvements in which a fatality was involved. One of the explicitly mentioned criteria for subsetting the BMCS and FARS data sets was the Gross Vehicle Weight Rating (GVWR). Only the 1977 FARS file, however, contained a variable (i.e., Body Type) which would permit subsetting by GVWR. Consequently, all files were subset to the available common

coding. Both FARS data sets include Body Types 53 - 60 and neither BMCS data set was subset by weight. This allowed for the maximum overlap in both files, but also permits the inclusion of some trucks lighter in weight than those specified originally.

After all subset operations had been performed, the BMCS data sets included 2,004 cases for calendar year 1976 and 2,267 cases for 1977.

2.3 The Telephone Survey of Fatal Accidents

As part of the FMVSS121 study cited earlier, HSRI conducted a telephone survey of fatal accidents to collect supplementary descriptive information on the heavy trucks involved. Eligible cases for this survey were 1974-1978 model year trucks with FARS coded body types (V105) of 53-60 involved in fatal accidents during the calendar years 1976, 1977, and 1978.[2] This supplementary data is keyed to the FARS case number providing and easy merge process.

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[2]"FLEET EVALUATION OF FMVSS121", Kenneth L. Campbell and Arthur C. Wolfe, Report UM-HSRI-77-35, Contract DOT-HS-6-01286, Interim Report, October 1977 The information that was included from the survey is described in Appendix A as Variables 500 - 507.

Section 3
THE FILE MATCH PROCESS

In Section 2, each of the component data sets was described. In this Section, the process used to match the corresponding BMCS and FARS cases will be described, and some descriptive results of the match process will be presented.

3.1 Creating Common Variables

Comparison of the two subject data sets is possible only in terms of items of information that are common to both data sets. Commonality implies that not only are the information items themselves the same, but that they are quantified (or coded) in the same way. In the FARS/BMCS comparison, three classes of common variables exist.

Certain variables are common to both data sets in information content and coding structure with no modification and comprise the simplest class of common variables. Other variables are common to both data sets in information content, but not in coding structure. These variables were recoded to provide new code values that represent the greatest degree of commonality that was possible. Finally, a number of "derived" variables were created from information available from a combination of variables in each data set. A list of the 32 common variables used in the final match process is shown in Table 1. A detailed definition of the recode operations used in creating these variables may be found in Appendix B.

Common variables were used in two ways during the process of matching FARS and BMCS cases. A small number of the common variables (referred to as MATCH variables) were used to determine when a FARS case matched (i.e., was potentially the same as) a BMCS case. That is, if values of the MATCH variable agreed completely in the FARS and BMCS files, the cases are processed through the remainder of the match algorithm.

Table 1
FARS/BMCS COMMON VARIABLES

Name	FARS #	BMCS #
Collision Type	300	1016
Day of Crash	8	1012
Driver Age	202	1024
Driver Dozed	307	1080
Driver Drinking	306	1079
Driver Injured	401	1051
Driver Killed	400	1050
Driver Seat Belts Used	311	1067
Driver Sick	317	1087
Fire	304	1077
Hour of Crash	10	1014
Light	313	1084
Mechanical Defects	309	1064
Miscellaneous	305	1078
Month of Crash	7	1011
Other Object Involved	301	1074
Power Unit Make	308	1081
Power Unit Model Year	106	1030
Ramp Involved	315	1085
Ran Off Road	302	1075
Road Surface	314	1070
Roadway Divided	316	1086
Rollover	303	1076
State of Crash	3	1005
Total Injured in Vehicle	403	1061
Total Killed in Vehicle	402	1060
Total Killed in Crash	46	1062
Total Injured in Crash	50	1063
Total Non-Truck Injured	405	1059
Total Non-Truck Killed	404	1058
Type of Defect	310	1082
Weather	312	1083

Match Variables used were as follows:

1) State of Accident
2) Month of Accident
3) Day of Accident
4) Age of Driver
5) Power Unit Make
6) Vehicle Model Year
7) Number Killed in the Accident
8) Number Killed in the Vehicle

The remainder of the common variables are referred to as CHECK variables. The CHECK variables are compared in the two data sets and the number of variables that are consistently coded in both are calculated. Total agreement on the check variables would indicate a perfect match. However, less than perfect agreement was permitted in the match process. Note that those variables which are not designated as MATCH variables for a particular iteration of the match process are considered to be CHECK variables. That is, full use of all the common variables was made at each step of the process.

3.2 The Match Algorithm

Since coding of some FARS variables was significantly different in 1976 and 1977, the match process was performed separately for each year. For each year, the matching process was iterative with different MATCH variables used at each iteration and varying degrees of success in the match attained as determined by a count of the CHECK variables.

The exact algorithm used in the match process is given below.

1) Create a MATCH variable that is some combination of the common variables. For instance, the variable for the first match was State/Month/Day. A description of the MATCH variables used at each step of the iteration is given in Section 3.3.

2) Create a new ordinal variable by assigning a number to each distinct level of the MATCH variable. As a result of this process, each distinct level of the MATCH variable will have a distinct number attached to it, while multiple occurrences of

the same level will have a common number.

3) Count the number of occurrences of each ordinal number created in Step 2). This count represents the number of occurrences of each MATCH variable value.

4) Redefine the MATCH variable to be equal to its original value when the count variable defined in Step 3) has the value 1, and to be equal to the system missing data code otherwise. Because missing data values are eliminated as possible match candidates, this step insures that only unique values of the MATCH variables are available for the match/merge.

5) Match cases from the BMCS file (as the smaller of the two data sets) to FARS cases on the basis of the MATCH variable defined in Step 4).

6) For cases where a match occurred, pass the FARS case number to the BMCS data set to provide a positive merge variable.

7) Merge the BMCS data set with the FARS data set on the basis of the FARS case number.

8) For each CHECK variable in the merged data set, create a variable that has the value 1 if the CHECK variable has the same value in both the FARS and BMCS components, and zero otherwise.

9) Count the number of CHECK variable comparisons coded 1 and divide by the total number of CHECK variables to yield a percentage value that measures the degree of match attained.

10) Code the match level indicator variable (V999) equal to the percentage match attained when the percentage indicated by Step 9) was 50% or greater.

11) Re-pool the data. That is, delete those cases from the merged data set when the match indicator defined in Step 9) is less than 50%.

12) Set the match level variable (V998) in the FARS and BMCS data

sets equal to the current iteration number for the matched cases.

13) Go to Step 1)

The process outlined by Steps 2) to 4) above insures that cases are matched on a one-to-one basis, because multiple occurrences of any value of the MATCH variable are not included in the match process. Cases that do not qualify as possible match cases on a given iteration, are candidates for matching on a later iteration, however, because the MATCH variable is changed at each pass.

3.3 Results of the Match Process

Statistics showing the number of cases that were matched at each step of the match iteration are shown for calendar years 1977 and 1976 in Tables 2 and 3, respectively.

The significantly different number of matched cases in 1976 and 1977 is due to the power unit make variable that did not offer valid truck-manufacturer code values in 1976. In 1977 the FARS system added new code values to the power unit make variable. The power unit make variable, along with driver's age, are the only two vehicle descriptor variables available for the match process. Consequently, the number of matches in 1976 was fewer.

Table 2

FARS/BMCS MATCHES
1977

Match #	Match Variables	# Matches
1	State-Month-Day	943
2	State-Month-Age	450
3	State-Month-PUMake	89
4	State-PUMake-Age	0
5	State-Month-Day-Age	208
6	State-Month-Day-PUMake	100
7	State-Month-Day-# Killed	70
8	State-Month-Age	17
9	State-Month-PUMake	57
10	State-Month-# Killed	50
11	State-Month-Day	18
	Total Matches	2002

Table 3

FARS/BMCS MATCHES
1976

Match #	Match Variables	# Matches
1	State-Month-Day	956
2	State-Month-Age	398
3	State-Month-#Killed Acc-#Killed Veh	28
4	State-Month-Day-Age	135
5	State-Month-Model Yr	46
	Total Matches	1563

Section 4
EVALUATION OF THE DATA SETS

In this section, the evaluation criteria for comparing the BMCS and FARS data sets are discussed. The two main evaluation criteria presented are the completeness of each data set and the consistency of information on common variables between data sets. Each data set is examined relative to the other to assess completeness and the resulting exclusion bias. Common variables are evaluated for consistency of coding and examined for possible reporting bias.

4.1 Evaluation Criteria

A data set is defined by describing the cases and variables that make up that data set. In evaluating a dataset, attention can be directed to the completeness of the cases which make it up or to the quality of the data and/or choice of data elements included in it. This report is not concerned with the choice of data elements, with the possible exception of indicating data elements which would have been helpful had they been included in the data set. The focus of the following section will center on a discussion of the problems inherent in assessing the completeness and reliability of the FARS and BMCS datasets relative to each other.

Measurement of the completeness of a data set can only be defined relative to another comparison data set or list. It is important to realize that the completeness of a data set, in terms of all possible cases that should be in the data set, cannot be evaluated without a complete enumeration of all such cases. Neither the BMCS or FARS data set will be assessed with respect to those vehicles that "should" be reported but will only be compared to assess the degree of overlap between two data sets.

Data sets which do not contain all appropriate cases are subject to bias. The bias, in this case, is an exclusion bias, in that certain cases are not found in the data set. This bias may be a result of random omission of cases, but, on the other hand, may represent a

systematic exclusion of a certain types of cases. After an assessment of the completeness of a data set, investigation of the resulting bias is in order.

The reliability of the variables can only be evaluated relatively since both datasets may be subject to error. The matching process itself may obscure this evaluation since exact matching cannot be assured. Coding instructions may vary even though coded values are equivalent. The best that can be done here is to compare common variables in BMCS and FARS to see how well they agree and to further investigate those variables that do not agree. In this manner, reporting biases in the data sets may be identified.

4.2 Completeness of the Data Sets

The exact population of interest is all trucks that have been involved in an accident which involve a fatality and are required to submit a form reporting the accident to BMCS. There is no complete list of these vehicles. This means that there is no way to determine, with the information in the two data sets, how many cases were missed by both data collection systems. It is possible however to get an indication of the degree of overlap between two data sets. It should be noted here that both data sets have been subset. These subsets are described in Sections 2.1 and 2.2. Tables 4 and 5 summarize the results of the case matching process for years 1976 and 1977 respectively and are based on the assumption that all matches were correct.

For both years it appears that BMCS has fewer cases than would be expected given the number of cases represented in FARS. The subset of FARS used in the match process was slightly more than twice the number in our subset of cases reported to BMCS. Of the total number of FARS cases used only 32.5% in 1976 (44.5% in 1977) were found in the cases reported to BMCS.

From the data presented in Tables 4 and 5 it can also be seen that of the cases reported to BMCS, 10.7% in 1977 and 22.2% in 1976 were found not to successfully match any vehicle in the FARS subset that was

Table 4

Applicable Trucks Reported by BMCS and FARS
1976

Reported to FARS	Reported to BMCS		
	Yes	No	Total
Yes .	1563	3244	4812
No .	441	?	?
Total	2004	?	?

Table 5

Applicable Trucks Reported by BMCS and FARS
1977

Reported to FARS	Reported to BMCS		
	Yes	No	Total
Yes .	2002	2952	4954
No .	265	?	?
Total	2267	?	?

used in the match process. Several possible reasons for these non-matches exist such as: miscoding on key match variables; multiple accidents with similar time and location coding; missing data on key variables; or quite possibly the vehicles not found in the FARS subset

were in FARS but not in the particular subset used. This is likely to have happened if the body type variable (the only variable used in subsetting the FARS data set) was miscoded.

It is possible that, because of subsetting the files, both totals are in error. The BMCS file was subset to include only accidents involving fatalities, and it is likely that some BMCS reports were filed before a death occurred among the occupants of other, involved vehicles. It is also impossible to determine how much the 4954 and 4812 FARS cases over-represent vehicles that should have been reported to BMCS. The subset of vehicles used was larger than what is specified by the BMCS reporting criteria. This was done to insure that none of the appropriate vehicles were specifically excluded in the chosen subset. The percentages mentioned above can be thought of as a conservative estimate of the percentage of BMCS cases found in FARS. The percentages may in fact be larger if the number of vehicles that are required to report to BMCS in the FARS subset is smaller than the actual number of FARS vehicles used or if the BMCS cases which were not matched are, in fact, represented in the FARS file.

It appears that there may have been omissions of cases from both data sets. It is desirable to examine the information available to see whether there are differences between the cases that were found to match and those that did not match. The analysis must be restricted to those variables common to both files and involve variables that may relate to whether an accident is reported or not. Three variables, accident type (i.e. whether the accident is a single or a multiple vehicle accident), power unit make, and carrier type where chosen for this discussion. Tables 6 and 7 present the distributions of accident type for the matches and the non-matches in the 1977 and 1976 data sets respectively. Also included in these tables are distributions for those matched and non-matched cases for which there was data present from the FARS Interview data set.

In both tables it appears that the percentage of single vehicle accidents is slightly higher for the BMCS and the FARS cases that did

not match than for those that did. The small increase is probably not practically significant. The FARS Interview distributions for match status by accident type are not directly comparable to the BMCS and FARS distributions. The FARS Interview cases are a specific subset of FARS data that were used in the FMVSS 121 Project and were included to show that distributions of accident type for the matched and non-matched cases used in the FARS Interview subset were practically the same.

Table 6

Accident Type by Data Set
Subset on FARS/BMCS-Match Status
1977

FARS/BMCS Status	% Single	% Multi	% M.D.	N
BMCS Data				
Match .	21.9	72.0	6.0	2002
No Match	29.8	62.3	7.9	265
Total .	22.8	70.9	6.3	2267
FARS Data				
Match .	22.4	77.3	0.3	2002
No Match	24.9	74.9	0.2	2952
Total .	23.9	75.9	0.2	4954
FARS Interview Data				
Match .	14.6	80.5	4.8	745
No Match	10.5	84.2	5.4	746
Total .	12.5	82.4	5.1	1491

Table 7

Accident Type by Data Set
Subset on FARS/BMCS-Match Status
1976

FARS/BMCS Status	% Single	% Multi	% M.D.	N
BMCS Data				
Match .	23.6	69.8	6.7	1562
No Match	31.5	61.9	6.6	441
Total .	25.3	68.0	6.6	2003
FARS Data				
Match .	24.6	75.1	0.3	1563
No Match	28.3	71.6	0.2	3249
Total .	27.1	72.7	0.2	4812
FARS Interview Data				
Match .	12.7	73.9	13.4	537
No Match	14.1	77.7	8.2	673
Total .	13.5	76.0	10.5	1210

Table 8 gives the distributions of power unit make by match status for 1977. Again the distributions vary slightly by match status but the variability is small. In the BMCS cases not found in FARS the percent of Chevys and Fords appears higher and Macks and Whites appears lower than for those cases that matched a FARS case. For the FARS cases that did not match, the percentage of Chevys, Fords, and Unknown types appears higher and International Harvesters and Macks appear lower than

Table 8

Power Unit Make by Data Set
Subset on FARS/BMCS-Match Status
1977

Make	FARS			BMCS		
	Match	No Match	Total	Match	No Match	Total
Other	2.1	2.3	2.1	2.5	4.3	3.6
Brkway	1.0	0.4	0.9	1.0	1.3	1.2
Chevy	2.4	6.0	2.8	2.3	9.8	6.7
Direo	1.0	1.1	1.1	1.2	1.3	1.2
Dodge	0.7	0.4	0.7	0.8	1.6	1.3
Ford .	9.0	15.8	9.8	8.8	14.4	12.1
Frtlin	6.4	5.3	6.3	1.7	0.8	1.2
GM . .	8.9	10.2	9.0	9.0	9.4	9.3
IH . .	20.5	16.6	20.1	20.7	19.7	20.1
Kenwth	10.7	9.4	10.5	10.6	7.6	8.8
Mack .	14.1	12.8	13.9	15.0	11.3	12.8
Pbilt	6.6	6.0	6.6	6.6	6.6	6.6
White	15.4	10.9	14.9	19.1	10.8	14.1
Unk. .	1.0	2.6	1.2	0.5	1.3	0.9

those cases which matched a BMCS case. Note that the distributions for the BMCS matched cases and FARS matched cases are not the same. This is due to coding discrepancies in the power unit make variable for the matched cases.

The information about carrier type is available for all the BMCS

cases but only for FARS cases that were included in the supplementary interview subset. The distribution of carrier type can be found in Table 9 for 1976 and Table 10 for 1977.

Table 9

Carrier Type by Match Status
1976

Match Status	Private	Auth.	Other
BMCS			
Match .	24.7	71.1	3.7
No Match	25.6	70.1	3.9
FARS Interview			
Match .	31.6	63.0	5.0
No Match	56.7	32.4	8.7

The same pattern is present in the data for 1976 and 1977. The distributions of the matched cases for BMCS and FARS are quite similar. Inconsistencies in the two distributions result either from errors in coding the carrier type variable in one of the data sets or possible mismatches in the matching process.

The distribution on carrier type for the unmatched BMCS cases differs strikingly from the unmatched FARS cases. The unmatched FARS cases are predominately private carriers. These cases may represent vehicles not required to file a BMCS report. This may imply that the FARS subset used in the matching process was too large. There is, however, no way to tell in FARS which vehicles are required to submit a BMCS report. Survey results from the 121 Project indicate that about

Table 10

Carrier Type by Match Status
1977

Match Status	Private	Auth.	Other
BMCS			
Match	29.5	67.7	2.9
No Match	27.5	71.3	1.1
FARS Interview			
Match	32.0	62.0	5.1
No Match	66.4	26.2	6.1

50% of all tractors are operated by Authorized carriers, and that about 30% of the vehicles operated by non-Authorized carriers are used for interstate trips.[3]

From the data presented in Tables 6-8 it can be seen that there are slight variations in the distributions for accident type and power unit make for the matched versus non-matched cases. In reviewing this data it should be reemphasized that mismatches may have occurred in the matching process so that any slight differences may exist because of imperfect matching of cases. None of the percentage changes are felt to be large enough to merit the conclusion that specific types of cases are being excluded from the data set. The data presented in Tables 9 and 10 on carrier type suggest the possibility that a large number of private carriers are not reporting involvements in fatal accidents to BMCS.

[3]"FLEET EVALUATION OF FMVSS 121 - FINAL REPORT", Campbell, K.L., et. al., In Preparation.

4.3 Reliability of the Data Sets

The reliability of these two data sets can be examined using all variables which are common to both data sets. These variables and their role in the match process were described in Section 3.1. To assess reliability the common variables will be examined individually (one variable from each data set). The analysis is restricted to the set of matched cases.

For each variable the number of cases for which the two variables were equal for the matched cases was calculated. This data is presented in Table 11. For each variable the frequency and percentage of agreement for the matched cases is included. It is important to realize that agreement here is defined in terms of the valid code values. Any case which has missing data will be counted as a disagreement, even if both cases are missing, unless there is a valid unknown code. If this is true and both variables are coded unknown for a given case this will be counted as an agreement. Looking at specific variables, the percent of agreement ranges from about 39% to 100%. Driver seat-belt usage agrees 38.9% (in 1977) of the time between the two data sets whereas the driver's age variable agrees 74.1% (in 1977) between the two files. The percentage agreement gives a direct measure of the consistency between the two files but does not give any information about possible biases in terms of differential reporting in the two data sets.

In order to evaluate why discrepancies occurred it is necessary to look at more detailed statistics. Contingency tables and scatter plots are helpful in determining any patterns in the cases that do not agree. In Appendix C scatter plots or contingency tables can be found for all variables listed in Table 11.

Here two variables will be discussed. Restraint usage (driver seat belt) is explored using a contingency table and driver age is examined using a scatter plot. The contingency tables for restraint usage are presented here in Table 12 for 1977 and 1976. Table 13 presents some statistics derived from the contingency table which will be used to evaluate the consistency of the restraint usage variable.

Table 11

Match Status of Common Variables
1976 and 1977 FARS and BMCS

Variable	1977				1976			
	Agree		Disagree		Agree		Disagree	
	Freq	%	Freq	%	Freq	%	Freq	%
Collision Type	1706	85.2	296	14.8	1384	88.5	179	11.5
Day of Crash .	1815	90.7	187	9.3	1505	96.3	58	3.7
Driver Age . .	1484	74.1	518	25.9	1304	83.4	259	16.6
Dr. Dozed . .	1932	96.5	70	3.5	1517	97.1	46	2.9
Dr. Drinking .	1763	88.1	239	11.9	518	33.1	1045	66.9
Dr. Injured .	915	45.7	1087	54.3	719	46.0	844	54.0
Dr. Killed . .	1941	97.0	61	3.0	1538	98.4	25	1.6
Dr. Seat Belt	778	38.9	1224	61.1	568	36.3	995	63.7
Driver Sick .	1997	99.8	5	0.2	1560	99.8	3	0.2
Fire	1999	99.9	3	0.1	1562	99.9	1	0.1
Hour of Crash	1042	52.0	960	48.0	783	50.1	780	49.9
Light	1586	79.2	416	20.8	1310	83.8	253	16.2
Mech. Defect .	1799	89.9	203	10.1	1416	90.6	147	9.4
Misc.	1989	99.4	13	0.6	1558	99.7	5	0.3
Month	2002	100	0	0	1563	100	0	0
State	2002	100	0	0	1562	99.9	1	0.1
Other Obj. . .	1669	83.4	333	16.6	1317	84.3	246	15.7

Table 11
Continued

Match Status of Common Variables
1976 and 1977 FARS and BMCS

Variable	1977				1976			
	Agree		Disagree		Agree		Disagree	
	Freq	%	Freq	%	Freq	%	Freq	%
P.U. Make . .	1674	83.6	328	16.4	173	11.1	1390	88.9
p.U. Year . .	1596	79.7	406	20.3	1343	85.9	220	14.1
Ramp	1912	95.5	90	4.5	1511	96.7	52	3.3
Ran Off Road .	1814	90.6	188	9.4	1410	90.2	153	9.8
Road Surface .	1773	88.6	229	11.4	1409	90.1	154	9.9
Road Divided .	1721	86.0	281	14.0	1344	86.0	219	14.0
Rollover . . .	1546	77.2	456	22.8	1170	74.9	393	25.1
Veh. Injured .	1613	80.6	389	19.4	1276	81.6	287	18.4
Veh. Killed .	1948	97.3	54	2.7	1520	97.2	43	2.8
Non-Truck Inj.	1605	80.2	397	19.8	1302	83.3	261	16.7
Non-trk Kill.	1891	94.5	111	5.5	1505	96.3	58	3.7
Kill. Crash .	1889	94.4	113	5.6	1498	95.8	65	4.2
Inj. Crash . .	1366	68.2	636	31.8	1130	72.3	433	27.7
Type Defect .	1799	89.9	203	10.1	1416	90.6	147	9.4
Weather . . .	1552	77.5	450	22.5	1253	80.2	310	19.8

Looking at the data in Table 13 it can be seen that the number of cases that have information about restraint usage in BMCS but have unknown coded in FARS is larger than the number of cases that have

Table 12
Distribution of Driver Restraint Usage
BMCS vs. FARS

BMCS	FARS				
	Yes	No	Unk.	Miss.	Total
1976					
Yes .	172	440	189	87	801
Row%	21.5	54.9	23.6		
Col%	86.0	49.1	57.1		56.1
No .	20	357	103	34	480
Row%	4.2	74.4	21.5		
Col%	10.0	39.8	31.1		33.6
Unk.	8	99	39	15	146
Row%	5.5	67.8	26.7		
Col%	4.0	11.0	11.8		10.2
Total	200	896	331	136	1563
Row%	14.0	62.8	23.2		
1977					
Yes .	184	607	290		1081
Row%	17.0	56.2	26.8		
Col%	88.0	47.5	56.4		54.0
No .	19	540	169		728
Row%	2.6	74.2	23.2		
Col%	9.1	42.2	32.9		36.4
(5)*	0	0	1		1
Row%			100		
Col%			.2		.0
Unk.	6	132	54		192
Row%	3.1	68.8	28.1		
Col%	2.9	10.3	10.5		9.6
Total	209	1279	514		1081
Row%	10.4	63.9	25.7		

*Undefined code value.

Table 13

Distribution of Possible Match Levels
On Driver Restraint Usage
BMCS/FARS 1976-1977

	1977		1976	
	Freq.	%	Freq.	%
Agree . . .	778	38.7	568	36.3
FARS-Yes . BMCS-No . .	19	0.9	20	1.3
FARS-No . . BMCS-Yes .	607	30.3	440	28.2
FARS-Unk. . BMCS-Yes/No	460	23.0	292	18.7
FARS-Yes/No BMCS-Unk. .	138	6.9	243	15.5
Total . . .	2002	100%	1563	100%

information on that variable in FARS but unknown coded in BMCS. The difference is much more pronounced in 1977 than it is in 1976. What is even more spectacular about this table is the large difference for those cases where there is information about restraint usage (either a YES or a NO is coded). The overwhelming majority of those cases have the BMCS variable coded YES for restraint usage of the driver and a NO coded for the corresponding FARS variable. If random error was the only source that explained all the discrepancy one would expect approximately half of the cases with an error in one direction and the rest having the error in the other direction. If this was the case for Table 12 one would expect approximately 313 cases coded YES on the FARS variable and NO on the BMCS variable instead of the 19 found in this data set.

Summarizing this data indicates that, at least in 1977, FARS had a

larger percentage of cases with unknown coded for the restraint usage variable when there was information about restraint usage in the BMCS file. It also appears that the largest percentage of the cases that disagree are those cases where the BMCS variable coding restraint usage is coded YES and the FARS variable is coded NO.

Scatter plots of driver's age in BMCS and FARS are presented at the end of this section in Figures 1 and 2. If the two files were completely consistent all of the cases should lie on a diagonal line. Table 11 indicates that 1,484 of the cases agree in 1977 and 518 cases disagree between the two files. The scatter plot for 1977 includes 1,977 cases; the remaining 39 cases represent missing data on either or both driver age variables. The scatter plot for 1976 contains 1,557 cases; the remaining 6 cases are also due to missing data and are part of the 259 cases that disagree on driver's age.

Visually comparing the two scatter plots it appears that for 1976 the two data sets were somewhat more consistent. Some of the variation in the variables may be due to the matching process itself. One possible source of bias was suggested by looking at a contingency table equivalent to the scatter plot. If the driver's age was obtained by subtracting the birth year from the death year, the driver's age may be off by one year. To investigate this, the difference between the BMCS driver's age variable and the FARS driver's age variable was examined for both years to see what percentage of cases that matched were within one year of the other. This data is presented in Table 14.

It can be seen from this table this bias does not explain all of the inconsistencies between the data sets. Except for the incorrect matches, which will account for at least some of the inconsistencies, there is not enough information to identify any other possible systematic biases in the driver's age variable.

These two variables were used to show the usefulness of the statistics found in the contingency tables and scatter plots found in Appendix C. Each variable needs to be examined on its own right to be able to make any judgements about possible bias in the coding of the

Table 14

Distribution of Driver Age Differences
BMCS/FARS

Difference	1976		1977	
	Freq.	%	Freq.	%
More than 1 year	39	2.5	119	2.5
1 year	99	6.4	154	7.7
0 (equal)	1304	83.8	1484	74.2
-1 Year	65	4.2	93	4.6
Less than -1 year	50	3.2	151	7.5

data in either of the data sets.

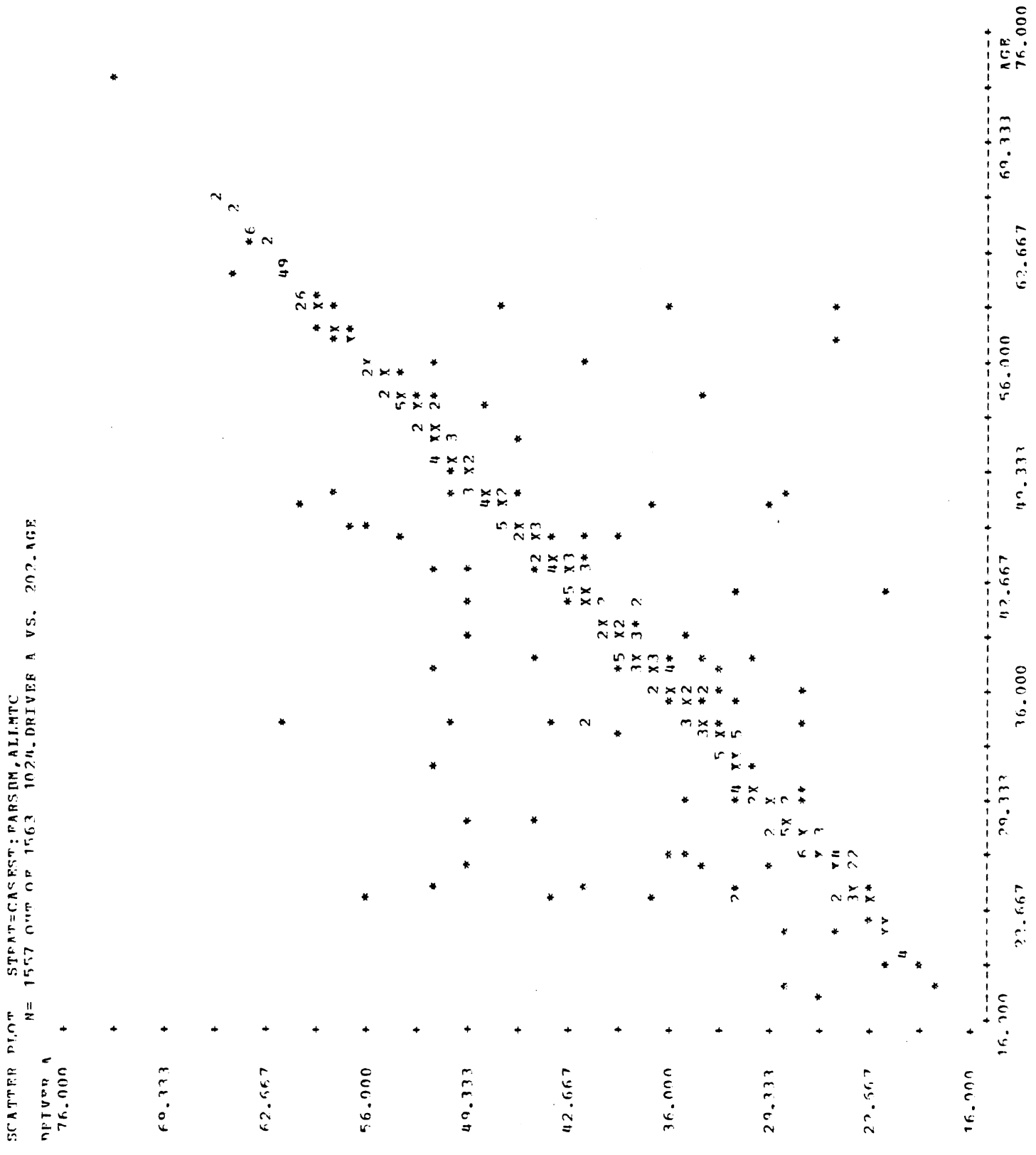

Figure 1

Scatter Plot of Driver's Age - 1976

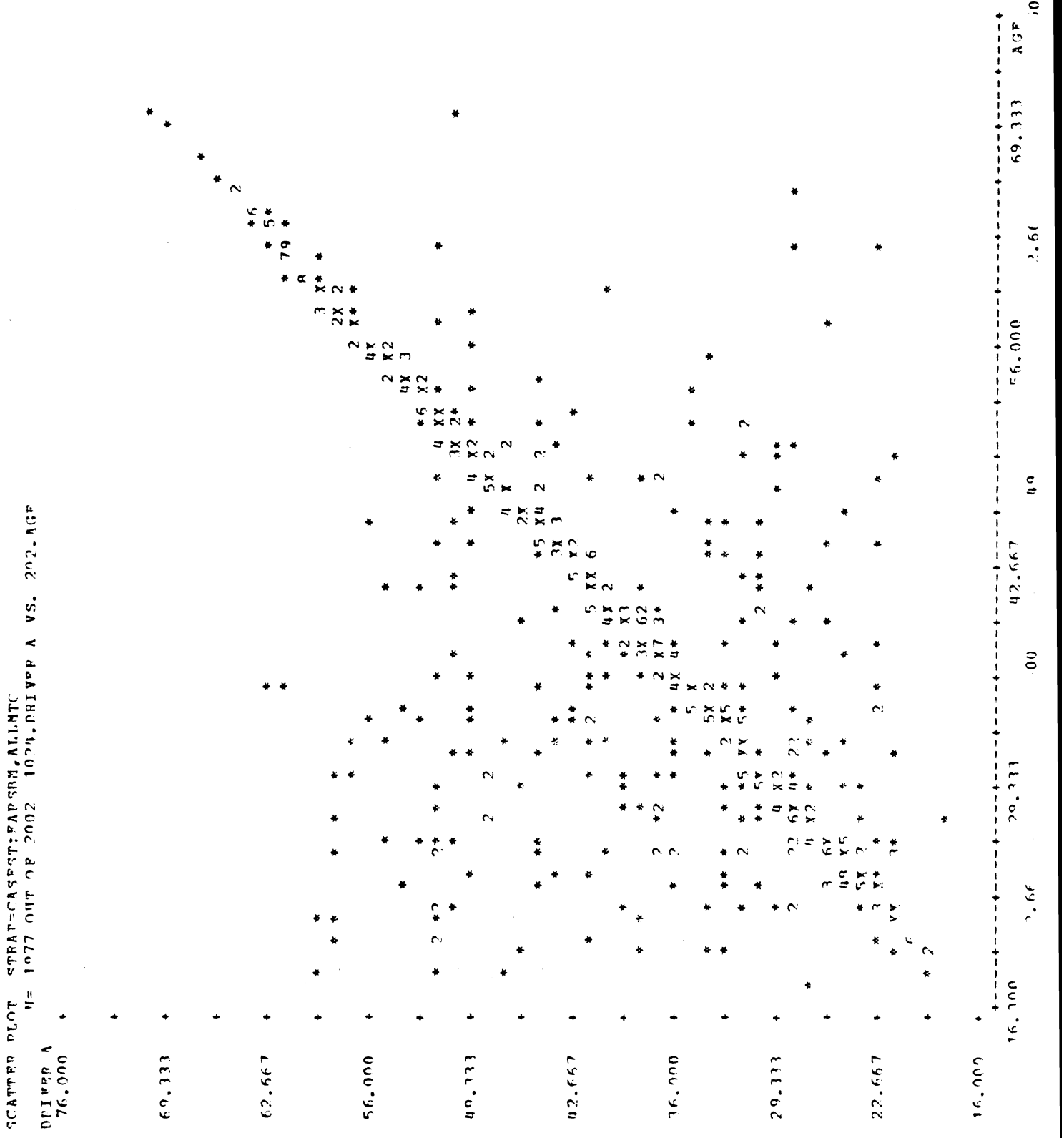

Figure 2

Scatter Plot of Driver's Age - 1977

Section 5
DATA SET DOCUMENTATION

Two years of data, 1976 and 1977, and three data sets for each year, FARS, FARS Interview, and BMCS, were used in this project. These data sets were merged into one data set for each year. This section describes the two merged files and their structure and also documents the data tape produced from these files.

5.1 File Structure

The final merged file is a vehicle file and thus each record (case) in the file represents one vehicle. For each case three sections of variables are present, representing: FARS, FARS Interview, and BMCS data, as well as several descriptive variables describing the match status of the case. It is important to understand that many cases are missing data on entire sections of variables because that particular case was not matched to that particular data set. Variable 9000, the last variable of each case, denotes what data sets are present for that case.

Figure 3 is a visual representation of the structure of the merged file. The numbers on the boxes are the code values of v9000 for that combination of valid and missing data. Thus to perform a comparison of variables from two of the data sets the analysis should be limited to the stratum or strata of v9000 which contain valid data for the variables. The cases used for analysis must be limited in this way because all missing-data values for non-valid (not-matched) portions of cases are zero and the code value zero may be valid for the particular variable (such as number killed) being analysed.

5.2 Output Tape

The data tape containing the final, merged 1976 and 1977 data sets is written on an IBM-labelled, 9 track, 1600 b.p.i. magnetic tape with an EBCDIC character set in a FB format with a block size of 18750 and a record length of 375. Variables are on the data tape, by case, in the

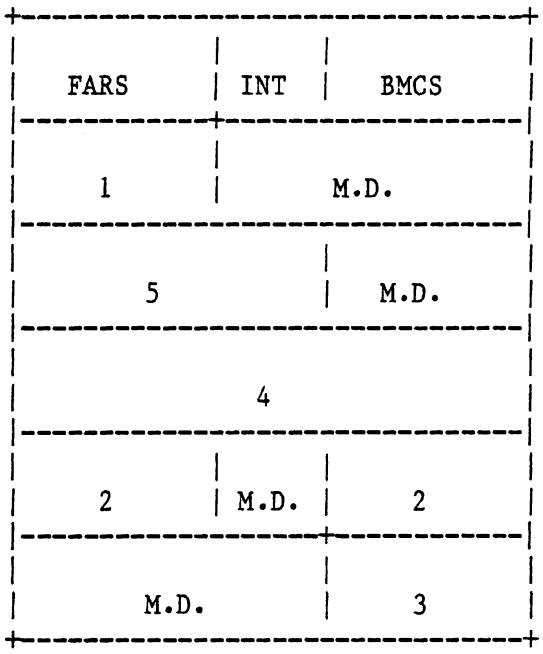

Figure 3

Structure of the Merged Files
with Code Values of the Strata Variable
CASEST, V9000 (M.D.=Missing Data)

order in which they appear in the codebook in Appendix C. Field widths for each variable may also be found in Appendix C. Where code values do not fill the entire field allowed the code value is right justified in the field and the remainder of the field to the left of the code value is filled with blanks.

As mentioned in section 5.1, cases which contain unmatched portions within the record (i.e. a case may contain only valid data on FARS variables because no Interview data or BMCS data could be matched to that particular case) will have a value of zero for every variable in the unmatched portion of the record. Some of these zeros may be valid code values even though the variable itself is invalid for that particular case. Care should be exercised to exclude invalid portions of records, particularly when zero is a valid code value for the variable under analysis.

A final point should be made concerning the representation of the data set in Figure 5.1. It could be inferred from the figure that the various strata are contiguous and in blocks within the data set. This is not the case; in fact, the strata are mixed randomly so that only by the use of v9000 can the valid portion of a given case be determined.

SECTION 6
SUMMARY

The purpose of this project was to match and evaluate cases from the FARS and BMCS data sets for 1976 and 1977 which represent heavy trucks involved in fatal accidents. A number of significant findings that resulted from this study are summarized in this section.

A computer algorithm using common variables was developed to match the two data sets. Eleven iterations were done for the 1977 data and five iterations for the 1976 data, resulting in an 88% and 78% match of the BMCS data for 1977 and 1976, respectively. Approximately one-half of the 1977 total matches, and two-thirds of the 1976 total matches, resulted from the first match attempted for each year, which combined State, Month, and Day of the accident. The availability of County information in the BMCS data set would have increased the number of reliable matches.

The BMCS subset that was used is approximately half the size of the FARS subset used. Approximately 10% of the BMCS cases were not matched to any case in the FARS subset used in the matching process. Despite the fact that the BMCS subset used was only half the size of the FARS subset, the distribution of certain key variables in the two subsets are approximately the same. Those cases found in the BMCS data set but not in the FARS subset would have to be examined individually, perhaps in a hard copy review of the raw data, to determine why they were not matched.

Comparison of responses to the BMCS and FARS variables was complicated by the nature of the matching process. For most of the twenty-nine variables common to both files, there was approximately 80% to 90% agreement between the two files. Potential bias is specific to each variable, and data are presented by variable for those interested in specific comparisons.

The comparison of two rather extensive data sets can produce a tremendous amount of detailed material describing the similarities and differences that were encountered. The primary objective of the present

effort was the development of the match algorithm and the merging of the two data sets. Descriptive statistics concerning the similarities and differences between the two data sets on the common variables available are included in this report. However, detailed analyses of all these variables or conclusions concerning the 'correctness' of either data set is beyond the scope of this study.

APPENDICES

APPENDIX A

FARS/BMCS MERGE FILE CODEBOOK

Variable 3 STATE M.D.Codes: 99, None
Field Width: 2, Numeric

FREQ. STATE

01. Alabama
02. Alaska
04. Arizona
05. Arkansas
06. California
08. Colorado
09. Connecticut
10. Delaware
11. District of Columbia
12. Florida
13. Georgia
15. Hawaii
16. Idaho
17. Illinois
18. Indiana
19. Iowa
20. Kansas
21. Kentucky
22. Louisiana
23. Maine
24. Maryland
25. Massachusetts
26. Michigan
27. Minnesota
28. Mississippi
29. Missouri
30. Montana
31. Nebraska
32. Nevada
33. New Hampshire
34. New Jersey
35. New Mexico
36. New York
37. North Carolina
38. North Dakota
39. Ohio
40. Oklahoma
41. Oregon
42. Pennsylvania
43. Puerto Rico
44. Rhode Island
45. South Carolina

FREQ. STATE

46. South Dakota
47. Tennessee
48. Texas
49. Utah
50. Vermont
51. Virginia
53. Washington
54. West Virginia
55. Wisconsin
56. Wyoming

Variable 4 SEQUENCE ID — M,D,Codes: 9999, None; Field Width: 4, Numeric

FREQ. CONSECUTIVE NUMBERS ASSIGNED WITHIN STATES

0001. Case number one
- .
9999. Case number 9999

Variable 5 CITY — M,D,Codes: 9999, None; Field Width: 4, Numeric

FREQ. GSA GEOGRAPHICAL LOCATION CODES

0000. Not applicable
0001.
- . GSA Codes
9996.
9997. Other
9999. Unknown

Variable 6 COUNTY — M,D,Codes: 999, None; Field Width: 3, Numeric

FREQ. GSA GEOGRAPHICAL LOCATION CODES

001.
- . GSA codes
996.
997. Other
999. Unknown

Variable 7 MONTH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. MONTH

01. January
02. February
03. March

FREQ. MONTH

04. April
05. May
06. June
07. July
08. August
09. September
10. October
11. November
12. December
99. Missing data

Variable 8 DAY — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. DAY

01. First day of month
. .
31. Last day of month
99. Unknown

Variable 9 YEAR — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. YEAR

76. 1976

Variable 10 HOUR — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. HOUR

00. Missing data
01. 12:01 - 12:59 A.M.
:
24. 11:00 - 11:59 P.M.
25. Midnight
99. Unknown

Variable 11 MINUTE — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. MINUTE

01.
. . Actual minute
59.
99. Unknown

Variable 12 NO. VEHICLE FORMS — M.D.Codes: 99, None; Field Width: 2, Numeric

FREQ. NO. OF VEHICLE FORMS SUBMITTED FOR ACCIDENT

00.
- . Actual number submitted
98.
99. Unknown

Variable 13 NO. PERSON FORMS — M.D.Codes: 99, None; Field Width: 2, Numeric

FREQ. NO. OF PERSON FORMS SUBMITTED FOR ACCIDENT

00.
- . Actual number submitted
98.
99. Unknown

Variable 14 VEHICLES INVOLVED — M.D.Codes: 99, None; Field Width: 2, Numeric

FREQ. VEHICLES INVOLVED

Count includes only motor vehicles in transport
Does not include parked vehicles, which are not T.U.'s.

01. One vehicle involved
02. Two vehicles involved
03. Three vehicles involved
04. Four vehicles involved
05. Five vehicles involved
06. Six vehicles involved
07. Seven vehicles involved
08. Eight vehicles involved
09. Nine vehicles involved
10. Ten vehicles involved
- .
98. Ninety eight vehicles
99. Missing data

Variable 15 LAND USE — M.D.Codes: 9, None; Field Width: 1, Numeric

FREQ. LOCATION IN TERMS OF POPULATION DENSITY

Federal Highway Adimin. class.

1. Urban
2. Rural
9. Unknown

Variable 16 CLASS OF TRAFFICWAY M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. CLASS OF TRAFFICWAY

1. Interstate
2. Other limited access
3. Other U.S. route
4. Other State route
5. Other major artery
6. County road
7. Local street
8. Other road
9. Unknown

Variable 17 TA 1 CLASS (76) M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. FEDERAL HIGHWAY ADMINISTRATION CLASSIFICATION

1. Interstate
2. Travelway Interstate
3. Other Federal Aid primary
4. Federal Aid secondary state
5. Federal Aid secondary local
6. Other state
7. Local roads and streets
8. Federal Aid urban systems
9. Unknown

Variable 19 FIRST HARMFUL EVENT M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. EVENT OF FIRST PROPERTY DAMAGE OR INJURY

01. Overturn
02. Fire/Explosion
03. Immersion
04. Gas inhalation
05. Fell from vehicle
06. Injured in vehicle
07. Other non-collision
08. Pedestrian
09. Pedalcycle
10. Railway train
11. Animal
12. Motor vehicle in transport
13. Motor vehicle in other roadway
14. Parked motor vehicle
15. Other object (not fixed)
16. Bridge or overpass
17. Building
18. Culvert/Ditch
19. Curb or wall

FREQ. EVENT OF FIRST PROPERTY DAMAGE OR INJURY

20. Divider
21. Embankment
22. Fence
23. Guard rail
24. Light support
25. Sign post
26. Tree/Shrubbery
27. Utility pole
28. Other poles/support
29. Other collision with fixed object
99. Unknown

Variable 20 MANNER OF COLLISION M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. RELATIONSHIP BETWEEN TWO OR MORE VEHICLES IN TRANSPORT

0. Not applicable
1. Rear-end
2. Head-on
3. Rear-to-rear
4. Angle
5. Sideswipe
9. Unknown

Variable 21 RELATION TO JUNCTION M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. RELATION TO JUNCTION

1. Non-junction
2. Intersection
3. Intersection related
4. Interchange area
5. Driveway, alley, access, etc.
9. Unknown

Variable 22 RELATION TO ROADWAY M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. RELATION TO ROADWAY

1. On roadway
2. Shoulder
3. Median
4. Roadside
5. Outside right-of-way
6. Off roadway - location unknown
9. Unknown

Variable 23 TYPE OF TRAFFICWAY — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. TYPE OF TRAFFICWAY

1. Physically divided
2. Not physically divided
3. One way trafficway
9. Unknown

Variable 24 NUMBER OF LANES — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. NUMBER OF LANES

A roadway is one part of a divided trafficway or, if undivided, the same as the trafficway.

1. One lane
2. Two lanes
3. Three lanes
4. Four lanes
5. Five lanes
6. Six or more lanes
9. Unknown

Variable 25 SPEED LIMIT — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. SPEED LIMIT

05. Five MPH
10. Ten MPH
15. Fifteen MPH
20. Twenty MPH
25. Twenty-five MPH
30. Thirty MPH
35. Thirty-five MPH
40. Forty MPH
45. Forty-five MPH
50. Fifty MPH
55. Fifty-five MPH
95. 95 MPH or greater
96. No limit
98. Not reportable
99. Unknown

Variable 29 PAVEMENT TYPE — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. PAVEMENT TYPE

1. Concrete
2. Blacktop
3. Brick or block
4. Slag, gravel or stone
5. Dirt
6. Other
9. Unknown

Variable 30 SURFACE CONDITION — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. SURFACE CONDITION

0. None
1. Wet
2. Snow
3. Ice
4. Sand, dirt, oil
5. Other
9. Unknown

Variable 31 TRAFFIC CONTROLS — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TRAFFIC CONTROLS

00. No controls
01. Flashing traffic signals
02. On colors traffic signal
03. Stop sign
04. Yield sign
05. Physically controlled railroad crossing
06. Stop sign for railroad crossing
07. Other railroad crossing
08. School zone sign
09. Other
10. Traffic controls not functioning
99. Unknown

Variable 32 LIGHT CONDITION — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. LIGHT CONDITION

1. Daylight
2. Dark
3. Dark but lighted
4. Dawn or dusk

FREQ. LIGHT CONDITION

9. Unknown

Variable 33	WEATHER/ATMOSPHERE	M,D,Codes:	9, None
		Field Width:	1, Numeric

FREQ. ENVIRONMENTAL CONDITIONS AT TIME OF ACCIDENT

0. None
1. Rain
2. Sleet
3. Snow
4. Fog, smog, smoke, blowing sand or dust
5. Heavy overcast
6. Other
9. Unknown

Variable 34	HIT & RUN	M,D,Codes:	9, None
		Field Width:	1, Numeric

FREQ. HIT & RUN

0. Not applicable
1. With motor vehicle
2. With non-occupant

Variable 35	TYPE E.M.S.(76)	M,D,Codes:	9, None
		Field Width:	1, Numeric

FREQ. TYPE OF EMERGENCY MEDICAL SERVICE

0. None
1. Commercial or private unit
2. Municipal or volunteer unit
3. Hospital based unit
4. State or federal unit
5. Other
6. Type unknown
7. Two or more types
8. Not reportable
9. Unknown

Variable 40	SCHOOL BUS	M,D,Codes:	9, None
		Field Width:	1, Numeric

FREQ. SCHOOL BUS

0. No
1. Yes
9. Unknown

Variable 41 CONTRIBUTING FACTOR — M,D,Codes: 99, 0; Field Width: 2, Numeric; Responses: 3

FREQ. CONTRIBUTING FACTOR

00. None

Vision Obscured By
- 01. Rain, snow, fog, smoke, sand, dust
- 02. Reflected glare, bright sunlight, headlights
- 03. Curve, hill, or other design features (Including traffic signs, embankment)
- 04. Building, billboard, etc.
- 05. Trees, crops, vegetation
- 06. Moving vehicle (including load)
- 07. Parked vehicle
- 08. Other object not classifiable above

Swerving Due To
- 20. Severe crosswind
- 21. Wind from passing truck
- 22. Slippery surface
- 23. Avoiding debris or objects in road
- 24. Ruts, holes, bumps in road
- 25. Avoiding animals in road
- 26. Avoiding vehicle in road
- 27. Avoiding phantom vehicle
- 28. Avoiding pedestrian,cyclist, other non-occupants
- 29. Avoiding water, snow, oil slick on road

Roadway Features
- 40. Traffic controls not functoning properly
- 41. Inadequate warning of exits, lanes narrow, traffic controls
- 42. Uncontrolled intersection or railroad crossing
- 43. Shoulder too low or high
- 44. Shoulders too narrow or none for emergency use
- 45. Roadway maintenance created condition
- 46. Roadway construction created condition
- 47. Other construction created condition
- 48. No or obscured pavement markings
- 49. Surface underwater or washed out

Unknown
- 99. Unknown

Variable 42 TOTAL NOT INJURED — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL NOT INJURED

00.
- . Actual number reported
99.

Variable 43 TOTAL C INJURIES IN ACC — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL C INJURIES IN ACC

00.
- . Actual number reported
99.

Variable 44 TOTAL B INJURIES IN ACC — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL B INJURIES IN ACC

00.
- . Actual number reported
99.

Variable 45 TOTAL A INJURIES IN ACC — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL A INJURIES IN ACC

00.
- . Actual number reported
99.

Variable 46 TOTAL KILLED IN ACC — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL KILLED IN ACC

00.
- . Actual number reported
99.

Variable 47 TOTAL DIED PRIOR TO ACC — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL DIED PRIOR TO ACC

00.
- . Actual number reported
99.

Variable 48 TOTAL UNKNOWN INJURIES — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL UNKNOWN INJURIES

00,
-, Actual number reported
99,

Variable 49 TOTAL # OF PERSONS — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL # OF PERSONS

00,
-, Actual number reported
99,

Variable 50 TOTAL INJURED IN ACC — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL INJURED IN ACC

00,
-, Actual number reported
99,

Variable 51 TOTAL # OF CASUALTIES — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL # OF CASUALTIES

00,
-, Actual number reported
99,

Variable 52 TOTAL # OF PEDESTRIANS — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. TOTAL # OF PEDESTRIANS

00,
-, Actual number reported
99,

********** The Vehicle Variables **********
Variables 101 through 161 describe the vehicles involved in the accident. They are in the Vehicle Level files but NOT in the Accident Level files.
****

Variable 101 VEHICLE NUMBER — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. VEHICLE NUMBER

00. Pedestrian
01.
- . Vehicle number
99.

Variable 102 MAKE-MODEL — M,D,Codes: 9999, None; Field Width: 4, Numeric

FREQ. 1976 MAKE-MODEL CODE VALUES

0101. Chevrolet Nova
0102. Chevrolet Chevelle
0103. Chevrolet Monte Carlo
0104. Chevrolet Biscayne
0105. Chevrolet Bel Air
0106. Chevrolet Impala
0107. Chevrolet Caprice
0108. Chevrolet Camaro
0109. Chevrolet Corvette
0110. Chevrolet Corvair
0111. Chevrolet Vega
0112. Chevrolet El Camino
0113. Chevrolet Monza
0114. Chevrolet Laguna
0115. Chevrolet Chevette
0197. Other Chevrolet
0198. Non reportable Chevrolet
0199. Unknown Chevrolet
0201. Ford Falcon
0202. Ford Maverick
0203. Ford Torino
0204. Ford Galaxie
0205. Ford LTD
0206. Ford Mustang
0207. Ford Thunderbird
0208. Ford Custom 500
0209. Ford XL
0210. Ford Pinto
0211. Ford Ranchero
0212. Ford
0213. Ford Elite
0214. Ford Granada
0297. Other Ford
0298. Non reportable Ford

FREQ. 1976 MAKE-MODEL CODE VALUES

0299. Unknown Ford
0301. Pontiac Lemans
0302. Pontiac Catalina
0303. Pontiac Executive
0304. Pontiac Bonneville
0305. Pontiac Grand Prix
0306. Pontiac Firebird
0307. Pontiac Grandville
0308. Pontiac Laurentian
0309. Pontiac Ventura
0310. Pontiac Grand Am
0311. Pontiac Astre
0312. Pontiac Sunbird
0313. Pontiac Grand Lemans
0397. Other Pontiac
0398. Non reportable Pontiac
0399. Unknown Pontiac
0401. Buick Skylark/Century
0402. Buick Lesabre
0403. Buick Wildcat
0404. Buick Electra
0405. Buick Riviera
0406. Buick Special Sportswagon
0407. Buick Lesabre Custom
0408. Buick Estate Wagon
0409. Buick Apollo/Skylark
0410. Buick Skyhawk
0497. Other Buick
0498. Non reportable Buick
0499. Unknown Buick
0501. Plymouth Valiant
0502. Plymouth Satellite/Fury
0503. Plymouth Fury I
0504. Plymouth Grand Fury
0505. Plymouth Grand Fury Custom
0506. Plymouth Fury Brougham
0507. Plymouth Barracuda
0508. Plymouth Valiant Scamp
0509. Plymouth Valiant Duster
0510. Plymouth Volare
0597. Other Plymouth
0598. Non reportable Plymouth
0599. Unknown Plymouth
0601. Oldsmobile Cutlass
0602. Oldsmobile Delta-88
0603. Oldsmobile 98
0604. Oldsmobile Toronado
0605. Oldsmobile Dynamic/Delmont
0606. Oldsmobile Jetstar-88
0607. Oldsmobile Vista Cruiser
0608. Oldsmobile Omega
0609. Oldsmobile Starfire
0697. Other Oldsmobile
0698. Non reportable Oldsmobile
0699. Unknown Oldsmobile

FREQ. 1976 MAKE-MODEL CODE VALUES

0701. Dodge Dart
0702. Dodge Coronet
0703. Dodge Polara
0704. Dodge Monaco
0705. Dodge Challenger
0706. Dodge Charger/Coronet
0707. Dodge Dart Sport
0708. Dodge Dart Swinger
0709. Dodge Aspen
0797. Other Dodge
0798. Non reportable Dodge
0799. Unknown Dodge
0801. Volkswagen Karmann Ghia
0802. Volkswagen Beetle
0803. Volkswagen Dasher
0804. Volkswagen 411/412
0805. Volkswagen Commercial
0806. Volkswagen The Thing
0807. Volkswagen Rabbit
0808. Volkswagen Scirocco
0897. Other Volkswagen
0898. Non reportable Volkswagen
0899. Unknown Volkswagen
0901. Mercury Montego
0902. Mercury Monterey
0903. Mercury Monterey Custom
0904. Mercury Marauder
0905. Mercury Marquis
0906. Mercury Cougar
0907. Mercury Comet
0908. Mercury Brougham
0909. Mercury Monarch
0910. Mercury Bobcat
0997. Other Mercury
0998. Non reportable Mercury
0999. Unknown Mercury
1001. Cadillac Calais
1002. Cadillac Deville
1003. Cadillac Brougham
1004. Cadillac Eldorado
1005. Cadillac Commercial Chassis
1006. Cadillac Fleetwood
1007. Cadillac Seville
1097. Other Cadillac
1098. Non reportable Cadillac
1099. Unknown Cadillac
1101. American Motors Gremlin
1102. American Motors Hornet
1103. American Motors Matador
1104. American Motors Ambassador
1105. American Motors Javelin
1106. American Motors AMX
1107. American Motors Marlin
1108. American Motors Rambler/American
1109. American Motors Pacer

FREQ. 1976 MAKE-MODEL CODE VALUES

1197. Other American Motors
1198. Non reportable American Motors
1199. Unknown American Motors
1201. Chrysler Newport
1202. Chrysler Newport Custom
1203. Chrysler 300
1204. Chrysler New Yorker
1205. Chrysler Town/Country
1206. Chrysler Imperial
1207. Chrysler Cordoba
1297. Other Chrysler
1298. Non reportable Chrysler
1299. Unknown Chrysler
1301. Lincoln Continental
1302. Lincoln Mark III
1303. Lincoln Mark IV
1304. Lincoln Mark V
1397. Other Lincoln
1398. Non reportable Lincoln
1399. Unknown Lincoln
1401. Opel Kadett/Standard
1402. Opel GT
1403. Opel 1900
1404. Opel Manta
1405. Opel 2-dr Coupe
1497. Other Opel
1498. Non reportable Opel
1499. Unknown Opel
1501. Datsun 240 Z
1502. Datsun 1200
1503. Datsun PL 411
1504. Datsun PL 510
1505. Datsun 1600
1506. Datsun 2000
1507. Datsun PL 610
1508. Datsun B210
1509. Datsun PL 710
1510. Datsun 260 Z
1511. Datsun 280 Z
1597. Other Datsun
1598. Non reportable Datsun
1599. Unknown Datsun
1601. Toyota Land Cruiser
1602. Toyota Corolla
1603. Toyota Crown
1604. Toyota Corona
1605. Toyota Mark II
1606. Toyota Celica
1607. Toyota Carina
1697. Other Toyota
1698. Non reportable Toyota
1699. Unknown Toyota
1701. Capri Sport Coupe
1797. Other Capri
1798. Non reportable Capri

FREQ. 1976 MAKE-MODEL CODE VALUES

1799. Unknown Capri
1801. Mazda 808/1600
1802. Mazda RX2
1803. Mazda RX3
1804. Mazda RX4
1897. Other Mazda
1898. Non reportable Mazda
1899. Unknown Mazda
1901. Fiat 124
1902. Fiat 128
1903. Fiat 850
1904. Fiat 131
1997. Other Fiat
1998. Non reportable Fiat
1999. Unknown Fiat
2001. Volvo 140
2002. Volvo 160
2003. Volvo 1800
2004. Volvo 240
2005. Volvo 260
2097. Other Volvo
2098. Non reportable Volvo
2099. Unknown Volvo
2101. Audi 100LS
2102. Audi Fox
2103. 100GL/Fox
2197. Other Audi
2198. Non reportable Audi
2199. Unknown Audi
2201. Colt
2297. Other Colt
2298. Non reportable Colt
2299. Unknown Colt
2301. Honda Civic
2302. Honda Accord
2397. Other Honda
2398. Non reportable Honda
2399. Unknown Honda
2401. Porsche 914
2402. Porsche 911
2497. Other Porsche
2498. Non reportable Porsche
2499. Unknown Porsche
2501. MG Midget
2502. MGB/GT
2503. MGB
2597. Other MG
2598. Non reportable MG
2599. Unknown MG
2601. Subaru G
2602. Subaru GL
2603. Subaru DL
2604. Subaru GF
2697. Other Subaru
2698. Non reportable Subaru

FREQ. 1976 MAKE-MODEL CODE VALUES

2699. Unknown Subaru
2799. Unknown Arrow
9700. Other
9898. Pedestrian
9900. Unknown

Variable 102 MAKE-MODEL M.D.Codes: 9999, None
Field Width: 4, Numeric

FREQ. 1977 MAKE-MODEL CODE VALUES

0101. Chevrolet Nova
0102. Chevrolet Chevelle
0103. Chevrolet Monte Carlo
0104. Chevrolet Biscayne
0105. Chevrolet Bel Air
0106. Chevrolet Impala
0107. Chevrolet Caprice
0108. Chevrolet Camaro
0109. Chevrolet Corvette
0110. Chevrolet Corvair
0111. Chevrolet Vega
0112. Chevrolet El Camino
0113. Chevrolet Monza
0114. Chevrolet Laguna
0115. Chevrolet Chevette
0197. Other Chevrolet
0199. Unknown Chevrolet
0201. Ford Falcon
0202. Ford Maverick
0203. Ford Torino
0204. Ford Galaxie
0205. Ford LTD
0206. Ford Mustang
0207. Ford Thunderbird
0208. Ford Custom 500
0209. Ford XL
0210. Ford Pinto
0211. Ford Ranchero
0212. Ford
0213. Ford Elite
0214. Ford Granada
0297. Other Ford
0299. Unknown Ford
0301. Pontiac Lemans

FATAL ACCIDENT REPORTING SYSTEM
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FREQ. 1977 MAKE-MODEL CODE VALUES

0302. Pontiac Catalina
0303. Pontiac Executive
0304. Pontiac Bonneville
0305. Pontiac Grand Prix
0306. Pontiac Firebird
0307. Pontiac Grandville
0308. Pontiac Ventura
0309. Pontiac Grand Am
0310. Pontiac Astre
0311. Pontiac Sunbird
0312. Pontiac Grand Lemans
0397. Other Pontiac
0399. Unknown Pontiac
0401. Buick Skylark/Century
0402. Buick Lesabre
0403. Buick Wildcat
0404. Buick Electra
0405. Buick Riviera
0406. Buick Special Sportswagon
0407. Buick Lesabre Custom
0408. Buick Estate Wagon
0409. Buick Apollo/Skylark
0410. Buick Skyhawk
0497. Other Buick
0499. Unknown Buick
0501. Plymouth Valiant
0502. Plymouth Satellite/Fury
0503. Plymouth Fury I
0504. Plymouth Grand Fury
0505. Plymouth Grand Fury Custom
0506. Plymouth Fury Brougham
0507. Plymouth Barracuda
0508. Plymouth Valiant Scamp
0509. Plymouth Valiant Duster
0510. Plymouth Volare
0597. Other Plymouth
0599. Unknown Plymouth
0601. Oldsmobile Cutlass
0602. Oldsmobile Delta-88
0603. Oldsmobile 98
0604. Oldsmobile Toronado
0605. Oldsmobile Dynamic/Delmont
0606. Oldsmobile Jetstar-88
0607. Oldsmobile Vista Cruiser
0608. Oldsmobile Omega
0609. Oldsmobile Starfire
0697. Other Oldsmobile
0699. Unknown Oldsmobile
0701. Dodge Dart
0702. Dodge Coronet
0703. Dodge Polara
0704. Dodge Monaco
0705. Dodge Challenger
0706. Dodge Charger/Coronet
0707. Dodge Dart Sport

FREQ. 1977 MAKE-MODEL CODE VALUES

0708. Dodge Dart Swinger
0709. Dodge Aspen
0797. Other Dodge
0799. Unknown Dodge
0801. Volkswagen Karmann Ghia
0802. Volkswagen Beetle
0803. Volkswagen Dasher
0804. Volkswagen 411/412
0805. Volkswagen Commercial
0806. Volkswagen The Thing
0807. Volkswagen Rabbit
0808. Volkswagen Scirocco
0897. Other Volkswagen
0899. Unknown Volkswagen
0901. Mercury Montego
0902. Mercury Monterey
0903. Mercury Monterey Custom
0904. Mercury Marauder
0905. Mercury Marquis
0906. Mercury Cougar
0907. Mercury Comet
0908. Mercury Brougham
0909. Mercury Monarch
0910. Mercury Bobcat
0997. Other Mercury
0999. Unknown Mercury
1001. Cadillac Calais
1002. Cadillac Deville
1003. Cadillac Brougham
1004. Cadillac Eldorado
1005. Cadillac Commercial Chassis
1006. Cadillac Fleetwood
1007. Cadillac Seville
1097. Other Cadillac
1099. Unknown Cadillac
1100. Undetermined American Motors
1101. American Motors Gremlin
1102. American Motors Hornet
1103. American Motors Matador
1104. American Motors Ambassador
1105. American Motors Javelin
1106. American Motors AMX
1107. American Motors Rambler/American
1108. American Motors Pacer
1197. Other American Motors
1199. Unknown American Motors
1201. Chrysler Newport
1202. Chrysler Newport Custom
1203. Chrysler 300
1204. Chrysler New Yorker
1205. Chrysler Town/Country
1206. Chrysler Imperial
1207. Chrysler Cordoba
1297. Other Chrysler
1299. Unknown Chrysler

FREQ. 1977 MAKE-MODEL CODE VALUES

1301. Lincoln Continental
1302. Lincoln Mark III
1303. Lincoln Mark IV
1304. Lincoln Mark V
1397. Other Lincoln
1399. Unknown Lincoln
1401. Opel Kadett/Standard
1402. Opel GT
1403. Opel 1900
1404. Opel Manta
1405. Opel 2-dr Coupe
1497. Other Opel
1499. Unknown Opel
1500. Undetermined Datsun
1501. Datsun 240, 260, 280 Z
1502. Datsun 1200
1503. Datsun PL 411
1504. Datsun PL 510
1505. Datsun 1600
1506. Datsun 2000
1507. Datsun PL 610
1508. Datsun B210
1509. Datsun PL 710
1597. Other Datsun
1599. Unknown Datsun
1600. Undetermined Toyota
1601. Toyota Land Cruiser
1602. Toyota Corolla
1603. Toyota Crown
1604. Toyota Corona
1605. Toyota Mark II
1606. Toyota Celica
1607. Toyota Carina
1697. Other Toyota
1699. Unknown Toyota
1701. Capri Sport Coupe
1797. Other Capri
1799. Unknown Capri
1800. Undetermined Mazda
1801. Mazda 808/1600
1802. Mazda RX2
1803. Mazda RX3
1804. Mazda RX4
1805. Mazda Cosmo Coupe
1806. Mazda 808/1300
1897. Other Mazda
1899. Unknown Mazda
1901. Fiat 124
1902. Fiat 128
1903. Fiat 850
1904. Fiat 131
1997. Other Fiat
1999. Unknown Fiat
2000. Undetermined Volvo
2001. Volvo 140

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FREQ. 1977 MAKE-MODEL CODE VALUES

2002. Volvo 160
2003. Volvo 1800
2004. Volvo 240
2005. Volvo 260
2097. Other Volvo
2099. Unknown Volvo
2100. Undetermined Audi
2101. Audi 100LS
2102. Audi Fox
2197. Other Audi
2199. Unknown Audi
2200. Undetermined Colt
2201. Colt
2297. Other Colt
2299. Unknown Colt
2300. Undetermined Honda
2301. Honda Civic
2302. Honda Accord
2397. Other Honda
2399. Unknown Honda
2400. Undetermined Porsche
2401. Porsche 914
2402. Porsche 911
2403. Porsche 912
2404. Porsche Turbo Carrera
2497. Other Porsche
2499. Unknown Porsche
2501. MG Midget
2502. MGB/GT
2503. MGB
2597. Other MG
2599. Unknown MG
2601. Subaru G
2602. Subaru GL
2603. Subaru DL
2604. Subaru GF
2697. Other Subaru
2699. Unknown Subaru
2701. Arrow
2797. Other Arrow
2799. Unknown Arrow
6100. BMW
6200. BSA
6300. Harley-Davidson
6400. Kawasaki
6500. Norton
6600. Suzuki
6700. Triumph
6800. Yamaha
8000. Brockway
8100. Diamond Reo
8200. Freightliner
8300. FWD
8400. GMC
8500. International Harvester

FREQ. 1977 MAKE-MODEL CODE VALUES

8600. Kenworth
8700. Mack
8800. Peterbilt
8900. White
9700. Other
9898. Pedestrian
9900. Unknown

Variable 103 MAKE M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. MAKE

01. Chevrolet
02. Ford
03. Pontiac
04. Buick
05. Plymouth
06. Oldsmobile
07. Dodge
08. Volkswagen
09. Mercury
10. Cadillac
11. American Motors
12. Chrysler
13. Lincoln
14. Opel
15. Datsun
16. Toyota
17. Capri
18. Mazda
19. Fiat
20. Volvo
21. Audi
22. Colt
23. Honda
24. Porsche
25. MG
26. Subaru
27. Arrow
97. Other
98. Not reportable or pedestrian
99. Unknown

Variable 105 BODY TYPE (76 VALUES) M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. BODY TYPE (76 VALUES)

Automobiles
01. Convertible
02. Hardtop - 2 door
03. Hardtop - 4 door
04. Sedan - 2 door
05. Sedan - 4 door

FREQ. BODY TYPE (76 VALUES)

06. Stationwagon (excluding van-based or truck-based)
07. On/off road vehicle
08. Other
09. Unknown type automobile
10. Coupe

Motorcycles
15. Motorcycle
16. Other (minibikes, mopeds, motorscooters)
17. Unknown type motorcycle

Buses
25. School bus
26. Cross country
27. Transit bus
28. Other
29. Unknown type bus

Special Vehicles
35. Snowmobile
36. Farm equipment other than trucks
37. Dune buggy, swamp buggy, etc.
38. Construction equipment other than trucks
39. Ambulance
40. Large limousine - more than four doors
41. Self propelled campers and motor homes
42. Fire truck

Trucks
50. Pickup including stake & small dump bodies and campers
51. Van
52. Truck based station wagon
53. Single unit truck
57. Two unit truck-tractor with semi-trailer
58. Multi-unit: trk or trk-tractor with 2+ trailers
59. Unknown type truck

Pedestrian
98. Pedestrian

Unknown Body Type
99. Unknown body type

Variable 105 BODY TYPE (77 VALUES) M.D.Codes: 99, None
Field Width: 2, Numeric

FREQ. BODY TYPE (77 VALUES)

Passenger cars
01. Convertible
02. 2-Door sedan, hardtop, coupe
03. 4-Door sedan, hardtop
06. Stationwagon (excluding van-based or truck-based)

FREQ. BODY TYPE (77 VALUES)

07. On/off road vehicle
08. Other
09. Unknown type automobile

Motorcycles
15. Motorcycle
16. Mopeds (motorized bicycles)
17. Other (minibikes, motorscooters)
18. Unknown type motorcycle

Buses
25. School bus
26. Cross country
27. Transit bus
28. Other
29. Unknown type bus

Special Vehicles
35. Snowmobile
36. Farm equipment other than trucks
37. Dune buggy, swamp buggy, etc.
38. Construction equipment other than trucks
39 Ambulance, emergency vehicle such ar hearse, etc.
40. Large limousine - more than four doors
41. Self propelled campers and motor homes
42. Fire truck

Trucks
50. Pickup including stake & small dump bodies and campers
51. Van
52. Truck based station wagon
53. Single unit truck (10,000 < GVW < 19,500)
54. Single unit truck (19,500 < GVW < 26,001)
55. Single unit truck (GVW > 26,000)
56. Single unit truck (GVW unknown)
57. Two unit truck-tractor with semi-trailer
58. Multi-unit: trk or trk-tractor with 2+ trailers
59. Truck-tractor pulling no trailers
60. Unknown type truck

Pedestrian
98. Pedestrian

Unknown Body Type
99. Unknown body type

Variable 106 MODEL YEAR — M.D.Codes: 99, None; Field Width: 2, Numeric

FREQ. MODEL YEAR

00. Pedestrian
01.
- . Actual model year
97.

Variable 108 VEHICLE WEIGHT M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. VEHICLE WEIGHT

00. Not applicable/pedestrian
01.
- . Actual value to nearest thousand pounds
80.
85. 81,000 - 90,000 Pounds
90. 91,000 - 100,000 Pounds
95. 100,000 plus pounds
98. Not reportable
99. Unknown

Variable 109 REGISTRATION-STATE M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. REGISTRATION-STATE

00. No registration/not applicable
01. Alabama
02. Alaska
04. Arizona
05. Arkansas
06. California
08. Colorado
09. Connecticut
10. Delaware
11. District of Columbia
12. Florida
13. Georgia
15. Hawaii
16. Idaho
17. Illinois
18. Indiana
19. Iowa
20. Kansas
21. Kentucky
22. Louisiana
23. Maine
24. Maryland
25. Massachusetts
26. Michigan
27. Minnesota
28. Mississippi
29. Missouri
30. Montana
31. Nebraska
32. Nevada
33. New Hampshire
34. New Jersey
35. New Mexico
36. New York
37. North Carolina

FREQ. REGISTRATION-STATE

38. North Dakota
39. Ohio
40. Oklahoma
41. Oregon
42. Pennsylvania
43. Puerto Rico
44. Rhode Island
45. South Carolina
46. South Dakota
47. Tennessee
48. Texas
49. Utah
50. Vermont
51. Virginia
53. Washington
54. West Virginia
55. Wisconsin
56. Wyoming
93. Multiple state registration - in state
94. Multiple state registration - out-of-state
95. U.S. Government tag
96. Military vehicles
97. Foreign countries
99. Unknown

Variable 111 INSPECTION CERTIFICATE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. INSPECTION CERTIFICATE

0. Not applicable
1. No inspection certificate
2. Current
3. Expired
8. Not reportable
9. Unknown

Variable 112 TRAVEL SPEED M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TRAVEL SPEED

00. Parked or stopped vehicle
01.
- . Actual value
94.
98. Pedestrian or not reportable
99. Unknown

Variable 113 TOWED VEHICLE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. TOWED VEHICLE

0. Not applicable
1. Travel trailer/camper
2. Other car trailer
3. Fifth wheel trailer
4. Truck trailer
5. Other
8. Not reportable
9. Unknown

Variable 116 IMPACT POINT INITIAL M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. IMPACT POINT INITIAL

00. Non-collision
01.
- . Clock points
12.
13. Top
14. Undercarriage
98. Pedestrian
99. Unknown

Variable 118 EXTENT OF DEFORMATION M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. EXTENT OF DEFORMATION

0. None
2. Other (minor)
4. Functional (moderate)
6. Disabling (severe)
8. Pedestrian or not reportable
9. Unknown

Variable 119 IMPACTS M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. IMPACTS

0. Non-collision
1. Striking
2. Struck
3. Both
8. Pedestrian
9. Unknown

Variable 120 TOWAWAY M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. TOWAWAY

0. Not applicable
1. Towed away
2. Abandoned
8. Not reportable
9. Unknown

Variable 122 FIRE OR EXPLOSION M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. FIRE OR EXPLOSION

0. Not applicable
1. Fire/explosion occurred in vehicle during accident
9. Missing data

Variable 123 NUMBER OF OCCUPANTS M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. NUMBER OF OCCUPANTS

00. None
01. One occupant
02. Two occupants
03. Three occupants
04. Four occupants
05. Five occupants
06. Six occupants
07. Seven occupants
08. Eight occupants
09. Nine occupants
10. Ten occupants
11. Eleven occupants
12. Twelve occupants
13. Thirteen occupants
14. Fourteen occupants
15. Fifteen occupants
16. Sixteen occupants
17. Seventeen occupants
18. Eighteen occupants
19. Nineteen occupants
20. Twenty occupants
21. Twenty-one occupants
22. Twenty-two occupants
23. Twenty-three occupants
24. Twenty-four occupants
25. Twenty-five occupants
. .
96. Ninety-six occupants
97. Unknown-only injured reported

FREQ. NUMBER OF OCCUPANTS

98. Pedestrian
99. Unknown

Variable 124 CONTRIBUTING FACTOR — M,D,Codes: 99, 0
Field Width: 2, Numeric
Responses: 2

FREQ. CONTRIBUTING FACTOR AT VEHICLE LEVEL

00. None

Defective
01. Tires and wheels
02. Brake system
03. Steering system
04. Suspension
05. Power train
06. Exhaust system
07. Headlights
08. Signal lights
09. Other lights
10. Horn
11. Mirrors
12. Wipers
13. Driver seating and control
14. Body, doors, other
15. Trailer hitch

Pedestrian
98. Pedestrian

Unknown
99. Unknown

Variable 135 DRIVER PRESENCE — M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. DRIVER PRESENCE

0. Pedestrian
1. Driver operated vehicle
2. No driver
9. Unknown

Variable 136 LICENSE - STATE — M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. LICENSE - STATE

00. Pedestrian
01. Alabama
02. Alaska

FREQ. LICENSE - STATE

04. Arizona
05. Arkansas
06. California
08. Colorado
09. Connecticut
10. Delaware
11. District of Columbia
12. Florida
13. Georgia
15. Hawaii
16. Idaho
17. Illinois
18. Indiana
19. Iowa
20. Kansas
21. Kentucky
22. Louisiana
23. Maine
24. Maryland
25. Massachusetts
26. Michigan
27. Minnesota
28. Mississippi
29. Missouri
30. Montana
31. Nebraska
32. Nevada
33. New Hampshire
34. New Jersey
35. New Mexico
36. New York
37. North Carolina
38. North Dakota
39. Ohio
40. Oklahoma
41. Oregon
42. Pennsylvania
43. Puerto Rico
44. Rhode Island
45. South Carolina
46. South Dakota
47. Tennessee
48. Texas
49. Utah
50. Vermont
51. Virginia
53. Washington
54. West Virginia
55. Wisconsin
56. Wyoming
94. Military
95. Canada
96. Mexico
97. Other foreign country
99. Unknown

Variable 137 LICENSE - STATUS M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. LICENSE - STATUS

0. No license required
1. No license, license required
2. License, but not for this type of vehicle
3. Valid license for this type of vehicle
4. Suspended license
5. Revoked license
6. Expired license
7. Learner's permit
8. Pedestrian
9. Unknown

Variable 138 LICENSE RESTRICTIONS 76 M.D.Codes: 9, None
Field Width: 1, Numeric

FREQ. LICENSE RESTRICTIONS 76

0. No restrictions or not applicable
1. Restrictions complied with
2. Restrictions not complied with
8. Not reportable
9. Unknown

Variable 138 LICENSE RESTRICTIONS 76 M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. LICENSE RESTRICTIONS 76

0. No restrictions or not applicable
1. Restrictions complied with
2. Restrictions not complied with
8. Not reportable
9. Unknown

Variable 139 DRIVER TRAINING M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. DRIVER TRAINING

0. None
1. High school
2. Commercial
3. School bus
4. Traffic school
5. Two or more types
8. Pedestrian or not reportable
9. Unknown

Variable 140 VIOLATIONS CHARGED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. VIOLATIONS CHARGED

0. No
1. Yes
2. Pending
8. Pedestrian
9. Unknown

Variable 141 PREVIOUS CRASHES M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. PREVIOUS RECORDED ACCIDENTS LISTED FOR THIS DRIVER

00. None
01.
- . Actual value
97.
98. Pedestrian
99. Unknown

Variable 142 PREVIOUS SUSPENSIONS M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. PREVIOUS SUSPENSIONS

00. None
01.
- . Actual value
97.
98. Pedestrian
99. Unknown

Variable 143 PREVIOUS DWI CONVICTIONS M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. PREVIOUS "DRIVING WHILE INTOXICATED" CONVICTIONS

00. None
01.
- . Actual value
97.
98. Pedestrian
99. Unknown

Variable 144 PREVIOUS SPEED CONV M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. PREVIOUS SPEEDING CONVICTIONS

00. None
01.
- . Actual value
97.
98. Pedestrian
99. Unknown

Variable 145 PREVIOUS OTHER MV CONV — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. PREVIOUS OTHER MOVING VIOLATIONS CONVICTIONS

00, None
01,
- , Actual value
97,
98, Pedestrian
99, Unknown

Variable 146 MONTH OF LAST CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. MONTH OF LAST CRASH

00, Not applicable
01, January
02, February
03, March
04, April
05, May
06, June
07, July
08, August
09, September
10, October
11, November
12, December
98, Not reportable
99, Unknown

Variable 147 YEAR OF LAST CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. YEAR OF LAST CRASH

00, Not applicable
01,
- , Actual year
97,
98, Not reportable
99, Unknown

Variable 148 MONTH OF FIRST CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. MONTH OF FIRST CRASH

00, Not applicable
01, January
02, February

FREQ. MONTH OF FIRST CRASH

03. March
04. April
05. May
06. June
07. July
08. August
09. September
10. October
11. November
12. December
98. Not reportable
99. Unknown

Variable 149 YEAR OF FIRST CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. YEAR OF FIRST CRASH

00. Not applicable
01.
- . Actual year
97.
98. Not repoortable
99. Unknown

Variable 150 CONTRIBUTING FACTOR — M,D,Codes: 99, 0; Field Width: 2, Numeric; Responses: 3

FREQ. CONTRIBUTING FACTOR AT DRIVER LEVEL

00. None

Physical/Mental Condition
01. Drowsy, sleepy, asleep, fatigued
02. Ill, blackout
03. Depression
04. Drinking
05. Drugs-medication
06. Other drugs
07. Inattentive (talking, eating, etc.)
08. Physical impairments
09. Died prior to accident

Miscellaneous Causes
20. Leaving vehicle unattended with engine running
21. Overloading or improper loading of vehicle
22. Towing or pushing vehicle improperly
23. Failing to dim lights or to have lights on when required
24. Operating without required equipment
25. Creating unlawful noise or using equipment prohibited by law

FREQ. CONTRIBUTING FACTOR AT DRIVER LEVEL

26. Following improperly
27. Improper or erratic lane changing
28. Failure to keep in proper lane or running off road
29. Illegal driving on road shoulder, in ditch or on sidewalk
30. Making improper entry to or exit from trafficway
31. Starting or backing improperly
32. Opening vehicle closure into moving traffic or while vehicle is in motion
33. Passing where prohibited by posted signs, pavement markings, hill or curve, or school bus displaying warning not to pass
34. Passing on wrong side
35. Passing with insufficient distance or inadequate visibility, or failing to yield to overtaking vehicle
36. Operating the vehicle in an erratic, reckless, careless or negligent manner
38. Failure to yield right-of-way
39. Failure to obey traffic signs, traffic control devices or traffic officers, or failure to observe safety zone
40. Passing through or around barrier
41. Failure to observe warnings or instructions on vehicles displaying them
42. Failure to signal intentions
43. Giving wrong signal
44. Driving too fast for conditions or in excess of posted maximum
45. Driving less than posted minimum
46. Operating at erratic or suddenly changing speeds
47. Making right turn from left-turn lane, making left turn from right-turn lane
48. Making other improper turn
49. Failure to comply with physical licence restriction
50. Driving wrong way on one-way roadway
51. Driving on wrong side of road
52. Operator inexperience
53. Unfamiliar with roadway

Pedestrian
98. Pedestrian

Unknown
99. Unknown

Variable 151 TOTAL NOT INJURED M.D.Codes: 99, None
Field Width: 2, Numeric

Variable 152 TOTAL C INJURIES IN VEH M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 153 TOTAL B INJURIES IN VEH M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 154 TOTAL A INJURIES IN VEH M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 155 TOTAL KILLED IN VEH M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 156 TOTAL DIED PRIOR TO ACC M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 157 TOTAL UNKNOWN INJURIES M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 158 TOTAL # OF PERSONS M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TOTAL NUMBER OF PERSON RECORDS FOR VEHICLE

Variable 159 TOTAL INJURED IN VEH M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 160 TOTAL # OF CASUALTIES M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TOTAL INJURED OR KILLED IN VEHICLE

Variable 161 WORST INJURY IN VEHICLE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. WORST INJURY IN VEHICLE

0. No injury
1. C = Possible injury
2. B = Non-incapacitating injury
3. A = Incapacitating injury
4. K = Fatal injury

********** The Person Variables **********
Variables 201 through 222 describe the persons involved in the accident. They are in the Person Level files but NOT in the Vehicle or Accident Level files.
****

Variable 201 PERSON NUMBER — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. PERSON NUMBER

00. Not applicable
01. Person number one
02. Person number two
03. Person number three
04. Person number four
05. Person number five
06. Person number six
07. Person number seven
08. Person number eight
09. Person number nine
10. Person number ten
11. Person number eleven
12. Person number twelve
13. Person number thirteen
14. Person number fourteen
15. Person number fifteen
16. Person number sixteen
17. Person number seventeen
18. Person number eighteen
19. Person number nineteen
20. Person number twenty
. .
99. Person ninety-nine

Variable 202 AGE — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. AGE

00. Infants less than one year old
01. One year old
02. Two years old
03. Three years old
04. Four years old
05. Five years old
06. Six years old
07. Seven years old
08. Eight years old
09. Nine years old
10. Ten years old
11. Eleven years old
12. Twelve years old
13. Thirteen years old

FREQ. AGE

14. Fourteen years old
15. Fifteen years old
16. Sixteen years old
17. Seventeen years old
18. Eighteen years old
19. Nineteen years old
20. Twenty years old
21. Twenty-one years old
22. Twenty-two years old
23. Twenty-three years old
24. Twenty-four years old
25. Twenty-five years old
26. Twenty-six years old
27. Twenty-seven years old
28. Twenty-eight years old
29. Twenty-nine years old
30. Thirty years old
31. Thirty-one years old
32. Thirty-two years old
33. Thirty-three years old
34. Thirty-four years old
35. Thirty-five years old
36. Thirty-six years old
37. Thirty-seven years old
38. Thirty-eight years old
39. Thirty-nine years old
40. Forty years old
41. Forty-one years old
42. Forty-two years old
43. Forty-three years old
44. Forty-four years old
45. Forty-five years old
46. Forty-six years old
47. Forty-seven years old
48. Forty-eight years old
49. Forty-nine years old
50. Fifty years old
51. Fifty-one years old
52. Fifty-two years old
53. Fifty-three years old
54. Fifty-four years old
55. Fifty-five years old
56. Fifty-six years old
57. Fifty-seven years old
58. Fifty-eight years old
59. Fifty-nine years old
60. Sixty years old
61. Sixty-one years old
62. Sixty-two years old
63. Sixty-three years old
64. Sixty-four years old
65. Sixty-five years old
66. Sixty-six years old
67. Sixty-seven years old
68. Sixty-eight years old

FREQ. AGE

69. Sixty-nine years old
70. Seventy years old
71. Seventy-one years old
72. Seventy-two years old
73. Seventy-three years old
74. Seventy-four years old
75. Seventy-five years old
76. Seventy-six years old
77. Seventy-seven years old
78. Seventy-eight years old
79. Seventy-nine years old
80. Eighty years old
81. Eighty-one years old
82. Eighty-two years old
83. Eighty-three years old
84. Eighty-four years old
85. Eighty-five years old
86. Eighty-six years old
87. Eighty-seven years old
88. Eighty-eight years old
89. Eighty-nine years old
90. Ninety years old
91. Ninety-one years old
92. Ninety-two years old
93. Ninety-three years old
94. Ninety-four years old
95. Ninety-five years old
96. Ninety-six years old
97. Ninety-seven years or older
99. Unknown

Variable 203 SEX — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. SEX

1. Male
2. Female
9. Unknown

Variable 204 PERSON TYPE — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. PERSON TYPE

1. Driver
2. Passenger
3. Non-occupant: Pedestrian
4. Non-occupant: Pedalcyclist
5. Non-occupant: Rider of animal
6. Non-occupant: In animal drawn vehicle
7. Non-occupant: Occupant of non-traffic unit vehicle
8. Non-occupant: Other

FREQ. PERSON TYPE

9. Unknown type occupant

Variable 205 SEATING POSITION M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. SEATING POSITION

00. Not applicable
01. Front seat - left side (driver's side)
02. Front seat - middle
03. Front seat - right side
04. Second seat - left side
05. Second seat - middle
06. Second seat - right side
07. Third seat - left side
08. Third seat - middle
09. Third seat - right side
10. Additional front seat passenger
11. Other passengers
12. Sleeper section of cab (truck)
13. Riding on vehicle exterior
99. Unknown

Variable 206 ACTIVE RESTRAINT M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. ACTIVE RESTRAINT

0. None used (vehicle occupant) or not applicable (non-occupant)
1. Shoulder belt
2. Lap belt
3. Lap and shoulder belt
4. Child safety seat
5. Child harness
6. Restraint used - type not specified
7. Motorcycle helmet
8. Not reportable
9. Unknown

Variable 209 EXTRICATION-EJECTION(76) M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. EXTRICATION-EJECTION(76)

0. Not applicable
1. Totally ejected
2. Partially ejected
3. Extrication by ambulance-rescue attendants
4. Extrication by police
5. Extrication by other

FREQ. EXTRICATION-EJECTION(76)

6. Extrication by unknown source
7. Extrication by two or more types
8. Partial ejection involving extrication
9. Unknown

Variable 210 EJECTION (77) M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. EJECTION (77)

0. Not applicable
1. Totally ejected
2. Partially ejected
9. Unknown

Variable 211 EXTRICATION (77) M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. EXTRICATION (77)

0. Not extricated
1. Extrication by ambulance-rescue attendants
2. Extrication by police
3. Extrication by other
4. Extrication by unknown source
5. Extrication by two or more types
9. Unknown

Variable 212 DRINKING INVOLVED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. DRINKING INVOLVED

0. No
1. Yes
9. Unknown

Variable 214 ALCOHOL TEST TYPE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. ALCOHOL TEST TYPE

0. Not applicable/no test
1. Blood
2. Breath
3. Urine
4. Saliva
5. Tissue
6. Other
8. Not reportable
9. Unknown

Variable 215 INJURY SEVERITY — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. INJURY SEVERITY

0. 0 - No injury
1. C - Possible injury
2. B - Non-incapacitating evident injury
3. A - Incapacitating injury
4. K - Fatal injury
7. Died prior to accident
9. Unknown

Variable 216 TAKEN TO HOSPITAL — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. TAKEN TO HOSPITAL

0. No
1. Yes
9. Unknown

Variable 217 DEATH DATE-MONTH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. DEATH DATE-MONTH

00. Not applicable
01. January
02. February
03. March
04. April
05. May
06. June
07. July
08. August
09. September
10. October
11. November
12. December
99. Unknown

Variable 218 DEATH DATE-DAY — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. DEATH DATE-DAY

00. Not applicable
01.
- . Actual date
31.
99. Unknown

Variable 219 DEATH DATE-YEAR M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. DEATH DATE-YEAR

00. Not applicable
76. 1976
77. 1977
99. Unknown

Variable 220 DEATH TIME-HOUR M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. DEATH TIME-HOUR

00. Not applicable
01.
- . Actual hour (24 hour clock)
24.
99. Unknown

Variable 221 DEATH TIME-MINUTE M,D,Codes: 99, None
Field Width: 2, Numeric

FARS DERIVED VARIABLES

Variable 300 Crash Type (c.f. V1016)

0. Missing data
1. Not applicable
2. Collision with moving object
3. Collision with fixed or parked object
9. Unknown

Variable 301 Other Object Involved (c.f. V1074)

0. Missing data
1. Not aplicable
2. Auto, truck, bus
3. Fixed object
4. Pedestrian
5. Train
6. Bike
7. Animal
9. Other

Variable 302 Off Road (c.f. V1075)

0. Missing data
1. Ran off road
2. Did not

Variable 303 Overturn (c.f. V1076)

0. Missing data
1. Yes
2. No

Variable 304 Fire (c.f. V1077)

0. Missing data
1. Yes
2. No

Variable 305 Misc. (c.f. V1078)
(Includes jacknife, separation of units, cargo problems)

0. Missing data
1. Yes
2. No

Variable 306 Driver Drinking (c.f. V1079)

0. Missing data
1. Yes
2. No

Variable 307 Driver Dozed (c.f. V1080)

0. Missing data
1. Yes
2. No

Variable 308 Power Unit Make (c.f. V1081)

00. Missing data
01. Other
02. Brockway
03. Chevrolet
04. Diamond Reo
05. Dodge
06. Ford
07. Freightliner
08. GMC
09. International Harvester
10. Kenworth
11. Mack
12. Peterbilt
13. White
14. Unknown

Variable 309 Defect (c.f. V1064)

0. Missing data
1. Yes
2. No
3. Unknown

Variable 310 Type of Defect (c.f. V1082)

0. Missing data
1. Wheel/Tires
2. Brakes
3. Steering
4. Suspension
5. Power, exhaust
6. Lights
7. Other
8. Hitch
9. Unknown

Variable 311 Seat Belts (c.f. V1067)

0. Missing data
1. Yes
2. No
3. Unknown

Variable 312 Weather (c.f. V1083)

0. Missing data
1. Rain
2. Clear
3. Snow
4. Cloudy
5. Sleet
6. Other
9. Unknown

Variable 313 Light (c.f. V1084)

0. Missing data
1. Day
2. Dark, lights
3. Dawn/Dusk
4. Dark

Variable 314 Road Surface (c.f. V1070)

0. Missing data
1. Dry
2. Wet
3. Snow
4. Ice
5. Other
9. Unknown

Variable 315 Ramp Involved (c.f. V1085)

0. Missing data
1. Yes
2. No
9. Unknown

Variable 316 Roadway Divided (c.f. V1086)

0. Missing data
1. Yes
2. No
9. Unknown

Variable 317 Driver Sick (c.f. V1087)

0. Missing data
1. Yes
2. No

Variable 400 Driver Killed

0. Missing data
1. Yes
2. No

Variable 401 Driver Injured

0. Missing data
1. Yes
2. No

Variable 402 Total Killed in Vehicle

Actual number killed in vehicle

Variable 403 Total Injured in Vehicle

Actual number injured in vehicle

Variable 404 Non-Truck Killed

Actual number killed in accident other than in vehicle

Variable 405 Non-Truck Injured

Actual number injured in accident other than in vehicle

Variable 406 Accident Type

0. Missing data
1. Single vehicle
2. Multi-vehicle
9. Unknown

FARS INTERVIEW VARIABLES

Variable 500 Manufacturer

0. Missing data
1. Ford
2. GM
3. Dodge
4. Mack
5. Peterbilt
6. Kenworth
7. White
8. International Harvester
9. Brockway
10. Diamond Reo
11. Chevrolet
12. Freightliner
13. Autocar
14. White Western Star
15. Mercedes
16. Rick.
17. Marmon
18. Wilson
19. Oshkosh
20. Hendrickson
21. Crain Carrier
22. Pirsch.
23. Toyota
24. Fiat
25. Master
26. ATR.

Variable 501 Model Year

00. Missing data
01-79. Model Year of Power Unit

Variable 502 Weight

0. Missing data
1. Under 26,000
2. Over 26,000
9. Unknown

Variable 503 Carrier Type

0. Missing data
1. Private
2. Hire
3. Authorized
4. Contract
5. Commercial
6. Exempt
7. Exempt Carrier
8. Exempt Agriculture
9. Unknown

Variable 504 Accident Type

0. Missing data
1. Single
2. Head-on
3. Rear-other vehicle
4. Rear-truck
5. Angle-other vehicle
6. Angle-truck
7. Side-swipe
8. Other
9. Unknown

Variable 505 Manufacturer (Recode of V500)

0. Missing data
1. Other
2. Brockway
3. Chevrolet
4. Diamond Reo
5. Dodge
6. Ford
7. Freightliner
8. GM
9. IH
10. Kenworth
11. Mack
12. Peterbilt
13. Autocar

Variable 506 Accident Type

0. Missing data
1. Single vehicle
2. Multi-vehicle
9. Unknown

Variable 507 Carrier Type

0. Missing data
1. Private
2. Authorized
3. Other
9. Unknown

Variable 998 Match

Iteration number BMCS was matched to FARS case (if applicable)

0. Not Applicable

1976
1-5. Match number

1977
1-11. Match number

Variable 999 Check %

Percentage of check variables which matched

00. Missing data (not applicable)
50-100. Percent Match

Variable 1001 RECORD ID NUMBER M,D,Codes: 99999, None
Field Width: 5, Numeric

Variable 1002 STATE OF CARRIER M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. PRINCIPAL STATE OF CARRIER

01. Alabama
02. Alaska
04. Arizona
05. Arkansas
06. California
08. Colorado
09. Connecticut
10. Delaware
11. District of Columbia
12. Florida
13. Georgia
15. Hawaii
16. Idaho
17. Illinois
18. Indiana
19. Iowa
20. Kansas
21. Kentucky
22. Louisiana
23. Maine
24. Maryland
25. Massachusetts
26. Michigan
27. Minnesota
28. Mississippi
29. Missouri
30. Montana
31. Nebraska
32. Nevada
33. New Hampshire
34. New Jersey
35. New Mexico
36. New York
37. North Carolina
38. North Dakota
39. Ohio
40. Oklahoma

FREQ. PRINCIPAL STATE OF CARRIER

41. Oregon
42. Pennsylvania
44. Rhode Island
45. South Carolina
46. South Dakota
47. Tennessee
48. Texas
49. Utah
50. Vermont
51. Virginia
53. Washington
54. West Virginia
55. Wisconsin
56. Wyoming
99. Missing data

Variable 1003 TYPE OF CARRIER — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. TYPE OF CARRIER

1. Private
2. ICC authorized
3. Other
9. Missing data

Variable 1004 TYPE OF TRIP — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. TYPE OF TRIP

1. Over-the-road
2. Local pick-up and delivery operation
9. Missing data

Variable 1005 STATE OF CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. PLACE ACCIDENT OCCURRED

01. Alabama
02. Alaska
04. Arizona
05. Arkansas
06. California
08. Colorado
09. Connecticut
10. Delaware
11. District of Columbia
12. Florida
13. Georgia
15. Hawaii

FREQ. PLACE ACCIDENT OCCURRED

16. Idaho
17. Illinois
18. Indiana
19. Iowa
20. Kansas
21. Kentucky
22. Louisiana
23. Maine
24. Maryland
25. Massachusetts
26. Michigan
27. Minnesota
28. Mississippi
29. Missouri
30. Montana
31. Nebraska
32. Nevada
33. New Hampshire
34. New Jersey
35. New Mexico
36. New York
37. North Carolina
38. North Dakota
39. Ohio
40. Oklahoma
41. Oregon
42. Pennsylvania
44. Rhode Island
45. South Carolina
46. South Dakota
47. Tennessee
48. Texas
49. Utah
50. Vermont
51. Virginia
53. Washington
54. West Virginia
55. Wisconsin
56. Wyoming
99. Missing data

Variable 1006 TYPE OF DISTRICT M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. TYPE OF DISTRICT

1. Residential
2. Rural
3. Primarily business
9. Missing data

Variable 1007 REGION OF DOMICILE — M,D,Codes: 99, None; Field Width: 2, Numeric

Variable 1008 REGION OF CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

Variable 1009 DAY OF WEEK OF CRASH — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. DAY OF WEEK OF CRASH

1. Monday
2. Tuesday
3. Wednesday
4. Thursday
5. Friday
6. Saturday
7. Sunday
9. Missing data

Variable 1010 YEAR OF CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. YEAR OF CRASH

74. 1974
75. 1975
76. 1976
77. 1977
78. 1978
99. Missing data

Variable 1011 MONTH OF CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. MONTH OF CRASH

01. January
02. February
03. March
04. April
05. May
06. June
07. July
08. August
09. September
10. October
11. November
12. December
99. Missing data

Variable 1012 DAY OF CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ, DAY OF CRASH

01,
- , Actual values
31,
99, Missing data

Variable 1013 JULIAN DAY OF CRASH — M,D,Codes: 99999, None; Field Width: 5, Numeric

FREQ, JULIAN DAY OF THE CRASH MEASURED FROM MARCH 1, 1900

Variable 1014 HOUR OF CRASH — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ, HOUR OF CRASH

00. Missing data
01. 12:00 - 12:59 A.M.
:
24. 11:00 -12:00 P.M.
99. Unknown

Variable 1015 MINUTE OF CRASH M.D.Codes: 99, None
Field Width: 2, Numeric

FREQ. MINUTE OF CRASH

00.
- . Actual values
59.
99. Missing data

**** Variables 16 through 23 describe the features ****
**** of the primary Crash event ****

Variable 1016 COLLISION TYPE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. TYPE OF OBJECT STRUCK

1. Not applicable (non-collision)
2. Collision with moving object
3. Collision with fixed or parked object
4. ***Code value unspecified
9. Missing data

Variable 1017 OTHER OBJECT INVOLVED M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. OTHER OBJECT INVOLVED

01. Not applicable
02. Commercial truck
03. Fixed object
04. Automobile
05. Pedestrian
06. Bus
07. Train
08. Bicycle
09. Animal
10. Motorcycle
11. Other
24. ***Code value unspecified
99. Missing data

Variable 1018 MOVEMENT - VEHICLE #1 M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. MOVEMENT - VEHICLE #1

01. Slowing - stopping
02. Stopped
03. Parked
04. Rear-end
05. Backing
06. Making right turn
07. Making left turn
08. Making U-turn
09. Proceeding straight
10. Merging
11. Entering traffic from shoulder, median, parking strip or private drive
12. Intersection

FREQ. MOVEMENT - VEHICLE #1

13. Passing
14. Changing lanes
15. Sideswipe - opposite direction
16. Head on - crossed into opposing lane
17. Skidding
18. Vehicle out-of-control
19. Roll-away
20. Controlled railroad crossing
21. Uncontrolled railroad crossing
22. Other
24. ***Code value unspecified
98. Not applicable
99. Missing data

Variable 1019 MOVEMENT - VEHICLE #2 M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. MOVEMENT - VEHICLE #2

01. Slowing - stopping
02. Stopped
03. Parked
04. Rear-end
05. Backing
06. Making right turn
07. Making left turn
08. Making U-turn
09. Proceeding straight
10. Merging
11. Entering traffic from shoulder, median, parking strip or private drive
12. Intersection
13. Passing
14. Changing lanes
15. Sideswipe - opposite direction
16. Head on - crossed into opposing lane
17. Skidding
18. Vehicle out-of-control
19. Roll-away
20. Controlled railroad crossing
21. Uncontrolled railroad crossing
22. Other
24. ***Code value unspecified
98. Not applicable
99. Missing data or no 2nd vehicle in collision

Variable 1020 MOVEMENT - VEHICLE #3 M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. MOVEMENT - VEHICLE #3

01. Slowing - stopping
02. Stopped
03. Parked
04. Rear-end
05. Backing
06. Making right turn
07. Making left turn
08. Making U-turn
09. Proceeding straight
10. Merging
11. Entering traffic from shoulder, median, parking strip or private drive
12. Intersection
13. Passing
14. Changing lanes
15. Sideswipe - opposite direction
16. Head on - crossed into opposing lane
17. Skidding
18. Vehicle out-of-control
19. Roll-away
20. Controlled railroad crossing
21. Uncontrolled railroad crossing
22. Other
23. ***Code value unspecified
24. ***Code value unspecified
98. Not applicable
99. Missing data or no 3rd vehicle in collision

Variable 1021 NON-COLLISION TYPE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. NON-COLLISION TYPE

0. Ran off road
1. Jackknife
2. Overturn
3. Separation of units
4. Fire
5. Loss or spillage of cargo
6. Cargo shift
7. Other
8. Not applicable (collision)
9. Missing data

Variable 1022 ASSOCIATED CRASH EVENT M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. ASSOCIATED EVENT THAT RESULTED FROM PRIMARY CRASH EVENT

1. Not applicable
2. Spillage of hazardous cargo
3. Fire
4. Spillage of non-hazardous cargo

FREQ. ASSOCIATED EVENT THAT RESULTED FROM PRIMARY CRASH EVENT

5. Explosion
9. Missing data

Variable 1023 MULTIPLE VEHICLE CODE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. RECODED BY HSRI

1. Definitely single
2. At least 2 vehicles
3. At least 3 vehicles
4. Probably single
9. Missing data

**** Variables 24 through 28 describe the Driver ****

Variable 1024 DRIVER AGE — M,D,Codes: 99, None — Field Width: 2, Numeric

FREQ. DRIVER AGE

00. Zero years old
01. One year old
02. Two years old
03. Three years old
10. Ten years old
16. Sixteen years old
17. Seventeen years old
18. Eighteen years old
19. Nineteen years old
20. Twenty years old
21. Twenty-one years old
22. Twenty-two years old
23. Twenty-three years old
24. Twenty-four years old
25. Twenty-five years old
26. Twenty-six years old
27. Twenty-seven years old
28. Twenty-eight years old
29. Twenty-nine years old
30. Thirty years old
31. Thirty-one years old
32. Thirty-two years old
33. Thirty-three years old
34. Thirty-four years old
35. Thirty-five years old
36. Thirty-six years old
37. Thirty-seven years old
38. Thirty-eight years old
39. Thirty-nine years old
40. Forty years old
41. Forty-one years old
42. Forty-two years old
43. Forty-three years old
44. Forty-four years old
45. Forty-five years old
46. Forty-six years old
47. Forty-seven years old
48. Forty-eight years old
49. Forty-nine years old
50. Fifty years old
51. Fifty-one years old
52. Fifty-two years old
53. Fifty-three years old
54. Fifty-four years old
55. Fifty-five years old
56. Fifty-six years old

FREQ. DRIVER AGE

57. Fifty-seven years old
58. Fifty-eight years old
59. Fifty-nine years old
60. Sixty years old
61. Sixty-one years old
62. Sixty-two years old
63. Sixty-three years old
64. Sixty-four years old
65. Sixty-five years old
66. Sixty-six years old
67. Sixty-seven years old
68. Sixty-eight years old
69. Sixty-nine years old
70. Seventy years old
71. Seventy-one years old
72. Seventy-two years old
73. Seventy-three years old
74. Seventy-four years old
76. Seventy-six years old
77. Seventy-seven years old
80. Eighty years old
86. Eighty-six years old
90. Ninety years old
99. Missing data

Variable 1025 YEARS DRIVER EMPLOYED M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. YEARS DRIVER EMPLOYED BY THE COMPANY

00.
* , Actual values
98.
99. Missing data

Variable 1026 HOURS DRIVER ON DUTY M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. HOURS DRIVER ON DUTY

01. One hour
02. Two hours
03. Three hours
04. Four hours
05. Five hours
06. Six hours
07. Seven hours
08. Eight hours
09. Nine hours
10. Ten hours
11. Eleven/twelve hours
12. Not applicable
13. ***Code value unspecified

FREQ. HOURS DRIVER ON DUTY

15. ***Code value unspecified
21. ***Code value unspecified
24. ***Code value unspecified
99. Missing data

Variable 1027 SCHEDULED DRIVING TIME M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. SCHEDULED DRIVING TIME OF TRIP (HAD ACCIDENT NOT OCCURRED)

01. One hour
02. Two hours
03. Three hours
04. Four hours
05. Five hours
06. Six hours
07. Seven hours
08. Eight hours
09. Nine hours
10. Ten hours
11. Eleven/twelve hours
12. Not applicable
24. ***Code value unspecified
99. Missing data

Variable 1028 DRIVER CONDITION M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. DRIVER CONDITION AT TIME OF ACCIDENT

1. Apparently normal
2. Sick
3. Had been drinking
4. Dozed at wheel
5. Medical waiver
6. Other
8. ***Code value unspecified
9. Missing data

**** Variables 29 through 49 describe the Vehicle ****

Variable 1029 TYPE OF POWER UNIT — M,D,Codes: 0, None; Field Width: 1, Numeric

FREQ. RECODED BY HSRI

0. Missing data
1. Truck - Van
2. Truck - Flat
3. Truck - Tank
4. Truck - Auto
5. Truck - Refrigerated
6. Truck - Dump
7. Truck - Other
8. Tractor
9. Both truck and tractor

Variable 1030 POWER UNIT YEAR — M,D,Codes: 99, None; Field Width: 2, Numeric

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Variable 1031 POWER UNIT NO. OF AXLES — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. POWER UNIT NO. OF AXLES

00. None
01. One
02. Two
03. Three
04. Four
05. Five
06. Six
08. Eight
09. Nine
13. Thirteen
99. Missing data

Variable 1032 POWER UNIT MAKE — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. RECODED BY HSRI

01. Autocar
02. Brockway
03. Chevrolet
04. Diamond
05. Dodge
06. Ford

FREQ. RECODED BY HSRI

07. Freightliner
08. G.M.
09. Hendrick
10. International Harvester
11. Kenworth
12. Mack
13. Marmon
14. Peterbuilt
15. White
16. Mercedes-Benz
98. Other
99. Missing data

Variable 1033 TYPE OF 1ST TRAILER M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. TYPE OF 1ST TRAILER

1. Semi-trailer
2. Full trailer
3. Other
9. Missing data or no 1st trailer

Variable 1034 1ST TRAILER YEAR M,D,Codes: 99, None
Field Width: 2, Numeric

Variable 1035 1ST TRAILER NO. OF AXLES M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. 1ST TRAILER NO. OF AXLES

00. None
01. One
02. Two
03. Three
04. Four
05. Five
07. Seven
08. Eight
63. Sixty-three
74. Seventy-four
99. Missing data or no 1st trailer

Variable 1036 1ST TRAILER BODY TYPE M,D,Codes: 0, None
Field Width: 1, Numeric

FREQ. RECODED BY HSRI

0. Missing data
1. Van

FREQ. RECODED BY HSRI

2. Flat
3. Tank
4. Auto
5. Refrigerated
6. Dump
7. Dolly
8. Conventional
9. Other or no 1st trailer

Variable 1037 TYPE OF 2ND TRAILER — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. TYPE OF 2ND TRAILER

1. Semi-Trailer
2. Full Trailer
3. Other
9. Missing data or no 2nd trailer

Variable 1038 2ND TRAILER YEAR — M,D,Codes: 99, None; Field Width: 2, Numeric

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Variable 1039 2ND TRAILER NO. OF AXLES — M,D,Codes: 99, None; Field Width: 2, Numeric

FREQ. 2ND TRAILER NO. OF AXLES

00. None
01. One
02. Two
03. Three
04. Four
05. Five
26. Twenty-six
99. Missing data or no 2nd trailer

Variable 1040 2ND TRAILER BODY TYPE — M,D,Codes: 0, None; Field Width: 1, Numeric

FREQ. RECODED BY HSRI

0. Missing data
1. Van
2. Flat
3. Tank
4. Auto
5. Refrigerated
6. Dump
7. Dolly
8. Conventional

FREQ. RECODED BY HSRI

9. Other or no 2nd trailer

Variable 1041 VEHICLE COMBINATION CODE M,D,Codes: 0, None
Field Width: 2, Numeric

FREQ. RECODED BY HSRI

00. Missing data
01. Truck only
02. Tractor only
03. Truck, full trailer
04. Truck, semi-trailer
Truck, other
05. Tractor, semi-trailer
06. Tractor, full trailer
Tractor, other
07. Tractor, semi-, full trailer
08. Tractor, semi-, 2nd full trailer
Tractor, semi-, other
09. Tractor, semi-, full, 2nd full trailer
Tractor, semi-, full trailer, other
10. Truck, tractor
Truck, tractor, semi-trailer
11. Other
12. No power unit

Variable 1042 TOTAL LENGTH M,D,Codes: 999, None
Field Width: 3, Numeric

FREQ. TOTAL LENGTH OF THE VEHICLE/COMBINATION IN FEET

000.
- . Actual values
998.
999. Missing data

Variable 1043 TOTAL WIDTH M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TOTAL WIDTH OF THE VEHICLE OR CARGO IN FEET

00.
- . Actual values
98.
99. Missing data

Variable 1044 CARGO WEIGHT M,D,Codes: 999999, None
Field Width: 6, Numeric

FREQ. CARGO WEIGHT IN POUNDS

000000.
- , Actual values
999998.
999999. Missing data

Variable 1045 GROSS WEIGHT M,D,Codes: 999999, None
Field Width: 6, Numeric

FREQ. GROSS WEIGHT IN POUNDS

000000.
- , Actual values
999998.
999999. Missing data

Variable 1046 EMPTY WEIGHT M,D,Codes: 999999, None
Field Width: 6, Numeric

FREQ. EMPTY WEIGHT IN POUNDS

000000.
- , Actual values
999998.
999999. Missing data

Variable 1047 FUEL TYPE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. FUEL TYPE

1. Gasoline
2. Diesel
3. L.P.G.
4. Other
6. ***Code value unspecified
9. Missing data

Variable 1048 HAZARDOUS CARGO M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. HAZARDOUS CARGO

1. Hazardous material in cargo
2. Non-hazardous material in cargo
4. ***Code value unspecified
9. Missing data

Variable 1049 CARGO TYPE M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. CARGO TYPE

01. General freight
02. Household goods or uncrated furniture/fixtures
03. Metal: coils, sheets, rods, plates, etc.
04. Heavy machinery or other large objects
05. Motor vehicles
06. Driveaway-towaway
07. Gases in bulk
08. Solids in bulk
09. Liquids in bulk
10. Explosives
11. Logs, poles, lumber
12. Empty
13. Refrigerated foods
14. Mobile home
15. Farm products
16. Other
24. ***Code value unspecified
99. Missing data

**** Variables 50 through 63 describe the Deaths ****
**** and Injuries in the Crash ****

Variable 1050 DRIVER KILLED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. DRIVER KILLED

1. Yes
2. No
3. ***Code value unspecified
9. Missing data

Variable 1051 DRIVER INJURED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. DRIVER INJURED

1. Yes
2. No
3. ***Code value unspecified
9. Missing data

Variable 1052 RELIEF DRIVER KILLED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. RELIEF DRIVER KILLED

1. Yes
2. No
3. Not applicable
9. Missing data

Variable 1053 RELIEF DRIVER INJURED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. RELIEF DRIVER INJURED

1. Yes
2. No
3. Not applicable
9. Missing data

Variable 1054 NO. OF OTHER AUTH KILLED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. NUMBER OF OTHER AUTHORIZED PERSONS IN VEHICLE KILLED

0. None
1. One
2. Two
3. Three
4. Four
9. Missing data

Variable 1055 NO. OF OTHR AUTH INJURED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. NUMBER OF OTHER AUTHORIZED PERSONS IN VEHICLE INJURED

0. None
1. One
2. Two
3. Three
4. Four
7. Seven
9. Missing data

Variable 1056 NO. OF UNAUTH KILLED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. NUMBER OF UNAUTHORIZED PERSONS IN VEHICLE KILLED

0. None
1. One
2. Two
3. Three
5. Five
9. Missing data

Variable 1057 NO. OF UNAUTH INJURED M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. NUMBER OF UNAUTHORIZED PERSONS IN VEHICLE INJURED

0. None
1. One
2. Two
3. Three
5. Five
9. Missing data

Variable 1058 TOT NON-CASE-VEH KILLED M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TOTAL NON-CASE-VEHICLE PERSONS KILLED

00. None
01. One
02. Two
03. Three
04. Four
05. Five
06. Six
07. Seven
08. Eight
10. Ten
12. Twelve
20. Twenty
27. Twenty-seven
30. Thirty
99. Missing data

Variable 1059 TOT NON-CASE-VEH INJURED M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TOTAL NON-CASE-VEHICLE PERSONS INJURED

00. None
01. One
02. Two
03. Three
04. Four
05. Five
06. Six
07. Seven
08. Eight
09. Nine
10. Ten
11. Eleven
12. Twelve
13. Thirteen
14. Fourteen
15. Fifteen
16. Sixteen
17. Seventeen
18. Eighteen
19. Nineteen
21. Twenty-one
24. Twenty-four
25. Twenty-five
26. Twenty-six
28. Twenty-eight
30. Thirty
31. Thirty-one
32. Thirty-two
35. Thirty-five

FREQ. TOTAL NON-CASE-VEHICLE PERSONS INJURED

37. Thirty-seven
40. Forty
42. Forty-two
43. Forty-three
45. Forty-five
50. Fifty
70. Seventy
90. Ninety
99. Missing data

Variable 1060 TOTAL KILLED IN VEHICLE M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TOTAL KILLED IN VEHICLE

00. None
01. One
02. Two
03. Three
04. Four
05. Five
06. Six
99. Missing data

Variable 1061 TOTAL INJURED IN VEHICLE M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TOTAL INJURED IN VEHICLE

00. None
01. One
02. Two
03. Three
04. Four
05. Five
06. Six
07. Seven
99. Missing data

Variable 1062 TOTAL KILLED IN CRASH M,D,Codes: 999, None
Field Width: 3, Numeric

FREQ. TOTAL KILLED IN CRASH

000. None
001. One
002. Two
003. Three
004. Four
005. Five
006. Six
007. Seven

FREQ. TOTAL KILLED IN CRASH

008. Eight
010. Ten
012. Twelve
020. Twenty
027. Twenty-seven
030. Thirty
031. Thirty-one
999. Missing data

Variable 1063 TOTAL INJURED IN CRASH M.D.Codes: 999, None
Field Width: 3, Numeric

FREQ. TOTAL INJURED IN CRASH

000. None
001. One
002. Two
003. Three
004. Four
005. Five
006. Six
007. Seven
008. Eight
009. Nine
010. Ten
011. Eleven
012. Twelve
013. Thirteen
014. Fourteen
015. Fifteen
017. Seventeen
018. Eighteen
019. Nineteen
021. Twenty-one
022. Twenty-two
025. Twenty-five
026. Twenty-six
027. Twenty-seven
029. Twenty-nine
030. Thirty
032. Thirty-two
033. Thirty-three
035. Thirty-five
037. Thirty-seven
040. Forty
042. Forty-two
044. Forty-four
045. Forty-five
050. Fifty
070. Seventy
071. Seventy-one
090. Ninety
999. Missing data

**** Variables 64 through 74 describe miscellaneous ****
**** aspects of the Crash ****

Variable 1064 MECHANICAL DEFECTS? M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. MECHANICAL DEFECTS OR FAILURE APPARENT ON VEHICLE?

1. Yes
2. No
3. ***Code value unspecified
4. ***Code value unspecified
9. Missing data

Variable 1065 TYPE OF DEFECTS M,D,Codes: 99, None
Field Width: 2, Numeric

FREQ. TYPE OF DEFECTS OR FAILURE

01. Not applicable
02. Fuel system
03. Wheels and tires
04. Steering system
05. Suspension
06. Transmission
07. Driveline
08. Engine
09. Brakes
10. Lights
11. Coupling
12. Other
13. ***Code value unspecified
24. ***Code value unspecified
99. Missing data

Variable 1066 SEAT BELTS IN VEHICLE? M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. SEAT BELTS IN VEHICLE?

1. Yes
2. No
7. ***Code value unspecified
9. Missing data

Variable 1067 DRIVER SEAT BELTS USED? M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. SEAT BELTS IN USE BY DRIVER?

1. Yes
2. No
3. ***Code value unspecified
5. ***Code value unspecified
9. Missing data

Variable 1068 WEATHER M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. WEATHER

1. Rain
2. Clear
3. Snow
4. Fog/smog
5. Cloudy/overcast
6. Sleet
7. Other
9. Missing data

Variable 1069 LIGHT M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. LIGHT

1. Day
2. Artificial lights
3. Dawn
4. Other
5. Dusk
6. Dark
9. Missing data

Variable 1070 ROAD SURFACE M,D,Codes: 9, None
Field Width: 1, Numeric

FREQ. ROAD SURFACE

1. Dry
2. Wet
3. Snowy
4. Icy
5. Other
6. ***Code value unspecified
9. Missing data

Variable 1071 NUMBER OF LANES — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. NUMBER OF LANES

1. One lane
2. Two lanes
3. Three lanes
4. Four or more lanes
9. Missing data

Variable 1072 HIGHWAY TYPE — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. HIGHWAY TYPE

1. Divided
2. Undivided
3. ***Code value unspecified
4. ***Code value unspecified
9. Missing data

Variable 1073 RAMP INVOLVED — M,D,Codes: 9, None; Field Width: 1, Numeric

FREQ. RAMP INVOLVED

1. Entrance ramp (expressway)
2. Exit ramp (expressway)
3. Not applicable
9. Missing data

Variable 1074 Other Object Involved (c.f. V301)

0. Missing data
1. Not applicable
2. Auto, truck. bus
3. Fixed object
4. Pedestrian
5. Train
6. Bike
7. Animal
9. Other

Variable 1075 Off Road (c.f. V302)

0. Missing data
1. Ran off road
2. Did not

Variable 1076 Overturn (c.f. V303)

0. Missing data
1. Yes
2. No

Variable 1077 Fire (c.f. V304)

0. Missing data
1. Yes
2. No

Variable 1078 Misc. (c.f. V305)
(Includes jacknife, separation of units, cargo problems)

0. Missing data
1. Yes
2. No

Variable 1079 Driver Drinking (c.f. V306)

0. Missing data
1. Yes
2. No

Variable 1080 Driver Dozed (c.f. V307)

0. Missing data
1. Yes
2. No

Variable 1081 Power Unit Make (c.f. V308)

00. Missing data
01. Other
02. Brockway
03. Chevrolet
04. Diamond Reo
05. Dodge
06. Ford
07. Freightliner
08. GMC
09. International Harvester
10. Kenworth
11. Mack
12. Peterbilt
13. White
14. Unknown

Variable 1082 Type of Defect (c.f. V310)

0. Missing data
1. Wheel/Tires
2. Brakes
3. Steering
4. Suspension
5. Power, exhaust
6. Lights
7. Other
8. Hitch
9. Unknown

Variable 1083 Weather (c.f. V312)

0. Missing data
1. Rain
2. Clear
3. Snow
4. Cloudy
5. Sleet
6. Other
9. Unknown

Variable 1084 Light (c.f. V313)

0. Missing data
1. Day
2. Dark, lights
3. Dawn/Dusk
4. Dark

Variable 1085 Ramp Involved (c.f. V315)

0. Missing data
1. Yes
2. No
9. Unknown

Variable 1086 Roadway Divided (c.f. V316)

0. Missing data
1. Yes
2. No
9. Unknown

Variable 1087 Driver Sick (c.f. V317)

0. Missing data
1. Yes
2. No

Variable 1100 Accident Type

0. Missing data
1. Single vehicle
2. Multi-vehicle
9. Unknown

Variable 9000 Case Status

0. Missing data
1. FARS data only
2. FARS + BMCS data
3. BMCS data only
4. FARS + FARSINTERVIEW + BMCS data
5. FARS + FARSINTERVIEW data

APPENDIX B

COMMON VARIABLE RECODE DEFINITIONS

This memo describes the variables that will now be created from the variables available in FARS and BMCS. These variables will be available in both files and when the two files are merged will be added to that file.

Crash Type (To be compatible with BMCS16)

FARS300=1	if	FARS20=0	and FARS19=1-7
2	if	FARS20=1-5	or FARS19=8-13
3	if	FARS20=0	and FARS19=14-30
9	if	FARS20=9	and FARS19=99

Other Object Involved

BMCS101=1 (Not Applicable)	if	BMCS17=1
2 (Auto, Truck, Bus)	if	BMCS17=2,4,6,10
3 (Fixed Object)	if	BMCS17=3
4 (Pedestrian)	if	BMCS17=5
5 (Train)	if	BMCS17=7
6 (Bike)	if	BMCS17=8
7 (Animal)	if	BMCS17=9
9 (Other)	if	BMCS17=11

FARS301=1	if	FARS19=1-7	and FARS20=0
2	if	FARS19=12-14	or FARS20=1-5
3	if	FARS19=16-30	and FARS20=0
4	if	FARS19=8	and FARS20=0
5	if	FARS19=10	and FARS20=0
6	if	FARS19=9	and FARS20=0
7	if	FARS19=11	and FARS20=0
9	if	FARS19=15	and FARS20=0

Noncollision Type: A series of variables will be created:
Off Road?

BMCS102=1 (Ran off road)	if	BMCS21=0
2 (Didn't run off road)	if	BMCS21=1-9

FARS302=1 (Ran off road)	if	FARS22=2-6
2 (Didn't run off road)	if	FARS22=1

Overturn?

BMCS103=1 (Overturned)	if	BMCS21=2
2 (Not Overturned)	if	Otherwise
FARS303=1 (Overturned)	if	FARS19=1 and FARS20=0
2 (Not overturned)	if	Otherwise

Fire?

BMCS104=1 (Fire)	if	BMCS21=4
2 (No fire)	if	Otherwise
FARS304=1 (Fire)	if	FARS19=2 and FARS20=0
2 (No fire)	if	Otherwise

Misc. (Includes Jackknife, Separation of Units, Cargo Problems)

BMCS105=1 (Jackknife,separation of units, cargo problems)	if	BMCS21=1,3,5,6
2 (None of above)	if	Otherwise
FARS305=1	if	FARS19=7 and FARS20=0
2	if	Otherwise

Driver Condition

Sick?

BMCS117=1 (Yes)	if	BMCS28=2
2 (No)	if	Otherwise
FARS317=1 (Yes)	if	FARS150=2
2 (No)	if	Otherwise

Drinking?

BMCS106=1 (Yes)	if	BMCS28=3
2 (No)	if	Otherwise
FARS306=1 (Yes)	if	FARS150=04 (1976)
2 (No)	if	Otherwise
FARS306=1 (Yes)	if	FARS212=1 (1977)
2 (No)	if	Otherwise

Dozed?

BMCS107=1 (Yes)	if	BMCS28=4
2 (No)	if	Otherwise
FARS307=1 (Yes)	if	FARS150=1
2 (No)	if	Otherwise

Power Unit Make (1977 FARS)

BMCS108=1	(Other)	if	BMCS32=1,9,13,16,98
2	(Brockway)	if	BMCS32=2
3	(Chevrolet)	if	BMCS32=3
4	(Diamond Red)	if	BMCS32=4
5	(Dodge)	if	BMCS32=5
6	(Ford)	if	BMCS32=6
7	(Freightliner)	if	BMCS32=7
8	(GMC)	if	BMCS32=8
9	(Inter. Harvester)	if	BMCS32=10
10	(Kenworth)	if	BMCS32=11
11	(Mack)	if	BMCS32=12
12	(Peterbilt)	if	BMCS32=14
13	(White)	if	BMCS32=15
14	(Unknown)	if	BMCS32=99

FARS308=1	(Other)	if	FARS103=97,83
2	(Brockway)	if	FARS103=80
3	(Chevrolet)	if	FARS103=1
4	(Diamond Red)	if	FARS103=81
5	(Dodge)	if	FARS103=7
6	(Ford)	if	FARS103=2
7	(Freightliner)	if	FARS103=82
8	(GMC)	if	FARS103=84
9	(Inter. Harvester)	if	FARS103=85
10	(Kenworth)	if	FARS103=86
11	(Mack)	if	FARS103=87
12	(Peterbilt)	if	FARS103=88
13	(White)	if	FARS103=89
14	(Unknown)	if	FARS103=99

Defect? (To be compatible with BMCS65)

FARS309=1	(Yes)	if	FARS124=1-15
2	(No)	if	FARS124=00
9	(Unknown)	if	FARS124=99

Type of Defects

BMCS110=1	(Wheel/Tires)	if	BMCS66=3
2	(Brakes)	if	BMCS66=9
3	(Steering System)	if	BMCS66=4
4	(Suspension)	if	BMCS66=5
5	(Fuel, Trans., Driveline,Engine)	if	BMCS66=2,6-8
6	(Lights)	if	BMCS66=10
7	(Other)	if	BMCS66=12
8	(Coupling)	if	BMCS66=11
9	(Unknown)	if	BMCS66=99

FARS310=1	(Wheel/tires)	if	FARS124=1
2	(Brakes)	if	FARS124=2
3	(Steering)	if	FARS124=3
4	(Suspension)	if	FARS124-4
5	(Power, Exhaust)	if	FARS124=5-6
6	(Lights)	if	FARS124=7-9
7	(Other)	if	FARS124=10-14
8	(Hitch)	if	FARS124=15
9	(Unknown)	if	FARS124=99

Light

FARS313=1	(Day)	if	FARS32=1
2	(Dark, Lights)	if	FARS32=3
3	(Dawn/Dusk)	if	FARS32=4
4	(Dark)	if	FARS32=2
BMCS113=1	(Day)	if	BMCS70=1
2	(Lights)	if	BMCS70=2
3	(Dawn/Dusk)	if	BMCS70=3,5
4	(Dark)	if	BMCS70=6

Road Surface (To be compatible with (BMCS71)

FARS314=1	(Dry)	if	FARS30=0
2	(Wet)	if	FARS30=1
3	(Snow)	if	FARS30=2
4	(Ice)	if	FARS30=3
5	(Other)	if	FARS30=4,8
9	(Unknown)	if	FARS30=9

Seat Belts? (To be compatible with BMCS68)

FARS311=1	(Yes)	if	FARS206=1-6
2	(No)	if	FARS206=0
9	(Unknown)	if	FARS206=9

Weather

FARS312=1	(Rain)	if	FARS33=1
2	(Clear)	if	FARS33=0
3	(Snow)	if	FARS33=3
4	(Cloudy)	if	FARS33=5
5	(Sleet)	if	FARS33=2
6	(Other)	if	FARS33=8,4
9	(Unknown)	if	FARS33=9
BMCS112=1	(Rain)	if	BMCS69=1
2	(Clear)	if	BMCS69=2
3	(Snow)	if	BMCS69=3
4	(Cloudy)	if	BMCS69=5
5	(Sleet)	if	BMCS69=6
6	(Other)	if	BMCS69=4,7
9	(Unknown)	if	BMCS69=9

Ramp Involved?

FARS315=1 (Yes)	if	FARS21=4
2 (No)	if	FARS21=1-3,5
9 (Unknown)	if	FARS21=9
BMCS115=1 (Yes)	if	BMCS74=1,2
2 (No)	if	BMCS74=3
3 (Unknown)	if	BMCS74=9

Roadway Divided?

FARS316=1 (Yes)	if	FARS23=1-3
2 (No)	if	FARS23=4-5
9 (Unknown)	if	FARS23=9
BMCS116=1 (Yes)	if	BMCS73=1
2 (No)	if	BMCS73=2
9 (Unknown)	if	BMCS73=9

APPENDIX C

SCATTER PLOTS AND CONTINGENCY TABLES

FOR THE COMMON VARIABLES

This appendix contains univariate and contingency tables as well as scatter plots of the variables common to the BMCS and FARS data sets. Tables and plots which appear in the text of this report are not repeated here.

Many of the tables and plots are subset on the strata variable (v9000:CASEST) which is discussed in Section 5. The strata are indicated by the phrase "Strat=..." at the beginning of a table or group of tables or at the top of a plot. The levels of v9000:CASEST are as follows:

1) FARSON = cases with FARS data only
2) FARSBM = cases with FARS+BMCS data
3) BMCSON = cases with BMCS data only
4) ALLMTC = FARS+TRIP SURVEY+BMCS data
5) FARSIN = FARS+TRIP SURVEY data.

The numbers of the above strata correspond to the numbers in Figure 3 which describes the structure of the data file (see discussion in Section 5).

1976 DATA

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1016. COLLISIO		300.CRSHTYP (1)	(2)	(3)
N=	1563			
TOTAL=	1563	96	1308	159
ROW%		6.1	83.7	10.2
COL%				
(1)	187	89	7	91
ROW%		47.6	3.7	48.7
COL%	12.0	92.7	.5	57.2
(2)	1270	7	1245	18
ROW%		.6	98.0	1.4
COL%	81.3	7.3	95.2	11.3
(3)	106	0	56	50
ROW%			52.8	47.2
COL%	6.8		4.3	31.4

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1075. RANOFFRD		302.RANOFFRD MISS	(1)	(2)
N=	1561			
TOTAL=	1563	1	241	1320
ROW%			15.4	84.6
COL%				
MISS	1	0	0	1
ROW%				
COL%				
(1)	136	0	113	23
ROW%			83.1	16.9
COL%	8.7		46.9	1.7
(2)	1425	1	128	1297
ROW%			9.0	91.0
COL%	91.3		53.1	98.3

TWOWAY CROSS-TABULATION STRAT=CASEST:FAPSBM,ALLMTC

1074. OTH OBJ		301.OTH OBJ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)
N=	1562								
TOTAL=	1563	96	1160	139	115	13	24	11	4
ROW%		6.1	74.3	8.9	7.4	.8	1.5	.7	.3
COL%									
MISS	1	0	0	0	0	1	0	0	0
ROW%									
COL%									
(1)	188	89	8	99	1	0	0	1	0
ROW%		47.3	4.3	47.3	.5			.5	
COL%	12.0	92.7	.7	64.0	.9			9.1	
(2)	1077	4	1047	13	10	0	2	0	1
ROW%		.4	97.2	1.2	.9		.2		.1
COL%	69.0	4.2	90.3	9.4	8.7		8.3		25.0
(3)	41	0	3	34	2	0	0	1	1
ROW%			7.3	82.9	4.9			2.4	2.4
COL%	2.6		.3	24.5	1.7			9.1	25.0
(4)	109	2	2	2	102	0	0	0	0
ROW%		1.9	1.9	1.9	94.4				
COL%	6.9	2.1	.2	1.4	88.7				
(5)	13	0	0	0	0	13	0	0	0
ROW%						100.0			
COL%	.8					100.0			
(6)	23	0	1	0	0	0	22	0	0
ROW%			4.3				95.7		
COL%	1.5		.1				91.7		
(7)	8	0	0	0	0	0	0	8	0
ROW%								100.0	
COL%	.5							72.7	
(9)	104	1	99	1	0	0	0	1	2
ROW%		1.0	95.2	1.0				1.0	1.9
COL%	6.7	1.0	8.5	.7				9.1	50.0

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSRM,ALLMTC

1076. ROLLOVER		303. ROLLOVER MISS	(1)	(2)
N=	1231			
TOTAL=	1563	328	87	1144
ROW%			7.1	92.9
COL%				
MISS	0	4	0	0
ROW%				
COL%				
(1)	26	19	26	0
ROW%			100.0	
COL%	2.1		29.9	
(2)	1205	309	61	1144
ROW%			5.1	94.9
COL%	97.9		70.1	100.0

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSRM,ALLMTC

1077. FIRE		304. FIRE (2)
N=	1562	
TOTAL=	1563	1562
ROW%		100.0
COL%		
MISS	1	1
ROW%		
COL%		
(2)	1562	1562
ROW%		100.0
COL%	100.0	100.0

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1078. MISC		305. MISC. (1)	(2)
N=	1562		
TOTAL=	1563	3	1559
ROW%		.2	99.8
COL%			
MISS	1	0	1
ROW%	.		
COL%			
(1)	5	2	3
ROW%		40.0	60.0
COL%	.3	66.7	.2
(2)	1557	1	1556
ROW%		.1	99.9
COL%	99.7	33.3	99.8

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1087. DR SICK		317. DR SICK (1)	(2)
N=	1563		
TOTAL=	1563	1	1562
ROW%		.1	99.9
COL%			
(1)	2	0	2
ROW%			100.0
COL%	.1		.1
(2)	1561	1	1560
ROW%		.1	99.9
COL%	99.9	100.0	99.9

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1079. DRINK		306. DRINK MISS	(1)	(2)
N=	547			
TOTAL=	1563	1016	37	510
ROW%			6.8	93.2
COL%				
(1)	10	2	9	1
ROW%			90.0	10.0
COL%	1.8		24.3	.2
(2)	537	1014	28	509
ROW%			5.2	94.8
COL%	98.2		75.7	99.8

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1080. DOZED		307. DOZED (1)	(2)
N=	1563		
TOTAL=	1563	45	1518
ROW%		2.9	97.1
COL%			
(1)	27	13	14
ROW%		48.1	51.9
COL%	1.7	28.9	.9
(2)	1536	32	1504
ROW%		2.1	97.9
COL%	98.3	71.1	99.1

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSPM,ALLMTC

1064. MECHANIC		309. DEFECT MISS	(1)	(2)
N=	1480			
TOTAL=	1563	83	66	1414
ROW%			4.5	95.5
COL%				
(1)	42	0	23	19
ROW%			54.8	45.2
COL%	2.8		34.8	1.3
(2)	1436	83	43	1393
ROW%			3.0	97.0
COL%	97.0		65.2	98.5
(9)	2	0	0	2
ROW%				100.0
COL%	.1			.1

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSPM,ALLMTC

1084. LIGHT		313. LIGHT (1)	(2)	(3)	(4)
N=	1546				
TOTAL=	1563	781	101	68	596
ROW%		50.5	6.5	4.4	38.6
COL%					
MISS	17	1	9	0	7
ROW%					
COL%					
(1)	755	720	7	13	15
ROW%		95.4	.9	1.7	2.0
COL%	49.8	92.2	6.9	19.1	2.5
(2)	48	2	24	1	17
ROW%		4.5	54.5	2.3	38.6
COL%	2.9	.3	23.8	1.5	2.9
(3)	120	34	4	42	40
ROW%		28.3	3.3	35.0	33.3
COL%	7.8	4.4	4.0	61.8	6.7
(4)	627	25	66	12	524
ROW%		4.0	10.5	1.9	83.6
COL%	40.6	3.2	65.3	17.6	87.9

TWOWAY CROSS-TABULATION SEPAT=CASEST:FAPSPM,ALLMTC

1082.		3110.TYP DEF							
TYP DEF		MISS	(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)
N=	23									
TOTAL=	1563	19	13	5	1	2	0	1	1	0
ROW%			56.5	21.7	4.3	8.7		4.3	4.3	
COL%										
MISS	126	1395	18	17	0	0	4	3	1	83
ROW%										
COL%										
(1)	14	9	13	0	1	0	0	0	0	0
ROW%			92.9		7.1					
COL%	60.9		100.0		100.0					
(2)	5	2	0	5	0	0	0	0	0	0
ROW%				100.0						
COL%	21.7			100.0						
(3)	0	1	0	0	0	0	0	0	0	0
ROW%										
COL%										
(4)	0	1	0	0	0	0	0	0	0	0
ROW%										
COL%										
(5)	3	1	0	0	0	2	0	1	0	0
ROW%						66.7		33.3		
COL%	13.0					100.0		100.0		
(6)	0	3	0	0	0	0	0	0	0	0
ROW%										
COL%										
(7)	0	2	0	0	0	0	0	0	0	0
ROW%										
COL%										
(8)	1	0	0	0	0	0	0	0	1	0
ROW%									100.0	
COL%	4.3								100.0	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSRM,ALLMTC

1070. ROAD SUR		314.RD SURF (1)	(2)	(3)	(4)	(5)	(6)
N=	1563						
TOTAL=	1563	1231	242	31	53	3	3
ROW%		78.8	15.5	2.0	3.4	.2	.2
COL%							
(1)	1248	1188	49	4	3	1	3
ROW%		95.2	3.9	.3	.2	.1	.2
COL%	79.9	96.5	20.2	12.9	5.7	33.3	100.0
(2)	221	31	182	3	3	2	0
ROW%		14.0	82.4	1.4	1.4	.9	
COL%	14.1	2.5	75.2	9.7	5.7	66.7	
(3)	28	2	5	11	10	0	0
ROW%		7.1	17.9	39.3	35.7		
COL%	1.8	.2	2.1	35.5	18.9		
(4)	42	1	5	8	28	0	0
ROW%		2.4	11.9	19.0	66.7		
COL%	2.7	.1	2.1	25.8	52.8		
(5)	4	2	1	0	1	0	0
ROW%		50.0	25.0		25.0		
COL%	.3	.2	.4		1.9		
(9)	20	7	0	5	8	0	0
ROW%		35.0		25.0	40.0		
COL%	1.3	.6		16.1	15.1		

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1067. DRIVER S		311.REST USE MISS	(1)	(2)	(9)
N=	1427				
TOTAL=	1563	136	200	896	331
ROW%			14.0	62.8	23.2
COL%					
(1)	801	87	172	440	189
ROW%			21.5	54.9	23.6
COL%	56.1		86.0	49.1	57.1
(2)	480	34	20	357	103
ROW%			4.2	74.4	21.5
COL%	33.6		10.0	39.8	31.1
(9)	146	15	8	99	39
ROW%			5.5	67.8	26.7
COL%	10.2		4.0	11.0	11.8

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSPM,ALLMTC

1085. RAMP		315.RAMP (1)	(2)
N=	1563		
TOTAL=	1563	33	1530
ROW%		2.1	97.9
COL%			
(1)	46	15	31
ROW%		32.6	67.4
COL%	2.9	45.5	2.0
(2)	1514	18	1496
ROW%		1.2	98.8
COL%	96.9	54.5	97.8
(9)	3	0	3
ROW%			100.0
COL%	.2		.2

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSPM,ALLMTC

1083. WEATHER		312.WEATHER (1)	(2)	(3)	(4)	(5)	(6)	(9)
M=	1563							
TOTAL=	1563	165	1192	61	46	6	90	3
ROW%		10.6	76.3	3.9	2.9	.4	5.8	.2
COL%								
(1)	164	125	25	5	3	0	6	0
ROW%		76.2	15.2	3.0	1.8		3.7	
COL%	10.5	75.8	2.1	8.2	6.5		6.7	
(2)	1129	14	1043	5	30	0	35	2
ROW%		1.2	92.4	.4	2.7		3.1	.2
COL%	72.2	8.5	87.5	8.2	65.2		38.9	66.7
(3)	57	3	6	41	0	3	4	0
ROW%		5.3	10.5	71.9		5.3	7.0	
COL%	3.6	1.8	.5	67.2		50.0	4.4	
(4)	140	13	101	5	10	2	8	1
ROW%		9.3	72.1	3.6	7.1	1.4	5.7	.7
COL%	9.0	7.9	8.5	8.2	21.7	33.3	8.9	33.3
(5)	2	1	0	0	0	1	0	0
ROW%		50.0				50.0		
COL%	.1	.6				16.7		
(6)	51	4	11	1	2	0	33	0
ROW%		7.8	21.6	2.0	3.9		64.7	
COL%	3.3	2.4	.9	1.6	4.3		36.7	
(9)	20	5	6	4	1	0	4	0
ROW%		25.0	30.0	20.0	5.0		20.0	
COL%	1.3	3.0	.5	6.6	2.2		4.4	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSRM,ALLMTC

1086. RD DIV		316.RD DIV (1)	(2)	(9)
N=	1563			
TOTAL=	1563	594	966	13
ROW%		37.4	61.8	.8
COL%				
(1)	677	527	145	5
ROW%		77.8	21.4	.7
COL%	43.3	90.2	15.0	38.5
(2)	878	55	816	7
ROW%		6.3	92.9	.8
COL%	56.2	9.4	84.5	53.8
(9)	8	2	5	1
ROW%		25.0	62.5	12.5
COL%	.5	.3	.5	7.7

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSRM,ALLMTC

1050. DRIVER K		400.DRKILLED (1)	(2)	(9)
N=	1563			
TOTAL=	1563	335	1227	1
ROW%		21.4	78.5	.1
COL%				
(1)	335	324	11	0
ROW%		96.7	3.3	
COL%	21.4	96.7	.9	
(2)	1226	11	1214	1
ROW%		.9	99.0	.1
COL%	78.4	3.3	98.9	100.0
(9)	2	0	2	0
ROW%			100.0	
COL%	.1		.2	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1051. DRIVER I		401. DR INJ (1)	(2)	(9)
N=	1563			
TOTAL=	1563	1226	336	1
ROW%		78.4	21.5	.1
COL%				
(1)	398	392	6	0
ROW%		98.5	1.5	
COL%	25.5	32.0	1.8	
(2)	1160	832	327	1
ROW%		71.7	28.2	.1
COL%	74.2	67.9	97.3	100.0
(9)	5	2	3	0
ROW%		40.0	60.0	
COL%	.3	.2	.9	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1060. TOT KILL		402. TOT KILL NONE	ONE	TWO
N=	1563			
TOTAL=	1563	1198	337	28
ROW%		76.6	21.6	1.8
COL%				
NONE	1201	1188	13	0
ROW%		98.9	1.1	
COL%	76.8	99.2	3.9	
ONE	325	9	310	6
ROW%		2.8	95.4	1.8
COL%	20.8	.8	92.0	21.4
TWO	37	1	14	22
ROW%		2.7	37.8	59.5
COL%	2.4	.1	4.2	78.6

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSRM,ALLMTC

1061. TOT INJ		403.TOT INJ				
TOT INJ		NONE	ONE	TWO	THREE	FOUR
N=	1563					
TOTAL=	1563	1048	470	37	6	2
ROW%		67.1	30.1	2.4	.4	.1
COL%						
NONE	1137	972	148	15	2	0
ROW%		85.5	13.0	1.3	.2	
COL%	72.7	92.7	31.5	40.5	33.3	
ONE	365	65	289	9	0	2
ROW%		17.8	79.2	2.5		.5
COL%	23.4	6.2	61.5	24.3		100.0
TWO	57	11	32	13	1	0
ROW%		19.3	56.1	22.8	1.8	
COL%	3.6	1.0	6.8	35.1	16.7	
THREE	2	0	0	0	2	0
ROW%					100.0	
COL%	.1				33.3	
FOUR	2	0	1	0	1	0
ROW%			50.0		50.0	
COL%	.1		.2		16.7	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSRM,ALLMTC

1100. ACCTYPE		406.ACCTYPE			
ACCTYPE		SING	MULT	UNK	
N=	1562				
TOTAL=	1563	385	1173	4	
ROW%		24.6	75.1	.3	
COL%					
MISS	1	0	1	0	
ROW%					
COL%					
SING	368	353	14	1	
ROW%		95.9	3.8	.3	
COL%	23.6	91.7	1.2	25.0	
MULT	1090	29	1060	1	
ROW%		2.7	97.2	.1	
COL%	69.8	7.5	90.4	25.0	
UNK	104	3	99	2	
ROW%		2.9	95.2	1.9	
COL	6.7	.8	8.4	50.0	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1058. NONTRK K		404. NONTRK K NONE	ONE	TWO	THREE	FOUR	FIVE	SEVEN	EIGHT
N=	1563								
TOTAL=	1563	331	1008	163	37	16	6	1	1
ROW%		21.2	64.5	10.4	2.4	1.0	.4	.1	.1
COL%									
NONE	310	302	7	1	0	0	0	0	0
ROW%		97.4	2.3	.3					
COL%	19.8	91.2	.7	.6					
ONE	1026	27	993	5	1	0	0	0	0
ROW%		2.6	96.8	.5	.1				
COL%	65.6	8.2	98.5	3.1	2.7				
TWO	168	2	6	155	5	0	0	0	0
ROW%		1.2	3.6	92.3	3.0				
COL%	10.7	.6	.6	95.1	13.5				
THREE	34	0	1	2	31	0	0	0	0
ROW%			2.9	5.9	91.2				
COL%	2.2		.1	1.2	83.8				
FOUR	16	0	0	0	0	16	0	0	0
ROW%						100.0			
COL%	1.0					100.0			
FIVE	6	0	0	0	0	0	6	0	0
ROW%							100.0		
COL%	.4						100.0		
SIX	1	0	1	0	0	0	0	0	0
ROW%			100.0						
COL%	.1		.1						
SEVEN	1	0	0	0	0	0	0	1	0
ROW%								100.0	
COL%	.1							100.0	
EIGHT	1	0	0	0	0	0	0	0	1
ROW%									100.0
COL%	.1								100.0

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

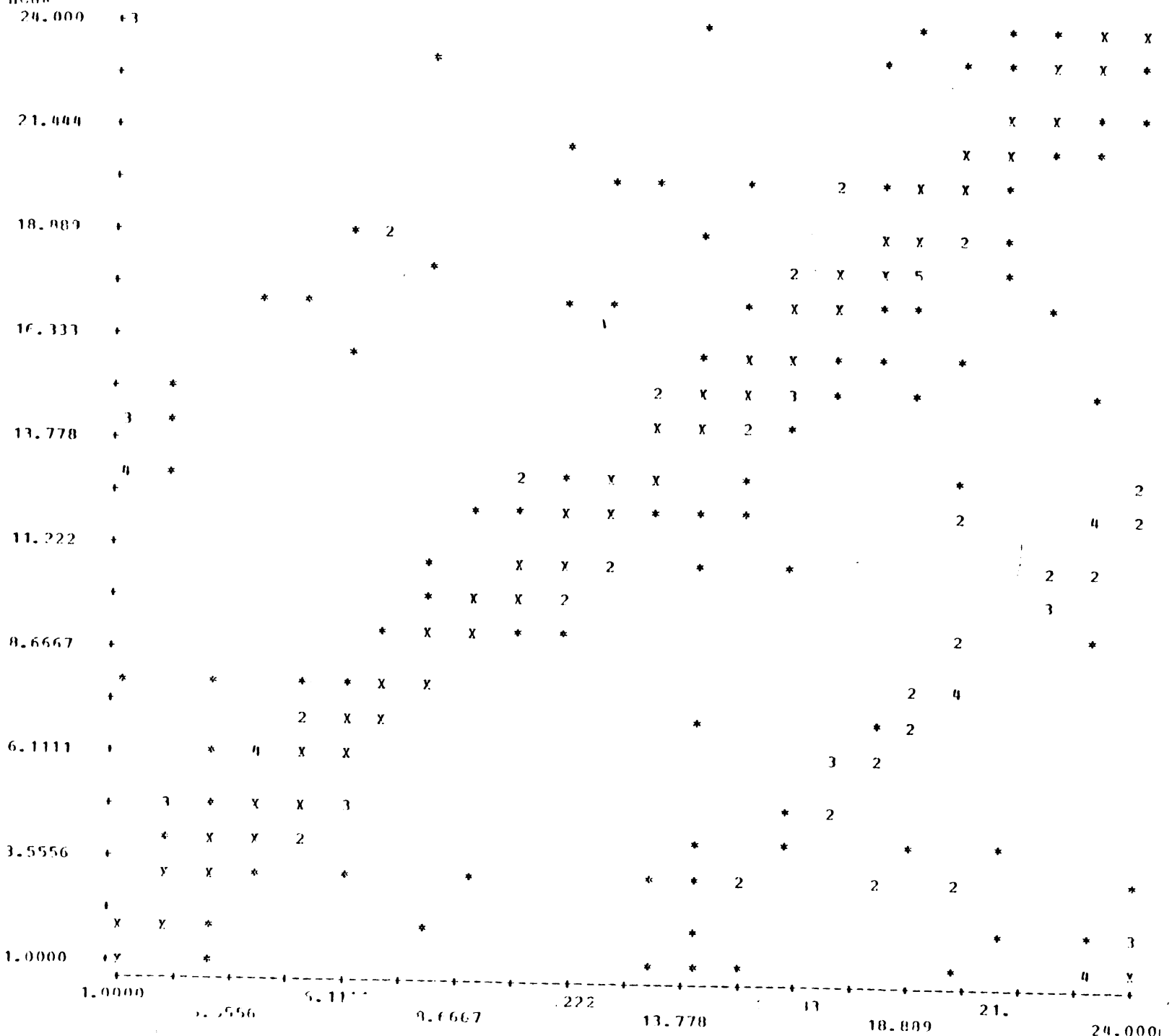
1003. TYPE OF		507.CARRIERT MISS	PRIV	AUTH	OTH	UNK
N=	440					
TOTAL=	1563	1123	139	277	22	2
ROW%			31.6	63.0	5.0	.5
COL%						
(1)	127	259	120	6	0	1
ROW%			94.5	4.7		.8
COL%	28.9		86.3	2.2		50.0
(2)	294	817	17	264	12	1
ROW%			5.8	89.8	4.1	.3
COL%	66.8		12.2	95.3	54.5	50.0
(3)	17	41	1	6	10	0
ROW%			5.9	35.3	58.8	
COL%	3.9		.7	2.2	45.5	
(9)	2	6	1	1	0	0
ROW%			50.0	50.0		
COL%	.5		.7	.4		

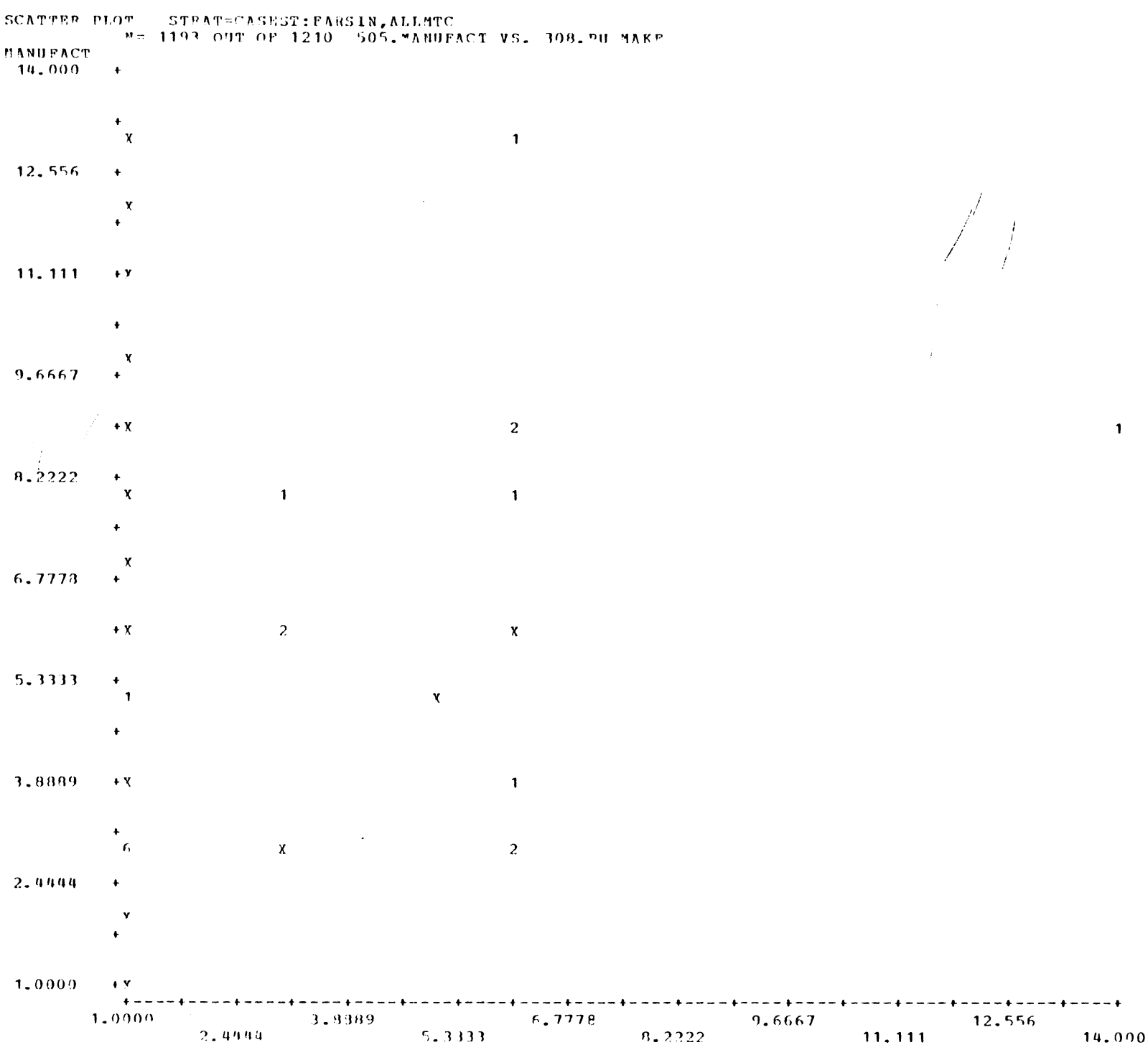
TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1060. TOT KILL		155.TOT KIL NONE	ONE	TWO
N=	1563			
TOTAL=	1563	1198	337	28
ROW%		76.6	21.6	1.8
COL%				
NONE	1201	1198	13	0
ROW%		98.9	1.1	
COL%	76.8	99.2	3.9	
ONE	325	9	310	6
ROW%		2.8	95.4	1.8
COL%	20.8	.8	92.0	21.4
TWO	37	1	14	22
ROW%		2.7	37.8	59.5
COL%	2.4	.1	4.2	78.6

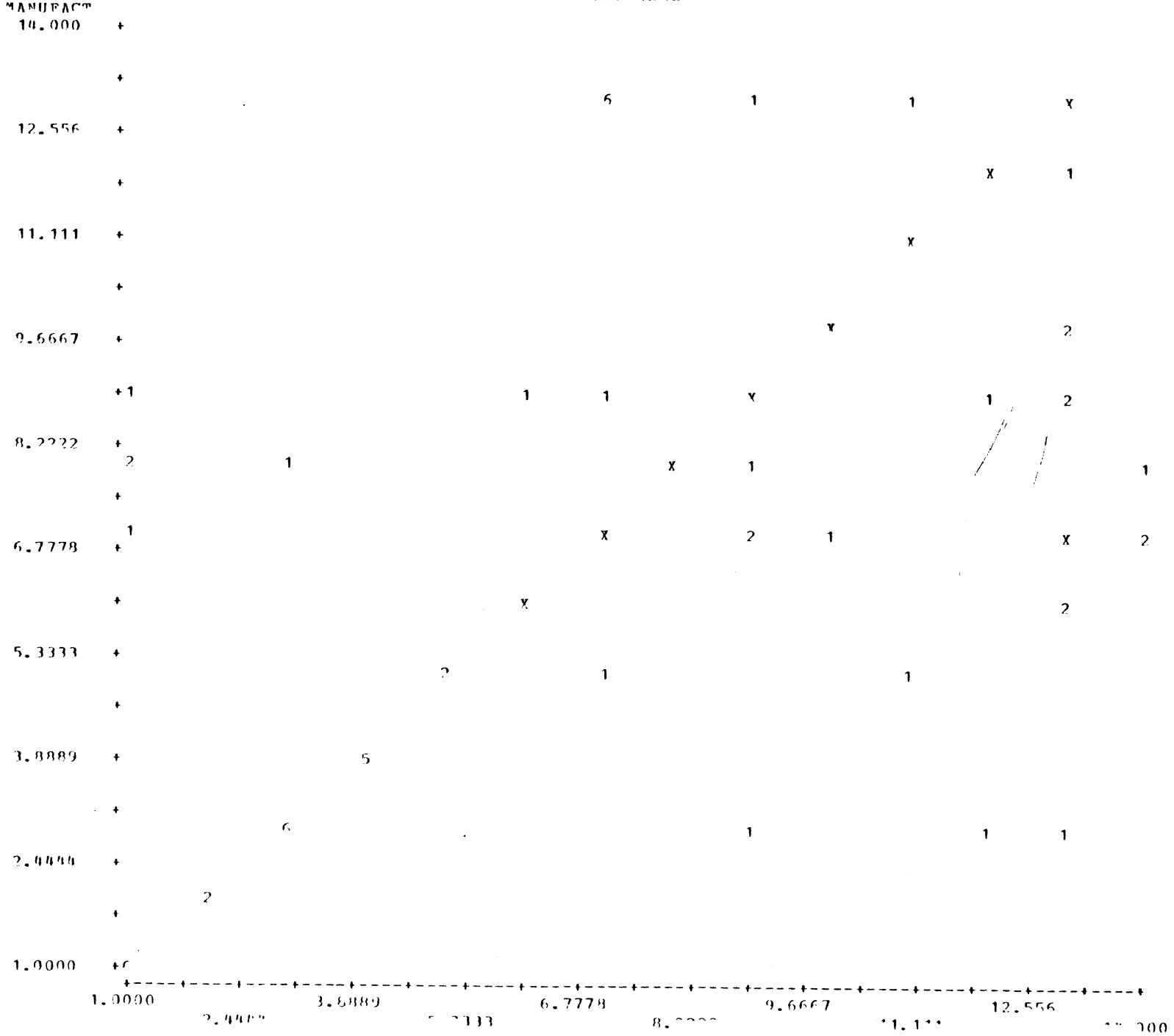
THOWAY CROSS-TABULATION STRAT=CASEST:FARSEM,ALLMTC

1062. TOT KILL		46.TOT KILL (1)	(2)	(3)	(4)	(5)	(7)	(8)
N=	1563							
TOTAL=	1563	1289	202	47	17	6	1	1
ROW%		82.5	12.9	3.0	1.1	.4	.1	.1
COL%								
(1)	1270	1254	14	2	0	0	0	0
ROW%		98.7	1.1	.2				
COL%	81.3	97.3	6.9	4.3				
(2)	217	27	183	7	0	0	0	0
ROW%		12.4	84.3	3.2				
COL%	13.9	2.1	90.6	14.9				
(3)	47	7	4	36	0	0	0	0
ROW%		14.9	8.5	76.6				
COL%	3.0	.5	2.0	76.6				
(4)	19	0	1	1	17	0	0	0
ROW%			5.3	5.3	89.5			
COL%	1.2		.5	2.1	100.0			
(5)	7	0	0	1	0	6	0	0
ROW%				14.3		85.7		
COL%	.4			2.1		100.0		
(7)	2	1	0	0	0	0	1	0
ROW%		50.0					50.0	
COL%	.1	.1					100.0	
(8)	1	0	0	0	0	0	0	1
ROW%								100.0
COL%	.1							100.0

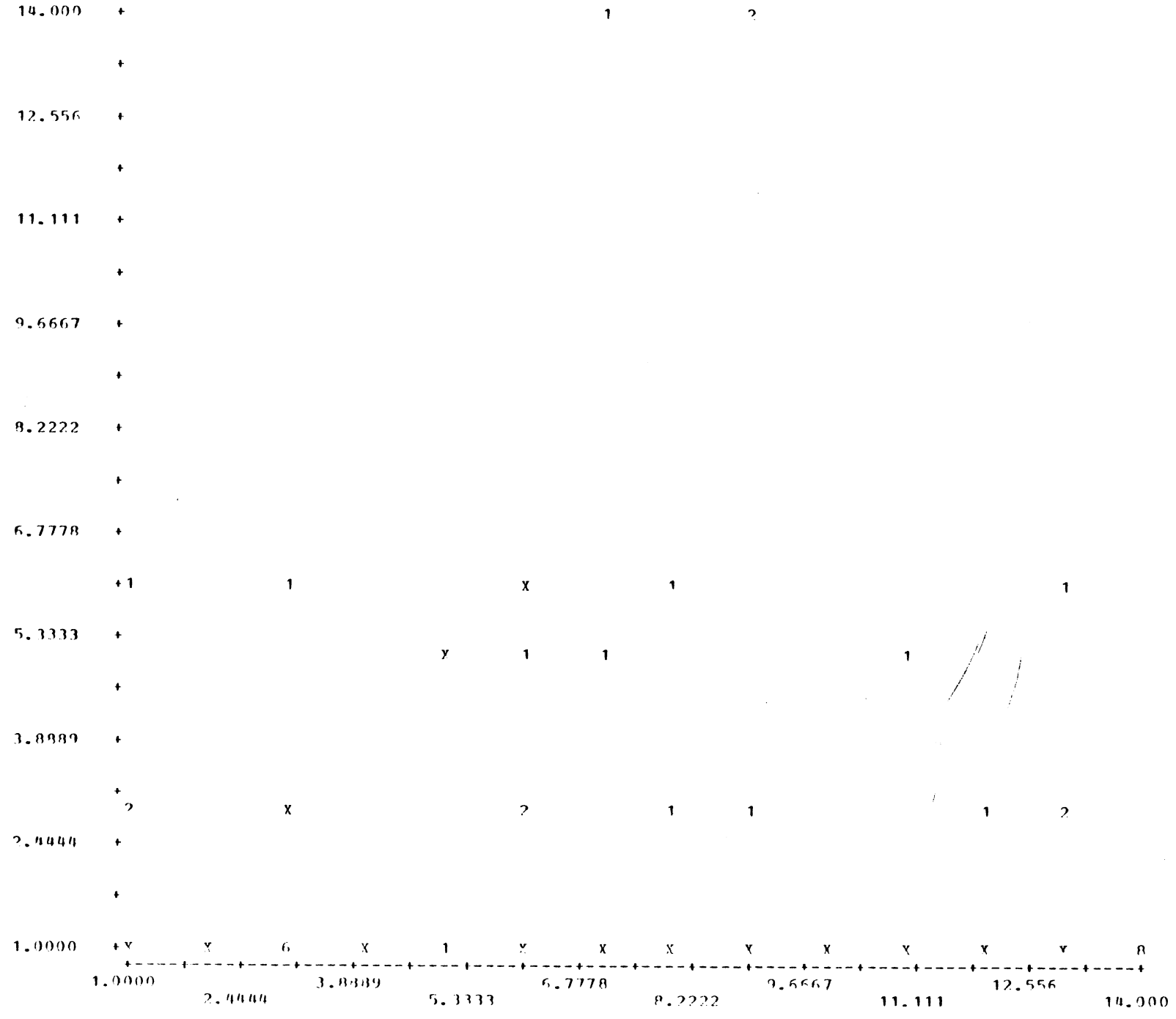

SCATTER PLOT STRAT=CASESC:FARSBH,ALLMTC
N= 1556 OUT OF 1563 1314.HOUR VS. 10.HOUR
HOUR
24.000
21.444
18.889
16.333
13.778
11.222
8.6667
6.1111
3.5556
1.0000
1.0000
5.111
9.6667
13.778
18.889
24.000


SCATTER PLOT STRAT=CASEST:FARSIN,ALLMTC
N= 1193 OUT OF 1210 505.MANUFACT VS. 308.PU MAKE
MANUFACT
14.000
12.556
11.111
9.6667
8.2222
6.7778
5.3333
3.8889
2.4444
1.0000
1.0000
2.4444
3.8889
5.3333
6.7778
8.2222
9.6667
11.111
12.556
14.000

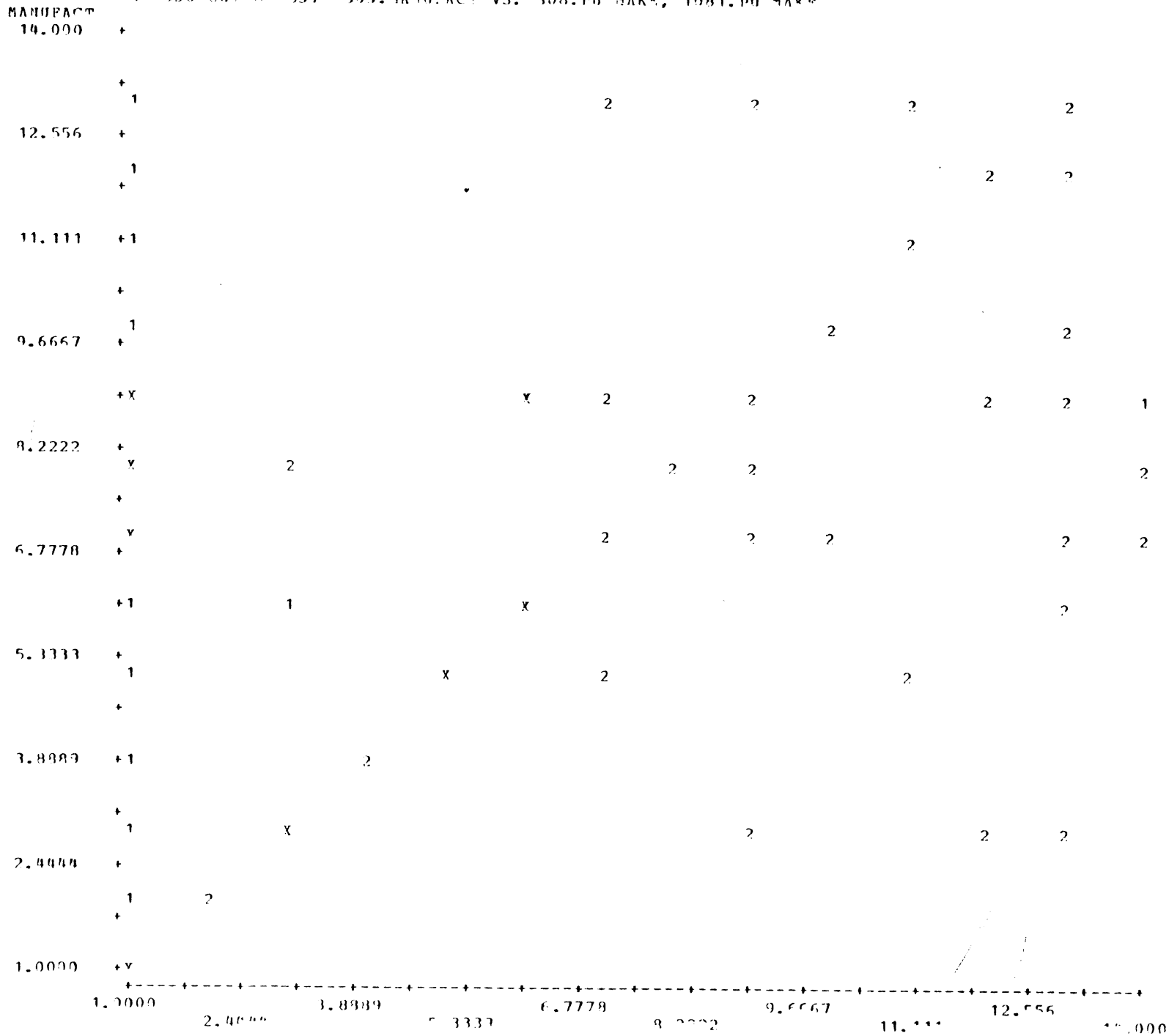
SCATTER PLOT
N= 530 OUT OF 5253 505.MANUFACT VS. 1081.PU MAKE



SCATTER PLOT STRAT=CASEST:FARSUM,ALLMTC
N= 1562 OUT OF 1563 308.PU MAKE VS. 1081.PU MAKE

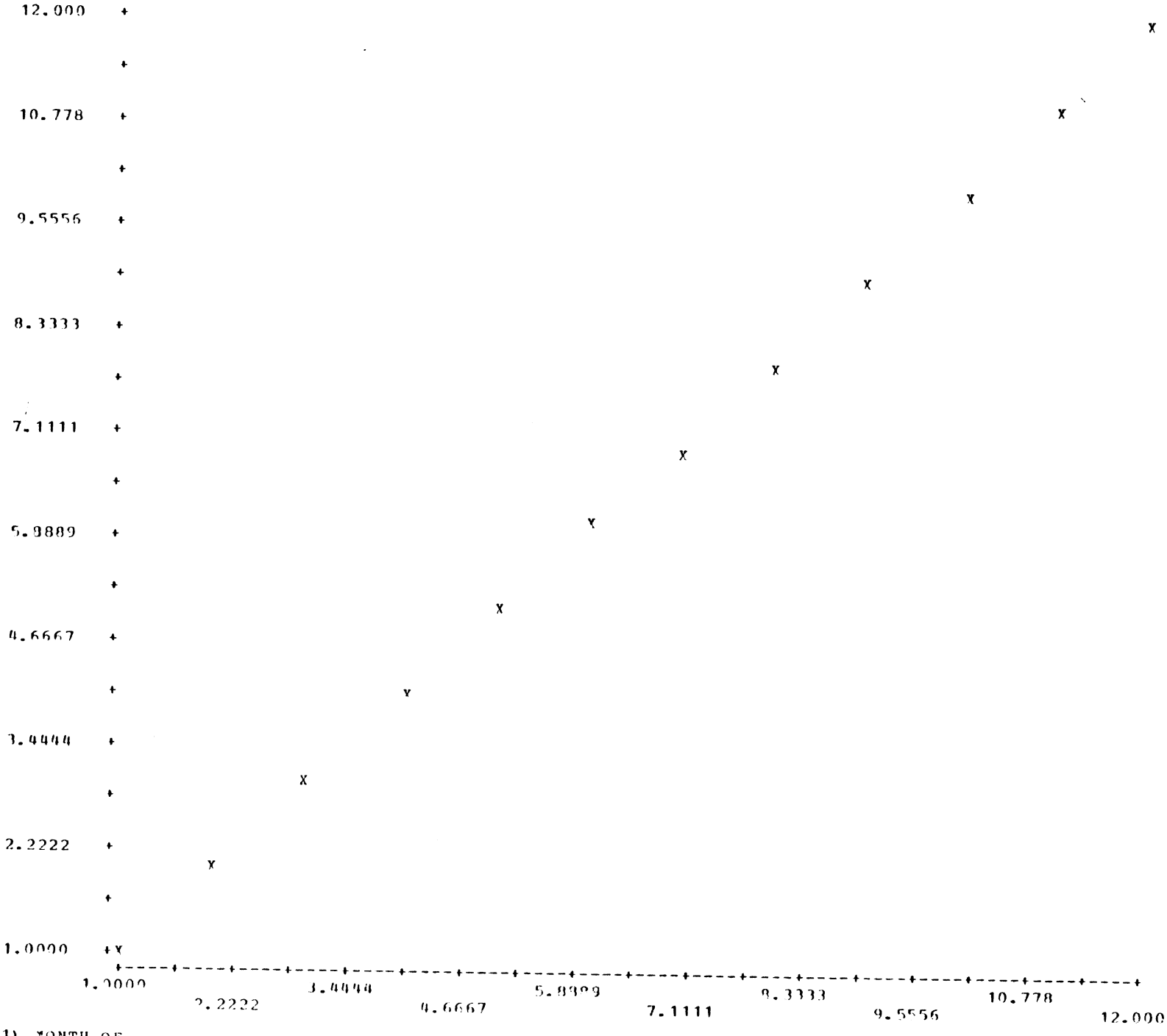


SCATTER PLOT STRAT=CASEST:ALLTEC
N= 530 OUT OF 537 505.MANUFACT VS. 308.PU MAKE, 1081.PU MAKE

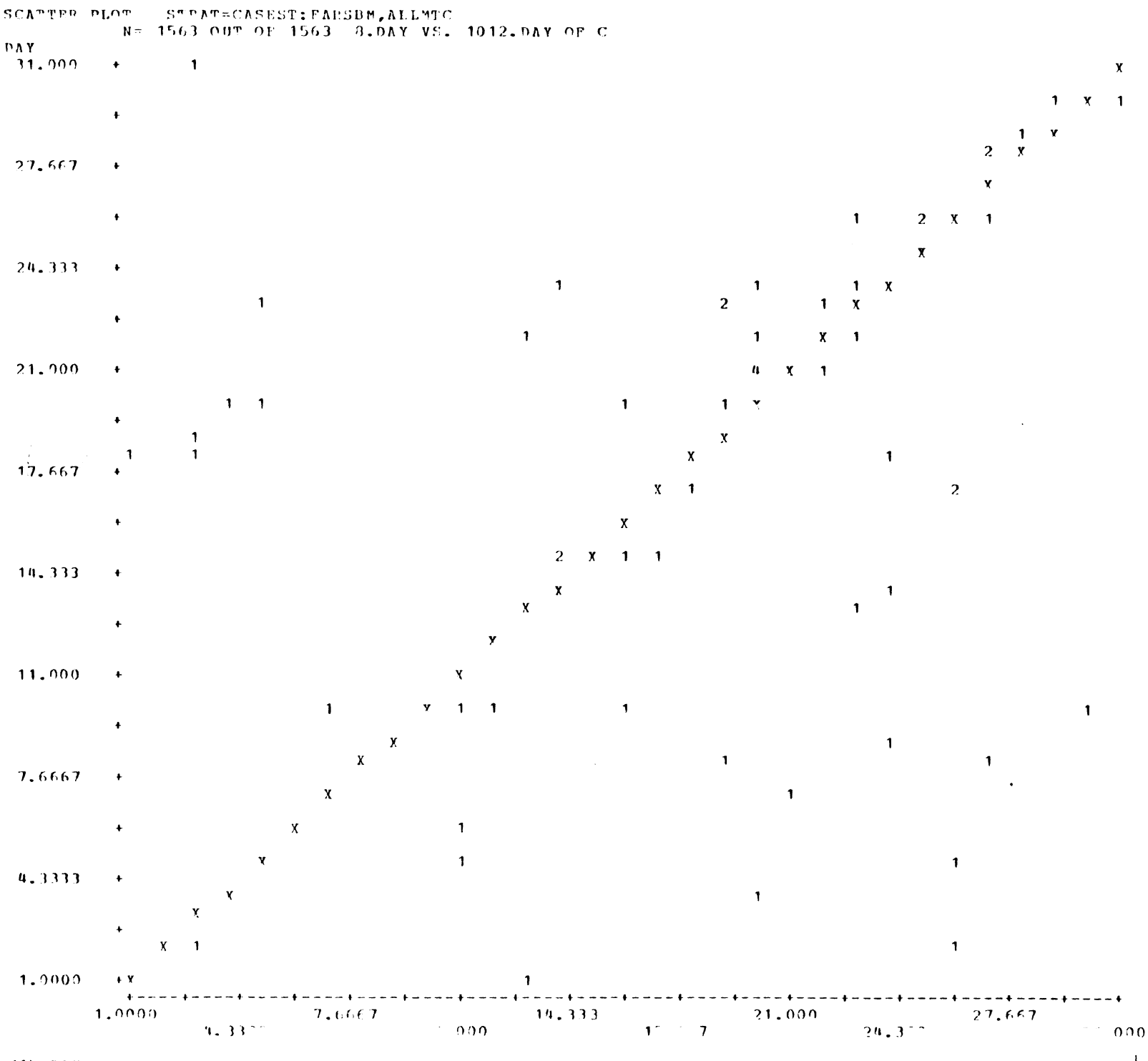


(1) PU MAKE (2) PU MAKE

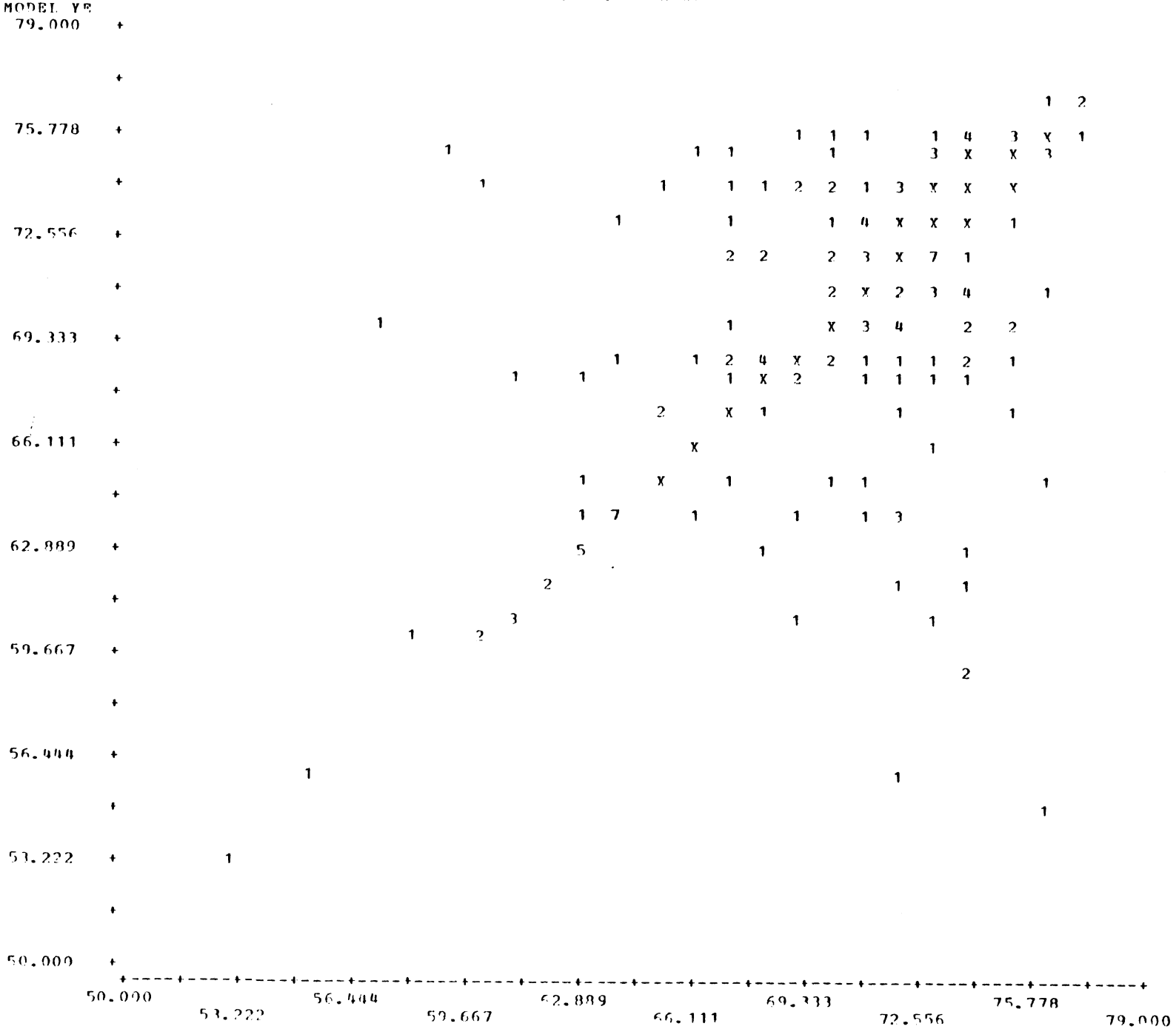
SCATTER PLOT STRAT=CASEST:FARSBM,ALLMTC
N= 1563 OUT OF 1563 7.MONTH VS. 1011.MONTH OF



(1) MONTH OF

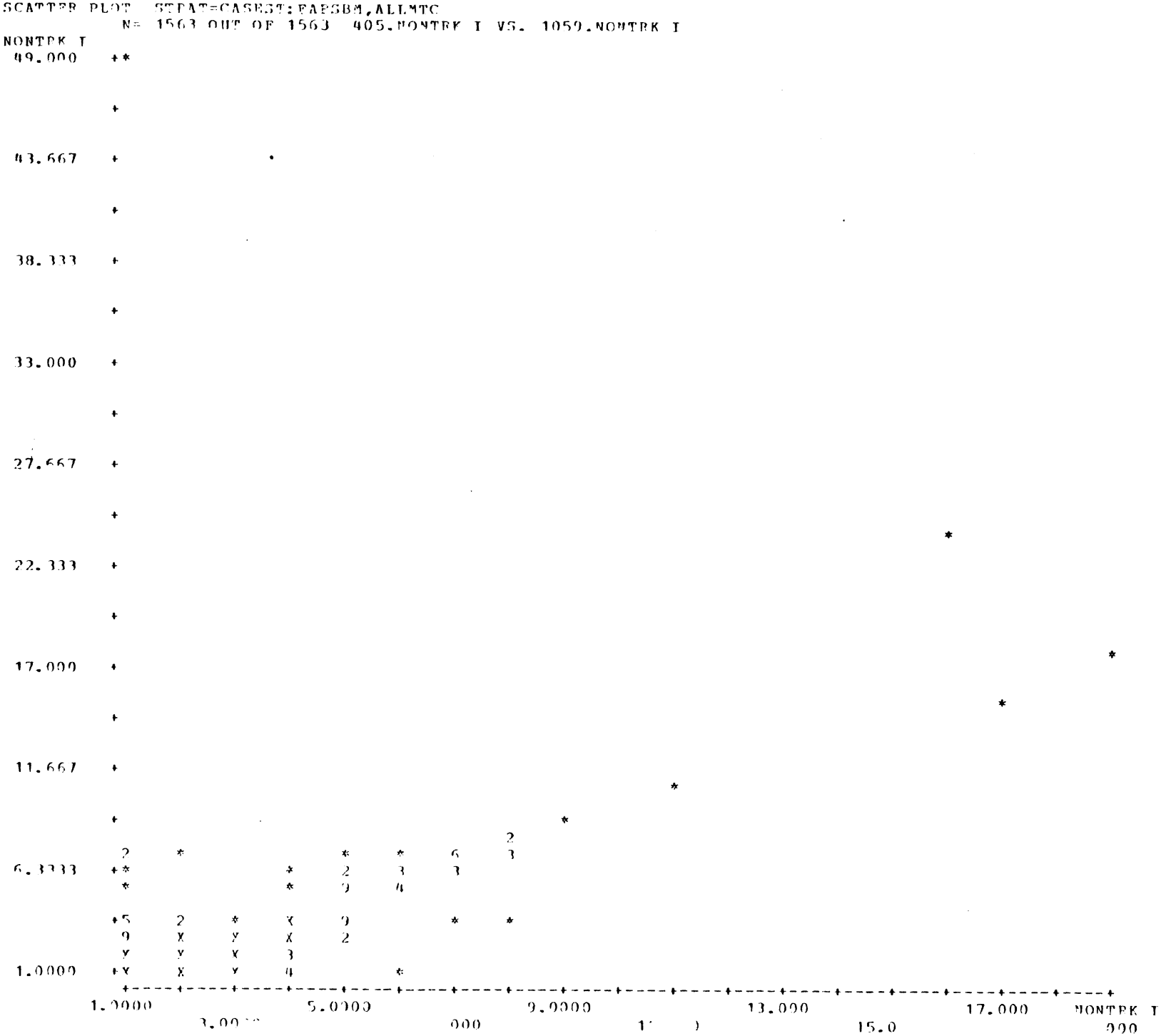

SCATTER PLOT STRAT=CASEST:FARSBM,ALLMTC
N= 1563 OUT OF 1563 8.DAY VS. 1012.DAY OF C
DAY
31.000
27.667
24.333
21.000
17.667
14.333
11.000
7.6667
4.3333
1.0000
1.0000
7.6667
14.333
21.000
27.667

SCATTER PLOT STRAT=CASESI:FARGBM,ALLMTC
N= 1545 OUT OF 1563 106.MODEL YR VS. 1030.POWER UN

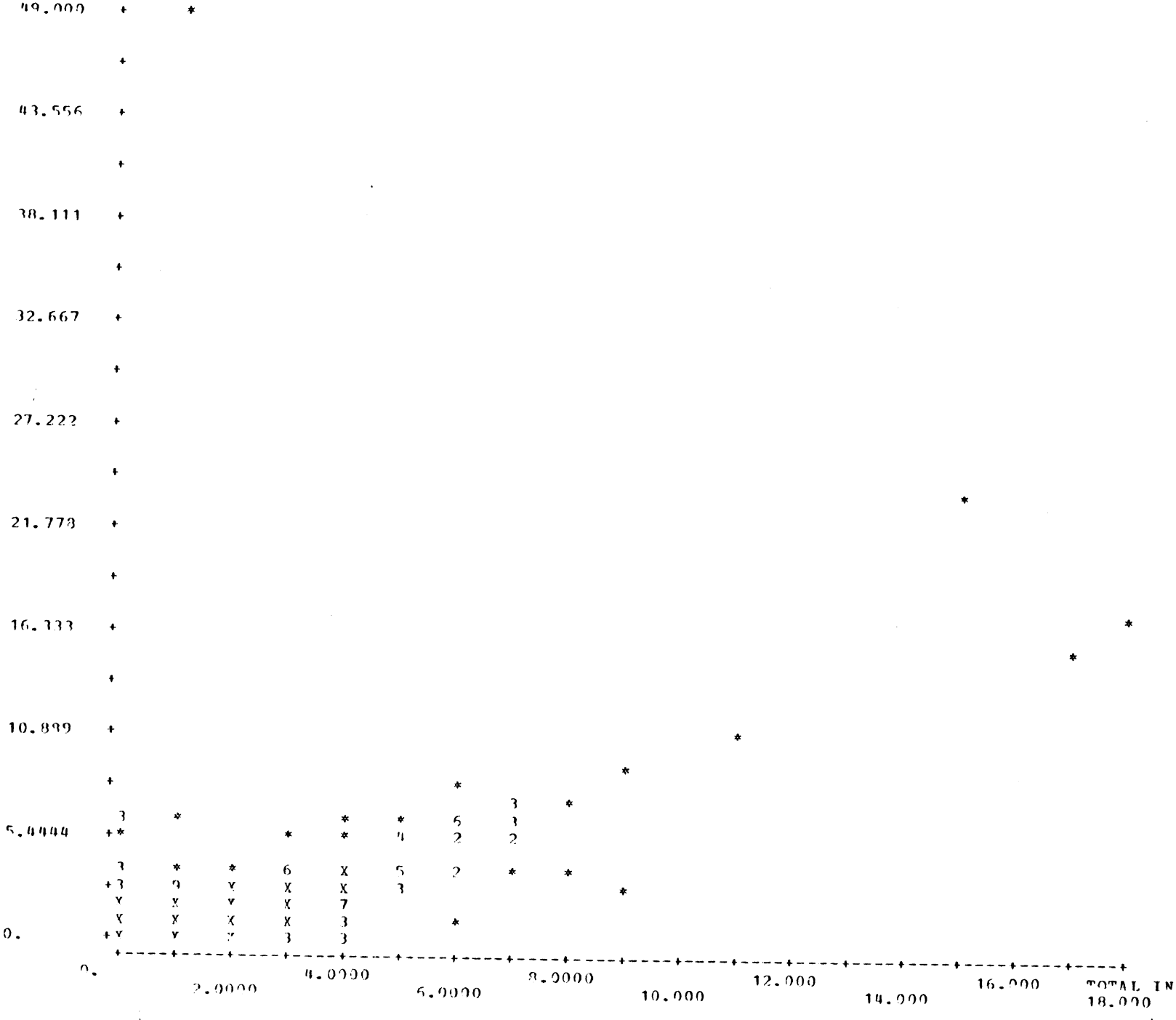


(1) POWER UN

SCATTER PLOT STRAT=CASEST:FAPSBM,ALLMTC
N= 1563 OUT OF 1563 405.NONTRK I VS. 1059.NONTRK I



SCATTER PLOT STRAT=CASEST:FAPSBM,ALIMTC
N= 1563 OUT OF 1563 50.TOTAL IN VS. 1063.TOTAL IN



1977 DATA

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1016. COLLISIO		302. CRSHTYP (1)	(2)	(3)
N=	2002			
TOTAL=	2002	124	1691	197
ROW%		6.2	84.0	9.8
COL%				
(1)	242	110	16	116
ROW%		45.5	6.6	47.9
COL%	12.1	88.7	1.0	58.9
(2)	1564	7	1536	21
ROW%		.4	98.2	1.3
COL%	78.1	5.6	91.4	10.7
(3)	195	6	129	60
ROW%		3.1	66.2	30.8
COL%	9.7	4.8	7.7	30.5
(9)	1	1	0	0
ROW%		100.0		
COL%	.0	.8		

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1075. RANOFFRD		302. RANOFFRD (1)	(2)
N=	2002		
TOTAL=	2002	300	1702
ROW%		15.0	85.0
COL%			
(1)	154	133	21
ROW%		86.4	13.6
COL%	7.7	44.3	1.2
(2)	1848	167	1691
ROW%		9.0	91.0
COL%	92.3	55.7	98.8

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1074. OTH OBJ		301. OTH OBJ MISS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)
N=	2001									
TOTAL=	2002	1	124	1523	170	133	23	19	3	6
ROW%			6.2	76.1	8.5	6.6	1.1	.9	.1	.3
COL%										
(1)	243	0	111	11	114	4	1	0	0	2
ROW%			45.7	4.5	46.9	1.6	.4			.8
COL%	12.1		89.5	.7	67.1	3.0	4.3			33.3
(2)	1422	0	5	1380	11	19	1	2	0	4
ROW%			.4	97.0	.8	1.3	.1	.1		.3
COL%	71.1		4.0	90.6	6.5	14.3	4.3	10.5		66.7
(3)	53	0	5	7	37	4	0	0	0	0
ROW%			9.4	13.2	69.8	7.5				
COL%	2.6		4.0	.5	21.8	3.0				
(4)	129	0	0	15	0	101	1	1	0	0
ROW%				12.5		85.8	.9	.8		
COL%	6.0			1.0		77.4	4.3	5.3		
(5)	19	1	0	0	0	0	19	0	0	0
ROW%							100.0			
COL%	.9						82.6			
(6)	20	0	0	4	0	0	0	16	0	0
ROW%				20.0				80.0		
COL%	1.0			.3				84.2		
(7)	3	0	0	0	0	0	0	0	3	0
ROW%									100.0	
COL%	.1								100.0	
(9)	121	0	3	106	8	3	1	0	0	0
ROW%			2.5	87.6	6.6	2.5	.9			
COL%	6.0		2.4	7.0	4.7	2.3	4.3			

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1076. ROLLOVER		303. ROLLOVER MISS	(1)	(2)
N=	1611			
TOTAL=	2002	386	109	1502
ROW%			6.8	93.2
COL%				
MISS	1	4	0	1
ROW%				
COL%				
(1)	54	22	49	5
ROW%			90.7	9.3
COL%	3.4		45.0	.3
(2)	1557	364	60	1497
ROW%			3.9	96.1
COL%	96.6		55.0	99.7

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1077. FIRE		304. FIRE (1)	(2)
N=	2002		
TOTAL=	2002	2	2000
ROW%		.1	99.9
COL%			
(1)	1	0	1
ROW%			100.0
COL%	.0		.0
(2)	2001	2	1999
ROW%		.1	99.9
COL%	100.0	100.0	99.9

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1078. MISC		305. MISC. (1)	(2)
N=	2002		
TOTAL=	2002	6	1996
ROW%		.3	99.7
COL%			
(1)	9	1	8
ROW%		11.1	88.9
COL%	.4	16.7	.4
(2)	1993	5	1988
ROW%		.3	99.7
COL%	99.6	83.3	99.6

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1087. DR SICK		317. DR SICK (1)	(2)
N=	2002		
TOTAL=	2002	2	2000
ROW%		.1	99.9
COL%			
(1)	3	0	3
ROW%			100.0
COL%	.1		.1
(2)	1999	2	1997
ROW%		.1	99.9
COL%	99.9	100.0	99.8

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1079. DRINK		306. DRINK MISS	(1)	(2)
N=	1885			
TOTAL=	2002	157	88	1757
ROW%			4.8	95.2
COL%				
(1)	16	0	11	5
ROW%			68.8	31.3
COL%	.9		12.5	.3
(2)	1929	157	77	1752
ROW%			4.2	95.8
COL%	99		87.	99.

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1080. DOZED		307. DOZED (1)	(2)
N=	2002		
TOTAL=	2002	65	1937
ROW%		3.2	96.8
COL%			
(1)	41	18	23
ROW%		43.9	56.1
COL%	2.0	27.7	1.2
(2)	1961	47	1914
ROW%		2.4	97.6
COL%	98.0	72.3	98.8

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1064. MECHANIC		309. DEFECT MISS	(1)	(2)
N=	1897			
TOTAL=	2002	105	107	1790
ROW%			5.6	94.4
COL%				
(1)	67	0	39	28
ROW%			58.2	41.8
COL%	3.5		36.4	1.6
(2)	1827	104	67	1760
ROW%			3.7	96.3
COL%	96.3		62.6	98.3
(9)	3	1	1	2
ROW%			33.3	66.7
COL%	.2		.9	.1

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1002. TYP DEF		310. TYP DEF								
TYP DEF		MISS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
N=	40										
TOTAL=	2002	25	26	5	0	0	2	2	1	3	1
ROW%			65.0	12.5			5.0	5.0	2.5	7.5	2.5
COL%											
MISS	172	1765	23	33	3	1	2	2	0	4	104
ROW%											
COL%											
(1)	25	3	25	0	0	0	0	0	0	0	0
ROW%			100.0								
COL%	62.5		96.2								
(2)	4	5	0	4	0	0	0	0	0	0	0
ROW%				100.0							
COL%	10.0			80.0							
(3)	0	3	0	0	0	0	0	0	0	0	0
ROW%											
COL%											
(4)	1	0	0	0	0	0	0	0	1	0	0
ROW%									100.0		
COL%	2.5								100.0		
(5)	3	8	0	0	0	0	1	2	0	0	0
ROW%							33.3	66.7			
COL%	7.5						50.0	100.0			
(7)	2	3	1	0	0	0	1	0	0	0	0
ROW%			50.0				50.0				
COL%	5.0		3.8				50.0				
(8)	3	1	0	0	0	0	0	0	0	3	0
ROW%										100.0	
COL%	7.5									100.0	
(9)	2	2	0	1	0	0	0	0	0	0	1
ROW%				50.0							50.0
COL%	5.0			20.0							100.0

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1084. LIGHT		313. LIGHT MISS	(1)	(2)	(3)	(4)
N=	1984					
TOTAL=	2002	1	1022	141	81	740
ROW%			51.5	7.1	4.1	37.3
COL%						
MISS	17	0	5	6	2	4
ROW%						
COL%						
(1)	967	0	901	7	26	33
ROW%			93.2	.7	2.7	3.4
COL%	48.7		88.2	5.0	32.1	4.5
(2)	60	0	7	24	2	27
ROW%			11.7	40.0	3.3	45.0
COL%	3.0		.7	17.0	2.5	3.6
(3)	153	1	53	3	39	58
ROW%			34.6	2.0	25.5	37.9
COL%	7.7		5.2	2.1	48.1	7.8
(4)	804	0	61	107	14	622
ROW%			7.6	13.3	1.7	77.4
COL%	40.5		6.0	75.9	17.3	84.1

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1067. DRIVER S		311. REST USE (1)	(2)	(9)
N=	2002			
TOTAL=	2002	209	1279	514
ROW%		10.4	63.9	25.7
COL%				
(1)	1081	184	607	290
ROW%		17.0	56.2	26.8
COL%	54.0	88.0	47.5	56.4
(2)	728	19	540	169
ROW%		2.6	74.2	23.2
COL%	36.4	9.1	42.2	32.9
(5)	1	0	0	1
ROW%				100.0
COL%	.0			.2
(9)	192	6	132	54
ROW%		3.1	68.8	28.1
COL%	9.6	2.9	10.3	10.5

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1070. ROAD SUR		310.RD SURF (1)	(2)	(3)	(4)	(5)	(6)
N=	2002						
TOTAL=	2002	1565	316	44	67	8	2
ROW%		78.2	15.8	2.2	3.3	.4	.1
COL%							
(1)	1570	1483	67	9	5	4	2
ROW%		94.5	4.3	.6	.3	.3	.1
COL%	78.4	94.8	21.2	20.5	7.5	50.0	100.0
(2)	303	62	232	2	4	3	0
ROW%		20.5	76.6	.7	1.3	1.0	
COL%	15.1	4.0	73.4	4.5	6.0	37.5	
(3)	38	5	6	17	10	0	0
ROW%		13.2	15.8	44.7	26.3		
COL%	1.9	.3	1.9	38.6	14.9		
(4)	57	4	4	7	41	1	0
ROW%		7.0	7.0	12.3	71.9	1.8	
COL%	2.8	.3	1.3	15.9	61.2	12.5	
(5)	8	5	2	1	0	0	0
ROW%		62.5	25.0	12.5			
COL%	.4	.3	.6	2.3			
(9)	26	6	5	8	7	0	0
ROW%		23.1	19.2	30.8	26.9		
COL%	1.3	.4	1.6	18.2	10.4		

TYPKAY CROSS-TABULATION STRAT=CASEST:PARSBM,ALLMTC

1083. WEATHER		312. WEATHER (1)	(2)	(3)	(4)	(5)	(6)	(9)
N=	2002							
TOTAL=	2002	200	1454	72	212	4	57	3
ROW%		10.0	72.6	3.6	10.6	.2	2.8	.1
COL%								
(1)	215	139	47	1	22	2	4	0
ROW%		64.7	21.9	.5	10.2	.9	1.9	
COL%	10.7	69.5	3.2	1.4	10.4	50.0	7.0	
(2)	1463	29	1284	9	125	0	13	3
ROW%		2.0	87.8	.6	8.5		.9	.2
COL%	73.1	14.5	88.3	12.5	59.0		22.8	100.0
(3)	71	3	8	50	5	2	3	0
ROW%		4.2	11.3	70.4	7.0	2.8	4.2	
COL%	3.5	1.5	.6	69.4	2.4	50.0	5.3	
(4)	161	14	91	7	46	0	3	0
ROW%		8.7	56.5	4.3	28.6		1.9	
COL%	8.0	7.0	6.3	9.7	21.7		5.3	
(5)	5	1	2	1	1	0	0	0
ROW%		20.0	40.0	20.0	20.0			
COL%	.2	.5	.1	1.4	.5			
(6)	59	6	12	0	8	0	33	0
ROW%		10.2	20.3		13.6		55.9	
COL%	2.9	3.0	.8		3.8		57.9	
(9)	28	8	10	4	5	0	1	0
ROW%		28.6	35.7	14.3	17.9		3.6	
COL%	1.4	4.0	.7	5.6	2.4		1.8	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1085. RAMP		315.RAMP (1)	(2)
N=	2002		
TOTAL=	2002	62	1940
ROW%		3.1	96.9
COL%			
(1)	74	24	50
ROW%		32.4	67.6
COL%	3.7	38.7	2.6
(2)	1926	38	1888
ROW%		2.0	98.0
COL%	96.2	61.3	97.3
(9)	2	0	2
ROW%			100.0
COL%	.1		.1

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1096. RD DIV		316.RD DIV (1)	(2)	(9)
N=	2002			
TOTAL=	2002	820	1180	2
ROW%		41.0	58.9	.1
COL%				
(1)	924	740	183	1
ROW%		80.1	19.8	.1
COL%	46.2	90.2	15.5	50.0
(2)	1056	74	981	1
ROW%		7.0	92.9	.1
COL%	52.7	9.0	83.1	50.0
(3)	1	0	1	0
ROW%			100.0	
COL%	.0		.1	
(4)	1	0	1	0
ROW%			100.0	
COL%	.0		.1	
(9)	20	6	14	0
ROW%		30.0	70.0	
COL%	1.0	.7	1.2	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1050. DRIVER K		409. DRKILLED (1)	(2)	(9)
N=	2002			
TOTAL=	2002	442	1539	21
ROW%		22.1	76.9	1.0
COL%				
(1)	431	416	14	1
ROW%		96.5	3.2	.2
COL%	21.5	94.1	.9	4.8
(2)	1571	26	1525	20
ROW%		1.7	97.1	1.3
COL%	78.5	5.9	99.1	95.2

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1060. TOT KILL		402. TOT KILL NONE	ONE	TWO	THREE
N=	2002				
TOTAL=	2002	1524	439	37	2
ROW%		76.1	21.9	1.8	.1
COL%					
NONE	1521	1509	13	0	0
ROW%		99.1	.9		
COL%	76.0	99.0	3.0		
ONE	431	15	409	7	0
ROW%		3.5	94.9	1.6	
COL%	21.5	1.0	93.2	18.9	
TWO	45	1	15	29	0
ROW%		2.2	33.3	64.4	
COL%	2.2	.1	3.4	78.4	
THREE	3	0	0	1	2
ROW%				33.3	66.7
COL%	.1			2.7	100.0
SIX	2	0	2	0	0
ROW%			100.0		
COL%	.1		.5		

TWOWAY CROSS-TABULATION STRAT=CASEST:PARSBM,ALLMTC

1051. DRIVER I		401. DR INJ (1)	(2)	(9)
N=	2002			
TOTAL=	2002	1539	442	21
ROW%		76.9	22.1	1.0
COL%				
(1)	504	488	15	1
ROW%		96.8	3.0	.2
COL%	25.2	31.7	3.4	4.8
(2)	1498	1051	427	20
ROW%		70.2	28.5	1.3
COL%	74.8	68.3	96.6	95.2

TWOWAY CROSS-TABULATION STRAT=CASEST:PARSBM,ALLMTC

1061. TOT INJ		403. TOT INJ NONE	ONE	TWO	THREE
N=	2002				
TOTAL=	2002	1353	595	53	1
ROW%		67.6	29.7	2.6	.0
COL%					
NONE	1437	1222	199	16	0
ROW%		85.0	13.8	1.1	
COL%	71.8	90.3	33.4	30.2	
ONE	489	119	363	7	0
ROW%		24.3	74.2	1.4	
COL%	24.4	8.8	61.0	13.2	
TWO	67	10	30	27	0
ROW%		14.9	44.8	40.3	
COL%	3.3	.7	5.0	50.9	
THREE	5	0	2	2	1
ROW%			40.0	40.0	20.0
COL%	.2		.3	3.8	100.0
FOUR	2	1	0	1	0
ROW%		50.0		50.0	
COL%	.1	.1		1.9	
SIX	1	1	0	0	0
ROW%		100.0			
COL%	.0	.1			
SEVEN	1	0	1	0	0
ROW%			100.0		
COL%					

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1058. NONTRK K		408. NONTRK K NONE	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT
N=	2002									
TOTAL=	2002	454	1316	169	45	11	3	2	1	1
ROW%		22.7	65.7	8.4	2.2	.5	.1	.1	.0	.0
COL%										
NONE	398	389	9	0	0	0	0	0	0	0
ROW%		97.7	2.3							
COL%	19.9	85.7	.7							
ONE	1366	61	1290	12	3	0	0	0	0	0
ROW%		4.5	94.4	.9	.2					
COL%	68.2	13.4	98.0	7.1	6.7					
TWO	175	3	14	156	2	0	0	0	0	0
ROW%		1.7	8.0	89.1	1.1					
COL%	8.7	.7	1.1	92.3	4.4					
THREE	42	0	0	1	40	1	0	0	0	0
ROW%				2.4	95.2	2.4				
COL%	2.1			.6	88.9	9.1				
FOUR	10	0	1	0	0	9	0	0	0	0
ROW%			10.0			90.0				
COL%	.5		.1			81.8				
FIVE	3	0	0	0	0	0	3	0	0	0
ROW%							100.0			
COL%	.1						100.0			
SIX	3	0	0	0	0	1	0	2	0	0
ROW%						33.3		66.7		
COL%	.1					9.1		100.0		
SEVEN	1	0	0	0	0	0	0	0	1	0
ROW%									100.0	
COL%	.0								100.0	
EIGHT	1	0	0	0	0	0	0	0	0	1
ROW%										100.0
COL%	.0									100.0
(27)	1	0	1	0	0	0	0	0	0	0
ROW%			100.0							
COL%	.0		.1							
(30)	1	0	1	0	0	0	0	0	0	0
ROW%			100.0							
COL%	.0		.1							
(99)	1	1	0	0	0	0	0	0	0	0
ROW%		100.0								
COL%	.0	.2								

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1062. TOT KILL		46. TOT KILL (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
N=	2092								
TOTAL=	2092	1718	214	47	15	4	2	1	1
ROW%		85.9	10.7	2.3	.7	.2	.1	.0	.0
COL%									
(1)	1658	1638	18	2	0	0	0	0	0
ROW%		98.8	1.1	.1					
COL%	82.8	95.3	8.4	4.3					
(2)	263	69	190	3	1	0	0	0	0
ROW%		26.2	72.2	1.1	.4				
COL%	13.1	4.0	88.8	6.4	6.7				
(3)	51	6	3	41	1	0	0	0	0
ROW%		11.8	5.9	80.4	2.0				
COL%	2.5	.3	1.4	87.2	6.7				
(4)	15	1	2	0	12	0	0	0	0
ROW%		6.7	13.3		80.0				
COL%	.7	.1	.9		80.0				
(5)	6	0	1	1	0	4	0	0	0
ROW%			16.7	16.7		66.7			
COL%	.3		.5	2.1		100.0			
(6)	5	2	0	0	1	0	2	0	0
ROW%		40.0			20.0		40.0		
COL%	.2	.1			6.7		100.0		
(7)	1	0	0	0	0	0	0	1	0
ROW%								100.0	
COL%	.0							100.0	
(8)	1	0	0	0	0	0	0	0	1
ROW%									100.0
COL%	.0								100.0
(27)	1	1	0	0	0	0	0	0	0
ROW%		100.0							
COL%	.0	.1							
(30)	1	1	0	0	0	0	0	0	0
ROW%		100.0							
COL%	.0	.1							

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1100. ACCTYPE		406.ACCTYPE MISS	SING	MULT	UNK
N=	2001				
TOTAL=	2002	1	449	1546	6
ROW%			22.4	77.3	.3
COL%					
SING	439	0	398	39	2
ROW%			90.7	8.9	.5
COL%	21.9		88.6	2.5	33.3
MULT	1441	1	37	1400	4
ROW%			2.6	97.2	.3
COL%	72.0		8.2	90.6	66.7
UNK	121	0	14	107	0
ROW%			11.6	88.4	
COL%	6.0		3.1	6.9	

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

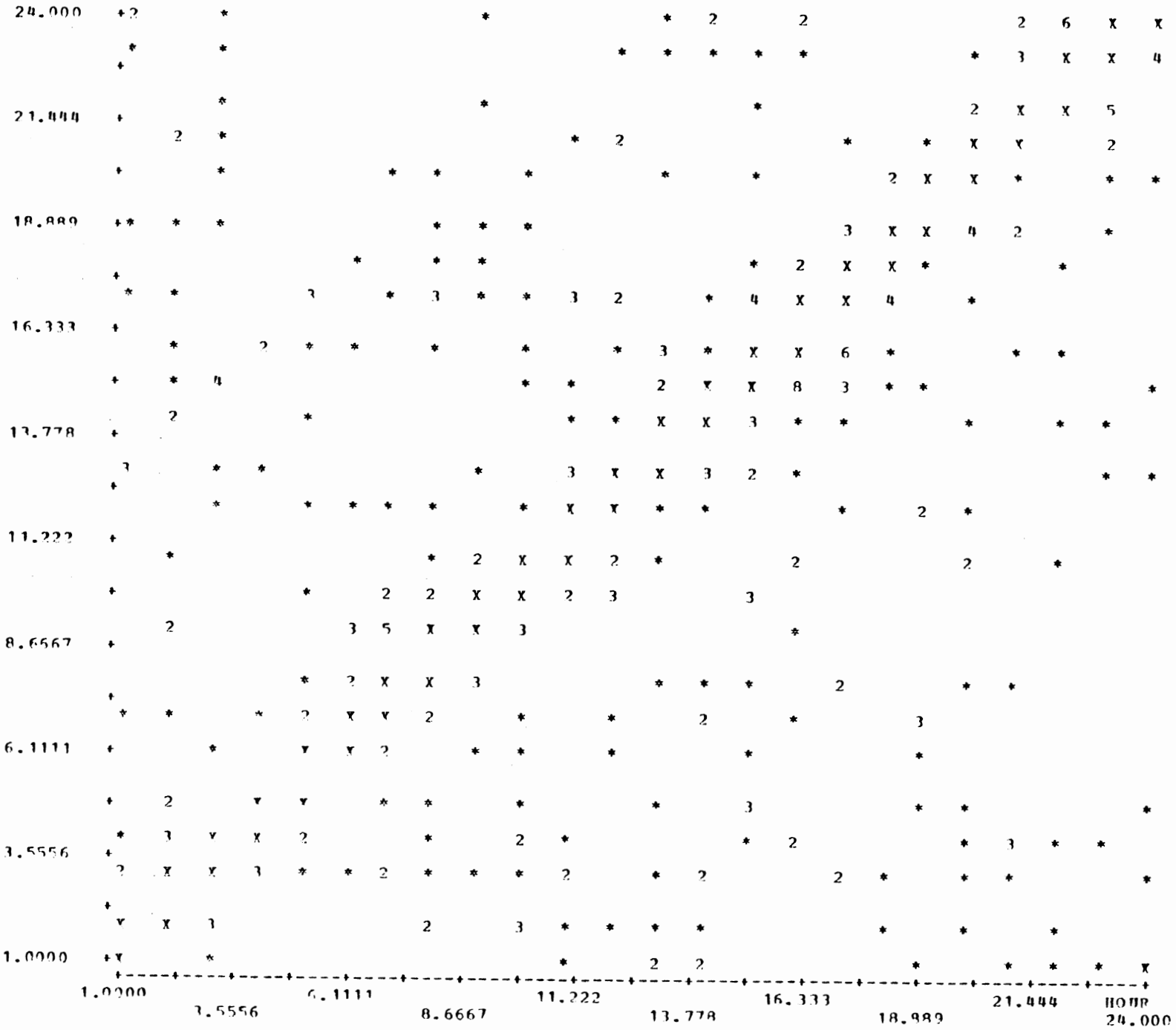
1003. TYPE OF		507.CARRIERT MISS	PRIV	AUTH	OTH	UNK
N=	631					
TOTAL=	2002	1371	202	391	32	6
ROW%			32.0	62.0	5.1	1.0
COL%						
(1)	186	315	150	31	4	1
ROW%			80.6	16.7	2.2	.5
COL%	29.5		74.3	7.9	12.5	16.7
(2)	427	1019	49	353	20	5
ROW%			11.5	82.7	4.7	1.2
COL%	67.7		24.3	90.3	62.5	83.3
(3)	18	37	3	7	8	0
ROW%			16.7	38.9	44.4	
COL%	2.9		1.5	1.8	25.0	

TWOWAY CROSS-TABULATION STRAT=CARYTYP:NOMTCH

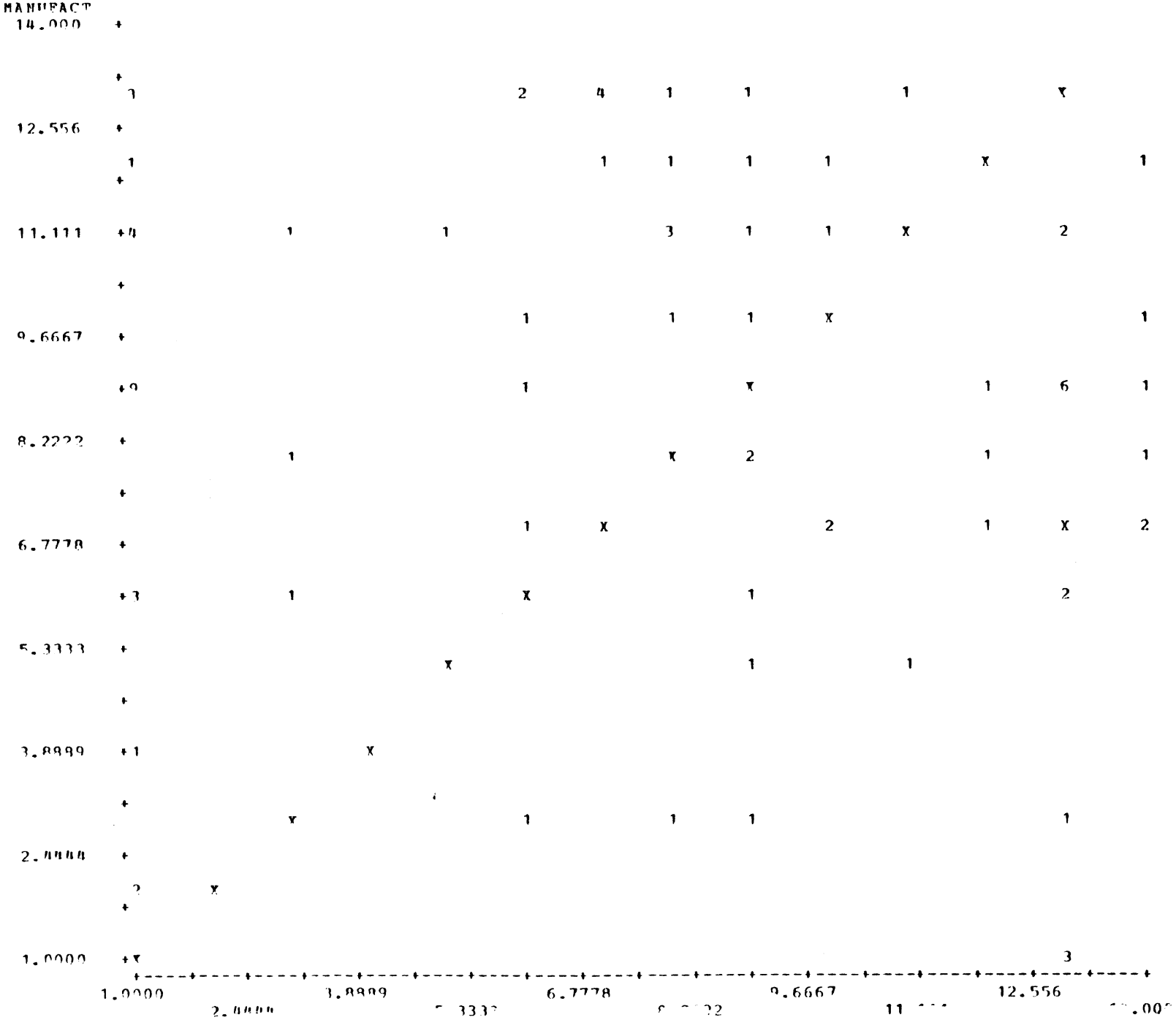
1003. TYPE OF		507.CARRIRPT MISS	PRIV	AUTH	OTH	UNK
N=	120					
TOTAL=	4709	1636	52	38	24	6
ROW%			43.3	31.7	20.0	5.0
COL%						
MISS	585	2407	362	143	33	7
ROW%						
COL%						
(1)	36	388	0	31	4	1
ROW%				86.1	11.1	2.8
COL%	30.0			81.6	16.7	16.7
(2)	74	1208	49	0	20	5
ROW%			66.2		27.0	6.8
COL%	61.7		94.2		83.3	83.3
(3)	10	40	3	7	0	0
ROW%			30.0	70.0		
COL%	8.3		5.8	18.4		

TWOWAY CROSS-TABULATION STRAT=CASEST:FARSBM,ALLMTC

1060. TOT KILL		155.TOT KILL NONE	ONE	TWO	THREE
N=	2002				
TOTAL=	2002	1524	439	37	2
ROW%		76.1	21.9	1.8	.1
COL%					
NONE	1521	1508	13	0	0
ROW%		99.1	.9		
COL%	76.0	99.0	3.0		
ONE	431	15	409	7	0
ROW%		3.5	94.9	1.6	
COL%	21.5	1.0	93.2	18.9	
TWO	45	1	15	29	0
ROW%		2.2	33.3	64.4	
COL%	2.2	.1	3.4	78.4	
THREE	3	0	0	1	2
ROW%				33.3	66.7
COL%	.1			2.7	100.0
SIX	2	0	2	0	0
ROW%			100.0		
COL%	.1		.5		

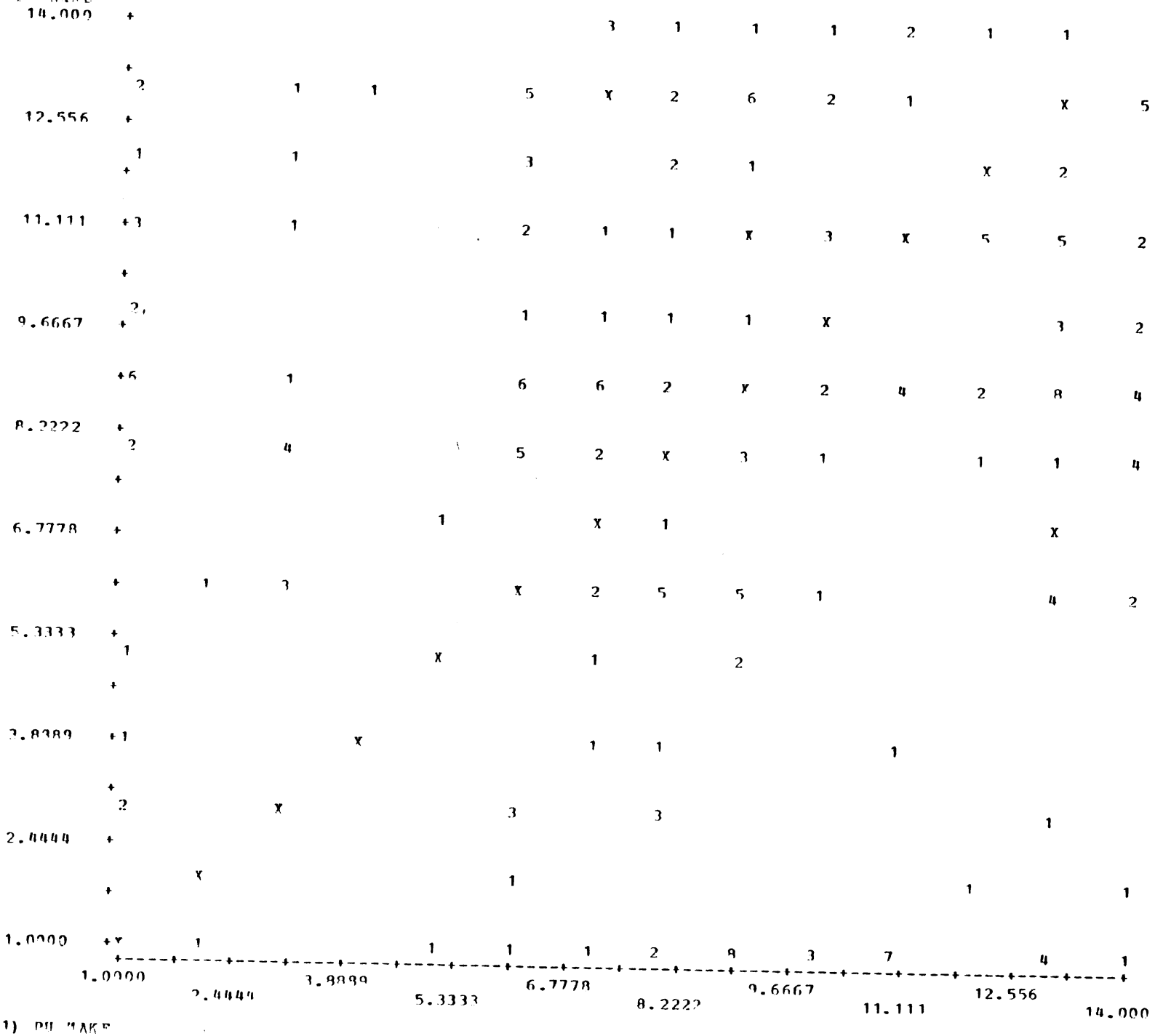

SCATTER PLOT STRAT=CASEST:PARSBM,ALLMTC
N= 1997 OUT OF 2002 1014.HOUR VS. 10.HOUR
HOUR
24.000
21.444
18.889
16.333
13.778
11.222
8.6667
6.1111
3.5556
1.0000
1.0000
3.5556
6.1111
8.6667
11.222
13.778
16.333
18.889
21.444
HOUR
24.000

SCATTER PLOT STRAT=CASEST:FARSIN,ALLMTC
N= 1464 OUT OF 1491 505.MANUFACT VS. 309.PU MAKE



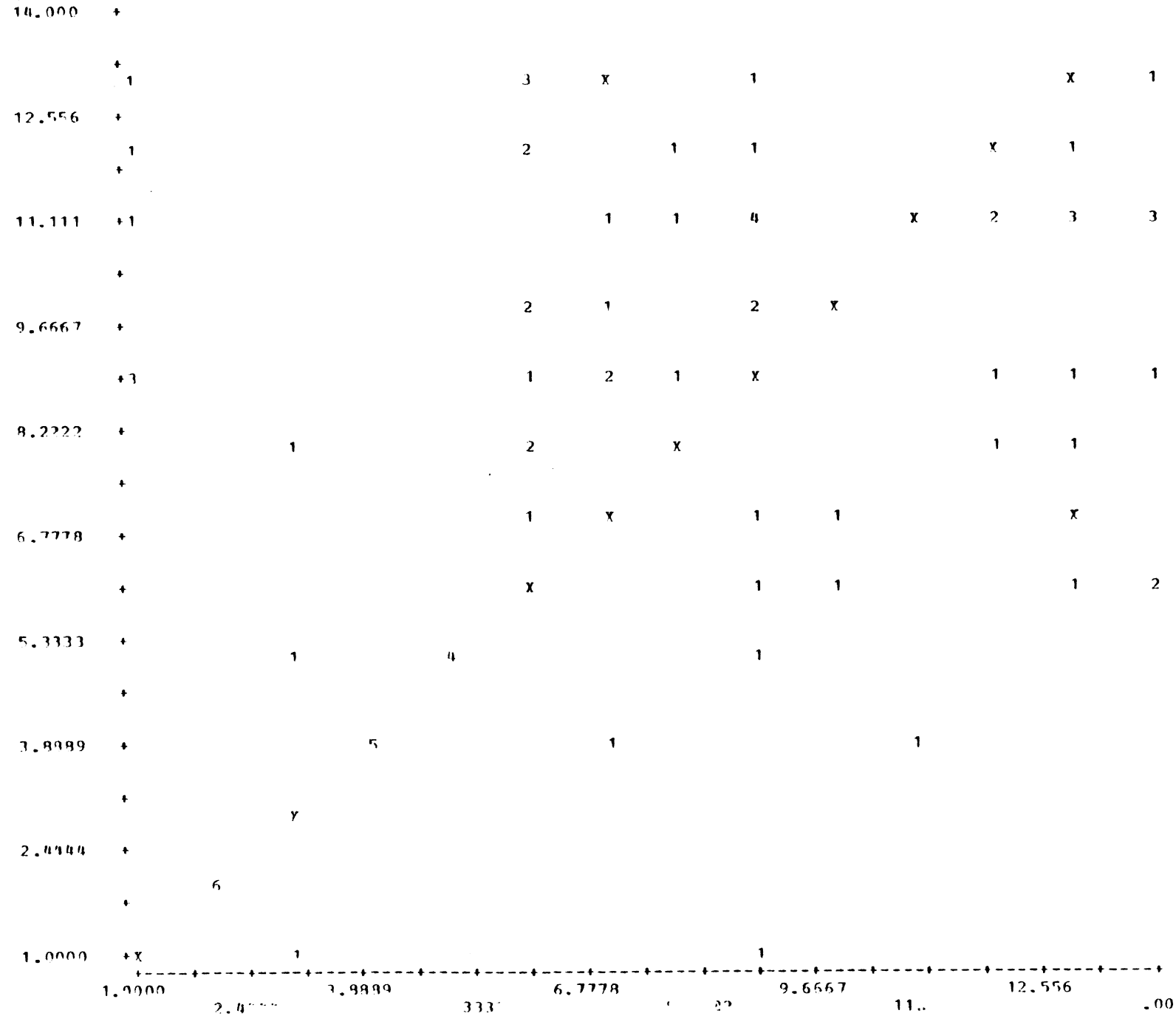
SCATTER PLOT

N= 2002 OUT OF 2002 308.PU MAKE VS. 1091.PU MAKE

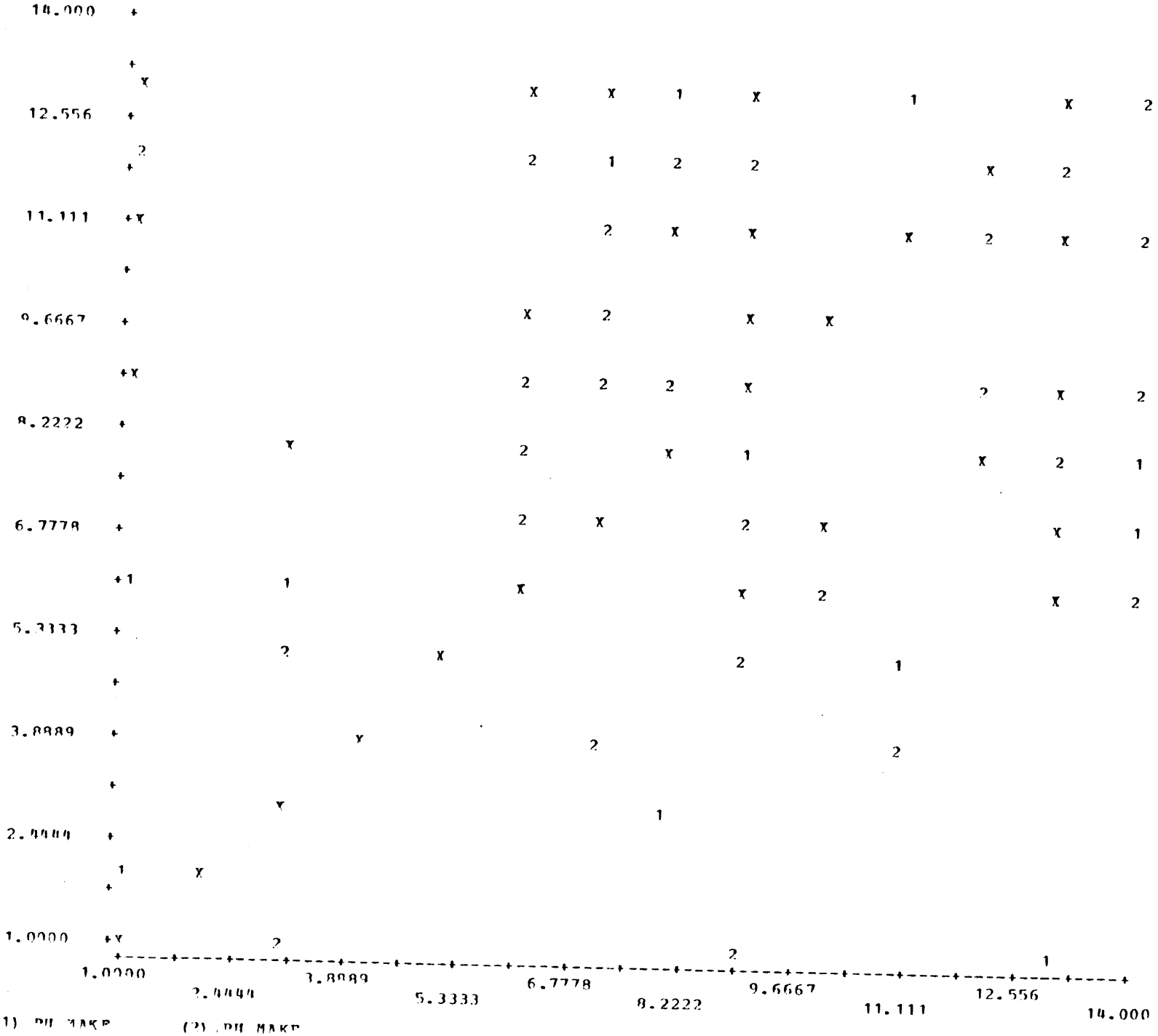


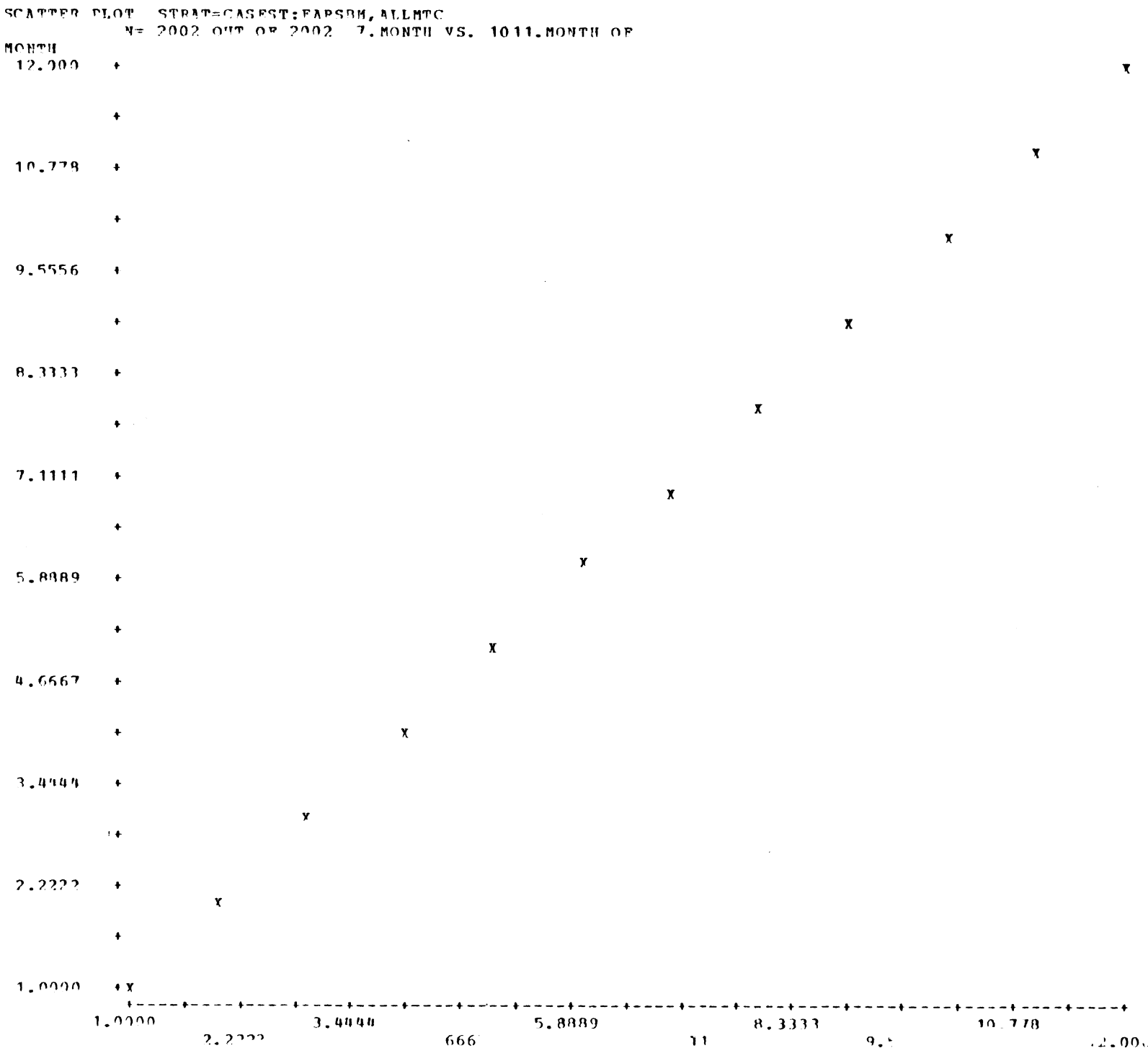
(1) PU MAKE

SCATTER PLOT STRAT=CASEST;ALLMTC
N= 735 OUT OF 745 505.MANUFACT VS. 1091.PU MAKE

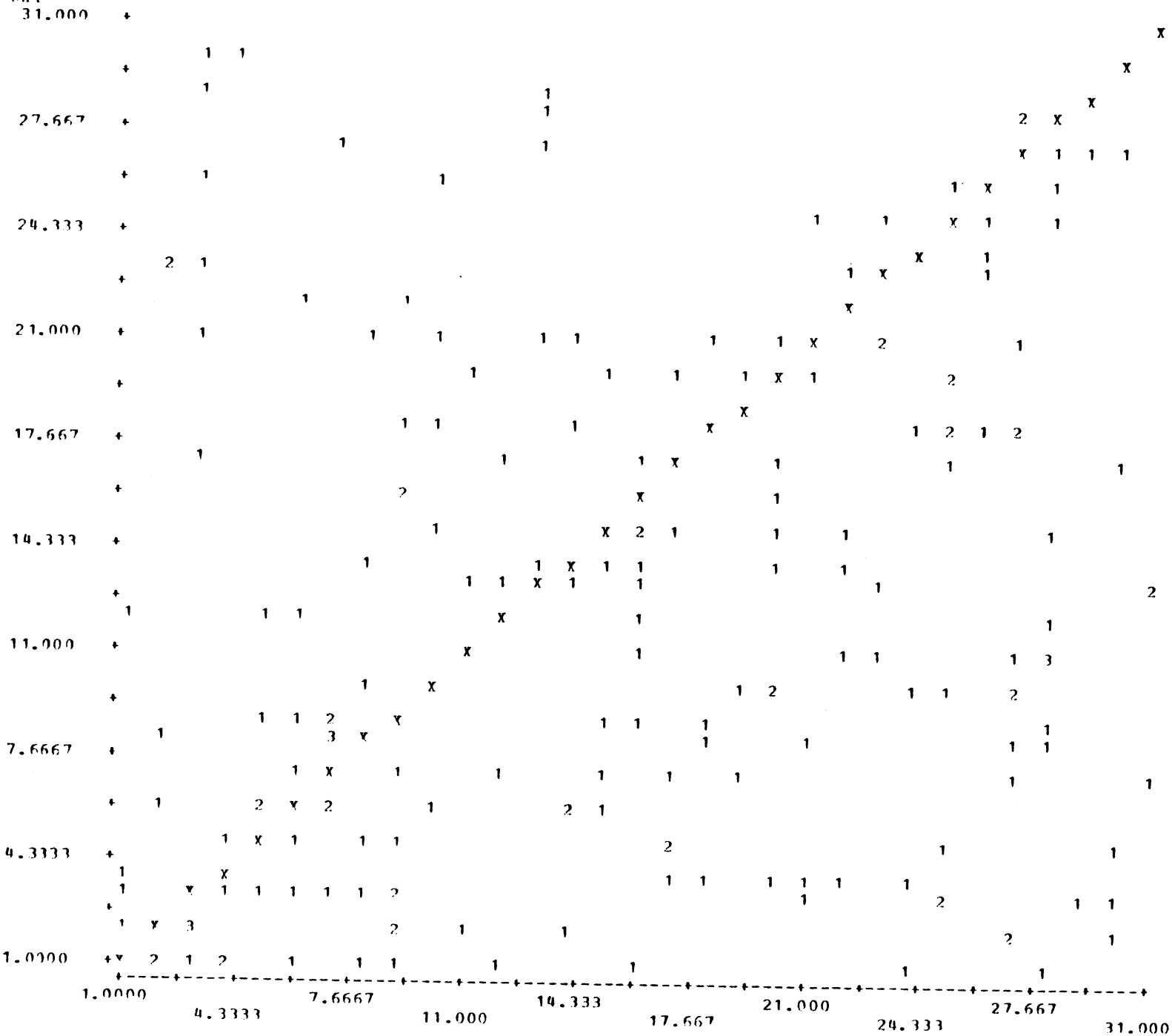


SCATTER PLOT STRAT=CASEST:PARSBM,ALLMTC
N= 735 OUT OF 2002 505.MANUFACT VS. 308.PU MAKE, 1091.PU MAKE



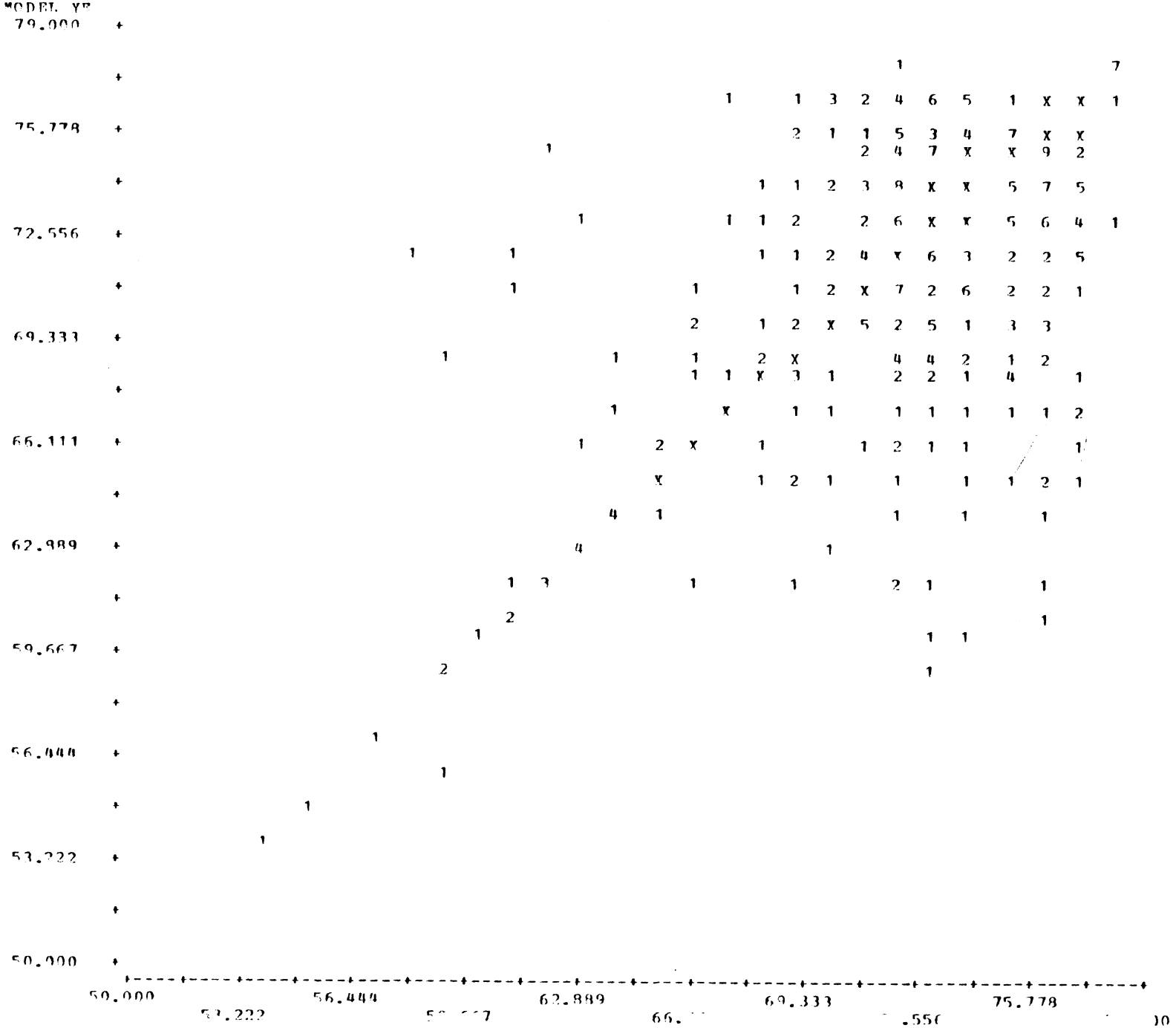

SCATTER PLOT STRAT=CASEST:FARSBM,ALLMTC
N= 2002 OUT OF 2002 7.MONTH VS. 1011.MONTH OF
MONTH
12.000
10.778
9.5556
8.3333
7.1111
5.8889
4.6667
3.4444
2.2222
1.0000
1.0000
2.2222
3.4444
5.8889
8.3333
10.778
666
11
9.
2.00

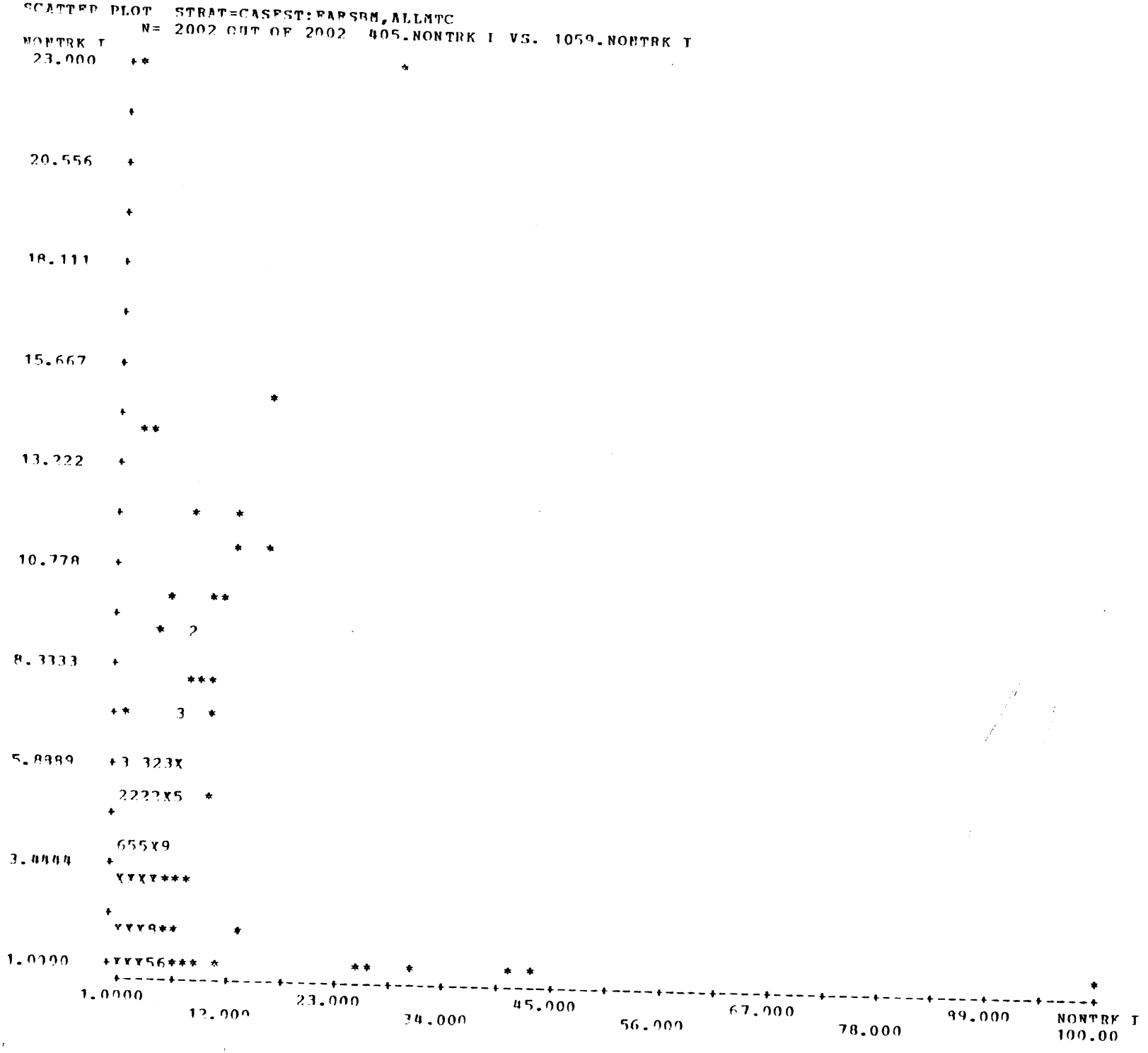
SCATTER PLOT STRAT=CASEST:FARSBM,ALLMTC
N= 2002 OUT OF 2002 8.DAY VS. 1012.DAY OF C



(1) DAY OF C

SCATTER PLOT STRAT=CASEST:FARSDM,ALLMTC
N= 1960 OUT OF 2002 106.MODEL YE VS. 1030.POWER UN




SCATTER PLOT STRAT=CASEST:PARSBM,ALLMTC
N= 2002 OUT OF 2002 405.NONTRK I VS. 1059.NONTRK T
NONTRK T
23.000
20.556
18.111
15.667
13.222
10.778
8.3333
5.8889
3.4444
1.0000
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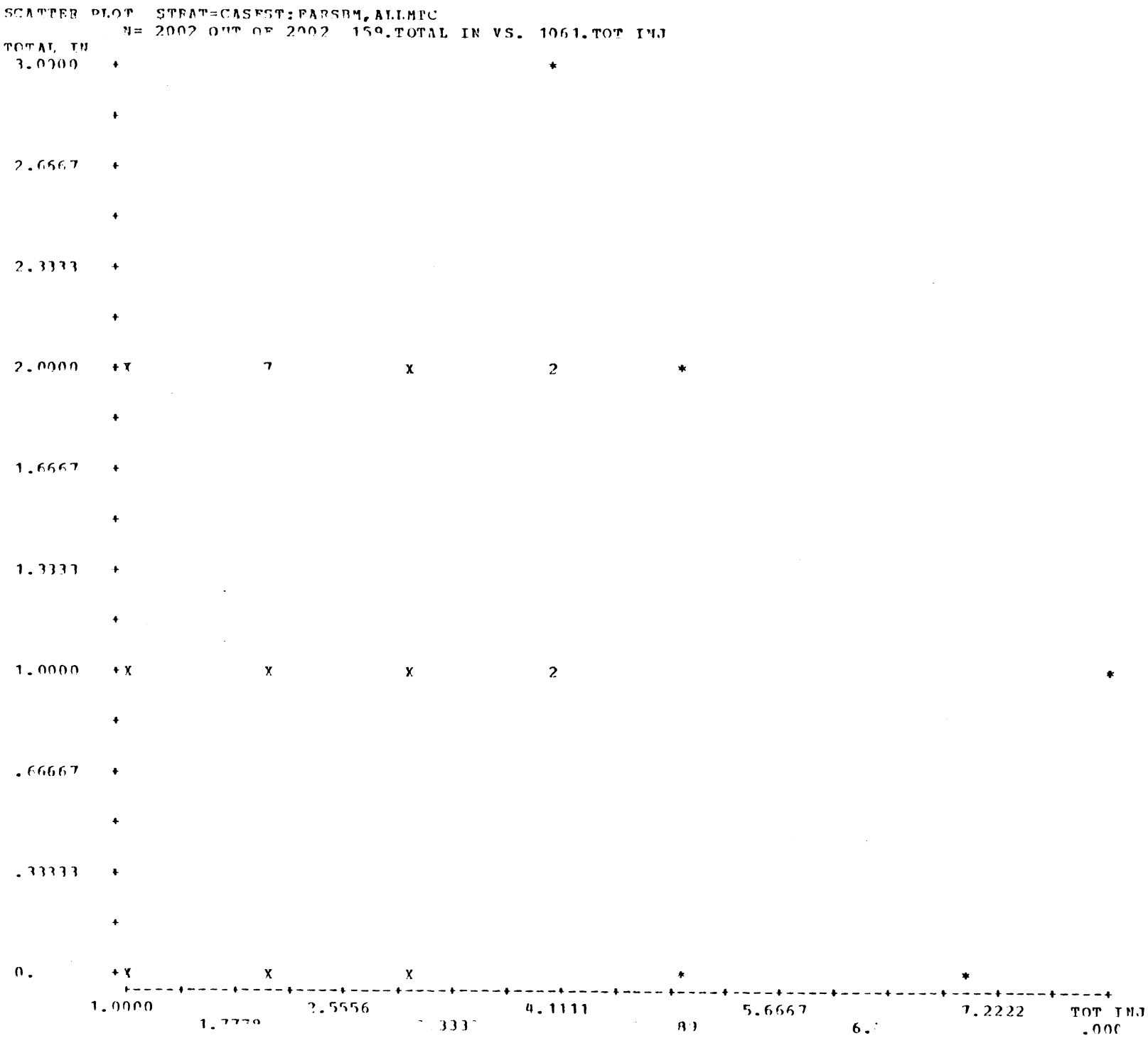
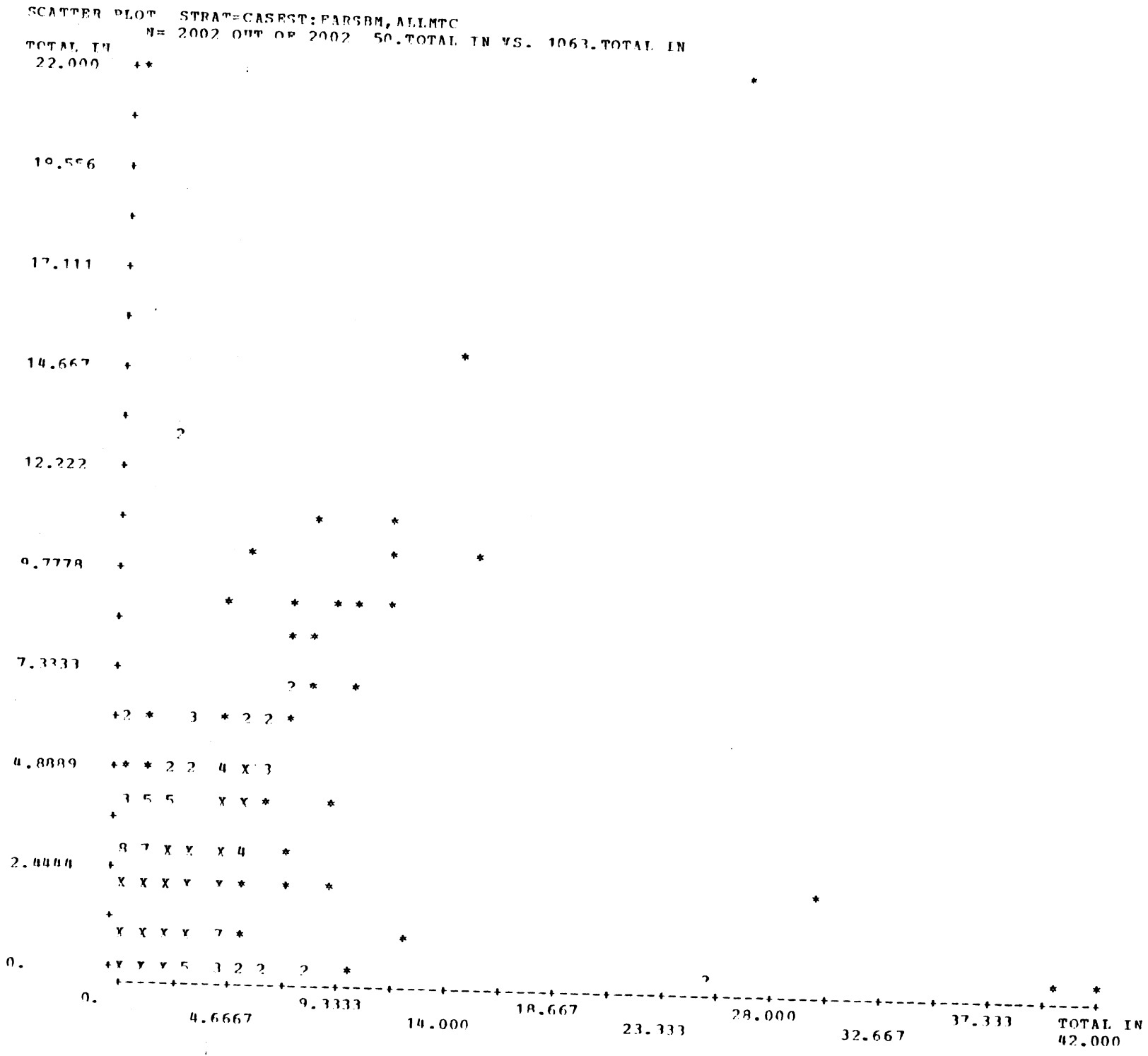
56.000
67.000
78.000
89.000
NONTRK I
100.00


SCATTER PLOT STRAT=CASEST:FARSBM,ALLMPC
N= 2002 OUT OF 2002 159.TOTAL IN VS. 1061.TOT INJ
TOTAL IN
3.0000
2.6667
2.3333
2.0000
1.6667
1.3333
1.0000
.66667
.33333
0.
1.0000
2.5556
4.1111
5.6667
7.2222
TOT INJ
.000


SCATTER PLOT STRAT=CASEST:PARSBM,ALLMTC
N= 2002 OUT OF 2002 50.TOTAL IN VS. 1063.TOTAL IN
TOTAL IN
22.000
19.556
17.111
14.667
12.222
9.7778
7.3333
4.8889
2.4444
0.
0.
4.6667
9.3333
14.000
18.667
23.333
28.000
32.667
37.333
TOTAL IN
42.000