

NATIONAL ACCIDENT SAMPLING SYSTEM (NASS)

CRASHWORTHINESS DATA SYSTEM

Analytical User's Manual

1994 File



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National Highway Traffic Safety Administration
National Center for Statistics and Analysis
Washington, D.C. 20590

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SECTION 1

INTRODUCTION

The National Accident Sampling System (NASS) Crashworthiness Data System (CDS) is a nationwide accident data collection program sponsored by the U.S. Department of Transportation. It is operated by the National Center for Statistics and Analysis (NCSA) of the National Highway Traffic Safety Administration (NHTSA).

The NASS CDS provides an automated, comprehensive national traffic accident data base. Data collection began in 1979 in 10 geographic sites, called Primary Sampling Units (PSU's). The 1994 NASS CDS file contains data from 24 PSU's. These data are weighted to represent all police reported motor vehicle accidents occurring in the USA during the year involving passenger cars, light trucks and vans that were towed due to damage.

The NASS program was re-evaluated in the mid-1980's. This re-evaluation resulted in changes which were implemented by NHTSA in January 1988. NASS now has two major operating components: (1) the General Estimates System (GES) which collects data on a sample of police traffic crash reports; and (2) the Crashworthiness Data System (CDS) which collects additional detailed information on a sample of police reported traffic crashes.

Comparing the 1988-1994 files with files from years prior to 1988 is not recommended. The principal attributes of the NASS CDS 1988-1994 files include: focusing on accidents involving automobiles and automobile derivatives, light trucks and vans with gross vehicle weight less than 10,000 pounds; giving special consideration to late model year vehicles (the five most recent model years); emphasizing the more serious injury accidents; eliminating the pedestrian and non-motorist record, the driver record and vehicle registration information. A revised set of data collection forms was designed in 1988 for the crashworthiness data system. Some features are: the introduction of an Accident Event Record to capture all events in the accident; the creation of three new vehicle records (General Vehicle, Exterior Vehicle, Interior Vehicle); and the separation of occupant records into an Occupant Assessment Record and an Occupant Injury Record, wherein all injuries are coded.

The NASS CDS file is available in two automated formats: a sequential data set or a Statistical Analysis System (SAS) data set. Hard copy data collection records, sanitized to protect privacy, are available for review. These records contain photographic slides, scene diagrams, and vehicle damage diagrams.

This manual and the NASS 1994 Crashworthiness Data System's Data Collection, Coding and Editing Manual are the primary documentation supporting the automated file. When using this file one should be careful to understand the coding conventions of all variables used thoroughly. In addition, the user may find the following documents helpful:

CRASH3 Technical Manual, July 1986

Collision Deformation Classification (SAE J224 MAR 80)

Injury Coding Manual 1993

NASS Design for Crashworthiness Research, April 1986
(Internal Working Paper)

General Description of the NASS Crashworthiness Data System
Sample Design, April 1987 (Internal Working Paper)

The first document is available from the DOT/Volpe National Transportation Systems Center (VNTSC), DTS-44, Kendall Square, Cambridge, Massachusetts 02142. The second document is available from the Society of Automotive Engineers (SAE), Warrendale, Pennsylvania 15096. The last three documents are available from the National Highway Traffic Safety Administration at the address below.

Comments on the content and utility of the files and primary documentation are appreciated. Please address them to the National Center for Statistics and Analysis - NRD-30, National Highway Traffic Safety Administration, U.S. Department of Transportation, 400 Seventh St., S.W., Washington, D.C. 20590.

SECTION 2

CHANGES IN 1994

Since 100% of all 1994 model year passenger cars were required to be equipped with AOPS devices (automatic occupant protection system), data collection requirements were changed for in-transport AOPS vehicles. EXTERIOR VEHICLE, INTERIOR VEHICLE, OCCUPANT ASSESSMENT and OCCUPANT INJURY RECORDS are no longer coded for nontowed AOPS vehicles.

ACCIDENT RECORD

One data element has been deleted

FATAL AOPS SPECIAL STUDY INDICATOR (AC06)

One data element has been added

IMPACT FIRES SPECIAL STUDY INDICATOR (AC08)

One attribute has been added in the data element

VEHICLE NUMBER OR OBJECT CONTACTED (AC16...AC44)

OBJECT FELL FROM VEHICLE IN-TRANSPORT(79)

GENERAL VEHICLE RECORD

One attribute has been deleted in the data element

ATTEMPTED AVOIDANCE MANEUVER (GV14)

NO IMPACT(00)

One attribute has been added in the data element

ROLLOVER INITIATION OBJECT CONTACTED (GV61)

OBJECT FELL FROM VEHICLE IN-TRANSPORT(79)

EXTERIOR VEHICLE RECORD

One attribute has been added to the data element

1ST CDC - OBJECT CONTACTED (EV05)

OBJECT FELL FROM VEHICLE IN-TRANSPORT(79)

One attribute has been added to the data element

2ND CDC - OBJECT CONTACTED (EV13)

OBJECT FELL FROM VEHICLE IN-TRANSPORT(79)

The title of the data element and the attribute "0" have been changed to permit the coding of more than one fuel tank

TYPE OF FUEL TANK-1 (EV32)

Twelve new data elements have been added

TYPE OF FUEL TANK-2 (EV33)

FUEL TANK-1 LOCATION (EV34)

FUEL TANK-2 LOCATION (EV35)

FUEL TANK-1 FILLER CAP LOCATION (EV36)

FUEL TANK-2 FILLER CAP LOCATION (EV37)

FUEL TANK-1 DAMAGE (EV38)

FUEL TANK-2 DAMAGE (EV39)

LOCATION OF FUEL SYSTEM-1 LEAKAGE (EV40)

LOCATION OF FUEL SYSTEM-2 LEAKAGE (EV41)

FUEL TYPE-1 (EV42)

FUEL TYPE-2 (EV43)

IS THIS VEHICLE EQUIPPED WITH MORE THAN TWO FUEL TANKS? (EV44)

OCCUPANT ASSESSMENT RECORD

One new data element has been added

PRIMARY SOURCE OF BELT USE DETERMINATION (OA53)

One attribute has been added to each of the data elements

1ST MEDICALLY REPORTED CAUSE OF DEATH (OA40)

2ND MEDICALLY REPORTED CAUSE OF DEATH (OA41)

3RD MEDICALLY REPORTED CAUSE OF DEATH (OA42)

MODE OF DEATH GIVEN BUT SPECIFIC INJURIES ARE NOT LINKED TO
CAUSE OF DEATH (96)

UNWEIGHTED CASES

Twenty-three Impact Fires Special Study cases, which were oversampled, have been retained on the file with zero weight. Cases qualify for this special study if a vehicle ~~fire~~ occurs from an impact with another vehicle or object and the case is not selected as part of the CDS case sample. All case numbers are in the 500 series e.g., 02-501G.

SECTION 3

THE SAMPLING SYSTEM AND SAMPLE DESIGN

The accidents investigated in NASS CDS are a probability sample of all police reported accidents in the U.S. A NASS CDS accident must fulfill the following requirements: must be police reported, must involve a harmful event (property damage and/or personal injury) resulting from an accident and must involve at least one towed passenger car or light truck or van in transport on a trafficway. Every accident which meets these conditions has a chance of being selected. This type of sample design makes it possible to compute estimates which are representative of the entire country.

The selection of sample accidents in NASS is accomplished in three stages: (1) selection of PSU's, (2) selection of police jurisdictions and (3) selection of accidents.

Stage 1 - Select PSU's

For the first stage of selection, the country was divided into 1195 geographic areas called Primary Sampling Units (PSU's). Each PSU consisted of either a central city, a county surrounding a central city, an entire county or a group of contiguous counties. The PSU's were defined so that their minimum population was approximately 50,000.

The 1195 PSU's were grouped into 12 strata based on geographic region and type, e.g., central cities, suburban counties, and other PSU's. The 24 PSU's to be sampled were allocated to each stratum roughly proportional to the number of accidents in each stratum. Two PSU's were selected from each stratum.

Stage 2 - Select Police Jurisdictions

If every accident in each PSU were investigated, a national estimate could be obtained by weighting each accident by the inverse of the probability of selecting the PSU. Because it is uneconomical and impractical to investigate every accident in each sample PSU, a second and third stage of sampling are performed. Each PSU contains a number of police jurisdictions which process reports of accidents that occur within the PSU's boundaries. These police jurisdictions form the frame of the second stage of sampling. Each jurisdiction is assigned a measure of size based on the number, severity and type of its accidents. A sample of jurisdictions is selected which over-samples those having a larger measure of size.

Stage 3 - Select Accidents

The final stage of sampling is the selection of accidents within the sampled jurisdictions. Each week, the

police jurisdictions are contacted and all accidents that qualify for the NASS CDS for which a police accident report has been filed since the last date that jurisdiction was contacted are listed. While being listed, each accident is classified into a stratum based on type of vehicle, most severe police reported injury, disposition of the injured, tow status of the vehicles and model year of the vehicles. All qualifying accidents are listed, except in a few of the largest police jurisdictions. In these jurisdictions only accidents with either an even or an odd police accident report number are listed.

To select accidents, each team is assigned a fixed number of accidents to investigate each week. The number of accidents a team selects for investigation is governed by the number of researchers on a team. Sampling weights for the strata are assigned so that a larger percentage of the higher severity accidents is selected than of the lower severity accidents. Also, accidents in the same stratum have the same probability of being selected, regardless of the PSU.

To select the sample, each accident is assigned a weight equal to the inverse of the probability of selecting the police jurisdiction in which it was listed.

SAMPLING VARIABLES

The stratification category (1) by type of vehicle is "CDS applicable"---passenger cars, light trucks and vans and "other vehicles"---all other vehicle types; (2) by injury is "fatal injury"---K, "serious injury"---A or "minor injury, not injured or unknown"---B,C,O,U; (3) by disposition of the injured is "transported to a medical facility" or "not transported"; (4) by hospitalization is "occupant admitted at least overnight"; (5) by tow status is "towed due to damage" or "not towed"; (6) by model year of the vehicle is "late model year"---1990 through 1995 or "non-late model year"---1989 or before.

SAMPLING STRATA

The ten PAR sampling Strata used by the CDS are listed below and shown in Table 3-1:

Stratum A-NASS accidents in which at least one occupant of a towed CDS applicable late model year vehicle had a police reported injury of "K" (fatal injury).

Stratum B-NASS accidents not qualifying for Stratum A in which at least one occupant of a towed CDS applicable non-late model year vehicle had a police reported injury of "K" (fatal injury).

Stratum J-NASS accidents not qualifying for Strata A or B in which at least one occupant of a towed CDS applicable late model year vehicle had a police reported injury of "A" (incapacitating injury) AND was transported to a treatment facility for treatment AND was admitted overnight to the hospital. If the accident involved more than one CDS applicable vehicle, at least two CDS applicable vehicles must be towed.

Stratum K-NASS accidents not qualifying for Strata A, B or J in which at least one occupant of a towed

CDS applicable nonlate model year vehicle had a police reported injury of "A" (incapacitating injury) AND was transported to a treatment facility for treatment AND was admitted overnight to the hospital. If the accident involved more than one CDS applicable vehicle, at least two CDS applicable vehicles must be towed.

Stratum C-NASS accidents not qualifying for Strata A, B, J or K in which at least one occupant of a towed CDS applicable late model year vehicle had a police reported injury of "A" (incapacitating injury) AND was transported to a treatment facility for treatment. If the accident involved more than one CDS applicable vehicle, then at least two CDS applicable vehicles must be towed.

Stratum D-NASS accidents not qualifying for Strata A, B, J, K or C in which at least one occupant of a towed CDS applicable non-late model year vehicle had a police reported injury of "A" (incapacitating injury) AND was transported to a treatment facility for treatment. If the accident involved more than one CDS applicable vehicle, then at least two CDS applicable vehicles must be towed.

Stratum E-NASS accidents not qualifying for Strata A, B, J, K, C or D in which at least one occupant of towed CDS applicable late model vehicle was transported from the scene to a treatment facility for treatment.

Stratum F-NASS accidents not qualifying for Strata A, B, J, K, C, D or E in which at least one occupant of a towed CDS applicable non-late model vehicle was transported from the scene to a treatment facility for treatment.

Stratum G-NASS accidents not qualifying for Strata A, B, J, K, C, D, E or F which involve at least one CDS applicable late model vehicle that was towed, according to the police report, from the scene due to damage.

Stratum H-NASS accidents not qualifying for Strata A, B, J, K, C, D, E, F or G which involve at least one CDS applicable non-late model vehicle that was towed, according to the police report, from the scene due to damage.

Example of Accident Stratification: A CDS applicable non-late model year vehicle and a bicycle crash. The CDS applicable vehicle is towed with minor injuries to the occupants, who are not transported. The bicyclist receives a serious injury---"A". The accident is classified as Stratum H because of the minor injuries to the occupants of the towed CDS applicable non-late model year vehicle.

Table 3-1
1994 NASS CDS Strata

Late Model Year (IMV) Vehicle Involve- ment	Most Severe Police Reported Injury								
	Fatal Injury "K"	Transported					Nontransported		
		Serious Injury "A"					Minor Injury or Unk. "B", "C", or "U"	Minor Injury, Not Injured or Unknown	
		Single CDS Veh.		Multiple CDS Applicable Vehicles				At Least One Towed CDS Veh.	No Towed CDS Appli. Veh.
		Towed		Two or More Towed		Only One Towed			
Hosp- ital- ized	Not Hosp- ital- ized	Hosp- ital- ized	Not Hosp- ital- ized						
Injury in Towed, IMY, CDS Veh.	A	J	C	J	C	E		G	Not In Scope
Injury not in Towed, IMY, CDS Vehicle	B	K	D	K	D	F		H	

Note: Late Model Year refers to 1990 through 1995 model years.

Sampling

Because the accidents selected in NASS CDS are a probability sample of all accidents occurring in the survey year, the data from these accidents are "weighted" to produce National Estimates. The weights result from the stages of selection, reflecting that accident's probability of selection. The analysis file contains only one weight.

PSU Inflation Factor

The PSU Inflation Factor is the within PSU sampling weight for each accident in that PSU's sample and is equal to the inverse of that accident's probability of selection within the PSU. It is equal to the product of the inverse of the probability of selecting that accident from the other accidents and the

inverse of the probability of selecting the police jurisdiction in which the accident occurred from among all police jurisdictions listed in the PSU (Stage 2).

The sum of the PSU Inflation Factors for all accidents sampled within a PSU is an unbiased estimate of the number of accidents which occurred during the year in that PSU. Unbiased estimates of accident characteristics for a PSU can be obtained by multiplying the value of the characteristic for each accident sampled in the PSU by that accident's PSU Inflation Factor and summing.

National Inflation Factor

The National Inflation Factor is the overall sampling weight for each accident selected in the NASS sample and the inverse of the probability of selection of that accident. It is equal to product of the PSU Inflation Factor and the inverse of the probability of selection of the PSU (Stage 1).

The sum of the National Inflation Factors for all sampled NASS accidents in a year is an unbiased estimate of the total number of accidents which occurred during the year in the U.S. If restricted to an accident stratum, the sum is an estimate of the total number of that type of accident which occurred in that year. Unbiased estimates of National totals of accident characteristics can be obtained by multiplying the value of the characteristic for each accident in the NASS sample by the National Inflation Factor for that accident.

Ratio Inflation Factor

The Ratio Inflation Factor is the product of the National Inflation Factor and a rate which adjusts for differences between actual and estimated totals. This ratio is calculated using accident totals from both the sampled and non-sampled police jurisdictions. The totals for the sampled jurisdictions come from the Stage 3 frame. The totals for the non-sampled jurisdictions are collected annually. The PSU's are grouped into predetermined sets. Ratios are formed by dividing the total accidents in each stratum and in each set of PSU's by the estimated total. Those estimated totals are sums of the National Inflation Factors for each accident in the accident strata and set of PSU's.

Estimates of National totals for accident characteristics can be obtained using the Ratio Inflation Factor (RIF). However, because the RIFs have been adjusted to actual accident counts, some of the sampling variation has been removed. Therefore they will produce more precise estimates than the National Inflation Factor. It is for this reason that the RIF or Ratio Weight is the only weight on the analysis file. Less than one percent of the cases have RIFs greater than 5000. This is the result of listing at least twice the number of expected serious injury crashes on a given sampling day.

SECTION 4

DERIVED VARIABLES

Most of the data presented in the NASS record layout can be identified easily as coming from accident investigation and other activities of NASS field teams. The following data elements, however, are by-products of sampling procedures used by NASS or are derived from data processing applications, such as totaling the number of injured persons in a given accident. The following list identifies the specific data elements, gives their location in the Sequential File Record Layout and explains their derivation:

SPECIFICATION FOR DERIVED VARIABLES VARIABLE NAME - LOCATION - DESCRIPTION

MAXIMUM TREATMENT IN THIS ACCIDENT (AC29) (SAS Label: ATREAT)

This single place numeric value indicates the most intensive treatment given to any occupant of a towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle in the accident, using the following order of codes:

1	FATAL
3	HOSPITALIZED
4	TRANSPORTED AND RELEASED
5	TREATMENT AT SCENE
6	TREATMENT LATER
8	TREATMENT - OTHER
2	FATAL - RULED DISEASE
9	UNKNOWN
0	NO TREATMENT
.	NOT COLLECTED

This variable is derived by scanning the TREATMENT-MORTALITY (OA35) variable in each occupant assessment record in the accident.

Source: TREATMENT-MORTALITY (OA35).

Missing Values: Occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF OCCUPANT FORMS SUBMITTED (GV18) equals 0. If there are no occupants in any towed CDS applicable vehicle in the accident, then use code "BLANK" (Not Collected) on the Flat file and ".N" (Not Collected) on the SAS file.

SAS Codes: .N for Blank (Not Collected) and .U for 9 (Unknown).

MAXIMUM KNOWN A.I.S. IN THIS ACCIDENT (AC30) (SAS Label: AAIS)

This single place numeric value indicates the single most severe injury level reported for any occupant of a towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle in the accident, using the following order of codes:

6	MAXIMUM (UNTREATABLE) INJURY
5	CRITICAL INJURY
4	SEVERE INJURY
3	SERIOUS INJURY
2	MODERATE INJURY
1	MINOR INJURY
7	INJURY, UNKNOWN SEVERITY
9	UNKNOWN IF INJURED
0	NOT INJURED
.	NOT COLLECTED

This variable is derived by scanning the A.I.S. SEVERITY (OI010...OI100) variable on each occupant injury record in the accident. If none of the occupants in the accident has an occupant injury record, then scan the NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43) variable on the occupant assessment record. Use the following order of codes: if "97", then code "7"; if "99", then code "9"; if "00", then code "0".

Source: A.I.S. SEVERITY (OI010...OI100) and NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43).

Missing Values: Occupant injury and occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF OCCUPANT FORMS SUBMITTED (GV18) equals 0. Occupant injury records will be missing for: (1) Towed CDS applicable vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00; (2) Non-towed CDS applicable AOPS vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE? (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00. If there are no occupants in any towed CDS applicable vehicle in the accident, then use code "BLANK" (Not Collected) on the Flat file and ".N" (Not Collected) on the SAS file.

SAS Codes: .N for Blank (Not Collected) and .U for 9 (Unknown).

NUMBER OF SERIOUSLY INJURED OCCUPANTS IN THIS ACCIDENT (AC31-32) (SAS Label: AINJSER)

This two place numeric value indicates the total number of fatally and other seriously injured occupants of towed CDS applicable vehicles or non-towed CDS applicable AOPS vehicles involved in the accident. It is derived by totaling for the accident either the number of occupant assessment records in which the TREATMENT-MORTALITY (OA35) value is coded "1" (Fatal) or the number of occupant injury records in which the A.I.S. SEVERITY (OI010...OI100) value is coded "3-6". (Add together "1"s in OA35 and if the code in OA35 is not equal to "1", add one injury per occupant where OI010...OI100 is "3-6").

Source: TREATMENT-MORTALITY (OA35) and A.I.S. SEVERITY (OI010...OI100).

Missing Values: Occupant injury and occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF OCCUPANT FORMS SUBMITTED (GV18) equals 0. Occupant injury records will be missing for: (1) Towed CDS applicable vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00; (2) Non-towed CDS applicable AOPS vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE? (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00. If none of the occupants in the accident has an occupant injury record or if, on all the occupant assessment records the only codes in OA43 are equal to "97, 99 or 00", then use code "00" (None) for this derived variable. If there are no occupants in any towed CDS applicable vehicle in the accident, then use code "BLANK" (Not Collected) on the Flat file and ".N" (Not Collected) on the SAS file.

SAS Codes: .N for Blank (Not Collected). Unknown is not a valid code.

NUMBER OF INJURED OCCUPANTS IN THIS ACCIDENT (AC33-34) (SAS Label: AINJURED)

This two place numeric value indicates the total number of injured occupants of towed CDS applicable vehicles or non-towed CDS applicable AOPS vehicles involved in the accident. It is derived by totaling the number of occupant assessment records in which the variable NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43) has a value of 01-97.

Source: NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43).

Missing Values: Occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF OCCUPANT FORMS SUBMITTED (GV18) equals 0. Towed CDS applicable vehicles

with no known occupant injuries will have codes-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 99 or 00. Non-towed CDS applicable AOPS vehicles with no known occupant injuries will have codes-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 99 or 00. If, on all the occupant assessment records in the accident, the only codes in OA43 are equal to "99 or 00", then use code "00" (None) for this derived variable. If there are no occupants in any towed CDS applicable vehicle in the accident, then use code "BLANK" (Not Collected) on the Flat file and ".N" (Not Collected) on the SAS file.

SAS Codes: .N for Blank (Not Collected). Unknown is not a valid code.

ALCOHOL INVOLVEMENT IN THIS ACCIDENT (AC35) (SAS Label: ALCINV)

This single place numeric value indicates if any involved driver were reported to have had some alcohol involvement at the time of the accident, using the following order of codes:

- 1 YES
- 2 NO
- 9 UNKNOWN

This variable is derived by scanning the POLICE REPORTED ALCOHOL PRESENCE (GV11) and ALCOHOL TEST RESULT FOR DRIVER (GV12) variables on each general vehicle record in the accident. The ALCOHOL INVOLVEMENT codes are derived as follows:

(YES) 1 - If POLICE REPORTED ALCOHOL PRESENCE equals 1 (YES- ALCOHOL PRESENT) or ALCOHOL TEST RESULT FOR DRIVER equals 01-49 (positive result).

(NO) 2 - If POLICE REPORTED ALCOHOL PRESENCE equals 0 (NO ALCOHOL PRESENT) and ALCOHOL TEST RESULT FOR DRIVER equals 00 (NONE) or 96 (NONE GIVEN).

(UNKNOWN) 9 - If the variables shown above have any other combination of values.

Source: POLICE REPORTED ALCOHOL PRESENCE (GV11) and ALCOHOL TEST RESULT FOR DRIVER (GV12).

Missing Values: None (must have at least one general vehicle record coded through the variable ACCIDENT TYPE (GV15) in the accident).

SAS Codes: .U for 9 (Unknown).

DAY OF WEEK (AC36-37) (SAS Label: DAYWEEK)

This two place numeric value indicates on which day of the week the accident occurred. To protect the confidentiality of records concerning specific accidents used by NASS, the accident date is not provided. Instead, the accident record indicates year, month and DAY OF WEEK

of accident occurrence. DAY OF WEEK values are coded as follows:

01	Sunday	05	Thursday
02	Monday	06	Friday
03	Tuesday	07	Saturday
04	Wednesday		

Source: DATE OF ACCIDENT (AC04).

Missing Values: None.

SAS codes: None. Unknown is not a valid code.

PSU INFLATION FACTOR (AC38-45) (SAS Label: PSUWGT)

This eight place numeric value has three implied decimal places. It indicates the within PSU sampling weight for each accident in that PSU's sample.

This weight is not on the current year file.

Source: Computed by NHTSA Headquarters.

Missing Values: None.

SAS Codes: None.

NATIONAL INFLATION FACTOR (AC46-53) (SAS Label: NATWGT)

This eight place numeric value has three implied decimal places. It indicates the overall sampling weight for each accident selected in the NASS sample.

This weight is not on the current year file.

Source: Computed by NHTSA Headquarters.

Missing Values: None.

SAS Codes: None.

RATIO INFLATION FACTOR (AC54-61) (SAS Label: RATWGT)

This eight place numeric value has three implied decimal places. It is the product of the National Inflation Factor and a ratio which adjusts for differences between actual and estimated totals.

Source: Computed by NHTSA Headquarters.

Missing Values: None.

SAS Codes: None.

DRUG INVOLVEMENT IN THIS ACCIDENT (AC62) (SAS Label: DRGINV)

This single place numeric value indicates if any involved driver were reported to have had some drug involvement at the time of the accident, using the following order of codes:

- 1 YES
- 2 NO
- 3 UNKNOWN

This variable is derived by scanning the POLICE REPORTED OTHER DRUG PRESENCE (GV37) and the variables reporting SPECIMEN TEST RESULTS for NARCOTIC, DEPRESSANT, STIMULANT, HALLUCINOGEN, CANNABINOID, PHENCYCLIDINE, INHALANT and OTHER DRUGS (GV41, GV43, GV45, GV47, GV49, GV51, GV53 and GV55) on each general vehicle record in the accident. The DRUG INVOLVEMENT codes are derived as follows:

(YES) 1 - If POLICE REPORTED OTHER DRUG PRESENCE equals 1 (YES - OTHER DRUG PRESENT) or NARCOTIC DRUG - SPECIMEN TEST RESULTS equals 2 (DRUG FOUND IN SPECIMEN) or DEPRESSANT DRUG equals 2 or STIMULANT DRUG equals 2 or HALLUCINOGEN DRUG equals 2 or CANNABINOID DRUG equals 2 or PHENCYCLIDINE DRUG equals 2 or INHALANT DRUG equals 2 or OTHER DRUG equals 2.

(NO) 2 -If POLICE REPORTED OTHER DRUG PRESENCE equals 0 (NO OTHER DRUGS PRESENT) and [NARCOTIC DRUG - SPECIMEN TEST RESULTS equals 0 (NO SPECIMEN TEST GIVEN) or 1 (DRUG NOT FOUND IN SPECIMEN)] and [DEPRESSANT DRUG equals 0 or 1] and [STIMULANT DRUG equals 0 or 1] and [HALLUCINOGEN DRUG equals 0 or 1] and [CANNABINOID DRUG equals 0 or 1] and [PHENCYCLIDINE DRUG equals 0 or 1] and [INHALANT DRUG equals 0 or 1] and [OTHER DRUG equals 0 or 1].

(UNKNOWN) 9 - If the variables shown above have any other combination of values.

Source: POLICE REPORTED OTHER DRUG PRESENCE (GV37) and NARCOTIC DRUG - SPECIMEN TEST RESULTS (GV41) and DEPRESSANT DRUG (GV43) and STIMULANT DRUG (GV45) and HALLUCINOGEN DRUG (GV47) and CANNABINOID DRUG (GV49) and PHENCYCLIDINE DRUG (GV51) and INHALANT DRUG (GV53) and OTHER DRUG (GV55).

Missing Values: None (must have at least one general vehicle record coded from variable GV37 through GV55 in the accident).

SAS Codes: .U for 9 (Unknown).

MANNER OF COLLISION (AC63) (SAS Label: MANCOLL)

This single place numeric value indicates the configuration of the accident based on the first harmful event, using the following codes:

- 0 NOT COLLISION WITH VEHICLE IN TRANSPORT
- 1 REAR-END
- 2 HEAD-ON
- 4 ANGLE
- 5 SIDESWIPE, SAME DIRECTION

- 6 SIDESWIPE, OPPOSITE DIRECTION
- 9 UNKNOWN

This variable is derived by scanning the OBJECT CONTACTED (AC16) variable the accident event record and the ACCIDENT TYPE (GV15) variable on the general vehicle record, where VEHICLE NUMBER (AC13) equals VEHICLE NUMBER (GV03). The MANNER OF COLLISION codes are derived as follows:

- 0 (NOT COLLISION WITH VEHICLE IN TRANSPORT) - If OBJECT CONTACTED equals 31-99.
- 1 (REAR-END) - If OBJECT CONTACTED equals 01-30 and ACCIDENT TYPE equals 20-43.
- 2 (HEAD-ON) - If OBJECT CONTACTED equals 01-30 and ACCIDENT TYPE equals 50-63.
- 4 (ANGLE) - If OBJECT CONTACTED equals 01-30 and ACCIDENT TYPE equals 68-91.
- 5 (SIDESWIPE, SAME DIRECTION) - If OBJECT CONTACTED equals 01-30 and ACCIDENT TYPE equals 44-49.
- 6 (SIDESWIPE, OPPOSITE DIRECTION) - If OBJECT CONTACTED equals 01-30 and ACCIDENT TYPE equals 64-67.
- 9 (UNKNOWN) - If OBJECT CONTACTED equals 01-30 and ACCIDENTTYPE equals 92-99.

Source: OBJECT CONTACTED (AC16) and ACCIDENT TYPE (GV15).

Missing Values: None (must have at least one general vehicle record coded through the variable ACCIDENT TYPE [GV15] in the accident.

SAS Codes: .U for 9 (Unknown).

PSU STRATA (AC64-65) (SAS Label: PSUSTRAT)

This two place numeric variable indicates the stratum into which each PSU is grouped in the first stage of selection of sample accidents. It is used for calculating variance by analysts using the SUDAAN statistical system. Values are coded as follows:

01 - 12

This variable is derived by scanning a coded table consisting of psu number and stratum number.

Source: PSU NUMBER (AC01) and coded table.

Missing Values: None.

SAS Codes: None.

MAXIMUM TREATMENT IN THIS VEHICLE (GV107) (SAS Label: VTREAT)

This single place numeric value indicates the most intensive treatment given to any occupant of

this towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle using the following order of codes:

- 1 FATAL
- 3 HOSPITALIZED
- 4 TRANSPORTED AND RELEASED
- 5 TREATMENT AT SCENE
- 6 TREATMENT LATER
- 8 TREATMENT - OTHER
- 2 FATAL - RULED DISEASE
- 9 UNKNOWN
- 0 NO TREATMENT
- . NOT COLLECTED

This variable is derived by scanning the TREATMENT-MORTALITY (OA35) variable in each occupant assessment record in this vehicle.

Source: TREATMENT-MORTALITY (OA35).

Missing Values: Occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF VEHICLE FORMS SUBMITTED (GV18) equals 0. If none of the occupants in the vehicle has an occupant assessment record, then use code "BLANK" (Not Collected) on the Flat file and ".N" (Not Collected) on the SAS file.

SAS Codes: .N for Blank (Not Collected) and .U for 9 (Unknown).

MAXIMUM KNOWN A.I.S. IN THIS VEHICLE (GV108) (SAS Label: VAIS)

This single place numeric value indicates the single most severe injury level reported for any occupant in this towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle using the following order of codes:

- 6 MAXIMUM (UNTREATABLE) INJURY
- 5 CRITICAL INJURY
- 4 SEVERE INJURY
- 3 SERIOUS INJURY
- 2 MODERATE INJURY
- 1 MINOR INJURY
- 7 INJURY, UNKNOWN SEVERITY
- 9 UNKNOWN IF INJURED
- 0 NOT INJURED
- . NOT COLLECTED

This variable is derived by scanning the A.I.S. SEVERITY (OI010...OI100) variable on each occupant injury record in this towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle. If none of the occupants in this vehicle has an occupant injury record, then scan the NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43) variable on the occupant assessment record. Use the following order of codes: if "97", then code "7"; if "99", then code "9"; if "00", then code "0".

Source: A.I.S. SEVERITY (OI010...OI100) and NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43).

Missing Values: Occupant injury and occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF VEHICLE FORMS SUBMITTED (GV18) equals 0. Occupant injury records will be missing for: (1) Towed CDS applicable vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00; (2) Non-towed CDS applicable AOPS vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE? (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00. If none of the occupants in the vehicle has an occupant assessment record, then use code "BLANK" (Not Collected) on the Flat file and use ".N" (Not Collected) on the SAS file.

SAS Codes: .N for Blank (Not Collected) and .U for 9 (Unknown).

NUMBER SERIOUSLY INJURED IN THIS VEHICLE (GV109-110) (SAS Label: VINJSER)

This two place numeric value indicates the total number of fatally and other seriously injured occupants of this towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle. It is derived by totaling for the vehicle either the number of occupant assessment records in which the TREATMENT-MORTALITY (OA35) value is coded "1" (Fatal) or the number of occupant injury records in which the A.I.S. SEVERITY (OI010...OI100) value is coded "3-6". (Add together "1"s in OA35 and if the code in OA35 is not equal to "1", add one injury per occupant where OI010...OI100 is "3-6").

Source: TREATMENT-MORTALITY (OA35) and A.I.S. SEVERITY (OI010...OI100).

Missing Values: Occupant injury and occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF VEHICLE FORMS SUBMITTED (GV18) equals 0. Occupant injury

records will be missing for: (1) Towed CDS applicable vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00; (2) Non towed CDS applicable AOPS vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE? (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00.

If none of the occupants in the vehicle has an occupant assessment record, then use code "BLANK" (Not Collected) on the Flat file and use ".N" (Not Collected) on the SAS file. If, on all the occupant assessment records in the vehicle, the only codes in OA43 are equal to "97, 99 or 00", then use code "00" (None) for this derived variable.

SAS Codes: .N for Blank (Not Collected). Unknown is not a valid code.

NUMBER INJURED IN THIS VEHICLE (GV111-112) (SAS Label: VINJURED)

This two place numeric value indicates the total number of injured occupants of this towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle. It is derived by totaling the number of occupant assessment records in which the variable NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43) has a value of 01-97.

Source: NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43).

Missing Values: Occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0; (3) Towed CDS applicable vehicles with no occupants-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF VEHICLE FORMS SUBMITTED (GV18) equals 0. Towed CDS applicable vehicles with no known occupant injuries will have codes-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 99 or 00. Non-towed CDS applicable AOPS vehicles with no known occupant injuries will have codes-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE? (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 99 or 00. If none of the occupants in the vehicle has an occupant assessment record, then use code "BLANK" (Not Collected) on the Flat file and ".N" (Not Collected) on the SAS file. If, on all the occupant assessment records in the vehicle, the only codes in OA43 are equal to "99 or 00", then use code "00" (None) for this derived variable.

SAS Codes: .N for Blank (Not Collected). Unknown is not a valid code.

FRONT/REAR WHEEL DRIVE (GV113) (SAS Label: DRIVE)

This single place numeric value indicates which wheels of a passenger car are powered.

Values are coded as follows:

- | | |
|---|--------------------------------------|
| 1 | REAR WHEEL DRIVE |
| 2 | FRONT WHEEL DRIVE |
| 8 | NOT APPLICABLE, NOT A PASSENGER CAR |
| 9 | UNKNOWN (FOUR WHEEL DRIVE POTENTIAL) |

This variable is derived by scanning a coded table consisting of vehicle make, vehicle model and vehicle model year, to which a "drive" code has been appended.

Source: VEHICLE MODEL YEAR (GV04), VEHICLE MAKE (GV05), VEHICLE MODEL (GV06), BODY TYPE (GV07) and coded table.

Missing Values: None.

SAS Codes: .U for 9 (Unknown).

VIN LENGTH (GV114-115) (SAS Label: VINLNTH)

This two place numeric value indicates the number of characters in the Vehicle Identification Number (VIN) as originally recorded. 99 denotes unknown (on the FLAT file).

Source: VEHICLE IDENTIFICATION NUMBER (GV08).

Missing Values: None.

SAS Codes: .U for 99 (Unknown).

WEIGHT OF THE OTHER VEHICLE (GV116-118) (SAS Label: OTVEHWGT)

This three place numeric value indicates the weight (in pounds) of the other vehicle, if the most severe impact is with another CDS applicable vehicle. (This vehicle must be an inspected CDS applicable vehicle, the other vehicle need only be a CDS applicable vehicle). Values are coded as follows:

- | | |
|-----------|---|
| 010 | LESS THAN 1,050 POUNDS |
| 011 - 134 | 1,050-13,449 POUNDS |
| 135 | 13,450 OR MORE |
| 998 | NOT APPLICABLE (MOST SEVERE IMPACT NOT WITH ANOTHER VEHICLE OR WITH VEHICLE HITTING ITSELF) |
| 999 | UNKNOWN |
| . | NOT COLLECTED |

This variable is derived by scanning the OBJECT CONTACTED (EV05) variable from the HIGHEST DELTA "V" as coded on the exterior vehicle record. If the object contacted is another CDS applicable vehicle, then the weight is derived by scanning the VEHICLE CURB WEIGHT (GV19) variable as coded on the general vehicle record for the other CDS applicable vehicle.

Source: OBJECT CONTACTED (EV05), BODY TYPE (GV07) & VEHICLE CURB WEIGHT (GV19).

Missing Values: Exterior vehicle records will be missing and variables GV16-36 on general

vehicle records will not be coded for Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99. If the most severe impact is between an inspected CDS applicable vehicle and a non CDS applicable vehicle, then use code "BLANK" (Not Collected) on the Flat file and use ".N" (Not Collected) on the SAS file. Exterior vehicle records will be missing for CDS applicable vehicles which are not inspected- BODY TYPE (GV07) equals 01-49 and TYPE OF VEHICLE INSPECTION (GV35) equals 0. Use code "BLANK" (Not Collected) on the Flat file and use ".N" (Not Collected) on the SAS file. If the OBJECT CONTACTED (EV05) variable is blank (non collision event) for an inspected CDS applicable vehicle, then use code 998 (Not Applicable).

SAS Codes: .N for Blank (Not Collected) and .U for 999 (Unknown)

BODY TYPE OF THE OTHER VEHICLE (GV119-120) (SAS Label: OTBDYTYP)

This two place numeric value indicates the body type of the other vehicle if the most severe impact is with another vehicle. (This vehicle must be an inspected CDS applicable vehicle, the other vehicle may be any vehicle type). If the impact is not with another vehicle, the value is coded as follows:

98 NOT APPLICABLE (MOST SEVERE IMPACT NOT WITH ANOTHER VEHICLE OR WITH VEHICLE HITTING ITSELF)
. NOT COLLECTED

This variable is derived by scanning the OBJECT CONTACTED (EV05) variable from the HIGHEST DELTA "V" as coded on the exterior vehicle record. If the object contacted is another vehicle, then the body type is derived by scanning the BODY TYPE (GV07) variable as coded on the general vehicle record for the other vehicle.

Source: OBJECT CONTACTED (EV05) and BODY TYPE (GV07).

Missing Values: Exterior vehicle records will be missing for:

- (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99;
- (2) Not Inspected CDS applicable vehicles-BODY TYPE (GV07) equals 01-49 and TYPE OF VEHICLE INSPECTION (GV35) equals 0. For these vehicle types, use code "BLANK" (Not Collected) on the Flat file and ".N" (Not Collected) on the SAS file. If the OBJECT CONTACTED (EV05) variable is blank (non collision event) for an inspected CDS applicable vehicle, then use code 98 (Not Applicable).

SAS Codes: .N for Blank (Not Collected) and .U for 99 (Unknown).

MAXIMUM KNOWN OCCUPANT A.I.S. (OA78) (SAS Label: MAIS)

This single place numeric value indicates the single most severe injury level reported for this occupant of a towed CDS applicable vehicle or non-towed CDS applicable AOPS vehicle using the following order of codes:

6 MAXIMUM (UNTREATABLE) INJURY
5 CRITICAL INJURY
4 SEVERE INJURY

- 3 SERIOUS INJURY
- 2 MODERATE INJURY
- 1 MINOR INJURY
- 7 INJURY, UNKNOWN SEVERITY
- 9 UNKNOWN IF INJURED
- 0 NOT INJURED

This variable is derived by scanning the A.I.S. SEVERITY (OI010...OI100) variable on the occupant injury record. If this occupant does not have an occupant injury record, then scan the NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43) variable on the occupant assessment record. Use the following order of codes: if "97", then code "7"; if "99", then code "9"; if "00", then code "0".

Source: A.I.S. SEVERITY (OI010...OI100) and NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43).

Missing Values: None (if you do not have an occupant injury record, you will have an occupant assessment record for each occupant of a towed CDS applicable vehicle or a non-towed CDS applicable AOPS vehicle). Occupant injury and occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0. Occupant injury records will be missing for: (1)Towed CDS applicable vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00; (2)Non-towed CDS applicable AOPS vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE? (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00.

SAS Codes: .U for 9 (Unknown).

OCCUPANT I.S.S. (OA79-80) (SAS Label: ISS)

This two place numeric value provides an index score indicating the relative severity of overall injury to the individual vehicle occupant of a towed CDS applicable vehicle or a non-towed CDS applicable AOPS vehicle using the following order of codes:

- 6 MAXIMUM (UNTREATABLE) INJURY
- 5 CRITICAL INJURY
- 4 SEVERE INJURY
- 3 SERIOUS INJURY
- 2 MODERATE INJURY
- 1 MINOR INJURY
- 0 NOT INJURED

It is derived by scanning the BODY REGION (OI006...OI096) and the A.I.S. SEVERITY

(OI010...OI100) variables on the occupant injury record. The I.S.S. score is calculated by adding the squares of the highest A.I.S. SEVERITY entries for each of the three most severely injured body regions. For A.I.S. Code "7" (Injury, Unknown Severity), use code "0". If the occupant injury record is missing, scan the NUMBER OF RECORDED INJURIES FOR THIS OCCUPANT (OA43) variable on the occupant assessment record. If the codes in OA43 are "97, 99 or 00", then use code "0". An example of calculating an I.S.S. score is the following:

An Occupant suffered serious injury (A.I.S.=3) to the legs (Body Region 5), moderate injury (A.I.S.=2) to the pelvic area (Body Region 4) and moderate to minor injuries elsewhere (A.I.S.=2). The resulting I.S.S. is the sum of the squares of these three A.I.S. Severity scores: $(3**2) + (2**2) + (2**2)$ or 17.

Source: BODY REGION (OI006...OI096) and A.I.S. SEVERITY (OI010...OI100).

Missing Values: None (if you do not have an occupant injury record, you will have an occupant assessment record for each occupant of a towed CDS applicable vehicle or a non-towed CDS applicable AOPS vehicle). Occupant injury and occupant assessment records will be missing for: (1) Non CDS applicable vehicles-BODY TYPE (GV07) equals 50-99; (2) Non-towed CDS applicable Non AOPS vehicles-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9 and IS THIS AN AOPS VEHICLE? (GV36) equals 0. Occupant injury records will be missing for: (1)Towed CDS applicable vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00; (2)Non-towed CDS applicable AOPS vehicles with no known occupant injuries-BODY TYPE (GV07) equals 01-49, POLICE REPORTED VEHICLE DISPOSITION (GV09) equals 0 or 9, IS THIS AN AOPS VEHICLE? (GV36) equals 1 and NUMBER OF RECORDED INJURIES THIS OCCUPANT (OA43) equals 97, 99 or 00.

SAS Codes: None.

SECTION 5
SEQUENTIAL ANALYTICAL FILE RECORD LAYOUTS

ACCIDENT RECORD

1	PSU NUMBER	38
2		39
-----		40
3		41
4	CASE NUMBER	42
5		43
6		44
-----		45
7	RECORD NUMBER (11)	-----
8		46
-----		47
9	VERSION NUMBER	48
-----		49
10	NUMBER OF GENERAL	50
11	VEHICLE FORMS SUBMITTED	51
-----		52
12	MONTH OF ACCIDENT	53
13		-----
-----		54
14		55
15		56
-----		57 RATIO INFLATION FACTOR
16	YEAR OF ACCIDENT	58
17		59
-----		60
18		61
19	TIME OF ACCIDENT	-----
20		62 DRUG INVOLVED
21		-----
-----		63 MANNER OF COLLISION
22	ADMINISTRATIVE USE	-----
-----		64 PSU STRATA
23	PEDESTRIAN STUDY	65
-----		-----
24	IMPACT FIRE	

25		
26		

27	NUMBER OF RECORDED	
28	EVENTS IN THIS ACCIDENT	

29	MAXIMUM TREATMENT	

30	MAXIMUM KNOWN AIS	

31	NUMBER OF SERIOUSLY	
32	INJURED OCCUPANTS	

33	NUMBER OF INJURED OCCUPANTS	
34		

35	ALCOHOL INVOLVED	

36	DAY OF WEEK OF ACCIDENT	
37		

ACCIDENT EVENT RECORD

1 PSU NUMBER
2

3
4 CASE NUMBER
5
6

7 RECORD NUMBER (12)
8

9 VERSION NUMBER

10 ACCIDENT EVENT
11 SEQUENCE NUMBER

12 VEHICLE NUMBER (1)
13

14 CLASS OF VEHICLE (1)
15

16 GENERAL AREA OF DAMAGE (1)

17 VEHICLE NUMBER (2) OR
18 OBJECT CONTACTED

19 CLASS OF VEHICLE (2)
20

21 GENERAL AREA OF DAMAGE (2)

GENERAL VEHICLE FORM

1	PSU NUMBER	50	ACCIDENT TYPE
2		51	
3		52	DRIVER PRESENCE
4	CASE NUMBER	53	NUMBER OF OCCUPANTS
5		54	THIS VEHICLE
6		55	NUMBER OF OCCUPANT FORMS
7	RECORD NUMBER (21)	56	SUBMITTED
8		57	VEHICLE CURB WEIGHT
9	VERSION NUMBER	58	
10	VEHICLE NUMBER	59	
11		60	VEHICLE CARGO WEIGHT
12	VEHICLE MODEL YEAR	61	
13		62	
14	VEHICLE MAKE	63	TOWED TRAILING UNIT
15		64	DOC. OF TRAJECTORY DATA
16		65	CONDITION OF TREE OR POLE
17	VEHICLE MODEL	66	ROLLOVER
18		67	FRONT OVERRIDE/UNDERRIDE
19	BODY TYPE	68	REAR OVERRIDE/UNDERRIDE
20		69	HEADING ANGLE FOR
21		70	THIS VEHICLE
22		71	
23		72	HEADING ANGLE FOR
24		73	OTHER VEHICLE
25	VEHICLE IDENTIFICATION	74	
26	NUMBER	75	BASIS FOR TOTAL DELTA V
27		76	TOTAL DELTA V
28		77	
29		78	
30		79	
31		80	LONGITUDINAL COMPONENT OF
32		81	DELTA V
33		82	
34		83	
35		84	LATERAL COMPONENT OF
36		85	DELTA V
37		86	
38	VEHICLE DISPOSITION	87	ENERGY ABSORPTION
39	TRAVEL SPEED	88	
40		89	
41		90	
42	ALCOHOL PRESENCE	91	CONFIDENCE IN RECONS. PGM.
43	ALCOHOL TEST RESULT	92	TYPE OF VEHICLE INSPECTION
44		93	AOPS VEHICLE
45	SPEED LIMIT		
46			
47			
48	ATTEMPTED		
49	AVOIDANCE MANEUVER		

GENERAL VEHICLE FORM
(CONTINUED)

1	PSU NUMBER	36	DRIVER'S RACE
2			
3		37	VEHICLE SPECIAL USE
4	CASE NUMBER	38	ROLLOVER INITIATION TYPE
5			
6		39	LOCATION OF ROLLOVER INIT.
7	RECORD NUMBER (22)	40	ROLLOVER
8		41	OBJECT CONTACTED
9	VERSION NUMBER	42	LOCATION OF TRIPPING FORCE
10	VEHICLE NUMBER	43	DIRECTION OF INITIAL ROLL
11			
12	DRUG PRESENCE	44	PRE-EVENT MOVEMENT
13	OBSERVATION TEST TYPE	45	
14	SPECIMEN TEST TYPE	46	CRITICAL PRECRASH EVENT
15	OBSERVED NARCOTIC DRUG	47	
16	SPECIMEN NARCOTIC DRUG	48	PRECRASH STABILITY
17	OBSERVED DEPRESSANT DRUG	49	CONSEQ OF CORRECTIVE ACTION
18	SPECIMEN DEPRESSANT DRUG	50	MAXIMUM TREATMENT
19	OBSERVED STIMULANT DRUG	51	MAXIMUM KNOWN AIS
20	SPECIMEN STIMULANT DRUG	52	NUMBER OF SERIOUSLY INJURED
21	OBSERVED HALLUCINOGEN DRUG	53	IN THIS VEHICLE
22	SPECIMEN HALLUCINOGEN DRUG	54	NUMBER OF INJURED
23	OBSERVED CANNABINOID DRUG	55	IN THIS VEHICLE
24	SPECIMEN CANNABINOID DRUG	56	FRONT/REAR WHEEL DRIVE
25	OBSERVED PHENCYCLIDINE DRUG	57	VIN LENGTH
26	SPECIMEN PHENCYCLIDINE DRUG	58	
27	OBSERVED INHALANT DRUG	59	WEIGHT OF THE
28	SPECIMEN INHALANT DRUG	60	OTHER VEHICLE
29	OBSERVED OTHER DRUG	61	
30	SPECIMEN OTHER DRUG	62	BODY TYPE OF
31		63	THE OTHER VEHICLE
32			
33	DRIVER'S ZIP CODE		
34			
35			

EXTERIOR VEHICLE FORM

1 PSU NUMBER	42 CRASH DAMAGE DATA FOR	88 ORIGINAL WHEELBASE
2	43 HIGHEST DELTA "V" - C2	89
3	44	90
4 CASE NUMBER	45 CRASH DAMAGE DATA FOR	91 ALTERED VEHICLE
5	46 HIGHEST DELTA "V" - C3	92 FIRE OCCURRENCE
6	47	93 ORIGIN OF FIRE
7 RECORD NUMBER (31)	48 CRASH DAMAGE DATA FOR	94 TYPE OF TANK-1
8	49 HIGHEST DELTA "V" - C4	95 TYPE OF TANK-2
9 VERSION NUMBER	50	96 LOCATION OF TANK-1
10 VEHICLE NUMBER	51 CRASH DAMAGE DATA FOR	97 LOCATION OF TANK-2
11	52 HIGHEST DELTA "V" - C5	98 FILLER CAP TANK-1
12 ACCIDENT SEQUENCE - 1	53	99 FILLER CAP TANK-2
13	54 CRASH DAMAGE DATA FOR	100 DAMAGE TANK-1
14 OBJECT	55 HIGHEST DELTA "V" - C6	101 DAMAGE TANK-2
15 CONTACTED - 1	56	102 LEAKAGE TANK-1
16 DIRECTION	57 CRASH DAMAGE DATA FOR	103 LEAKAGE TANK-2
17 OF FORCE - 1	58 HIGHEST DELTA "V" - D	104 FUEL TYPE TANK-1
18 DEFORMATION LOCATION - 1	59	105
19 LONG./LATERAL LOCATION-1	60	106 FUEL TYPE TANK-2
20 VERT./LATERAL LOCATION-1	61 CRASH DAMAGE DATA	107
21 TYPE OF DAMAGE DIST. - 1	62 FOR 2ND HIGHEST	108 MORE THAN TWO TANKS
22 DEFORMATION	63 DELTA "V" - L	
23 EXTENT - 1	64 CRASH DAMAGE DATA FOR	
24 ACCIDENT SEQUENCE - 2	65 2ND HIGHEST DELTA "V"-C1	
25	66	
26 OBJECT	67 CRASH DAMAGE DATA FOR	
27 CONTACTED - 2	68 2ND HIGHEST DELTA "V"-C2	
28 DIRECTION	69	
29 OF FORCE - 2	70 CRASH DAMAGE DATA FOR	
30 DEFORMATION LOCATION-2	71 2ND HIGHEST DELTA "V"-C3	
31 LONG./LATERAL LOCATION-2	72	
32 VERT./LATERAL LOCATION-2	73 CRASH DAMAGE DATA FOR	
33 TYPE OF DAMAGE DIST.-2	74 2ND HIGHEST DELTA "V"-C4	
34 DEFORMATION	75	
35 EXTENT - 2	76 CRASH DAMAGE DATA FOR	
36 CRASH DAMAGE DATA FOR	77 2ND HIGHEST DELTA "V"-C5	
37 HIGHEST DELTA "V" - L	78	
38	79 CRASH DAMAGE DATA FOR	
39 CRASH DAMAGE DATA FOR	80 2ND HIGHEST DELTA "V"-C6	
40 HIGHEST DELTA "V" - C1	81	
41	82 CRASH DAMAGE DATA	
	83 FOR 2ND HIGHEST	
	84 DELTA "V" - D	
	85	
	86 CDCS DOCUMENTED-NOT CODED	
	87 VEHICLE DISPOSITION (RES.)	

INTERIOR VEHICLE FORM

 1 PSU NUMBER
 2

 3
 4 CASE NUMBER
 5
 6

 7 RECORD NUMBER (41)
 8

 9 VERSION NUMBER

 10 VEHICLE NUMBER
 11

 12 PASSENGER COMPARTMENT
 13 INTEGRITY

 14 DOOR/GATE/HATCH OPENING-LF

 15 DOOR/GATE/HATCH OPENING-RF

 16 DOOR/GATE/HATCH OPENING-LR

 17 DOOR/GATE/HATCH OPENING-RR

 18 DOOR/GATE/HATCH OPENING-TG

 19 DOOR/GATE/HATCH DAMAGE-LF

 20 DOOR/GATE/HATCH DAMAGE-RF

 21 DOOR/GATE/HATCH DAMAGE-LR

 22 DOOR/GATE/HATCH DAMAGE-RR

 23 DOOR/GATE/HATCH DAMAGE-TG

 24 GLAZING DAMAGE-IMPACT-WS

 25 GLAZING DAMAGE-IMPACT-LF

 26 GLAZING DAMAGE-IMPACT-RF

 27 GLAZING DAMAGE-IMPACT-LR

 28 GLAZING DAMAGE-IMPACT-RR

 29 GLAZING DAMAGE-IMPACT-BL

 30 GLAZING DAMAGE-IMPACT-RO

 31 GLAZING DAMAGE-IMPACT-OT

 32 GLAZING DAMAGE-CONTACT-WS

 33 GLAZING DAMAGE-CONTACT-LF

 34 GLAZING DAMAGE-CONTACT-RF

 35 GLAZING DAMAGE-CONTACT-LR

 36 GLAZING DAMAGE-CONTACT-RR

 37 GLAZING DAMAGE-CONTACT-BL

 38 GLAZING DAMAGE-CONTACT-RO

 39 GLAZING DAMAGE-CONTACT-OT

 40 TYPE OF GLAZING-WS

 41 TYPE OF GLAZING-LF

 42 TYPE OF GLAZING-RF

 43 TYPE OF GLAZING-LR

 44 TYPE OF GLAZING-RR

 45 TYPE OF GLAZING-BL

 46 TYPE OF GLAZING-RO

 47 TYPE OF GLAZING-OT

 48 PRECRASH GLAZING STATUS-WS

 49 PRECRASH GLAZING STATUS-LF

 50 PRECRASH GLAZING STATUS-RF

 51 PRECRASH GLAZING STATUS-LR

 52 PRECRASH GLAZING STATUS-RR

 53 PRECRASH GLAZING STATUS-BL

 54 PRECRASH GLAZING STATUS-RO

 55 PRECRASH GLAZING STATUS-OT

INTERIOR VEHICLE FORM
(CONTINUED)

1 PSU NUMBER	42 LOCATION OF INTRUSION-6TH	84 RIM/SPOKE DEFORMATION
2	43	85
3	44 INTRUDING COMPONENT-6TH	86 LOCATION OF STEERING
4 CASE NUMBER	45	87 RIM/SPOKE DEFORMATION
5		
6	46 MAGNITUDE OF INTRUSION-6TH	88 ODOMETER READING
7 RECORD NUMBER (42)	47 CRUSH DIRECTION-6TH	89
8		90
9 VERSION NUMBER	48 LOCATION OF INTRUSION-7TH	91 INSTRUMENT PANEL DAMAGE
	49	
10 VEHICLE NUMBER	50 INTRUDING COMPONENT-7TH	92 KNEE BOLSTERS DEFORMED
11	51	93 GLOVE CMPRTMNT DR. OPEN
12 LOCATION OF INTRUSION-1ST	52 MAGNITUDE OF INTRUSION-7TH	
13		
14 INTRUDING COMPONENT-1ST	53 CRUSH DIRECTION-7TH	
15	54 LOCATION OF INTRUSION-8TH	
	55	
16 MAGNITUDE OF INTRUSION-1ST		
17 CRUSH DIRECTION-1ST	56 INTRUDING COMPONENT-8TH	
	57	
18 LOCATION OF INTRUSION-2ND	58 MAGNITUDE OF INTRUSION-8TH	
19		
20 INTRUDING COMPONENT-2ND	59 CRUSH DIRECTION-8TH	
21	60 LOCATION OF INTRUSION-9TH	
22 MAGNITUDE OF INTRUSION-2ND	61	
23 CRUSH DIRECTION-2ND	62 INTRUDING COMPONENT-9TH	
	63	
24 LOCATION OF INTRUSION-3RD	64 MAGNITUDE OF INTRUSION-9TH	
25		
26 INTRUDING COMPONENT-3RD	65 CRUSH DIRECTION-9TH	
27	66 LOCATION OF INTRUSION-10TH	
28 MAGNITUDE OF INTRUSION-3RD	67	
29 CRUSH DIRECTION-3RD	68 INTRUDING COMPONENT-10TH	
	69	
30 LOCATION OF INTRUSION-4TH	70 MAGNITUDE OF INTRUSION-10TH	
31		
32 INTRUDING COMPONENT-4TH	71 CRUSH DIRECTION-10TH	
33	72 STEERING COLUMN TYPE	
34 MAGNITUDE OF INTRUSION-4TH	73	
35 CRUSH DIRECTION-4TH	74	
	75	
36 LOCATION OF INTRUSION-5TH	76	
37	77	
38 INTRUDING COMPONENT-5TH	78	
39	79	
40 MAGNITUDE OF INTRUSION-5TH	80	
41 CRUSH DIRECTION-5TH	81	
	82	
	83	

OCCUPANT ASSESSMENT FORM

1 PSU NUMBER	42 SEAT TYPE	83 ABG BICARBONATE
2	43	84
3	44 SEAT PERFORMANCE	85 BELT USE DETERMINATION
4 CASE NUMBER	45 CHILD SAFETY SEAT	86 MAXIMUM KNOWN AIS
5	46 MAKE/MODEL	87 INJURY SEVERITY SCORE
6	47	88
7 RECORD NUMBER (51)	48 TYPE OF CHILD SAFETY SEAT	
8	49 CHILD SAFETY SEAT	
9 VERSION NUMBER	50 ORIENTATION	
10 VEHICLE NUMBER	51 CHILD SAFETY SEAT	
11	52 HARNESS USAGE	
12 OCCUPANT NUMBER	53 CHILD SAFETY SEAT	
13	54 SHIELD USAGE	
14 OCCUPANT' S AGE	55 CHILD SAFETY SEAT	
15	56 TETHER USAGE	
16 OCCUPANT' S SEX	57 INJURY SEVERITY	
17 OCCUPANT' S HEIGHT	58 TREATMENT-MORTALITY	
18	59 TYPE OF MEDICAL FACILITY	
19	60 HOSPITAL STAY	
20	61	
21 OCCUPANT' S WEIGHT	62 WORKING DAYS LOST	
22	63	
23 OCCUPANT' S ROLE	64 TIME TO DEATH	
24 OCCUPANT' S SEAT POSITION	65	
25	66 1ST MEDICALLY REPORTED	
26 OCCUPANT' S POSTURE	67 CAUSE OF DEATH	
27 EJECTION	68 2ND MEDICALLY REPORTED	
28 EJECTION AREA	69 CAUSE OF DEATH	
29 EJECTION MEDIUM	70 3RD MEDICALLY REPORTED	
30 MEDIUM STATUS	71 CAUSE OF DEATH	
31 ENTRAPMENT	72 NUMBER OF RECORDED INJURIES	
32 MANUAL BELT AVAILABILITY	73 FOR THIS OCCUPANT	
33 MANUAL BELT USE	74 AUTOMATIC BELT AVAILABILITY	
34	75 AUTOMATIC BELT USE	
35 PROPER USE OF MANUAL BELT	76 AUTOMATIC BELT TYPE	
36 MANUAL BELT FAILURE	77 PROPER USE - AUTOMATIC BELT	
37 AIR BAG AVAILABILITY	78 AUTOMATIC BELT FAILURE MODE	
38 AIR BAG DEPLOYMENT	79 SEAT ORIENTATION	
39 DID AIR BAG FAIL?	80 GLASGOW SCORE	
40 POLICE REP. RESTRAINT USE	81	
41 HEAD REST. TYPE/DAMAGE	82 BLOOD GIVEN	

OCCUPANT INJURY FORM

1 PSU NUMBER
2

3
4 CASE NUMBER
5
6

7 RECORD NUMBER (61)
8

9 VERSION NUMBER

10 VEHICLE NUMBER
11

12 OCCUPANT NUMBER
13

14 INJURY NUMBER
15

16 SOURCE OF INJURY DATA

17 BODY REGION - AIS90

18 TYPE OF ANATOMIC STRUCTURE

19 SPECIFIC ANATOMIC STRUCTURE
20

21 LEVEL OF INJURY
22

23 AIS SEVERITY

24 ASPECT - AIS90

25 INJURY SOURCE
26

27 CONFIDENCE LEVEL

28 DIRECT/INDIRECT INJURY

29 OCCUPANT AREA
30 INTRUSION NUMBER

31 BODY REGION - AIS85

32 LESION - AIS85

33 SYSTEM ORGAN - AIS85

SECTION 6 SAS FILE

NASS data are available in the form of a Statistical Analysis System (SAS) file. SAS is a highly flexible statistical package that provides a high level programming language for effective matrix manipulation and data management facilities.

SAS is a non-hierarchical data base. The SAS data base for NASS consists of seven individual data sets, corresponding to the six NASS CDS data collection records. The exception is the Accident record which is broken into Accident and Accident Event data sets. The other data sets are General Vehicle, Exterior Vehicle, Interior Vehicle, Occupant Assessment and Occupant Injury. Using modified relational database concepts, SAS allows the natural hierarchical structure of NASS data to be fully explored by the analyst. An analyst can create a new SAS data set by merging data from several levels of the NASS hierarchy--e. g., vehicle and occupant levels--through use of an appropriate set of SAS commands within the DATA step.

SAS Date Base Contents

The variable names in the NASS/SAS data base are from the data collection forms or derived variables and are limited to eight characters. The SAS data base is generally an exact representation of the data contained on the NASS master file. The only exceptions are the following:

- Numeric variables for which 9, 99, etc. represent "unknown" are recoded to the SAS special missing value .U ("dot-u") and are not included in percentage tabulations;
- The value of 95 ("test refused") for Alcohol Test Result For Driver (ALCTEST) has been recoded to .B; the value of 96 ("none given") has been recoded to .C; the value of 97 ("performed, results unknown") has been recoded to .D; the value of 98 ("no driver present") has been recoded to .E; and the value of 99 ("unknown") has been recoded to .U; these values are not included in percentage tabulations;
- Missing data for numeric values are recoded as "." in SAS and are not included in percentage tabulations;
- Values for derived variables which cannot be computed due to conditions where a form is not completed e.g., non CDS applicable vehicle, non towed CDS applicable non AOPS vehicle, have been recoded to .N ("not coded");
- Hour of Day (Time) is stored as a SAS time value and has an output format of HHMM5.

PSU NUMBER (PSU), CASE NUMBER-STRATUM (CASEID) and CASE SEQUENCE NUMBER (CASENO) are identical variables across all NASS records. CASENO is the first three digits of CASEID. Therefore, PSU and either CASENO or CASEID can be used to merge NASS record levels. Similarly, VEHICLE NUMBER (VEHNO) is identical in the General Vehicle, Exterior Vehicle, Interior Vehicle, Occupant Assessment and Occupant Injury record levels and can be used to merge these records in the DATA step.

The remainder of this Section presents the SAS layout for the current year NASS Analysis file. In general, the order of variables in the SAS data sets follows the order of data fields on the master file (and thus the order of items on the data collection forms used by NASS investigation teams). The user can invoke PROC CONTENTS to produce the following list of SAS variables:

SAS

CONTENTS PROCEDURE

-----Directory for Library NASS94-----

#	Name	Memtype
1	ACCIDENT	DATA
2	EVENT	DATA
3	GV	DATA
4	OA	DATA
5	OI	DATA
6	VE	DATA
7	VI	DATA

SAS

CONTENTS PROCEDURE

Data Set Name: NASS94. ACCIDENT Type:
Observations: 4296 Record Len: 90
Variables: 21
Label:

-----Alphabetic List of Variables and Attributes-----

#	Variable	Type	Len	Pos	Label
12	AAIS	Num	4	47	MAXIMUM KNOWN AIS IN ACCIDENT
13	AINJSER	Num	4	51	NUMBER OF SERIOUSLY INJURED OCCUPANTS
14	AINJURED	Num	4	55	TOTAL NUMBER OF INJURED OCCUPANTS
15	ALCINV	Num	4	59	ALCOHOL INVOLVED IN ACCIDENT
11	ATREAT	Num	4	43	MAXIMUM TREATMENT IN ACCIDENT
2	CASEID	Char	4	8	CASE NUMBER - STRATUM
3	CASENO	Num	4	12	CASE SEQUENCE NUMBER
16	DAYWEEK	Num	4	63	DAY OF WEEK OF ACCIDENT
18	DRGINV	Num	4	74	DRUG INVOLVED
10	EVENTS	Num	4	39	NUMBER OF RECORDED EVENTS IN ACCIDENT
21	FIRESTDY	Num	4	86	
19	MANCOLL	Num	4	78	MANNER OF COLLISION
7	MONTH	Num	4	26	MONTH OF ACCIDENT
1	PSU	Num	4	4	PRIMARY SAMPLING UNIT NUMBER
20	PSUSTRAT	Num	4	82	PRIMARY SAMPLING UNIT STRATIFICATION
17	RATWGT	Num	7	67	RATIO INFLATION FACTOR
4	STRATIF	Char	1	16	CASE STRATUM
9	TIME	Num	5	34	TIME OF ACCIDENT
6	VEHFORMS	Num	4	22	NUMBER GENERAL VEHICLE FORMS SUBMITTED
5	VERSION	Num	5	17	VERSION NUMBER
8	YEAR	Num	4	30	YEAR OF ACCIDENT

SAS

CONTENTS PROCEDURE

#	Variable	Type	Len	Pos	Label
46	OTVEHWGT	Num	4	193	WEIGHT OF THE OTHER VEHICLE
77	PREEVENT	Num	4	317	INITIAL CRITICAL (PRECRASH) EVENT
76	PREMOVE	Num	4	313	PRE-EVENT MOVEMENT PRIOR REC CRIT EVENT
78	PRESTAB	Num	4	321	PRECRASH STABILITY AFTER AVOID. MANEUVER
2	PSU	Num	4	11	PRIMARY SAMPLING UNIT NUMBER
1	RATWGT	Num	7	4	RATIO INFLATION FACTOR
75	ROLINDIR	Num	4	309	DIRECTION OF INITIAL ROLL
72	ROLINLOC	Num	4	297	LOCATION OF ROLLOVER
71	ROLINTYP	Num	4	293	ROLLOVER INITIATION TYPE
73	ROLLOBJ	Num	4	301	ROLLOVER INITIATION OBJECT CONTACTED
29	ROLLOVER	Num	4	124	ROLLOVER
31	ROVERRIDE	Num	4	132	REAR OVERRIDE/UNDERRIDE THIS VEHICLE
61	SPECCNAB	Num	4	253	CANNABINOID DRUG: SPECIMEN TEST RESULTS
55	SPECDEPR	Num	4	229	DEPRESSANT DRUG: SPECIMEN TEST RESULTS
59	SPECHLUC	Num	4	245	HALLUCINOGEN DRUG: SPECIMEN TEST RESULTS
65	SPECINHL	Num	4	269	INHALANT DRUG: SPECIMEN TEST RESULTS
53	SPECNARC	Num	4	221	NARCOTIC DRUG: SPECIMEN TEST RESULTS
67	SPECOTH	Num	4	277	OTHER DRUG: SPECIMEN TEST RESULTS
63	SPECPCP	Num	4	261	PHENCYCLIDINE DRUG: SPECIMEN TEST RESULT
57	SPECSTIM	Num	4	237	STIMULANT DRUG: SPECIMEN TEST RESULTS
51	SPECTEST	Num	4	213	OTHER DRUG SPECIMEN TEST TYPE FOR DRIVER
18	SPLIMIT	Num	4	79	SPEED LIMIT
6	STRATIF	Char	1	27	CASE STRATUM
26	TOWHITCH	Num	4	112	TOWED TRAILING UNIT
14	TOWPAR	Num	4	63	POLICE REPORTED VEHICLE DISPOSITION
15	TRAVELSP	Num	4	67	POLICE REPORTED TRAVEL SPEED
74	TRIPLOC	Num	4	305	LOC. ON VEH. WHERE INIT TRIP FORCE APPL
48	VAIS	Num	4	201	MAXIMUM KNOWN AIS IN THIS VEHICLE
8	VEHNO	Num	4	33	VEHICLE NUMBER
70	VEHUSE	Num	4	289	VEHICLE SPECIAL USE
7	VERSION	Num	5	28	VERSION NUMBER
13	VIN	Char	10	53	VEHICLE IDENTIFICATION NUMBER
42	VINJSER	Num	4	177	NUMBER SERIOUSLY INJURED IN THIS VEHICLE
43	VINJURED	Num	4	181	NUMBER INJURED IN THIS VEHICLE
41	VINLNTH	Num	4	173	VIN LENGTH
45	VTREAT	Num	4	189	MAXIMUM TREATMENT IN THIS VEHICLE

SAS

CONTENTS PROCEDURE

#	Variable	Type	Len	Pos	Label
27	PARUSE	Num	4	106	POLICE REPORTED RESTRAINT USE
14	POSTURE	Num	4	54	OCCUPANT' S POSTURE
1	PSU	Num	4	4	PRIMARY SAMPLING UNIT NUMBER
49	RATWGT	Num	7	194	RATIO INFLATION FACTOR
12	ROLE	Num	4	46	OCCUPANT' S ROLE
30	SEATPERF	Num	4	118	SEAT PERFORMANCE (THIS POSITION)
13	SEATPOS	Num	4	50	OCCUPANT' S SEAT POSITION
29	SEATTYPE	Num	4	114	SEAT TYPE (THIS OCCUPANT POSITION)
9	SEX	Num	4	34	OCCUPANT' S SEX
56	STORIENT	Num	4	225	SEAT ORIENTATION (THIS OCCUPANT POS.)
4	STRATIF	Char	1	16	CASE STRATUM
38	TREATMNT	Num	4	150	TREATMENT - MORTALITY
6	VEHNO	Num	4	22	VEHICLE NUMBER
5	VERSION	Num	5	17	VERSION NUMBER
11	WEIGHT	Num	4	42	OCCUPANT' S WEIGHT
41	WORKDAYS	Num	4	162	WORKING DAYS LOST

SAS

CONTENTS PROCEDURE

Data Set Name: NASS94.0I
 Observations: 26091
 Variables: 20
 Label:

Type:
 Record Len: 85

-----Alphabetic List of Variables and Attributes-----

#	Variable	Type	Len	Pos	Label
15	AIS	Num	4	58	A. I. S. SEVERITY (O. I. C. - A. I. S.)
14	ASPECT90	Num	4	54	ASPECT90 (O. I. C. - A. I. S.)
2	CASEID	Char	4	8	CASE NUMBER - STRATUM
3	CASENO	Num	4	12	CASE SEQUENCE NUMBER
18	DIRINJ	Num	4	70	DIRECT/INDIRECT INJURY
12	INJLEVEL	Num	4	46	INJURY LEVEL
8	INJNO	Num	4	30	INJURY NUMBER
16	INJSOU	Num	4	62	INJURY SOURCE
19	INTRUNO	Num	4	74	OCCUPANT AREA INTRUSION NO.
7	OCCNO	Num	4	26	OCCUPANT NUMBER
1	PSU	Num	4	4	PRIMARY SAMPLING UNIT NUMBER
20	RATWGT	Num	7	78	RATIO INFLATION FACTOR
13	REGION90	Num	4	50	BODY REGION (O. I. C. - A. I. S.)
17	SOUCON	Num	4	66	INJURY SOURCE CONFIDENCE LEVEL
9	SOU DAT	Num	4	34	SOURCE OF INJURY DATA
4	STRATIF	Char	1	16	CASE STRATUM
11	STRUSPEC	Num	4	42	SPECIFIC ANATOMI C STRUCTURE
10	STRUTYPE	Num	4	38	TYPE OF ANATOMI C STRUCTURE
6	VEHNO	Num	4	22	VEHICLE NUMBER
5	VERSION	Num	5	17	VERSION NUMBER

SAS

CONTENTS PROCEDURE

#	Variable	Type	Len	Pos	Label
36	SDVC5	Num	4	118	CRUSH PROFILE C5 (2ND HIGHEST)
37	SDVC6	Num	4	122	CRUSH PROFILE C6 (2ND HIGHEST)
38	SDVD	Num	4	126	CRUSH PROFILE D (2ND HIGHEST)
31	SDVL	Num	4	98	CRUSH PROFILE L (2ND HIGHEST)
11	SHL1	Char	1	39	SPECIFIC LONGITUDINAL LOCATION (HIGHEST)
19	SHL2	Char	1	59	SPECIFIC LONGITUDINAL LOC. (2ND HIGHEST)
4	STRATIF	Char	1	16	CASE STRATUM
12	SVL1	Char	1	40	SPECIFIC VERTICAL LOCATION (HIGHEST)
20	SVL2	Char	1	60	SPECIFIC VERTICAL LOCATION (2ND HIGHEST)
13	TDD1	Char	1	41	TYPE OF DAMAGE DISTRIBUTION (HIGHEST)
21	TDD2	Char	1	61	TYPE OF DAMAGE DISTRIBUTION(2ND HIGHEST)
40	TOWRES	Num	4	134	RESEARCHER ASSESSMNT VEHICLE DISPOSITION
6	VEHNO	Num	4	22	VEHICLE NUMBER
5	VERSION	Num	5	17	VERSION NUMBER
41	WHEELBAS	Num	8	138	ORIGINAL WHEELBASE

SAS

CONTENTS PROCEDURE

#	Variable	Type	Len	Pos	Label
42	GLPREWS	Num	4	166	WS WINDOW PRECRASH GLAZING STATUS
39	GLTYPBL	Num	4	154	BL TYPE OF WINDOW/WINDSHIELD GLAZING
35	GLTYPLF	Num	4	138	LF TYPE OF WINDOW/WINDSHIELD GLAZING
37	GLTYPLR	Num	4	146	LR TYPE OF WINDOW/WINDSHIELD GLAZING
41	GLTYPOTH	Num	4	162	OTHER TYPE OF WINDOW/WINDSHIELD GLAZING
36	GLTYPRF	Num	4	142	RF TYPE OF WINDOW/WINDSHIELD GLAZING
38	GLTYPRR	Num	4	150	RR TYPE OF WINDOW/WINDSHIELD GLAZING
40	GLTYPRUF	Num	4	158	ROOF TYPE OF WINDOW/WINDSHIELD GLAZING
34	GLTYPWS	Num	4	134	WS TYPE OF WINDOW/WINDSHIELD GLAZING
51	INCOMP1	Num	4	202	1ST INTRUDING COMPONENT
55	INCOMP2	Num	4	218	2ND INTRUDING COMPONENT
59	INCOMP3	Num	4	234	3RD INTRUDING COMPONENT
63	INCOMP4	Num	4	250	4TH INTRUDING COMPONENT
67	INCOMP5	Num	4	266	5TH INTRUDING COMPONENT
71	INCOMP6	Num	4	282	6TH INTRUDING COMPONENT
75	INCOMP7	Num	4	298	7TH INTRUDING COMPONENT
79	INCOMP8	Num	4	314	8TH INTRUDING COMPONENT
83	INCOMP9	Num	4	330	9TH INTRUDING COMPONENT
87	INCOMP10	Num	4	346	10TH INTRUDING COMPONENT
50	INLOC1	Num	4	198	1ST LOCATION OF INTRUSION
54	INLOC2	Num	4	214	2ND LOCATION OF INTRUSION
58	INLOC3	Num	4	230	3RD LOCATION OF INTRUSION
62	INLOC4	Num	4	246	4TH LOCATION OF INTRUSION
66	INLOC5	Num	4	262	5TH LOCATION OF INTRUSION
70	INLOC6	Num	4	278	6TH LOCATION OF INTRUSION
74	INLOC7	Num	4	294	7TH LOCATION OF INTRUSION
78	INLOC8	Num	4	310	8TH LOCATION OF INTRUSION
82	INLOC9	Num	4	326	9TH LOCATION OF INTRUSION
86	INLOC10	Num	4	342	10TH LOCATION OF INTRUSION
52	INMAG1	Num	4	206	1ST MAGNITUDE OF INTRUSION
56	INMAG2	Num	4	222	2ND MAGNITUDE OF INTRUSION
60	INMAG3	Num	4	238	3RD MAGNITUDE OF INTRUSION
64	INMAG4	Num	4	254	4TH MAGNITUDE OF INTRUSION
68	INMAG5	Num	4	270	5TH MAGNITUDE OF INTRUSION
72	INMAG6	Num	4	286	6TH MAGNITUDE OF INTRUSION
76	INMAG7	Num	4	302	7TH MAGNITUDE OF INTRUSION
80	INMAG8	Num	4	318	8TH MAGNITUDE OF INTRUSION
84	INMAG9	Num	4	334	9TH MAGNITUDE OF INTRUSION
88	INMAG10	Num	4	350	10TH MAGNITUDE OF INTRUSION
93	ODOMETER	Num	4	370	ODOMETER READING
8	OPENLF	Num	4	30	LF DOOR, TAILGATE OR HATCH OPENING
10	OPENLR	Num	4	38	LR DOOR, TAILGATE OR HATCH OPENING
9	OPENRF	Num	4	34	RF DOOR, TAILGATE OR HATCH OPENING
11	OPENRR	Num	4	42	RR DOOR, TAILGATE OR HATCH OPENING
12	OPENTG	Num	4	46	TG DOOR, TAILGATE OR HATCH OPENING
94	PANELDAM	Num	4	374	INSTRUMENT PANEL DAMAGE - OCC. CONTACT
7	PASINTEG	Num	4	26	PASSENGER COMPARTMENT INTEGRITY
1	PSU	Num	4	4	PRIMARY SAMPLING UNIT NUMBER
97	RATWGT	Num	7	386	RATIO INFLATION FACTOR
92	RDEFLOC	Num	4	366	LOCATION STEERING RIM/SPOKE DEFORMATION
91	RIMDEF	Num	4	362	STEERING RIM/SPOKE DEFORMATION
4	STRATIF	Char	1	16	CASE STRATUM
6	VEHNO	Num	4	22	VEHICLE NUMBER
5	VERSION	Num	5	17	VERSION NUMBER

APPENDIX A

DATA COLLECTION FORMS

(These forms can also be found in the NASS Data Collection, Coding and Editing Manual)

APPENDIX B

CODING INFORMATION FOR VEHICLE MAKE/MODEL

(These codes can also be found in the NASS Data Collection, Coding and Editing Manual)

The primary source of information on vehicle make and model is vehicle inspection; the VIN provides vehicle make data. Secondary sources include the police report and interviews. If the make of the vehicle is known and the model is not known, but the vehicle type (e. g., passenger car) is known, then Vehicle Model is coded as "399" (Unknown automobile). If the make of the vehicle is not known but the body type is known (e.g., a hit-and-run 2-door sedan), then Vehicle Make is coded "99" (Unknown) and Vehicle Model is coded "399" (Unknown automobile). If no information is available for a vehicle, then Vehicle Make and Body Type are coded "99" (Unknown) and Vehicle Model is coded "999" (Unknown).

Vehicle models are organized into general groups. These groups are:

- 001-397 - Passenger vehicle (automobile)
 - 398 - Other automobile
 - 399 - Unknown automobile
- 401-490 - Light trucks (including compact and large utility vehicles, utility station wagons, minivans, large vans [includes step vans and van derivatives], compact pickup trucks, and large pickup trucks)
 - 498 - Other light truck
 - 499 - Unknown light truck
- 701-734 - Motored Cycles/ATCs/ATVs (including motorcycles, mopeds, minibikes, motorscooters and dirt bikes) (701 - 706 Motorcycles/Mopeds) (731 - 734 ATCs/ATVs)
 - 798 - Other motored cycle
 - 799 - Unknown motored cycle
- 801-890 - Medium/heavy trucks (includes all trucks over 10,000 lbs. GVWR except some pickup type trucks under Body Type code "31" -Standard pickup)
 - 898 - Other medium/heavy truck
 - 899 - Unknown medium/heavy truck
- 901-983 - Buses
 - 988 - Other bus

- 989 - Unknown bus
- 998 - Other vehicle (includes construction equipment, farm vehicles and go-karts)
- 999 - Unknown vehicle

Within these groups, the model codes for automobiles and light trucks generally are not ordered to give any indication of vehicle size or type. However, the model codes for motored cycles, medium/heavy trucks, buses and other vehicles have specific definition. These definitions are:

Motored Cycles

- 701 0-50cc
- 702 51-124cc
- 703 125-349cc
- 704 350-449cc
- 705 450-749cc
- 706 750cc or greater

All Terrain Cycles/Vehicles

- 731 0-50cc
- 732 51-124cc
- 733 125-349cc
- 734 350cc or greater

Trucks and Buses

- 881 Medium/Heavy - CBE
- 882 Medium/Heavy - COE/low entry
- 883 Medium/Heavy - COE/high entry
- 884 Medium/Heavy - Unknown engine location
- 890 Medium/Heavy - COE entry position unknown
- 950 Truck based motor home
- 981 Bus - conventional front engine
- 982 Bus - front engine/flat front
- 983 Bus - rear engine/flat front

Other

- 398 Other automobile
- 498 Other light truck
- 798 Other motored cycle
- 898 Other medium/heavy truck
- 988 Other bus
- 998 Other vehicle (farm vehicle, go-kart)

Unknown

- 399 Unknown automobile
- 499 Unknown light truck
- 799 Unknown motored cycle
- 899 Unknown medium/heavy truck
- 989 Unknown bus
- 999 Unknown vehicle

APPENDIX C

MISSING RECORD RULES

Under the NASS Crashworthiness Data System (CDS) the rules for the presence or absence of forms (records) in an accident will depend on whether data exists or has been collected. For example, if a vehicle is not inspected there will not be an Exterior Vehicle record; if an occupant does not have a recorded injury there will not be an Occupant Injury record. In the current year NASS CDS at least one of each record type will be required for an accident which includes (1) a towed, inspected, CDS applicable vehicle or (2) a non-towed, inspected, CDS applicable, AOPS vehicle involved in a CDC applicable event (or CDC is blank) with an occupant having a recorded injury. The rules for the presence and absence of each record type and whether partial or complete are as follows:

Accident Record	One required for every accident.
Accident Event Record	At least one required for every accident.
General Vehicle Record	
Complete Record:	One required for every CDS applicable vehicle (GV07=01-49).
Partial Record:	One required (completed through variable GV15) for every non CDS applicable vehicle (GV07=50-99).
Exterior Vehicle Record	
Complete Record:	One required for every inspected (GV35=1 or 2) CDS applicable vehicle (GV07=01-49) involved in a CDC applicable event.
Partial Record:	One required for every inspected CDS applicable vehicle not involved in a CDC applicable event (variables EV04-19 will be blank).
Missing Record:	(1) Not inspected (GV35=0) CDS applicable vehicle. (2) Non CDS applicable vehicle (GV07=50-99).
Interior Vehicle Record	
Complete Record:	(1) Towed (GV09=1), inspected (GV35=1 or 2), CDS applicable vehicle (GV07=01-49). (2) Not towed (GV09=0 or 9), inspected, CDS applicable, AOPS (GV36=1) vehicle.
Missing Record:	(1) Towed, not inspected (GV35=0) CDS applicable vehicle. (2) Not towed (GV09=0 or 9) CDS applicable, Non AOPS (GV36=0) vehicle. (3) Non CDS applicable vehicle (GV07=50-99).
Occupant Assessment	
Complete Record:	(1) Towed (GV09=1), CDS applicable vehicle (GV07=01-49). (2) Not towed (GV09=0 or 9), CDS applicable, AOPS (GV36=1) vehicle
Missing Record:	(1) Not towed (GV09=0 or 9), CDS applicable, Non AOPS (GV36=0) vehicle. (2) Non CDS applicable vehicle (GV07=50-99).
Occupant Injury Record	
Complete Record:	(1) Towed (GV09=1), CDS applicable vehicle (GV07=01-49) with an occupant having a recorded injury (OA43=01-96). (2) Not towed (GV09=0 or 9), CDS applicable, AOPS (GV36=1) with an

- Missing Record:
- occupant having a recorded injury.
- (1) Towed, CDS applicable vehicle with no occupant having a recorded injury (OA43=00,97,99).
 - (2) Not towed (GV09=0 or 9), CDS applicable, Non AOPS (GV36=0) vehicle.
 - (3) Non CDS applicable vehicle (GV07=50-99).

APPENDIX D

CDC AND DELTA-V

This section gives an overview of the Collision Deformation Classification (C.D.C.) for cars, vans, and light trucks, per SAE J224 MAR 84 in the current year NASS. The C.D.C. codes contain eight characters. If there is no C.D.C., these codes are left blank. If there is a C.D.C., these codes are as follows:

Direction of Force (2-character numeric). Sum of Clock Direction and Incremental Value of Shift if both are known. If either is unknown, direction of force is coded "99".

Clock Direction is coded as follows:

00	Non-horizontal force	07	7 o'clock
01	1 o'clock	08	8 o'clock
02	2 o'clock	09	9 o'clock
03	3 o'clock	10	10 o'clock
04	4 o'clock	11	11 o'clock
05	5 o'clock	12	12 o'clock
06	6 o'clock	99	Unknown

Incremental Value of Shift i.e., change in direction of the structure as opposed to crushing of the structure. It is coded as follows:

00	No shift
20	End shift vertical--up; top shift--forward
40	End shift vertical--down; top shift--rearward
60	End or top shift lateral--right
80	End or top shift lateral--left
99	Unknown

Deformation Location (1 character alphanumeric) is coded as follows:

F	Front
R	Right side
L	Left side
B	Back (rear)
T	Top
U	Undercarriage
9	Unknown

Specific Longitudinal or Lateral Location (1 character alphanumeric) is coded as follows:

<u>Horizontal Impacts</u>		<u>Top or Undercarriage</u>	
D	Distributed--side or end	D	Distributed (F+P+B)
L	Left--front or rear	F	Front Section
C	Center--front or rear	P	Center Section
R	Right--front or rear	B	Rear Section
F	Side front--left or right	Y	F+P
P	Side center section--L or R	Z	P+B
B	Side rear--left or right	9	Unknown
Y	Side (F + P) or end (L + C)		
Z	Side (P + B) or end (C + R)		
9	Unknown		

Specific Vertical or Lateral Location (1 character alphanumeric) is coded as follows:

Vertical - Front, Rear, or Side Impacts

A	All
H	Top of frame to top
E	Everything below belt line
G	Belt line and above
M	Middle--top of frame to belt line or hood
L	Frame--top of frame, frame, bottom of frame (including undercarriage)
W	Below undercarriage level (wheel and tires only)
9	Unknown

Lateral - Top and Undercarriage Impacts

D	Distributed
L	Left
C	Center
R	Right
Y	Left and Center (L + C)
Z	Right and Center (R + C)
9	Unknown

Type of Damage Distribution (1 character alphanumeric) is coded as follows:

W	Wide impact area	E	Corner
N	Narrow impact area	K	Conversion in impact type
S	Sideswipe	U	No residual deformation
O	Rollover (including side)	9	Unknown
A	Overhanging structure		

Deformation Extent Guide (2 character alphanumeric) is coded as follows:

01	One	06	Six
02	Two	07	Seven
03	Three	08	Eight
04	Four	09	Nine
05	Five	99	Unknown

Delta-V.

Delta-V is defined as the vector velocity change during the collision phase of a crash or as common velocity minus approach velocity, where common velocity is the velocity of both vehicles at the instant of maximum crush:

$$\text{Delta V} = V_{\text{common}} - V_{\text{approach}}$$

The direction of the vector is determined by the investigator as the direction of principal force. For each vehicle, the components of its Delta-V are obtained by projecting on the longitudinal and lateral axes of that vehicle.

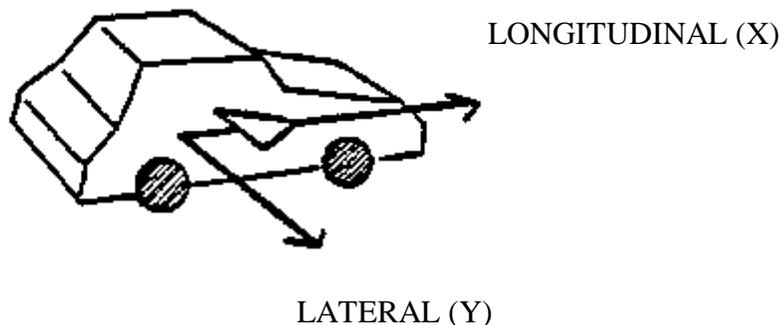


Figure D-1

Figure D-1 shows the positive direction of the longitudinal and lateral components of Delta-V. For example, in a head-on collision, a vehicle is decelerated and the initial high positive longitudinal velocity is reduced; thus it will have a negative longitudinal Delta-V.

APPENDIX E

SELECTED COUNTS

Users of the NASS Analysis file occasionally have requested that the manual include total counts for certain NASS statistics. These counts may help assure that the users are accessing the desired NASS tape. Further, such counts help to identify the source of apparent anomalies.

For this edition of the User's Manual, the following counts have been identified as potentially the most useful:

!	Total Number of Accident Records	4,296
!	Total Number of Accident Event Records	7,967
!	Total Number of General Vehicle Records	7,451
!	Total Number of Exterior Vehicle Records	5,221
!	Total Number of Interior Vehicle Records	4,718
!	Total Number of Occupant Assessment Records	9,851
!	Total Number of Occupant Injury Records	26,091

APPENDIX F - PSU DEMOGRAPHIC DATA

- (1) PSU Codes
- (2) PSU Description
- (3) Population (1990 & 1980)
- (4) Land Area (Square Miles)
- (5) Population (by Age Group)
- (6) Number of Workers and Means of Transportation to Work
- (7) Number of Housing Units and Vehicles Available

Demographics data on the 24 PSU's are included to give researchers supplementary information on the nature of the PSU's when analyzing NASS data. The land area figures are from the County and City Data Book, 1988. The 1990 population figures and the figures on age distribution of the population in 1990 are from Tables 54 and 61 of "1990 Census of Population, General Population Characteristics, Age and Sex by Race and Hispanic Origin: 1990 - County, Place and County Subdivision". The 1980 population figures and the figures on age distribution of the population in 1980 are from Tables 26 and 46 of "1980 Census of Population, Chapter B, General Population Characteristics, Persons by Age for Countries, Areas and Places: 1980". The figures pertaining to number of workers, means of transportation to work, number of housing units and vehicles available are from Table 6 "Employment Status and Journey to Work Characteristics: 1990" and Table 14 "Fuels and Equipment Characteristics: 1990" of "1990 Census of Population and Housing, Summary Social, Economic and Housing Characteristics".

PRIMARY SAMPLING UNIT (PSU) CODES AND DESCRIPTION

<u>VALUES</u>	<u>STRATA</u>	<u>DESCRIPTION</u>
03, 06, 41, 49, 72, 74, 79, 82	1	Central City, one of the 60 largest SMSAs
05, 08, 09, 12, 45, 73, 75, 81	2	Suburban, one of the 17 - 60th largest SMSAs or PSU within 61st - 119th largest SMSAs either containing or not containing a central city
02, 04, 11, 13, 43, 48, 76, 78	3	Other PSU

POPULATION

PSU	1990	1980	PERCENT CHANGE	LAND AREA
P02	165,304	158,158	+4.5	1131
P03	2,300,664	2,230,936	+3.1	70
P04	433,203	346,038	+25.2	641
P05	678,111	643,621	+5.4	486
P06	1,585,577	1,688,210	-6.1	136
P08	966,570	1,026,147	-5.8	672
P09	830,422	737,822	+12.6	939
P11	282,937	264,748	+6.9	710
P12	430,459	450,449	-4.4	642
P13	158,983	157,589	+0.9	507
P41	271,074	274,602	-1.3	55
P43	423,380	301,327	+40.5	854
P45	335,749	319,694	+5.0	506
P48	167,098	153,264	+9.0	1961
P49	1,006,877	904,078	+11.4	331
P72	2,783,726	3,005,072	-7.4	228
P73	475,594	522,965	-9.1	501
P74	416,444	397,038	+4.9	333
P75	441,500	374,194	+18.0	917
P76	74,778	71,348	+4.8	11219
P78	120,739	90,554	+33.3	9994
P79	4,948,333	4,149,319	+19.3	3554
P81	991,060	775,903	+27.7	2044
P82	516,259	493,846	+4.5	84
All PSUs	20,804,841	19,536,922	+6.5	38,515
Total U.S.	248,709,873	226,542,203	+9.8	3,618,770

POPULATION BY AGE GROUP (1990)

PSU 24	UNDER 5	5 TO 9	10 TO 14	15 TO 19	20 TO
P02	11396	11045	10150	11765	12206
P03	178420	165956	164476	164977	179622
P04	28816	27497	26434	25568	24228
P05	45837	43619	39570	39910	44516
P06	115871	104113	100472	107408	135952
P08	61325	59345	54992	54766	56554
P09	64026	58331	53667	59426	77972
P11	19160	17431	15395	24922	39623
P12	33436	33652	33493	33647	30825
P13	12854	12930	12082	11336	10353
P41	16068	14648	12681	13713	16586
P43	30174	27295	25468	29177	40887
P45	21426	21148	20155	24918	30077
P48	10818	11073	11539	15863	19330
P49	81138	70967	61951	65369	91074
P72	216468	201140	190488	200988	235616
P73	34039	37502	38942	36770	30902
P74	33314	32489	29325	28498	31740
P75	33469	34032	31125	29471	25841
P76	5771	6388	6418	5781	3973
P78	10160	10104	9608	9091	9573
P79	416258	377775	348590	364937	419299
P81	75665	74986	67462	62023	65249
P82	29269	23842	20057	25641	48364

POPULATION BY AGE GROUP (1990) CONT.

PSU	25 TO 29	30 TO 44	45 TO 64	65 & OVER
P02	14201	41415	32628	21498
P03	204387	538749	419020	285057
P04	30151	91778	78323	100408
P05	56186	165576	140904	101993
P06	142337	347907	290803	240714
P08	72966	232418	208629	165575
P09	88137	220574	151373	56916
P11	29635	71793	43592	21226
P12	34807	102684	84086	43829
P13	12576	36925	29149	20798
P41	22707	64861	55147	54663
P43	46171	118537	72478	33193
P45	28850	81291	65194	42690
P48	13062	36760	29473	19180
P49	120170	254770	163547	97891
P72	278694	645300	484450	330182
P73	35923	109188	93649	58679
P74	39112	101480	73153	47333
P75	37177	128350	86421	35614
P76	4502	14717	15167	12061
P78	9670	24212	20826	17495
P79	478019	1217438	859606	466411
P81	89923	275550	191520	88692
P82	55845	149538	85303	78400

WORKERS AND MEANS OF TRANSPORTATION TO WORK

PSU	WORKERS	% USING CAR, TRUCK OR VAN	% IN CARPOOLS	% USING PUBLIC TRANSIT
P02	78,739	88.6	12.3	1.7
P03	907,010	31.3	8.8	58.0
P04	178,966	92.7	13.3	2.0
P05	352,960	88.8	10.0	4.2
P06	640,577	57.8	13.2	28.7
P08	444,449	85.6	12.8	8.7
P09	468,944	83.7	19.0	11.2
P11	148,727	83.1	9.6	3.0
P12	174,589	95.2	10.1	0.8
P13	63,855	93.7	11.3	0.7
P41	126,578	88.7	13.3	3.6
P43	237,181	93.0	12.1	1.6
P45	160,829	91.1	12.4	1.1
P48	71,893	93.6	13.5	0.7
P49	500,566	87.6	15.2	6.7
P72	1,181,677	61.1	14.8	29.7
P73	199,700	91.5	12.4	3.6
P74	210,358	91.1	11.4	2.7
P75	238,304	90.8	12.2	3.0
P76	23,706	88.3	14.3	0.2
P78	45,834	86.4	18.2	1.3
P79	2,283,850	89.5	15.8	4.2
P81	525,998	89.2	11.0	4.9
P82	279,748	70.5	11.8	15.9

HOUSING UNITS AND VEHICLE AVAILABILITY

PSU	ALL OCCUPIED HOUSING UNITS	PERCENT NONE	WITH VEHICLES 1	AVAILABLE 2 OR MORE
P02	60,807	9.0	33.2	57.8
P03	828,199	56.7	33.2	10.1
P04	168,147	8.9	42.0	49.1
P05	254,995	7.0	32.6	60.4
P06	603,075	38.1	40.5	21.4
P08	387,778	13.3	38.0	48.8
P09	290,961	8.9	33.7	57.4
P11	104,528	7.2	35.2	57.6
P12	161,296	11.3	34.7	54.0
P13	57,798	9.7	33.5	56.8
P41	119,344	13.6	46.1	40.3
P43	165,743	6.3	31.7	62.0
P45	133,639	9.4	33.8	56.8
P48	61,099	10.2	32.0	57.8
P49	402,042	11.2	44.2	44.6
P72	1,025,174	34.3	41.1	24.6
P73	170,748	12.5	35.2	52.3
P74	161,113	10.5	34.6	54.9
P75	167,853	3.3	26.8	69.9
P76	26,177	8.8	33.9	57.4
P78	41,139	6.4	39.3	54.3
P79	1,613,172	7.8	32.5	59.6
P81	379,090	4.2	27.7	68.1
P82	236,702	16.7	40.9	42.3