U.S. DEPARTMENT
OF TRANSPORTATION

**National Highway
Traffic Safety
Administration**

National Automotive Sampling System (NASS) General Estimates System (GES)

Analytical User's Manual 1988-2002

NASS GES Analytical User's Manual
1988 - 2002

U. S. Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
Washington, D.C. 20590

TABLE OF CONTENTS

New in 2002 GES

Coding Changes:

A10 Relation to Roadway (REL_RWY): code 9 “Continuous Left Turn Lane” has been added.

A14 Roadway Profile (PROFILE): code 8 changed from “Other” to “Sag.”

A23 Stratum (STRATUM): Group 1 is distributed into 3 new strata. See discussion in “GES Sample Design” of this report.

V31 Motor Carrier’s ID Number changed from SAS numeric variable to character to preserve leading zeros. The SAS name changed from C_ID_NO to CARIDNUM.

D06 Driver Maneuvered to Avoid (DRMAN_AV): codes 93 “Not on PAR” and 94 “Not Coded” replace code 96 “Not Reported.”

D07 Driver Distracted By (DR_DSTRD): codes 93 “Not on PAR” and 94 “Not Coded” replace code 96 “Not Reported.”

D08 Driver’s Zip Code changed from SAS numeric variable to character to preserve leading zeros. The SAS name changed from DR_ZIP_C to DZIPCODE.

P11 Police Reported Alcohol Involvement (PER_ALCH): codes 6 “Not on PAR” and 7 “Not Coded” replace code 8 “Not Reported.”

P17 Police Reported Drug Involvement (PER_DRUG): codes 6 “Not on PAR” and 7 “Not Coded” replace code 8 “Not Reported.”

New Variables and Files

New SAS data sets and variables are added to 2002 GES to accommodate multiple responses. These changes are discussed in detail in “GES SAS Files” of this report.

The following variables are added to the Vehicle/Driver file:

- V_A11 Trafficway Flow (VTRAFWAY)
- V_A12 Number of Travel Lanes (VNUM_LAN)
- V_A13 Roadway Alignment (VALIGN)
- V_A14 Roadway Profile (VPROFILE)
- V_A15 Roadway Surface Condition (VSURCOND)
- V_A16 Traffic Control Device (VTRAFCON)
- V_A18 Speed Limit (VSPD_LIM)

The variable E_06 Vehicle’s Action (E_ACTION) is added to the Event file

The following SAS data sets and new variables are added:

- Distract file, Driver Distracted by (MDRDSTRD)
- Factor file, Vehicle Contributing Factors (MFACTOR)
- Maneuver file: Driver Maneuvered to Avoid (MDRMANAV)
- Violatn file: Violations Charged to Drivers (MVIOLATN)
- Vision file: Driver's Vision Obstructed By (MVISOBSC)
- Impair file: Person's Physical Impairment (MIMPAIRMT)
- Nmaction file: Non-Motorist Action (MACTION)
- Safetyeq file: Non-Motorist Safety Equipment Use (MSAFEQMT)
- Trafcon file: Traffic Control Devices for Vehicles (MTRAFCON)
- Biketraf file: Traffic Control Devices for Cyclists (BTRAFCON)

Introduction

One of the primary objectives of the National Highway Traffic Safety Administration (NHTSA) is to reduce the staggering human toll and property damage that motor vehicle traffic crashes impose on our society. Crashes each year result in thousands of lives lost, hundreds of thousands of injured victims, and billions of dollars in property damage. Good data are required to support the development, implementation, and assessment of highway safety programs aimed at reducing this toll. NHTSA uses data from many sources, including the National Automotive Sampling System General Estimates System (GES) which began operation in 1988. Providing data about all types of crashes involving all types of vehicles, the GES is used to identify highway safety problem areas, provide a basis for regulatory and consumer information initiatives, and form the basis for cost and benefit analyses of highway safety initiatives.

The GES obtains its data from a nationally representative probability sample selected from the estimated 6.4 million police-reported crashes which occur annually. These crashes include those that result in a fatality or injury and those involving major property damage. Although various sources suggest that there are many more crashes that are not reported to the police, the majority of these unreported crashes involve only minor property damage and no significant personal injury. By restricting attention to police-reported crashes, the GES concentrates on those crashes of greatest concern to the highway safety community and the general public.

This multi-year analytical user's manual provides documentation on variables that are contained in the GES and other useful information that will enable the users to become familiar the data system.

GES Operations

The GES is directed by the National Center for Statistics and Analysis, which is a component of Research and Development in NHTSA. The data are obtained by GES data collectors in 60 geographic sites across the United States. These data collectors make weekly, biweekly, or monthly visits to approximately 400 police agencies within the 60 sites. During the visit, the data collectors list all police traffic crash reports (PARs) not previously listed and then select a sample of the listed PARs. The collector obtains copies of these selected PARs and sends them to a contractor for coding. Trained personnel interpret and code data directly from the PARs onto an electronic file. To protect individual privacy, no personal information such as names, addresses, specific crash location, etc., is coded.

During data coding, the data are checked for validity and consistency. After the data file is created, quality checks are performed on the data. When these are completed, the electronic data are made available to governments, researchers, motor vehicle manufacturers, insurance companies, and others. The GES data are also used to respond to requests from the international and national highway safety communities, state and local government, the Congress, federal agencies, research organizations, industry, the media, and private citizens. Currently, annual GES data files are available for 1988 through 2002.

.

GES Sample Design

The police accident reports (PARs) from which GES data are coded are a probability sample of police-reported crashes that occurred in the United States. Since each crash that occurred in the survey year had a chance of being selected, the design makes it possible to compute not only national estimates but also probable errors associated with the estimates.

The selection of the sample of PARs for the GES was accomplished in three stages. The first stage is a sample of geographic areas, called Primary Sampling Units (PSUs), from across the United States. A PSU is either a central city, a county surrounding a central city, an entire county, or a group of contiguous counties. The U.S. was divided into 1,195 of these PSUs. The PSUs were then grouped into 14 categories according to the following geographic regions and types of PSUs:

- Geographic Region: Northeast, Midwest, South, and West
- Type: Large Central City, Large Suburban Area, and All others.

The second stage of the design is a sample of police jurisdictions within the geographic areas. In most areas, the number of police jurisdictions is more than can reasonably be visited by a data collector. All jurisdictions within a PSU were enumerated and the number of crashes investigated by each was determined. A probability sample of jurisdictions within each PSU was selected with probability proportional to the number of crashes investigated, i.e., as the number of crashes investigated increased, the probability of selecting that jurisdiction increased. An average of six or seven police jurisdictions were selected within each area.

The third and final stage is the selection of PARs within the sampled police jurisdictions. From 1988 to 2001 the PARs were grouped, or stratified, into one of four groups by the data collector:

- Group 1: NASS crashes involving at least one passenger vehicle, i.e., a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene and no medium or heavy trucks are involved;
- Group 2: NASS crashes not qualifying for *Group 1* involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C;
- Group 3: NASS crashes not qualifying for *Group 1 or 2* in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B; and,
- Group 4: NASS crashes not qualifying for *Group 1, 2 or 3.* No one in the crash can receive a K, A, or B injury.

From 2002 onward there are 6 GES strata: Group 1 is split into 3 groups, and Groups 2, 3, and 4 shown above remain the same. The new strata that had comprised Group 1 are:

- Group 1L: NASS crashes where an occupant of a towed, passenger vehicle is killed. This category also includes crashes involving one passenger vehicle, the passenger vehicle is towed, and one of the occupants receives an incapacitating (MAIS=A) injury and is transported for treatment -or- the crash involves two or more passenger vehicles, at least two passenger vehicles are towed and one of the occupants of the towed passenger vehicles receives an incapacitating injury and is transported for treatment. No medium or heavy trucks may be involved.

- Group 1M: NASS crashes not qualifying for Group 1L, but at least one occupant of a towed passenger vehicle is injured and transported for treatment. No medium or heavy trucks may be involved.

- Group 1N: NASS crashes not qualifying for Group 1L or Group 1M, but a passenger vehicle is towed and no medium or heavy trucks are involved.

Within each of these groups a systematic sample of crashes is selected, based on different sampling rations. In some very large police jurisdictions the number of police investigated crashes is too many for reasonable listing. In these jurisdictions the data collector will list a subsample of PARs, with those listed depending on the PAR number**.**

The data collector obtains copies of the selected PARs and sends them to the NASS zone centers for quality review and processing. The zone centers then code the selected PARs into a common format and create an electronic file. In 2002 approximately 54,300 PARs were sampled and coded.

A thorough discussion of the sample design can be found in the ***National Accident Sampling System General Estimates Technical Note***, DOT HS 807 796. For a copy, write:

Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis, NRD-31
400 Seventh Street SW
Washington, D.C.20590

National Estimates

Since the GES data are obtained from a probability sample of police-reported traffic crashes, national estimates can be made from these data. In order to calculate estimates of national level crash characteristics, data from each PAR on the file must be weighted. The national weight has been added to the file for each PAR and is called "WEIGHT". (Technically, this weight is the product of the inverse of the probabilities of selection at each of the three stages in the sampling process.)

In 1995, the methodology for calculating the national weight in the GES was evaluated. Using 1992 state data obtained through state agencies for each of the 1,195 Primary Sampling Units (PSUs), the number of fatal and injury crashes showed an overall increase throughout the geographical and urbanization areas. It was decided that changes were large enough to warrant some type of modification in procedures. PSUs in the GES had not been reselected since the 1986 redesign because of the cost and time required to do so. To account for shifts in the distribution of crashes, the procedures used to stratify and select the PSUs in 1979 and 1986 were followed, without actually resampling the PSUs. Rather, the weights of the current PSUs would be adjusted to reflect changes. The revised weights were phased into the 1993, 1994 and 1995 GES files. Therefore, estimates from the GES for 1993-95 had been revised.

Because some of the changes were so dramatic, NHTSA decided to make adjustments to the PSU weights every three years. For more information on reweighting of the PSUs in the GES, refer to the research note, ***Reweighting of the Primary Sampling Units in the National Automotive Sampling System***, published September 1997.

The second round for making adjustments to the PSU weights was implemented in 1998. Some of the same procedures used in the first round were used in the second round. Using 1995 state data obtained through state agencies, the number of fatal and injury crashes throughout the geographical and urbanization areas were evaluated. Overall, there was a decrease in the number of crashes. The PSUs weights were revised to reflect the shift and the revised weights were phased into the 1996 and 1997 GES files. Therefore, estimates from the GES for 1996-98 have been revised.

A weight variable is provided in the GES data files that produces the national estimates (see GES Variables and Definitions).

The national estimates produced from GES data may differ from the true values because they are based on a probability sample of crashes and not a census of all crashes. The size of these differences may vary depending on which sample of crashes was selected. The standard error of an estimate is a measure of the precision or reliability with which an estimate from this particular GES sample approximates the results of a census.

It is impractical to compute a standard error for each national estimate crash characteristic. Instead, generalized standard errors for estimates of totals are provided in Appendix D.

For more information on GES estimation and the reliability of these estimates, refer to the ***National Accident Sampling System General Estimates System Technical Note***, DOT HS 807 796.

GES SAS Files

GES data are made available to the public in Statistical Analysis System (SAS) data sets. Over the years changes have been made to the type of data collected and the way the data have been organized in the SAS data sets. Some variables have been dropped and new ones added, coding of individual variables has changed, and new SAS data sets have been created. Coding changes and the years for which individual data items are available are documented in the "Variables and Definitions" section of this document. The following discussion highlights major changes in SAS data sets.

From 1988 to 1999 GES data items were organized into three SAS files: The Accident, Vehicle/Driver, and Person files. Starting in 2000 the Event file is also available. These four files contain the following types of information:

- The Accident File contains information on crash characteristics and environmental conditions at the time of the crash. There is one record per crash.

- The *Vehicle/Driver File contains* information describing the vehicles and drivers involved in the crash. There is one record per vehicle.

- The *Person File contains* general information describing all persons involved in the crash: drivers, passengers, pedestrians, pedalcyclists, and non-motorists. It includes information such as age, sex, and vehicle occupant restraint use, and injury severity. There is one record per person.

- The *Event File* contains a brief description of each harmful event in a crash including the vehicles or objects involved and the general area of vehicle damage. The most harmful event number for each vehicle is recorded in the Vehicle file, enabling the identification of the vehicle or object involved in the vehicle's most harmful event. There is one record per event.

A number of new variables and new SAS data sets are issued in the 2002 GES as a result of changes in NHTSA's data collection system. The new data sets and variables are summarized below.

Starting in 2002, a number of roadway characteristic variables that had been available only on the Accident file are now also available on the Vehicle file. Prior to the new data collection system an algorithm was followed to select one roadway for coding roadway characteristics for a crash. Under the new system, roadway characteristics are coded for each vehicle in a crash. For example, in an intersection crash, one vehicle may be traveling on a snow-covered road surface while the other involved vehicle is traveling on a roadway that is cleared and dry. One vehicle may be controlled by a stop sign while the other vehicle is not. These types of situations may now be identified using the new variables. The seven roadway characteristic variables added to the Vehicle file are:

- Trafficway flow (SAS variable VTRAFWAY, GES Locator Code V_A11),
- Number of travel lanes (SAS variable VNUM_LAN, GES Locator Code V_A12),

- Roadway alignment (SAS name VALIGN, GES Locator Code V_A13),
- Roadway profile (SAS variable VPROFILE, GES Locator Code V_A14),
- Roadway surface condition (SAS variable VSURCOND, GES Locator Code V_A15),
- Traffic Control Device (SAS variable VTRAFCON, GES Locator Code V_A16), and
- Speed limit (SAS variable VSPD_LIM, GES Locator Code V_A18).

A second change was to record multiple responses for data items like violations charged, driver distractions, and non-motorist actions. Prior to the change in data collection, if the Police Accident Report had more than one response for these types of variables an algorithm was used to select only one response for a vehicle, driver, or non-motorist, and the variables were in the Vehicle/Driver or the Person file. Starting in 2002 all information on the PARs for these types of variables is available in individual SAS files, in addition to the variables with selected responses on the Vehicle/Driver and Person levels. The following SAS files have been created for the multiple response data, and have been added to GES in 2002:

- The *Factor File,* with information on vehicle-related factors that may have contributed to the cause of the crash, contains at least one record per vehicle. If more than one factor is identified for a vehicle each is coded on a separate record. (SAS variable MFACTOR, GES Locator Code M_V12)

- The *Violatn File,* with information on violations that were charged to drivers, contains at least one record per vehicle. If more than one violation is identified for a vehicle each is coded on a separate record. (SAS variable MVIOLATN, GES Locator Code M_D02)

- The *Vision File,* with information on circumstances that may have obscured the driver's vision, contains at least one record per vehicle. If more than one obstruction is identified each is coded on a separate record. (SAS variable MVISOBSC, GES Locator Code M_D04)

- The *Maneuver File*, with information on actions taken by the driver to avoid something or someone in the road, contains at least one record per vehicle. If more than one maneuver is identified each is coded on a separate record. (SAS variable MDRMANAV, GES Locator Code M_D06)

- The *Distract File,* with information on driver distractions, contains at least one record per vehicle. If more than one distraction is identified each is coded on a separate record. (SAS variable MDRDSTRD, GES Locator Code M_D07)

- The *Impair File*, with information on physical impairments for drivers and all non-motorists that may have contributed to the cause of the crash. There is one record per impairment, and there is at least one record for each driver or non-motorist. (SAS variable MIMPAIRMT, GES Locator Code M_P18)

- The *Nmaction File*, with information on actions of non-motorists that may have contributed to the cause of the crash. There is one record per action, and there is at least one record for each non-motorist, except that there are no records for occupants of motor vehicles not in transport. (SAS variable MACTION, GES Locator Code M_P19)

- The *Safetyeq File,* with information on safety equipment used by non-motorists. There is one record per equipment item, and there is at least one record for each non-motorist,

except that there are no records for occupants of motor vehicles not in transport. (SAS variable MSAFEQMT, GES Locator Code M_P20)

Two other files have been added in 2002 to accommodate multiple traffic control devices for a vehicle or for a cyclist. They are:

- The *Trafcon File*, with information on traffic control devices for each vehicle in a crash. There is one record per traffic control device, and at least one record for every vehicle. (SAS variable MTRAFCON, GES Locator Code MV_A16)

- The *Biketraf File*, with information on traffic control devices for each cyclist. There is one record per traffic control device, and at least one record for every cyclist. (SAS variable BTRAFCON, GES Locator Code MB_A16)

The Variable Definitions and Codes section of this report contains detailed information on each SAS variable, organized by SAS data set.

GES Imputation

GES data are obtained either directly from an item on the PAR or by interpreting the information provided in the report through reviewing the crash diagram, the Officer's written summary of the crash, or combinations of variables on the PAR. Because of this interpretation, and because the police officer may not have entered some item of information or provided complete information, data can be missing. Two different statistical procedures have been used on GES data to complete values for unknown data: univariate imputation and hot-deck imputation. A thorough discussion of the imputation procedures can be found in *Imputation in the NASS General Estimates System*, DOT HS 807 985. For a copy of the existing documentation, write:

Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis, NRD-31
400 Seventh Street, SW
Washington, D.C. 20590

The univariate imputation procedure was developed in SAS to randomly assign values to the unknowns in the same proportion as the known values for that one variable. For example, consider the variable *EJECTION*. The values might be:

No	**60**
Yes	**40**
Unknown	**5**
Total	**105**

The SAS univariate imputation program would assign values to the five unknown values in the following proportions:

No	**60/100**
Yes	**40/100**

The new variable, *EJECT_I* would have these values:

No	**63**
Yes	**42**
Total	**105**

Hot-deck imputation was also accomplished using SAS. Hot-decking replaces the unknown values for one variable using information from other correlated variables. For example, the hot-deck imputation program for *SEX* used the following correlated variables: *AGE, HOUR, DAY OF WEEK, VIOLATIONS CHARGED, PERSON TYPE, SEATING POSITION, DRUG & ALCOHOL INVOLVEMENT, and NUMBER OF OCCUPANTS & VEHICLES INVOLVED*. When *SEX* was unknown for a person record, the hot-deck program searches for another record that has a set of variables similar to the unknown sex record. When that record is found, the *SEX* value is used for the unknown *SEX* record.

Imputed variables can be identified by the _H or _I suffix in their SAS names. Hot-deck imputed *Body Type* is labeled *BDYTYP_H* and univariate imputed *EJECTION* is labeled *EJECT_I*. All original variables still exist on the data files. The analyst can choose to use the original variables with unknowns or the univariate/hot-deck imputed variables without unknowns. The proportion of unknowns for a given variable varies from year to year. In some years the proportion is so low that it seems redundant to provide an imputed variable, however imputed variables are not removed for those years to avoid rounds of removing and then reinstating data items in the SAS files.

GES Variable List

There are 6 variables that are on each of the SAS data sets. They are:

GES Case Number (CASENUM): This variable is a unique number assigned to each crash. It appears on each of the three files and is used to merge the various information from the files together.

Primary Sampling Unit (PSU): There are 60 possible values ranging from 1 to 97. A PSU is either a large central city, a county surrounding a city, or a group of counties.

Police Jurisdiction (PJ): The number (range 1 through 120) of the police jurisdiction from which the PAR was originally sampled.

Region of the Country (REGION): Indicates the region of the country where the crash occurred. It is based on the primary sampling unit and is defined as follows:

1 = Northeast (PA, NJ, NY, NH, VT, RI, MA, ME, CT)
2 = Midwest (OH, IN, IL, MI, WI, MN, ND, SD, NE, IA, MO, KS)
3 = South (MD, DE, DC, WV, VA, KY, TN, NC, SC, GA, FL, AL, MS, LA, AR, OK, TX)
4 = West (MT, ID, WA, OR, CA, NV, NM, AZ, UT, CO, WY, AK, HI)

Case Stratum (STRATUM): The number of the category in which the PAR was originally listed in GES PAR Program or Stratification Record. From 1988 to 2001 there are 4 strata, and starting in 2002 there are 6. See the report section titled "GES Sample Design" for more information. SAS codes for Stratum are shown in the "Variable Definition and Codes – Accident File" section of this report.

GES Case Weight (WEIGHT): This is the variable used to produce national estimates from the data. See the report section titled "National Estimates" for more information.

The "Variable Definitions and Codes" section of this report provides detailed information on the data items, including SAS formats. If the SAS variable has an associated format, the format name appears in brackets following the SAS variable name. If a format name changed from 1988 to 2002, format names are given for the last three years of data. Format names for years earlier than those in this report can be obtained from a SAS PROC CONTENTS.

All variables are numeric except the following:

- VIN (V07) Character all GES years
- Driver Zip Code (D08) Character 2002, numeric all prior years
- Motor Carrier ID (V31) Character 2002, numeric all prior years

The following list shows all SAS variables with their SAS data set locations.

ACCIDENT FILE

EVENT FILE

VEHICLE/DRIVER FILE

DISTRACT FILE

FACTOR FILE

MANEUVER FILE

TRAFCON FILE

VIOLATN FILE

VISION FILE

PERSON FILE

IMPAIR FILE

NMACTION FILE

SAFETYEQ FILE

BIKETRAF FILE

The Accident File

The Accident file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, AND PJ, which are discussed in a previous section. It also contains:

Primary Sampling Unit Stratum

Definition: The stratum into which the PSU is grouped in the first stage of selection of sample crashes. This variable is used in the SUDAAN statistical system for calculating the variances. There are 14 strata. See the "GES Sample Design" section of this report for more information.

SAS Name: PSUSTRAT

Attribute Codes 1988-Later

1 to 14

A01 Month of the Crash

Definition: The month in which the crash occurred.

SAS Name: MONTH [A1Z.]

Attribute Codes 1988-Later

1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
10 = October
11 = November
12 = December

A01B Year of the Crash

Definition: The last two digits of the year in which the crash occurred. In 1999 year of the crash was changed to a four digit code.

SAS Name: YEAR

Attribute Codes

1988-1998	1999-Later
2 digit year	4 digit year

A01C Day of Week

Definition: The day of the week in which the crash occurred. This variable is derived from the SAS Weekday function. The SAS Weekday function returns the day of the week from a date.

SAS Name: WEEKDAY [A1CZ.]

Attribute Codes 1988- Later

1 = Sunday
2 = Monday
3 = Tuesday
4 = Wednesday
5 = Thursday
6 = Friday
7 = Saturday
9 = Unknown

A01CI Univariate Imputed Day of Week

Definition: This imputed variable has the same definition and element values as ***Day of Week***, excluding value 9 for unknown day of week. (See ***Understanding the GES Imputation Process*** section of this manual)

SAS Name: WKDY_I [A1CZ.]

A02 Hour of the Crash

Definition: The hour in which the crash occurred. Military time is used. Noon is coded as "12" and midnight is coded as "24". For one minute after midnight to fifty-nine minutes after midnight the hour is coded as "00". Unknown hour is coded "99."

SAS Name: HOUR [A2Z.]

Attribute Codes 1988-Later

x = hour
99 = unknown

A02I Univariate Imputed Hour of the Crash

Definition: This imputed variable has the same definition and element values as ***Hour of the Crash***, excluding value 99 for unknown hour. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: HOUR_I [A2Z.]

A02A Minute of the Crash

Definition: The minute in which the crash occurred. Possible values range from 00 to 59, with a value of 99 for unknown.

SAS Name: MINUTE [A2AZ.]

Attribute Codes 1988-Later

x = minute
99 = unknown

A02AI Univariate Imputed Minute of the Crash

Definition: This imputed variable has the same definition and element values as ***Minute of the Crash***, excluding value 99 for unknown minutes. (See ***Understanding the GES Imputation Process*** section.)

SAS Name: MINUTE_I [A2AZ.]

A03 Number of Vehicles Involved

Definition: The number of vehicles involved in the crash. This number includes hit and run vehicles that have been noted on the PAR, even if the PAR contains no further information on the vehicles, but does not include phantom vehicles (a vehicle which may have caused the crash but left the scene).

SAS Name: VEH_INVL

Attribute Codes 1988-Later

x = number of vehicles

A03A Number of Vehicles Coded

Definition: This variable was derived by counting the number of vehicles listed in the vehicle file for a crash. This variable was discontinued in 1990.

SAS Name: VEH_COD

Attribute Codes 1988-1989

x = number of vehicles

A03B Number of Persons Involved

Definition: The number of persons involved in the crash A value 0 is coded when there are no persons involved in the crash. For example, if a parked vehicle slips into gear, rolls down a driveway and hits a vehicle parked on the street, the number of persons involved is 0. This variable was discontinued in 1990.

SAS Name: PER_INVL

Attribute Codes 1988-1989

x = Number of persons
99 = Unknown

A03C Number of Persons Coded

Definition: This variable is derived by calculating the number of listed persons in the person file for the crash. A value 0 is coded when there are no persons coded in the crash. This number may be less than number of persons involved because some states report only the number of injured occupants, but no further information. This variable was discontinued in 1990.

SAS Name: PER_COD

Attribute Codes 1988-1989

x = number of persons

A04 Number of Non-Motorists Involved

Definition: The number of non-motorists involved in the crash. A non-motorist is defined as a pedestrian, a cyclist, an occupant of a motor vehicle not in transport, a person riding a horse, an occupant of an animal drawn conveyance, person associated with non-motorist conveyance (e.g., baby carriage, skate board, wheelchair), or an other non-motorist (e.g., person outside a trafficway, person in a house).

SAS Name: NON_INVL

Attribute Codes 1988-Later

Note: From 1988-1998 the range was 0-25 and in 1999 it was changed to 0-98.

x = number of non-motorists

A04A Number of Non-Motorists Coded

Definition: This variable is derived by counting the number of listed non-motorists in the person file for the crash. A value 0 is coded when there were no non-motorists coded in the crash. This variable was discontinued in 1990.

SAS Name: NON_COD

Attribute Codes 1988-1989

x = number of non-motorists

A05 Land Use

Definition: This variable is based on the police jurisdiction. The coder identifies the name of the city or town where the crash occurred. Depending on the population of the city or town, the coder classifies the city or town accordingly. Prior to 1995, population figures were taken from the 1980 County and City Data Book published by the Census. If city or town population is less the 25,000 or the population was not listed in the County/City Book, then 8 is coded. In 1995, population figures were taken from the 1994 County and City Data Book published by the U.S. Census. Beginning in 1999, it is based on the population of the area associated with the police agency from which the accident reports are selected.

SAS Name: LAND_USE [A5Z.]

Attribute Codes 1988-Later

1 = Within Area of Population 25,000-50,000
2 = Within Area of Population 50,000-100,000
3 = Within Area of Population 100,000+
8 = Other Area
9 = Unknown

A05A Percentage Rural

Definition: This variable is computer generated based on 1980 Census data and the primary sampling unit (PSU). In 1995, population figures were taken from the 1994 County and City Data Book published by the Census. This variable was discontinued in 1997.

SAS Name: RUR_URB [A5AZ.]

1988-1996 Coding Attributes

0 = Rural
1 = 10 % of Area is Rural
2 = 20 % of Area is Rural
3 = 30 % of Area is Rural
4 = 40 % of Area is Rural
5 = 50 % of Area is Rural
6 = 60 % of Area is Rural
7 = 70 % of Area is Rural
8 = 80 % of Area is Rural
9 = 90 % of Area is Rural
10 = 100 % of Area is Rural

A06 First Harmful Event

Definition: Indicates the first property damaging or injury producing event in the crash.

SAS Name: EVENT1 [A6NZ.]

Attribute Codes

1988-1991	1992-1998	1999-Later	
			Noncollision
1	1	1	Rollover/Overturn
2	2	2	Fire/Explosion
3	3	3	Immersion
4		4	Gas Inhalation
5	5	5	Jackknife
6	6	6	Noncollision Injury (Injured In Vehicle Or Fell From Vehicle)
	50	7	Pavement Surface Irregularity (Ruts, Potholes, Grates,etc.)
8	8	8	Other Noncollision
9	9	9	Noncollision-No Details
10	10	10	Thrown or Falling Object
			Collision with Object Not Fixed
21	21	21	Pedestrian
22	22	22	Cycle or Cyclist (Pedalcyclist or Pedalcycle)
23	23	23	Railway Train
24	24	24	Animal
25	25	25	Motor Vehicle in Transport
26	26	26	Parked Motor Vehicle (or Other M.V. Not in Transport)
27	27	27	Other Type Non-Motorist
28	28	28	Other Object Not Fixed
29	29	29	Object Not Fixed-No Details
			Collision with Fixed Object
31	31	31	Ground
32	32	32	Building
33	33	33	Impact Attenuator/Crash Cushion
34	34	34	Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
35	35	35	Guardrail
36	36	36	Concrete Traffic Barrier or Other Longitudinal Barrier Type
37	37	37	Post, Pole or Support (Sign Post, Utility Post)
38	38	38	Culvert or Ditch
39	39	39	Curb
40	40	40	Embankment
41	41	41	Fence
42	42	42	Wall
43	43	43	Fire Hydrant
44	44	44	Shrubbery or Bush
45	45	45	Tree
46	46	46	Boulder
48	59	58	Other Fixed Object
49	59	59	Fixed Object, No Details
97			Other – No Details (1988-1989 only)
99	99	99	Unknown

A06I Univariate Imputed First Harmful Event

Definition: This imputed variable has the same definition as ***First Harmful Event***, excluding value 99 for unknown first harmful event**.** (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: EVENT1_I [A6NZ.]

A07 Manner of Collision

Definition: Indicates the orientation of the vehicles in a collision. If a non-collision, it is classified as such.

SAS Name: MAN_COL [A7N.]

Attribute Codes

1988 –1998	1999-Later	
0	0	Not Collision with Motor Vehicle in Transport
1	1	Rear-End
2	2	Head-On
3	3	Rear-to-Rear
4	4	Angle
5	5	Sideswipe, same direction
6	6	Sideswipe, opposite direction
8		Other
9	9	Unknown

A07I Univariate Imputed Manner of Collision

Definition: This imputed variable has the same definition and element values as ***Manner of Collision***, excluding value "9" for unknown manner of collision. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: MANCOL_I [A7N.]

A08 Interstate Highway

Definition: Indicates whether or not the crash occurred on an interstate highway. Interstate highway is a Federal Highway Administration classification.

SAS Name: INT_HWY [A8Z.]

Attribute Codes 1988-Later

0 = No
1 = Yes
9 = Unknown.

A09 Relation to Junction

Definition: Indicates if the first harmful event is located within a junction or interchange area. If the first harmful event occurs off the roadway, the location classified is the point of departure. In 1992, this variable was modified into two categories: *Non-Interchange Area* and *Interchange Area*.

SAS Name: REL_JCT [A9N.]

Attribute Codes

1988-1991

0 = Non-Junction
1 = Intersection
2 = Intersection Related
3 = Interchange Area
4 = Driveway, Alley Access, Etc.
5 = Entrance/Exit Ramp
6 = Rail Grade Crossing
8 = Other
9 = Unknown

1992-1994	1995-1998	1999-Later	
			Non-interchange Area
0	0	0	Non-Junction
1	1	1	Intersection
2	2	2	Intersection Related
3	3	3	Driveway, Alley Access, Etc.
4	4	4	Entrance/Exit Ramp
5	5	5	Rail Grade Crossing
	6	6	On A Bridge
		7	Crossover Related
8	8	8	Other, Non-interchange
9	9	9	Unknown, Non-interchange
			Interchange Area
10	10	10	Non-Junction
11	11	11	Intersection
12	12	12	Intersection Related
13	13	13	Driveway, Alley Access, Etc.
14	14	14	Entrance/Exit Ramp
	16	16	On A Bridge
		17	Crossover Related
18	18	18	Other Location in Interchange
19	19	19	Unknown, Interchange Area
99	99	99	Unknown if Interchange

A09I Univariate Imputed Relation to Junction

Definition: This imputed variable has the same definition and element values as ***Relation to Junction***, excluding value 9, 19, 99 for unknown relation to junction. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: RELJCT_I [A9N.]

A10 Relation to Roadway

Definition: Indicates the location of the first harmful event.

SAS Name: REL_RWY [A10N.]

Attribute Codes

1988-1998	1999-2001	2002
1 = On Roadway	1	1 On Roadway
2 = On Shoulder or Parking Lane	2	2 On Shoulder
3 = Off Roadway/Shoulder/Parking Lane	3	3 On Median
4 = On Median	4	4 On Roadside
	5	5 Outside Trafficway
	6	6 Off Roadway-Location Unknown
	7	7 In Parking Lane
8 = Other	8	8 Gore
		9 Continuous Left Turn Lane
	10	10 Separator
9 = Unknown	99	99 Unknown

A11 Trafficway Flow

Definition: Indicates whether or not the roadway was divided.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VTRAFWAY is in the Vehicle file

SAS Name: TRAF_WAY [A11Z.]

Attribute Codes 1988-Later

1 = Not Physically Divided (Two Way Trafficway)
2 = Divided Highway (Median Strip, Barrier)
3 = One Way Trafficway
9 = Unknown

A12 Number of Travel Lanes

Definition: Indicates the number of lanes of travel. If a divided trafficway, the number of travel lanes are only lanes in the direction of travel of the first harmful event. If an undivided trafficway, the number of travel lanes are all the lanes regardless of their direction of travel.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VNUM_LAN is in the Vehicle file.

SAS Name: NUM_LAN [A12Z.]

Attribute Codes 1988-Later

1 = One Lane
2 = Two Lanes
3 = Three Lanes
4 = Four Lanes
5 = Five Lanes
6 = Six Lanes
7 = Seven or More Lanes
9 = Unknown

A13 Roadway Alignment

Definition: Horizontal alignment of roadway.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VALIGN is in the Vehicle file.

SAS Name: ALIGN [A13Z.]

Attribute Codes 1988-Later

1 = Straight
2 = Curve
9 = Unknown

A13I Univariate Imputed Roadway Alignment

Definition: This imputed variable has the same definition and element values as ***Roadway Alignment***, excluding value "9" for unknown roadway alignment. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: ALIGN_I [A13Z.]

A14 Roadway Profile

Definition: Vertical alignment of roadway.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VPROFILE is in the Vehicle file.

SAS Name: PROFILE [A14Z.]

Attribute Codes

1988-2001	**2002**
1 = Level	1=Level
2 = Grade	2=Grade
3 = Hillcrest	3=Hillcrest
8 = Other	8=Sag
9 = Unknown	9=Unknown

A14I Univariate Imputed Roadway Profile

Definition: This imputed variable has the same as definition and element values as ***Roadway Profile****,* excluding value "9" for unknown roadway profile. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: PROFIL_I [A14Z.]

A15 Roadway Surface Condition

Definition: Condition of road surface at the time of the crash.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VSURCOND is in the Vehicle file.

SAS Name: SUR_COND [A15Z.]

Attribute Codes 1988-Later

1 = Dry
2 = Wet
3 = Snow or Slush
4 = Ice
5 = Sand, Dirt, Oil
8 = Other
9 = Unknown

A15I Univariate Imputed Roadway Surface Condition

Definition: This imputed variable has the same definition and element values as ***Roadway Surface Condition***, excluding value "9" for unknown roadway surface condition. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: SURCON_I [A15Z.]

A16 Traffic Control Device

Definition: Indicates whether or not a traffic control device was present for the crash and the type of traffic control device.

If the crash involves vehicles and cyclists controlled by different traffic control devices, the device coded is based on the following priority:

51 - Officer, Crossing Guard, Flagman, etc
The lowest numbered device shown below
0 - No traffic control device.

From 2002 onward this information is also available on the Vehicle file (VTRAFCON), the Biketraf file (BTRAFCON) and in the Trafcon file (MTRAFCON).

SAS Name: TRAF_CON [A16N.]

Attribute Codes:

1988-1989

0 = No Controls

Not at Railroad Grade Crossing

Traffic Signals:
1 = Traffic Control Signal (on colors) w/o Pedes. Signal
2 = Traffic Control Signal (on colors) w/ Pedes. Signal
3 = Traffic Control Signal (on colors) Pedes. Signal Not Known
4 = Flashing Traffic Control Signal or Flashing Beacon

8 = Other Traffic Signal
9 = Unknown Traffic Signal

Regulatory, School Zone or Warning Signs:
11 = Stop Sign
12 = Yield Sign
13 = School Zone Related Sign
14 = Warning Sign
18 = Other Sign
19 = Unknown Sign

Miscellaneous not at Railroad Crossing:
21 = Officer, Crossing Guard, Flagman, etc

At Railroad Grade Crossing:
31 = Active Devices (e.g. Gates, Flashing Lights, Traffic Signal)
32 = Passive Devices (Stop Sign, Cross Bucks)
Other:
97 = Traffic Control Present-No Details
98 = Other Traffic Control (whether or not at RR Grade Crossing)
99 = Unknown

1990-Later

0 = No Controls

Not at Railroad Grade Crossing

Trafficway Traffic Signals:
1 = Traffic Control Signal (on colors)

4 = Flashing Traffic Control Signal or Flashing Beacon
8 = Other Traffic Signal
9 = Unknown Traffic Signal

Regulatory, School ZoneSigns:
21 = Stop Sign
22 = Yield Sign
23 = School Zone Related Sign

28 = Other Sign
29 = Unknown Sign

Warning Signs:
40 = Advisory Speed Sign
41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
42 = Warning Sign For Road Construction
43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
49 = Unknown Type Warning

Miscellaneous, Not at Railroad Crossing:
51 = Officer, Crossing Guard, Flagman, etc

At Railroad Grade Crossing:
61 = Active Devices (e.g. Gates, Flashing Lights, Traffic Signal)
62 = Passive Devices (Stop Sign, Cross Bucks)
Other:
97 = Traffic Control Present-No Details
98 = Other Traffic Control (whether or not at RR Grade Crossing)
99 = Unknown

A17 Traffic Device Functioning

Definition: Indicates whether or not the traffic control device was functioning. This variable was discontinued in 1990.

SAS Name: DEV_FUNC [A17Z.]

Attribute Codes 1988-1989

0 = No Controls
1 = Device Not Functioning
2 = Device Functioning
9 = Unknown

A18 Speed Limit

Definition: Posted speed limit in miles per hour.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the highest speed limit is coded.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VSPD_LIM is in the Vehicle file.

SAS Name: SPD_LIM [A18Z.]

Attribute Codes 1988-Later

0 = No Statutory Limit (parking lot, alley, etc.)
5-75 = (Actual Speed Limit)
99 = Unknown

A18H Hot-deck Imputed Speed Limit

Definition: This imputed variable has the element values as ***Speed Limit***, excluding value "99" for unknown speed limit. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: SPDLIM_H [A18Z.]

A19 Light Condition

Definition: General light conditions at the time of the crash, including light from external roadway illumination fixtures.

SAS Name: LGHT_CON [A19N.]

Attribute Codes

1988-1998	1999-Later	
1	1	= Daylight
2	2	= Dark
3	3	= Dark but Lighted
4	4	= Dawn
5	5	= Dusk
6		= Dawn or Dusk
9	9	= Unknown

A19I Univariate Imputed Light Condition

Definition: This imputed variable has the same definition and element values as ***Light Condition***, excluding value "9" for unknown light condition. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: LGTCON_I [A19N.]

A20 Atmospheric Conditions

Definition: General atmospheric conditions at the time of crash.

SAS Name: WEATHER [A20Z.]

Attribute Codes 1988-Later

1 = No Adverse Conditions
2 = Rain
3 = Sleet
4 = Snow
5 = Fog
6 = Rain and Fog
7 = Sleet and Fog
8 = Other (Smog, Smoke, Blowing Sand/Dust/Snow, Crosswind, Hail)
9 = Unknown

A20I Univariate Imputed Atmospheric Condition

Definition: This imputed variable has the same definition and element values as ***Atmospheric Conditions***, excluding value "9" for unknown atmospheric conditions. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: WEATHR_I [A20Z.]

A21 School Bus-Related

Definition: Indicates if a school bus is related to the crash. The number of school bus related crashes may not equal the number of crashes with school buses involved. For example, if a vehicle goes around a stopped school bus and hits a pedestrian, the school bus usually will not be coded, but the crash is school bus related.

SAS Name: SCHL_BUS [A21Z.]

Attribute Codes 1988-Later

0 = No
1 = Yes

A23 Stratum

Definition: The number of the category in which the PAR was originally listed in GES PAR Program or Stratification Record. See the report section "GES Sample Design" for more information. This variable is on all GES SAS files.

SAS Name: STRATUM [A23Z.]

Attribute Codes

1988-2001

1 = Group 1: NASS crashes involving at least one passenger vehicle, i.e., a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene and no medium or heavy trucks are involved.

2 = Group 2: NASS crashes not qualifying for *Group 1* involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C.

3 = Group 3: NASS crashes not qualifying for *Group 1 or 2* in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B.

4 = Group 4: NASS crashes not qualifying for *Group 1, 2 or 3* . No one in the crash can receive a K, A, or B injury.

2002

1 = Group 1L: NASS crashes where an occupant of a towed, passenger vehicle is killed. This category also includes crashes involving one passenger vehicle, the passenger vehicle is towed, and one of the occupants receives an incapacitating (MAIS=A) injury and is transported for treatment -or- the crash involves two or more passenger vehicles, at least two passenger vehicles are towed and one of the occupants of the towed passenger vehicles receives an incapacitating injury and is transported for treatment. No medium or heavy trucks may be involved.

2 = Group 2: NASS crashes not qualifying for *Group 1* involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C.

3 = Group 3: NASS crashes not qualifying for *Group 1 or 2* in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B.

4 = Group 4: NASS crashes not qualifying for *Group 1, 2 or 3* . No one in the crash can receive a K, A, or B injury.

5 = Group 1M: NASS crashes not qualifying for Group 1L, but at least one occupant of a towed passenger vehicle is injured and transported for treatment. No medium or heavy trucks may be involved.

6 = Group 1N: NASS crashes not qualifying for Group 1L or Group 1M, but a passenger vehicle is towed and no medium or heavy trucks are involved.

A24 Pedestrian/Cyclist Crash Type

Definition: Information to code this variable is obtained from the police narrative. The values 1 through 99 pertain to cyclist crash types and 110 through 920 pertain to pedestrian crash types. Starting in 1989, four-digit codes are added pertaining to wheelchair involved crash types. The codes are similar to the 110-920 codes for pedestrians, with a 1 added as the first-digit. For example, 1110 is wheelchair involved with a commercial bus.

The crash types are prioritized. The lower category number has the higher the priority. For example, if after examining the PAR the cyclist crash could be classified as either a 3 or 13, the Crash Type would be classified as a 3.

SAS Name: PED_ACC [A24Z.]

Attribute Codes 1988-Later

0 = No pedestrian/cyclist involved

Bicyclist Rides out from a Driveway, Alley, or Other Mid-block Location
1 = Cyclist fails to yield to motorist at a residential driveway or alley; pre-crash path perpendicular to roadway.
2 = Cyclist fails to yield to motorist at a commercial driveway or alley; pre-crash path perpendicular to roadway.
3 = Cyclist turns or merges into the path of motorist from a residential driveway or alley; pre-crash path parallel to roadway.
4 = Cyclist fails to yield to motorist at a mid-block location: entry is over curb or shoulder.

Bicyclist Rides out from a Controlled Intersection
5 = Cyclist fails to yield to motorist at an intersection controlled by a stop sign or a flashing red signal.
6 = Cyclist fails to clear intersection controlled by signal before light turns green for cross traffic; motorists' view of cyclist was not obstructed.
7 = Cyclist fails to clear intersection controlled by signal before light turns green for cross traffic; motorists' view of cyclist was obstructed by standing traffic.

Motorist Turns or Drives out in Front of Bicyclist
8 = Motorist exiting from driveway, alley, or other mid-block location fails to yield to cyclist.
9 = At an intersection controlled by a stop sign or flashing red light, motorist obeys the sign but fails to yield to cyclist.
10 = At an intersection controlled by a signal, motorist obeys signal but fails to yield to cyclist while making right turn on red.
11 = Motorist backing from driveway fails to yield to cyclist.
12 = Motorist fails to stop at an intersection controlled by a stop sign.

Motorist Overtakes Bicyclist
13 = Motorist fails to detect cyclist he/she is overtaking.
14 = Motorist loses control of vehicle while overtaking cyclist; in some cases motorist is in uncontrolled slide or spin, but more often, merely loses precise control and veers too far to right.
15 = T he motorist and the cyclist counteract each other's evasive action.
16 = Motorist misjudges space required to pass cyclist.
17 = Cyclist's path is obstructed, causing cyclist to strike obstruction or overtaking motorist.

Bicyclist Makes Unexpected Turn or Swerve
18 = Cyclist turns left in front of motorist proceeding in the same direction.
19 = Cyclist turns left in front of motorist approaching from straight ahead.
20 = Cyclist loses control and swerves into the path of a motorist proceeding in the same direction.
21 = Cyclist riding on wrong side of street makes right turn in path of approaching motorist.

Motorist Makes Unexpected Turn
22 = Motorist make left turn in front of cyclist proceeding in the same direction; in some cases cyclist was riding on wrong side of street.
23 = Motorist make left turn in front of cyclist approaching from straight ahead.
24 = Motorist makes right turn in front of cyclist proceeding in a parallel path; bicyclist either proceeding in same direction or from opposite direction (riding on the wrong side of the street).

Other/Infrequent
25 = Vehicles collide at uncontrolled intersection: crossing paths
26 = Vehicles collide head-on: wrong-way bicyclist
27 = Bicyclist overtaking motor vehicle
28 = Vehicles collide head-on; wrong-way motorist
29 = Parking lot, other open area: crossing paths
30 = Vehicles collide head-on: counteractive evasive action
31 = Bicyclist cuts corner when turning left: crossing paths
32 = Bicyclist swings wide when turning right: crossing paths
33 = Motorist cuts corner when turning left: crossing paths
34 = Motorist swings wide when turning right: crossing paths
35 = Motorist drives out from on-street parking
36 = Weird (e.g. motorist/cyclist intentionally causes crash, or cyclist struck by falling cargo)
39 = Motorist overtaking Cyclist (other than elements 13-17)
40 = Play vehicle (Big wheel, other tricycle, or bicyclist with training wheels)
41 = Cyclist struck parked vehicle
48 = Drive out-Intersection (Motorist drove out into or in front of cyclist)
49 = Ride out-intersection (Bicyclist)
55 = Controlled intersection-other
97 = Unknown if approach paths are parallel or crossing* (added in 1989)
98 = Parallel path-unknown
99 = Intersecting path-unknown

Pedestrian Crash Types
110 = Commercial Bus
120 = School Bus
130 = Ice Cream Vendor
140 = Mailbox Related
150 = Entering/Exiting
210 = Driverless Vehicle
220 = Backing Vehicle
230 = Hot Pursuit
310 = To/from Disabled Vehicle
320 = Disabled Vehicle Related
330 = Emergency Vehicle Related
410 = Working on Roadway
420 = Play Vehicle-Related
430 = Playing in Roadway
510 = Hitchhiking
520 = Expressway Crossing
531 = Walking along Roadway with Traffic
532 = Walking along Roadway against Traffic
539 = Walking along Roadway Can't Specify
610 = Waiting to Cross At or Near Curb
620 = Pedestrian Not in Roadway
710 = Multiple Threat, Intersection
720 = Vehicle Turn/Merge
730 = Intersection Dash
740 = Trapped
750 = Pedestrian Walked into Vehicle, Intersection
760 = Intersection, Driver Violation
790 = Intersection-other
810 = Multiple Threat, Mid-block
821 = Mid-block Dart-out, First half

822 = Mid-block Dart-out, Second half
829 = Mid-block Dart-out, Can't specify
830 = Mid-block dash
840 = Pedestrian Walked into Vehicle, Mid-block
890 = Mid-block-other
910 = Other-weird
920 = Inadequate information

Wheelchair Pedestrian Crash Types
1620 = Wheelchair-Not in Roadway*
1710 = Wheelchair-Multiple Threat / Intersection*
1720 = Wheelchair-Vehicle Turn/Merge*
1730 = Wheelchair-Intersection Dash*
1740 = Wheelchair-Trapped*
1790 = Wheelchair-Intersection/Other*
1890 = Wheelchair-Mid-block/Other*

A25 Work Zone

Definition: Indicates if the crash occurred in a construction area or in a work zone. This variable was added to the accident file in 1995.

SAS Name: WRK_ZONE [A25Z.]

Attribute Codes 1995-Later

0 = No
1 = Yes

A26 National Highway System (NHS) Roadway Type

Definition: This variable was added to indicate whether this roadway is designated as part of the National Highway System and the urban or rural character of the area through which the roadway travels. This variable was added to the accident file in 1995 and removed in 1999.

SAS Name: NHS_RWTP)[A26Z.]

Attribute Codes 1995-1998

00 = Not NHS Roadway

Urban
1 = Eisenhower Interstate (EIS)
2 = Congressional High Priority Route
3 = STRAHNET Route
4 = STRAHNET Major Connector
5 = Other NHS Route
9 = Unknown Urban Route

Rural
11 = Eisenhower Interstate (EIS)
12 = Congressional High Priority Route
13 = STRAHNET Route
14 = STRAHNET Major Connector
15 = Other NHS Route
19 = Unknown Urban Route

Urban or Rural
21 = Eisenhower Interstate (EIS)
22 = Congressional High Priority Route
23 = STRAHNET Route
24 = STRAHNET Major Connector
25 = Other NHS Route
98 = Unknown if Urban or Rural
99 = Unknown if NHS Route

A90 Maximum Injury Severity in Crash

Definition: Indicates the most severe injury of all persons involved in the crash, and is derived from the injury severity variable in the person file. The following order of severity has been used since 2001.

4-Fatal
3- Incapacitating
2-Non- incapacitating
1-Possible Injury
5-Injured, Unknown Severity
0-No Injury
6-Died Prior
9-Unknown if Injured
8-No Person Involved in the Crash

From 1999 to 2000 the priority was different: Unknown if Injured had priority over No Injury.

SAS Name: MAX_SEV [A90Z.]

Attribute Codes 1988-Later

0 = No Injury
1 = Possible Injury
2 = Non-incapacitating
3 = Incapacitating
4 = Fatal
5 = Unknown Injury Severity
6 = Died Prior
8 = No Person Involved in the Crash
9 = Unknown

A90I Univariate Imputed Maximum Injury Severity in Crash

Definition: This imputed variable has the same definition and element values as ***Maximum Injury Severity in Crash***, excluding value "9" for unknown maximum injury severity. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: MAXSEV_I [A90Z.]

A91 Number Known Injured in Crash

Definition: Derived by counting all the persons with an injury severity of 1, 2, 3, 4, or 5 in a crash.

SAS Name: NUM_INJ [A91N.]

Attribute Codes 1988-Later

0 = No Person Injured/Property Damage Only Crash
x = Number of Known Injured
98 = No Person Involved in the Crash
99 = Unknown

A91I Imputed Number Known Injured in Crash

Definition: This imputed variable was derived from the hot-deck injury severity variable in the person file. This variable has the same definition and element values as ***Number Known Injured in Crash***, excluding values 98 and 99 for no person involved and unknown number injured, respectively.

SAS Name: NO_INJ_I [A91N.]

A92 Alcohol Involved in Crash

Definition: This is a derived variable based on police-reported alcohol involvement from the person file. This variable indicates alcohol use for drivers, pedestrians, cyclists and other type of non-motorists (except occupants of motor vehicles not in transport) involved in the crash.

SAS Name: ALCOHOL [A92Z.]

Attribute Codes 1988-Later

1 = Alcohol Involved
2 = No Alcohol Involved
8 = No Applicable Person Involved in the Crash (The crash involved only passengers of in-transport motor vehicles, occupants of motor vehicles not in transport or unknown occupant types who are in an in-transport motor vehicle)
9 = Unknown

A92I Imputed Alcohol Involved in Crash

Definition: This variable has the same definition and element values as ***Alcohol Involved in Crash***, excluding element value 9 for unknown alcohol involvement, and the attribute code 8 was converted to attribute code 2. This imputed variable was derived from the hot-deck imputed police reported alcohol involvement on the person file.

SAS Name: ALCHL_I [A92Z.]

The Event File

The Event file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, and PJ. CASENUM may be used to merge with crashes in the Accident file. It also contains:

E01 Crash Event Sequence Number

Definition: Number assigned to each harmful event in a crash, in chronological order.

SAS Name: **EVENTNUM**

Attribute Codes 2000-Later

x = Event Number

E02 Vehicle Number-This vehicle

Definition: Number assigned to an in transport motor vehicle involved in the event. Example: this vehicle's (VEHNUM=1) front (GAD=1) impacts the other vehicle's (OBJCONT=2) right side (OBJGAD=2). This variable is the same as VEHNO in the Vehicle file.

SAS Name: **VEHNUM**

Attribute Codes 2000-Later

x = Vehicle Number

E03 General Area of Damage-This vehicle

Definition: Indicates the impact point that produced property damage or personal injury for this transport motor vehicle involved in the event.

SAS Name: GAD [E3Z.]

Attribute Codes 2000-Later

0 = Non-Collision
1 = Front
2 = Right Side
3 = Left Side
4 = Back
5 = Top
6 = Undercarriage
11 = Front Right Corner
12 = Front Left Corner
13 = Back Right Corner
14 = Back Left Corner
99 = Point of Impact Unknown

E04 Vehicle Number-Other Vehicle or Object Contacted

Definition: vehicle number of the other vehicle or object hit, or the type of non-collision involved in the event.

SAS Name: OBJCONT [E4Z.]

Attribute Codes 2000-Later

Collision with Motor Vehicle in Transport:
1-100 Vehicle Number of Other Vehicle

Noncollision
101 Rollover/Overturn
102 Fire/Explosion
103 Immersion
104 Gas Inhalation
105 Jackknife
106 Noncollision Injury (Injured in Vehicle, or Fell From Veh.)
107 Pavement Surface Irregularity (Ruts, Potholes, Grates,etc.)
108 Other Noncollision
109 Noncollision-No Details
110 Thrown or Falling Object

Collision with Object Not Fixed
121 Pedestrian
122 Cycle or Cyclist (Pedalcyclist or Pedalcycle)
123 Railway Train
124 Animal
126 Parked Motor Vehicle (or Other M.V. Not in Transport)
127 Other Type Non-Motorist
128 Other Object Not Fixed
129 Object Not Fixed-No Details

Collision with Fixed Object
131 Ground
132 Building
133 Impact Attenuator/Crash Cushion
134 Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
135 Guardrail
136 Concrete Traffic Barrier or Other Longitudinal Barrier Type
137 Post, Pole or Support (Sign Post, Utility Post)
138 Culvert or Ditch
139 Curb
140 Embankment
141 Fence
142 Wall
143 Fire Hydrant
144 Shrubbery or Bush
145 Tree
146 Boulder
158 Other Fixed Object
159 Fixed Object-No Details

Unknown
999 Unknown

E05 General Area of Damage-Other Vehicle

Definition: Indicates the impact point for the other in transport motor vehicle involved in the harmful event.

SAS Name: OBJGAD [E5Z.]

Attribute Codes

2000	2001-Later	
1	1	= Front
2	2	= Right Side
3	3	= Left Side
4	4	= Back
5	5	= Top
6	6	= Undercarriage
11	11	= Front Right Corner
12	12	= Front Left Corner
13	13	= Back Right Corner
14	14	= Back Left Corner
	98	= Not a Motor Vehicle in Transport
99	99	= Point of Impact Unknown

E06 Vehicle's Action

Definition: Describes the action for the event.

SAS Name: E_ACTION [E6Z.]

Attribute Codes

2002

1 = Non-Collision
2 = Collision With Object Not Fixed
3 = Collision With Fixed Object
4 = Strike Another In-Transport Motor Vehicle
5 = Struck By An In-Transport Motor Vehicle

The Vehicle File

The Vehicle file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. It also contains:

V02 Hit and Run

Definition: Hit and run is coded when a motor vehicle in-transport, or its driver, departs from the scene; therefore, fleeing pedestrians and motor vehicles not in transport are excluded. It does not matter whether the hit-and-run vehicle was striking or struck.

SAS Name: HIT_RUN [V2Z.]

Attribute Codes 1988-Later

0 = No, Did Not Leave Scene
1 = Yes, Driver or Car and Driver Left Scene
9 = Unknown

V02I Univariate Imputed Hit and Run

Definition: This imputed variable has the same definition and element values as ***Hit and Run***, excluding value "9" for unknown hit and run. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: HITRUN_I [V2Z.]

V03 Vehicle Make

Definition: A numerical code indicating the make of each motor vehicle in transport.

SAS Name: MAKE [V3Z.]

Attribute Codes 1988-Later

See Appendix A for make and model codes.

V04 Vehicle Model

Definition: A numerical code indicating the model of each motor vehicle in transport

SAS Name: MODEL

Attribute Codes 1988-Later

See Appendix A for make and model codes.

V05 Body Type

Changes to this variable were made in:

1990: Attribute codes 11 and 12 were modified, attribute codes 13 *Limousine* and 22 *Step Van or Walk-in Van* were added, and attribute codes 33, 34, and 47 were deleted.

1992: Attribute codes 11, 12, 13, 14, 20, 21, 30, 31, 60, and 65 were modified. Attribute codes 15, 16, 17, 19, 23, 33, 45, and 64 were added. Some of the existing attribute coding changed.

1993: Attribute codes 24 and 25 were added. Prior to 1993 GVWR was measured in kilograms; in 1993 it changed to pounds.

1999: Attribute 17 was added.

The attribute coding for various years follows.

SAS Name: BODY_TYP [V5N.]

Attribute Codes 1988-1989

Automobiles
01 = Convertible (excludes sun-roof, t-bar)
02 = 2-door sedan, hardtop, coupe
03 = 3-door/2-door hatchback
04 = 4-door sedan, hardtop
05 = 5-door/4-door hatchback
06 = Station wagon (excluding van and truck based)
07 = Hatchback, number of doors unknown
08 = Other automobile type
09 = Unknown automobile type

Automobile Derivatives
10 = Auto based pickup (included El Camino, Caballero, Ranchero, and Brat)
11 = Auto based panel (Cargo Station Wagon, auto-based ambulance/hearse)
12 = Large limousine (More than four side doors or stretched chassis)

Utility Vehicles
14 = Utility-(includes Jeep CJ-2-CJ7, Renegade, Landrover, Bronco, Landcruiser, Thing, Blazer, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

Van-Based Light Trucks (≤ 10,000 lbs GVWR)
20 = Minivan (Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)
21 = Standard Van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Mini Ram Van, Chateau, Ram Wagon, Vandura, Rally Voyager, Beauville, Sportsman)
28 = Other Van Type
29 = Unknown Van type

Light Conventional Trucks (Pickup style cab, ≤ 10,000 lbs GVWR)
30 = Compact Pickup (< 4,500 lbs GVWR, S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)
31 = Standard Pickup (4,500 to 10,000 lbs GVWR, C10-C30, K10-K30, T10, D100-D300, W150, F100-F350, Comanche, J10, J20)
32 = Pickup with slide-in camper

33 = Truck based station wagon (4-door; includes Suburban, Travelall, Wagoneer)
34 = Light truck based suburban limousine
39 = Unknown (pickup style) light conventional truck

Other Light Trucks (< 10,000 lbs GVWR)
40 = Cab chassis based (included rescue vehicle, light stake, dump, and tow truck)
41 = Truck based panel
42 = Light truck based motor home (chassis mounted)
47 = Other light conventional truck type (not a pickup)
48 = Unknown other light truck type (utility, van, pickup, or other light truck)
49 = Unknown light vehicle type (automobile, van, or light truck)

Buses (excludes van based)
50 = School bus type (designed to carry students, not cross country or transit)
58 = Other bus (e.g., transit, intercity, bus based motor home)
59 = Unknown bus type

Medium/Heavy Trucks (>10,000 lbs GVWR)
60 = Single unit straight truck
63 = Medium/heavy truck based motor home
65 = Truck-tractor (cab only, or with any number of trailing units; any WEIGHT)
68 = Unknown medium/heavy truck type
69 = Unknown truck type (light/medium/heavy)

Motored Cycles (Does not include all terrain vehicles/cycles)
70 = Motorcycle
71 = Moped (motorized bicycle)
72 = Three wheeled motorcycle or moped
78 = Other motored cycle type (minibike, motor scooter)
79 = Unknown motored cycle type

Other Vehicles
80 = ATV (all terrain vehicle including dune/swamp buggy) and ATC (all terrain cycle)
81 = Snowmobile
82 = Farm equipment other than trucks
83 = Construction equipment other than trucks (includes graders)
88 = Other type vehicle (includes go-cart, fork lift, city street sweeper)
89 = Unknown other vehicle
99 = Unknown body type

Attribute Codes 1990-1991

Automobiles
01 = Convertible (excludes sun-roof, t-bar)
02 = 2-door sedan, hardtop, coupe
03 = 3-door/2-door hatchback
04 = 4-door sedan, hardtop
05 = 5-door/4-door hatchback
06 = Station wagon (excluding van and truck based)
07 = Hatchback, number of doors unknown
08 = Other automobile type
09 = Unknown automobile type

Automobile Derivatives
10 = Auto based pickup (included El Camino, Caballero, Ranchero, and Brat)
11 = Ambulance
12 = Hearse
13 = Limousine

Utility Vehicles
14 = Utility-(includes Jeep CJ-2-CJ7, Renegade, Landrover, Bronco, Landcruiser, Thing, Blazer, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

Van-Based Light Trucks (≤ 10,000 lbs GVWR)
20 = Minivan (Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)
21 = Large Van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, Ram Wagon, Vandura, Rally Voyager, Beauville, Sportsman)
22 = Step Van or Walk-in Van (< *10,000 lbs GVWR)*
28 = Other Van Type
29 = Unknown Van type

Light Conventional Trucks (Pickup style cab, ≤ 10,000 lbs GVWR)
30 = Compact pickup (S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck,
Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)
31 = Standard pickup (C10-C30, K10-K30, T10, D100-D300, W150, F100-F350, Comanche, J10, J20)
32 = Pickup with slide-in camper
39 = Unknown (pickup style) light conventional truck

Other Light Trucks (< 10,000 lbs GVWR)
40 = Cab chassis based (included rescue vehicle, light stake, dump, and tow truck)
41 = Truck based panel
42 = Light truck based motor home (chassis mounted)
48 = Unknown other light truck type (utility, van, pickup, or other light truck)
49 = Unknown light vehicle type (automobile, van, or light truck)

Buses (excludes van based)
50 = School bus type (designed to carry students, not cross country or transit)
58 = Other bus (e.g., transit, intercity, bus based motor home)
59 = Unknown bus type

Medium/Heavy Trucks (>10,000 lbs GVWR)
60 = Single unit straight truck
63 = Medium/heavy truck based motor home
65 = Truck-tractor (cab only, or with any number of trailing units; any WEIGHT)
68 = Unknown medium/heavy truck type
69 = Unknown truck type (light/medium/heavy)

Motored Cycles (Does not include all terrain vehicles/cycles)
70 = Motorcycle
71 = Moped (motorized bicycle)
72 = Three wheeled motorcycle or moped
78 = Other motored cycle type (minibike, motor scooter)
79 = Unknown motored cycle type

Other Vehicles
80 = ATV (all terrain vehicle including dune/swamp buggy) and ATC (all terrain cycle)
81 = Snowmobile
82 = Farm equipment other than trucks
83 = Construction equipment other than trucks (includes graders)
88 = Other type vehicle (includes go-cart, fork lift, city street sweeper)
89 = Unknown other vehicle
99 = Unknown body type

Attribute Codes 1992-Later

Automobiles
01 = Convertible (excludes sun-roof, t-bar)
02 = 2-door sedan, hardtop, coupe
03 = 3-door/2-door hatchback
04 = 4-door sedan, hardtop
05 = 5-door/4-door hatchback
06 = Station wagon (excluding van and truck based)
07 = Hatchback, number of doors unknown
17 = 3-Door Coupe *(added in 1999)*
08 = Other automobile type
09 = Unknown automobile type

Automobile Derivatives
10 = Auto based pickup (included El Camino, Caballero, Ranchero, Brat, and Rabbit Pickup)
11 = Auto based panel (Cargo Station Wagon, auto-based ambulance/hearse)
12 = Large limousine (More than four side doors or stretched chassis)
13 = Three wheel automobile or automobile derivative

Utility Vehicles
14 = Compact Utility-(includes Jeep CJ-2-CJ7, Scrambler, Golden Eagle, Renegade, Laredo, Cherokee (84 and after), Wrangler, Commando, Jeepster, GEO Tracker, Dispatcher, Bronco & Bronco II, 4 Runner, S15 Jimmy, Typhoon, Bravada, Thing, T30, Raider, Pathfinder, Trooper, Trooper II, Amigo, Rodeo, Navajo, RAV-4, Montero, Samurai, Sidekick, Rocky, Passport, Defender, Sportage, Mountaineer, Explorer, and S-10 Blazer)
15 = Large Utility (Jeep Cherokee (83 & before), Ramcharger, Trail duster, Bronco-full size, Blazer Fullsize, Tahoe, Jimmy Fullsize, Land Cruiser, Rover, Range Rover, Hummer, Expedition, Navigator, Scout, and Yukon)
16 = Utility Station wagon (Chevrolet Suburban, GMC Suburban, Travelall, Grand Wagoneer, and Suburban Limousin)
19 = Utility Vehicle, Unknown Body type

Van-Based Light Trucks (≤ 4,536 kg GVWR)
20 = Minivan (Chrysler Town & Country, Astro, Caravan, Grand Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Mini-Ram, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi, Previa, Lumina APV, Windstar, Odyssey Oasis, Villager, Silhouette, Transport, Nissan Minivan, Quest, Expo Wagon, Mitsubishi Minivan)
21 = Large Van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, E150-E350, G10 G30, Ram Wagon, Vandura, Rally Voyager (83 and before), Beauville, Sportsman, B150-350, Royal, Maxi-wagon, Tradesman, G15-35)
22 = Step Van or Walk-in Van (≤ 4,536 kg GVWR)
23 = Van-based Motor-home
24 = Van-based School Bus *(added in 1993)*
25 = Van-based Other Bus *(added in 1993)*
28 = Other Van Type
29 = Unknown Van type

Light Conventional Trucks (Pickup style cab, ≤ 4,536 kg GVWR)
30 = Compact pickup (S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Datsun/Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup, D50, Colt P/U, T-10, S-15, T-15, Ram 100, Dakota, Sonoma)
31 = Large pickup (C10-C35, Jeep P/U, Comanche, Ram P/U, K10-K35, D100-D350, W100-350, F100-F350, R100-500, R10-R35, V10-35, Silverado, Sierra, T100)
32 = Pickup with slide-in camper
33 = Convertible Pickup
39 = Unknown (pickup style) light conventional truck

Other Light Trucks (≤ 4,536 kg GVWR)
40 = Cab chassis based (included rescue vehicle, light stake, dump, and tow truck)
41 = Truck based panel
42 = Light truck based motor home (chassis mounted)

45 = Other light truck type
48 = Unknown other light truck type (utility, van, pickup, or other light truck)
49 = Unknown light vehicle type (automobile, utility, van, or light truck)

Buses (excludes van based)
50 = School bus type (designed to carry students, not cross country or transit)
58 = Other bus (e.g., transit, intercity, bus based motor home)
59 = Unknown bus type

Medium/Heavy Trucks (>4,536 kg GVWR)
60 = Step van
64 = Single unit straight truck
65 = Medium/heavy truck-based motor home
66 = Truck-tractor (cab only, or with any number of trailing units; any WEIGHT)
78 = Unknown medium/heavy truck type
79 = Unknown truck type (light/medium/heavy)

Motored Cycles (Does not include all terrain vehicles/cycles)
80 = Motorcycle
81 = Moped (motorized bicycle)
82 = Three wheeled motorcycle or moped
88 = Other motored cycle type (minibike, motor scooter)
89 = Unknown motored cycle type

Other Vehicles
90 = ATV (all terrain vehicle including dune/swamp buggy) and ATC (all terrain cycle)
91 = Snowmobile
92 = Farm equipment other than trucks
93 = Construction equipment other than trucks (includes graders)
97 = Other type vehicle (includes go-cart, fork lift, city street sweeper, motorized wheel chair)
99 = Unknown body type

V05H Hot-deck Imputed Body Type

Definition: This attributes for this imputed variable have changed over the years to mirror the values for ***Body Type***, excluding values "49", "79", and "99" for unknown light vehicle type, unknown truck type (light/medium/heavy), and unknown body type, respectively. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: BDYTYP_H [V5N.]

V06 Model Year

Definition: The model year of the vehicle. From 1988 to 1998, model years earlier than 1941 were coded "1940." Starting in 1999 the actual model year was coded for all vehicles.

SAS Name: MODEL_YR [V6Z.]

Attribute Codes 1988-Later

1940 = Model year 1940 and earlier (actual model years from 1999 onward)
1941-2001 = Model Year
9999 = Unknown

V06I Univariate Imputed Model Year

Definition: This imputed variable has the same definition and element values as ***Model Year***, excluding value "9999" for unknown model year. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: MDLYR_I [V6Z.]

V07 Vehicle Identification Number

Definition: The vehicle identification number assigned by the vehicle manufacturer. The VIN contains information on the vehicle such as: manufacturer, model year, model, body type, restraint type, etc. For VINs with a length of more than 11 characters, only the first 11 characters are coded. Characters beyond the 11th may contain the serial number, which can uniquely identify the vehicle, and consequently were omitted from the data.

SAS Name: VIN

Attribute Codes 1988-Later

00000000000 = No VIN
Actual VIN (left justified, up to 11 alphanumeric characters)
99999999999 = Unknown VIN

V08 Special Use

Definition: Indicates whether the vehicle has a special use. Special use means "in use" and not necessarily emergency use. All military vehicles are classified as "4" even if they are police, ambulance, or fire trucks.

SAS Name: SPEC_USE [V8N.]

Attribute Codes

1988-1991	1992-Later
0 = No Special Use	0 = No Special Use
1 = Taxi	1 = Taxi
2 = Vehicle Used as School Bus	2 = Vehicle Used as School Bus
3 = Vehicle Used as Other Bus	3 = Vehicle Used as Other Bus
4 = Military	4 = Military
5 = Police	5 = Police
6 = Ambulance	6 = Ambulance
7 = Fire truck	7 = Fire Truck and Car
	10 = Hearse
8 = Other (Farm or Construction Equip., Etc.)	11 = Farm Equipment
	12 = Construction Equipment
9 = Unknown	99 = Unknown

V09 Emergency Use

Definition: Indicates if a "4" through "7" *Special Use* (V8) vehicle is on an emergency run. Value "0" is coded if applicable vehicle was not on an emergency run or it was not one of the applicable vehicles.

SAS Name: EMCY_USE [V9Z.]

Attribute Codes 1988-Later

0 = No Emergency Use or Not an Applicable Vehicle
1 = Yes
9 = Unknown

V10 Number of Occupants Coded

Definition: This variable has been in the Vehicle file for all GES years. The SAS name has stayed the same but the definition has changed. From 1988 to 1989 V10 (OCC_INVL) represented the number of occupants in the vehicle and V10A (OCC_COD) represented the number of occupants in the vehicle that were coded. The number coded and the number involved are not always the same because, for example, some PARs have information only for injured occupants. In 1990 V10A (OCC_COD) was dropped and V10 (OCC_INVL) changed to represent the number of occupants coded. The definition of V10 has stayed the same since 1990. In 2000 V10B (NUMOCCS), representing the total number of occupants, was added to the Vehicle file.

SAS Name: OCC_INVL

Attribute Codes 1988-1989 (Number of Occupants Involved)

0-95 = Number of Occupants Involved
96 = 96 or more
97 = Unknown-Only Injured Reported
99 = Unknown

Attribute Codes 1990-1999 (Number of Occupants Coded)

0-29 =Number of Occupants Coded
30 = 30 or more

Attribute Codes 1999-Later (Number of Occupants Coded)

x = Number of occupants coded

V10A Number of Occupants Coded

Definition: Derived by counting the number of occupants including drivers that were coded for this vehicle. This variable was dropped from the Vehicle file in 1990.

SAS Name: OCC_COD

Attribute Codes 1988 -1989

0-30 = Number of Occupants Coded
99 = Unknown

V10B Number of Occupants Involved

Definition: Indicates the number of persons including drivers that were occupants of this vehicle.

2000-Later

SAS Name: NUMOCCS

0-998 = Number of Occupants Involved
999 = Unknown

V11 Travel Speed

Definition: Travel speed in miles per hour.

SAS Name: SPEED [V11Z.]

Attribute Codes

1988-1999	2000-Later
0 = Stopped Vehicle	0 = Stopped Vehicle
1-96 = Travel Speed (MPH)	1-998 = Travel Speed (MPH)
97 = Ninety-Seven MPH or Greater	
99 = Unknown	999 = Unknown

V12 Vehicle Contributing Factors

Definition: Indicates vehicle factors that may have contributed to the cause of the crash.

If a vehicle has multiple contributing factors (some of which may not be defects), the lowest of the attribute codes shown below is selected. From 1988 to 1994 the data element was called *Vehicle Defects* and the SAS name was DEFECT, but in 1995 the name was changed to *Vehicle Contributing Factors* to allow for inclusion of all factors that may have contributed to this vehicle's involvement in the crash. The SAS name was changed to FACTOR.

Starting in 2002 multiple contributing factors for a vehicle are available in the Factor file (SAS variable MFACTOR).

Attribute Codes:

1988-1994 **SAS Name: DEFECT [V12Z.]**	**1995-Later** **SAS Name: FACTOR [V12N.]**
0 = None	0 = None
1 = Tires	1 = Tires
2 = Brake System	2 = Brake System
3 = Steering System-Tie Rod, Kingpin, Ball Joint, etc.	3 = Steering System-Tie Rod, Kingpin, Ball Joint, etc.
4 = Suspension-Springs, Shock Absorbers, McPherson Struts, Control Arms, etc.	4 = Suspension-Springs, Shock Absorbers, McPherson Struts, Control Arms, etc.
5 = Power Train-Universal Joint, Drive Shaft, Transmission, etc.	5 = Power Train-Universal Joint, Drive Shaft, Transmission, etc.
6 = Exhaust System	6 = Exhaust System
7 = Headlights	7 = Headlights
8 = Signal Lights	8 = Signal Lights
9 = Other Lights	9 = Other Lights
10 = Wipers	10 = Wipers
11 = Wheels	11 = Wheels
12 = Mirrors	12 = Mirrors
13 = Driver Seating and Control	13 = Driver Seating and Control
14 = Body, Doors	14 = Body, Doors
15 = Trailer Hitch	15 = Trailer Hitch
50 = Hit-and-Run Vehicle	50 = Hit-and-Run Vehicle
97 = Vehicle Defects-No Details	97 = Vehicle Contributing Factors-No Details*
98 = Other Vehicle Defects	98 = Other Vehicle Contributing Factors*
99 = Unknown if Vehicle Has Defects	99 = Unknown if Vehicle Has Contributing Factors

V13 Vehicle Trailing

Definition: Indicates if vehicle was pulling a trailer unit. A trailer unit can be a horse trailer, fifth wheel trailer, camper, boat, truck trailer, towed vehicle or any other trailer

SAS Name: TRAILER [V13N.]

Attribute Codes:

1988-1998	**1999-Later**
0 = No	1 = No
1 = Yes, One Trailing Unit	2 = Yes, One Trailing Unit
2 = Yes, Two Trailing Units	3 = Yes, Two Trailing Units
3 = Yes, Three or More Trailing Units	4 = Yes, Three or More Trailing Units
4 = Yes, Number of Trailing Units Unknown	5 = Yes, Number of Trailing Units Unknown
9 = Unknown	6 = Unknown

V14 Jackknife

Definition: Indicates if a jackknife occurred. Jackknife can occur at any time during the crash sequence. In 1988-1990, jackknife is not restricted to truck-tractor vehicles; it may occur with a passenger car, van, motorcycle, etc. which is pulling a trailing unit. In 1991-1998, it is restricted to truck-tractor vehicles. Beginning in 1999, jackknife is not restricted to truck-tractor vehicles; it may occur with a passenger car, van, motorcycle, etc. which is pulling a trailing unit

SAS Name: JACKNIFE [V14Z.]

Attribute Codes 1988-Later

0 = No Jackknife Noted on PAR
1 = Jackknife Occurred

V15 Rollover

Definition: Indicates if a rollover occurred (tripped or untripped). Rollover is defined as any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis. Rollover can occur at any time during the crash.

The coding of this variable changed after 1991. See *Rollover Type (V30)* for rollover after 1991.

SAS Name: ROLLOVER [V15Z.]

Attribute Codes: 1988-1991

0 = No Rollover Noted on PAR
1 = Rollover Occurred

V16 Fire Occurrence

Definition: Indicates whether or not a vehicle sustained fire damage.

SAS Name: FIRE [V16Z.]

Attribute Codes 1988-Later

0 = No Fire Noted on PAR
1 = Fire Occurred in Vehicle

V17 Maximum Damage Area

Definition: This variable reports the most severe area of damage on the vehicle.

In 1990, this variable was replaced with *Initial Point of Impact* (V24) *and Damage Areas* (V25).

SAS Name: DAM_AREA [V17Z.]

Attribute codes 1988-1989

0 = No damage
1 = Front
2 = Right Side
3 = Left Side
4 = Back
5 = Top
6 = Undercarriage
8 = Multiple Damage Areas
9 = Damage Area Not Determinable or Unknown

V17H Hot-deck Imputed Damage Area

Definition: This imputed variable has the same definition and element values as ***Maximum Damage Area,*** excluding value 9 for damage area not determinable or unknown. (See ***Understanding the GES Imputation Process*** section of this manual.)

In 1990, this variable was dropped from the Vehicle File.

SAS Name: DAM_AR_H [V17Z.]

V18 Damage Severity

Definition: Reports the severity of the vehicle damage. In 2001 the towed (due to damage) status of the vehicle became a factor in coding this variable. Starting in 2001, if the PAR indicates that the vehicle was not towed due to damage, or unknown if towed, then Damage Severity must be either None, Minor, Functional, or Unknown. If the PAR indicates that the damage to the vehicle renders it undriveable then Damage Severity must be coded 3, Disabling. Vehicles that are described on PARs that use a Moderate/Severe scale, rather than Functional/Disabling, are more likely to be affected by this narrowing of definition. Prior to 2001, some vehicles that were towed due to damage may have been coded "2, Functional/Moderate" if the PAR used a Moderate/Severe scale. In 2001 and later any vehicle towed due to damage is coded "3, Disabling."

SAS Name: VEH_SEV [V18Z.]

Attribute Codes 1988-Later

0 = None
1 = Minor
2 = Functional (Moderate)
3 = Disabling (Severe)
9 = Unknown

V19 Manner of Leaving Scene

Definition: Measures the disposition of the vehicle, or power unit of an articulated combination, at the crash scene.

SAS Name: TOWED [V19N.]

Attribute Codes

1988-1989	1990-Later
1 = Driven	1 = Driven
2 = Towed Away	2 = Towed Due to Damage
	3 = Towed Not Due to Damage
3 = Abandoned	4 = Abandoned
4 = Unknown	9 = Unknown if Towed

V20 Most Harmful Event

Definition: Indicates the most severe property damage or injury producing event for the vehicle.

SAS Name: V_EVENT [V20NZ.]

Attribute Codes:

1988-1991	1992-1998	1999-Later	
			Noncollision
1	1	1	Rollover/Overturn
2	2	2	Fire/Explosion
3	3	3	Immersion
4		4	Gas Inhalation
5	5	5	Jackknife
6	6	6	Noncollision Injury (Injured in Vehicle, or Fell From Veh.)
	50	7	Pavement Surface Irregularity (Ruts, Potholes, Grates,etc.)
8	8	8	Other Noncollision
9	9	9	Noncollision-No Details
10	10	10	Thrown or Falling Object
			Collision with Object Not Fixed
21	21	21	Pedestrian
22	22	22	Cycle or Cyclist (Pedalcyclist or Pedalcycle)
23	23	23	Railway Train
24	24	24	Animal
25	25	25	Motor Vehicle in Transport
26	26	26	Parked Motor Vehicle (or Other M.V. Not in Transport)
27	27	27	Other Type Non-Motorist
28	28	28	Other Object Not Fixed
29	29	29	Object Not Fixed-No Details
			Collision with Fixed Object
31	31	31	Ground
32	32	32	Building
33	33	33	Impact Attenuator/Crash Cushion
34	34	34	Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
35	35	35	Guardrail
36	36	36	Concrete Traffic Barrier or Other Longitudinal Barrier Type
37	37	37	Post, Pole or Support (Sign Post, Utility Post)
38	38	38	Culvert or Ditch
39	39	39	Curb
40	40	40	Embankment
41	41	41	Fence
42	42	42	Wall
43	43	43	Fire Hydrant
44	44	44	Shrubbery or Bush
45	45	45	Tree
46	46	46	Boulder
48	58	58	Other Fixed Object
49	59	59	Fixed Object-No Details
			Other/Unknown
97			Other-No Details* *(1988-1989 only)*
99	99	99	Unknown

V20H Hot-deck Imputed Most Harmful Event

Definition: This imputed variable has the same element values as ***Most Harmful Event***, excluding value "99" for unknown most harmful event . (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: V_EVNT_H [V20NZ.]

V20A Most Harmful Event Number

Definition: Indicates the number of the event that caused the most severe property damage or injury for the vehicle. This variable may be used to identify the specific event in the Event File.

This variable was added to the Event file in 1999.

SAS Name: MHENUM

Attribute Codes 2000-Later

1-xx = Event Number

V21 Vehicle Maneuver

Definition: Reports the last action this vehicle's driver engaged in either just prior to the impact or just before the driver's realized the impending danger.

This variable changed in 1992, when GES began to collect precrash information. V21, Vehicle Maneuver, was changed to Movement Prior to Critical Event. In addition to changing the definition, element values were added, modified, or deleted and the SAS name changed. See the next page for variable coding and definitions from 1992 to 2002.

SAS Name: MANEUVER [V21Z.]

Attribute Codes 1988-1991

1 = Going Straight
2 = Slowing or Stopping in Traffic Lane
3 = Starting in Traffic Lane
4 = Stopped in Traffic Lane
5 = Passing or Overtaking Another Vehicle
6 = Leaving a Parked Position
7 = Parked
8 = Entering a Parked Position
9 = Maneuvering to Avoid an Animal, Pedestrian, Object or Vehicle
10 = Turning Right
11 = Turning Left
12 = Making U-turn
13 = Backing Up (other than for parking purposes)
14 = Changing Lanes or Merging
15 = Negotiating a Curve
98 = Other
99 = Unknown

V21I Univariate Imputed Vehicle Maneuver

Definition: This imputed variable has the same as definition and element values as ***Vehicle Maneuver***, excluding value "99" for unknown vehicle maneuver. (See ***Understanding the GES Imputation Process*** section of this manual.)

1988-1991

SAS Name: MANEUV_I [V21Z.]

V21 Movement Prior to Critical Event

Definition: Records the attribute which best describes this vehicle's activity prior to the driver's realization of an impending critical event or just prior to impact if the driver took no action or had no time to attempt to any evasive maneuvers.

In 1992, attribute values 16, 17, 18 and 94 were added and 9 *Maneuvering to Avoid* was deleted. In 1995, attribute value 0 was added and attribute value 94 *More than Two Vehicles Involved* was deleted.

SAS Name: P_CRASH1 [V21NZ.]

Attribute Codes:

1992- 1998	1999-Later	
0 *(added in 1995)*	0	No Driver Present
1	1	Going Straight
2	2	Decelerating in Traffic Lane
	3	Accelerating in traffic lane
3	4	Starting in Traffic Lane
4	5	Stopped in Traffic Lane
5	6	Passing or Overtaking Another Vehicle
6	7	Disabled or Parked in Travel Lane
7	8	Leaving a Parked Position
8	9	Entering a Parked Position
10	10	Turning Right
11	11	Turning Left
12	12	Making U-turn
13	13	Backing Up (other than for parking purposes)
15	14	Negotiating a Curve
16	15	Changing Lanes
17	16	Merging
18	17	Successful Corrective Action to a Previous Critical Event
94 *(deleted in 1995)*		More than Two Vehicles Involved* (Deleted in 1995)
98	97	Other
99	99	Unknown

V21I Univariate Imputed Movement Prior to Critical Event

Definition: This imputed variable has the same definition and element values as ***Movement Prior to Critical Event***, excluding value "99" for unknown movement prior to critical event. (See ***Understanding the GES Imputation Process*** section of this manual.)

1992-Later

SAS Name: MANEUV_I [V21NZ.]

V22 Vehicle Role

Definition: Indicates vehicle role in single or multi-vehicle crashes.

SAS Name: VEH_ROLE [V22Z.]

Attribute Codes: 1988-Later

0 = Non-Collision
1 = Striking
2 = Struck
3 = Both
9 = Unknown

V22I Univariate Imputed Vehicle Role

Definition: This imputed variable has the same definition and element values as ***Vehicle Role***, excluding value "9" for unknown vehicle role. (See ***Understanding the GES Imputation Process*** section of this manual.)

1988-Later

SAS Name: VROLE_I [V22Z.]

V23 Accident Type

Definition: Categorizes the precrash situation. For graphic descriptions of possible values see Appendix B.

Attribute Code 97, Untripped Rollover was added in 1992 and removed in 1999.

SAS Name: ACC_TYPE [V23N.]

Attribute Codes 1988-Later

0 No Impact

Category I: Single Driver

Configuration A: Right Roadside Departure
1 Drive Off Road
2 Control/Traction Loss
3 Avoid Collision with Vehicle, Pedestrian, Animal
4 Specifics Other
5 Specifics Unknown

Configuration B: Left Roadside Departure
6 Drive Off Road
7 Control/Traction Loss
8 Avoid Collision With Vehicle, Pedestrian, Animal
9 Specifics Other
10 Specifics Unknown

Configuration C: Forward Impact
11 Parked Vehicle
12 Stationary Object
13 Pedestrian/Animal
14 End Departure
15 Specifics Other
16 Specifics Unknown

Category II: Same Trafficway, Same Direction

Configuration D: Rear End
20 Stopped
21 Stopped, Straight
22 Stopped, Left
23 Stopped, Right
24 Slower
25 Slower, Going Straight
26 Slower, Going Left
27 Slower, Going Right
28 Decelerating (Slowing)
29 Decelerating (Slowing), Going Straight
30 Decelerating (Slowing), Going Left

31 Decelerating (Slowing), Going Right
32 Specifics Other
33 Specifics Unknown

Configuration E: Forward Impact
34 This Vehicles Frontal Area Impacts Another Vehicle.
35 This Vehicle Is Impacted by Frontal Area of Another Vehicle
36 This Vehicles Frontal Area Impacts Another Vehicle.
37 This Vehicle Is Impacted by Frontal Area of Another Vehicle
38 This Vehicles Frontal Area Impacts Another Vehicle.
39 This Vehicle Is Impacted by Frontal Area of Another Vehicle
40 This Vehicles Frontal Area Impacts Another Vehicle.
41 This Vehicle Is Impacted by Frontal Area of Another Vehicle
42 Specifics Other
43 Specifics Unknown

Configuration F: Sideswipe/Angle
44 Straight Ahead on Left.
45 Straight Ahead on Left/Right.
46 Changing Lanes to the Right
47 Changing Lanes to the Left
48 Specifics Other
49 Specifics Unknown

Category III: Same Trafficway, Opposite Direction

Configuration G: Head-On
50 Lateral Move (Left/Right)
51 Lateral Move (Going Straight)
52 Specifics Other
53 Specifics Unknown

Configuration H: Forward Impact
54 This Vehicles Frontal Area Impacts Another Vehicle.
55 This Vehicle Is Impacted by Frontal Area of Another Vehicle
56 This Vehicles Frontal Area Impacts Another Vehicle.
57 This Vehicle Is Impacted by Frontal Area of Another Vehicle
58 This Vehicles Frontal Area Impacts Another Vehicle.
59 This Vehicle Is Impacted by Frontal Area of Another Vehicle
60 This Vehicles Frontal Area Impacts Another Vehicle.
61 This Vehicle Is Impacted by Frontal Area of Another Vehicle
62 Specifics Other
63 Specifics Unknown

Configuration I: Sideswipe/Angle
64 Lateral Move (left/Right)
65 Lateral Move (Going Straight)
66 Specifics Other
67 Specifics Unknown

Category IV: Changing Trafficway, Vehicle Turning

Configuration J: Turn Across Path
- 68 Initial Opposite Directions (Left/Right)
- 69 Initial Opposite Directions (Going Straight)
- 70 Initial Same Directions (Turning Right)
- 71 Initial Same Directions (Going Straight)
- 72 Initial Same Directions (Turning Left)
- 73 Initial Same Directions (Going Straight)
- 74 Specifics Other
- 75 Specifics Unknown

Configuration K: Turn Into Path
- 76 Turn Into Same Direction (Turning Left)
- 77 Turn Into Same Direction (Going Straight)
- 78 Turn Into Same Direction (Turning Right)
- 79 Turn Into Same Direction (Going Straight)
- 80 Turn Into Opposite Directions (Turning Right)
- 81 Turn Into Opposite Directions (Going Straight)
- 82 Turn Into Opposite Directions (Turning Left)
- 83 Turn Into Opposite Directions (Going Straight)
- 84 Specifics Other
- 85 Specifics Unknown

Category V: Intersecting Paths (Vehicle Damage)

Configuration L: Straight Paths
- 86 Striking from the Right
- 87 Struck on the Right
- 88 Striking from the Left
- 89 Struck on the Left
- 90 Specifics Other
- 91 Specifics Unknown

Category VI: Miscellaneous

Configuration M: Backing, Etc.
- 92 Backing Vehicle
- 93 Other Vehicle or Object
- 97 Untripped Rollover *(1992 to 1998 only)*
- 98 Other Accident Type
- 99 Unknown Accident Type

V24 Initial Point of Impact

Definition: The first impact point that produced property damage or personal injury (regardless of *FIRST or MOST HARMFUL EVENT*). This variable was added to the Vehicle file in 1990.

SAS Name: IMPACT [V24NZ.]

Attribute Codes:

1990-1991	1992-Later
0 = No Damage/Non-Collision	0 = No Damage/Non-Collision
1 = Front	1 = Front
2 = Right Side	2 = Right Side
3 = Left Side	3 = Left Side
4 = Back	4 = Back
5 = Top	5 = Top
6 = Undercarriage	6 = Undercarriage
7 = Corner	11 = Front Right Corner
	12 = Front Left Corner
	13 = Back Right Corner
	14 = Back Left Corner
9 = Initial Point of Impact Unknown	99 = Initial Point of Impact Unknown

V24H Hot-deck Imputed Initial Point of Impact

Definition: This imputed variable has the same definition and element values as ***Initial Point of Impact***, excluding value "9" for unknown initial point of impact. (See ***Understanding the GES Imputation Process*** section of this manual.)

1990 -Later

SAS Name: IMPACT_H [V24NZ.]

V25 Damage Areas

Definition: This vehicle's specific areas damaged due to impact. The totality of the damage is used when determining the specific areas. A five character field is used to indicate up to five specific areas of damage on the vehicle.

This variable replaced *Maximum Damage Area* (V17) in 1990.

SAS Name: DAM_AREA [V25N.]

Attribute Codes 1990-Later

0 = No damage
1 = Front
2 = Right side
3 = Left side
4 = Back
5 = Top
6 = Undercarriage
7 = All areas damaged
9 = Unknown damage areas

Examples of complete codes are:
0 = No damage
12000 = Front and right damage
12999 = Front and right damage and unknown if damaged in other areas

PRE CRASH VARIABLES: In 1992, variables **V21, V26-V29** were added to the vehicle file. These variables were designed to identify: (1) what this vehicle was doing just prior to the critical precrash event, (2) what made this vehicle's situation critical, (3) what was the corrective action made, if any, to this critical situation, and what was the (4) location and (5) stability of the vehicle just prior to impact.

V26 Critical Event

Definition: Identifies the critical event which made the crash imminent (i.e., something occurred which made the collision possible). A critical event is coded for each vehicle and identifies the circumstances leading to this vehicle's first impact in the crash. From 1992 to 1993 coding distinguishes between events initiated by "this" vehicle, events initiated by the "other" vehicle, and events initiated by non-motorists. In 1994 coding changed to eliminate the concept of initiation, and to add factors. In 1999 there were extensive additions, deletions, and renumbering.

SAS Name: P_CRASH2 [V26Z.]

Attribute Codes 1992-1993:

0 = Not Applicable/No Collision

I. CRITICAL EVENT INITIATED BY THIS VEHICLE

Loss of Control Due to:
- 1 = Blow out or flat tire
- 2 = Stalled engine
- 3 = Disabling vehicle failure (e.g., wheel fell off)
- 4 = Minor vehicle failure
- 5 = Poor road conditions (puddle, pothole, ice, etc.)
- 6 = Excessive speed
- 9 = Other or unknown reason

Traveling Over Edge of Roadway:
- 10 = Over left edge of roadway
- 11 = Over right edge of roadway
- 12 = End departure
- 19 = Unknown which edge

In Another Vehicle's Lane:
- 20 = Stopped
- 21 = Traveling in same direction with lower speed
- 22 = Traveling in same direction with higher speed
- 23 = Traveling in opposite direction

Encroaching Into Another Vehicle's Lane: At Non-Junction
- 26 = From adjacent lane (opposite direction)
- 30 = From adjacent lane (same direction)-over left lane line
- 31 = From adjacent lane (same direction)-over right lane line

Encroaching Into Another Vehicle's Lane: At Junction
- 33 = Entering intersection-turning into same direction
- 34 = Entering intersection-straight across path
- 35 = Entering intersection-turning into opposite direction
- 36 = Entering intersection-intended path unknown
- 37 = Entering driveway, alley access, etc.

38 = From driveway, alley access, etc.-turning into same direction
39 = From driveway, alley access, etc.-straight across path
40 = From driveway, alley access, etc.-turning into opposite direction
41 = From driveway, alley access, etc.-intended path unknown
42 = Entering from "Yield" entrance (ramp/channel)
48 = Encroaching-details unknown
49 = This vehicle initiated critical event-details unknown

II. CRITICAL EVENT INITIATED BY THE OTHER VEHICLE

Motor Vehicle Already In This Vehicle's Lane:
50 = Stopped
51 = Traveling in same direction with lower speed
52 = Traveling in same direction with higher speed
53 = Traveling in opposite direction
Another Vehicle Encroaching Into This Vehicle's Lane: At Non-Junction
56 = From adjacent lane (opposite direction)
60 = From adjacent lane (same direction)-over left lane line
61 = From adjacent lane (same direction)-over right lane line
64 = From parallel/diagonal parking lane
Another Vehicle Encroaching Into This Vehicle's Lane: At Junction
65 = Entering intersection-turning into same direction
66 = Entering intersection-straight across path
67 = Entering intersection-turning into opposite direction
68 = Entering intersection-intended path unknown
69 = Entering driveway, alley access, etc.
70 = From driveway, alley access, etc.-turning into same direction
71 = From driveway, alley access, etc.-straight across path
72 = From driveway, alley access, etc.-turning into opposite direction
73 = From driveway, alley access, etc.-intended path unknown
74 = Entering from "Yield" entrance (ramp/channel)
78 = Encroaching-details unknown
79 = Other vehicle initiated critical event-details unknown

III. CRITICAL EVENT INITIATED BY PEDESTRIAN, PEDALCYCLIST, OTHER NON-MOTORIST, ANIMAL OR OBJECT
80 = Pedestrian in roadway
81 = Pedestrian approaching roadway
83 = Pedalcyclist/other non-motorist in roadway
84 = Pedalcyclist/other non-motorist approaching roadway
86 = Pedestrian/Pedalcyclist/other non-motorist-unknown location
87 = Animal in roadway
88 = Animal approaching roadway
90 = Object in roadway
93 = Animal or object-unknown location

IV. MISCELLANEOUS
94 = More than two vehicles involved
98 = Other event
99 = Unknown

Attribute Codes:

1994-1998	1999-Later	
0		Not Applicable/No Collision
This Vehicle Loss of Control Due to:		
10	1	Blow out or flat tire
20	2	Stalled engine
30	3	Disabling vehicle failure (e.g., wheel fell off)
40	4	Minor vehicle failure
50	5	Poor road conditions (puddle, pothole, ice, etc.)
60	6	Excessive speed
99		Other or unknown reason
	8	Other cause of control loss
	9	Unknown cause of control loss
This Vehicle Traveling:		
	10	Over the lane line on left side of travel lane
	11	Over the lane line on right side of travel lane
100	12	Over left edge of roadway
101	13	Over right edge of roadway
199		Unknown which edge
102	14	End departure
	15	Turning Left at intersection
	16	Turning right at intersection
	17	Crossing over (passing through) intersection
	18	This vehicle decelerating
	19	Unknown travel direction
In Another Vehicle's Lane:		
200		Stopped
210		Traveling in same direction with lower steady speed
215		raveling in same direction while decelerating (added in 1995)
220		raveling in same direction with higher speed
230		Traveling in opposite direction
Encroaching Into Another Vehicle's Lane: At Non-Junction		
300		From adjacent lane (opposite direction)
310		From adjacent lane (same direction)-over left lane line
320		From adjacent lane (same direction)-over right lane line
330		From parallel/diagonal parking lane
Encroaching Into Another Vehicle's Lane: At Junction		
410		Entering intersection-turning into same direction
411		Entering intersection-straight across path
412		Entering intersection-turning across path
413		Entering intersection-turning into opposite direction
429		Entering Intersection-intended path unknown
430		Entering driveway, alley access, etc.
440		From driveway, alley access, etc.-turning into same direction
441		From driveway, alley access, etc.-straight across path
442		From driveway, alley access, etc.-turning into opposite direction
459		From driveway, alley access, etc.-intended path unknown
460		Entering from "Yield" entrance (ramp/channel)

497		Encroaching-other
498		Encroaching-details unknown
499		This vehicle initiated critical event-details unknown

Other Motor Vehicle In Lane

500	50	Other vehicle stopped
510	51	Traveling in same direction with lower steady speed
515	52	Traveling in same direction while decelerating (added in 1995)
520	53	Traveling in same direction with higher speed
530	54	Traveling in opposite direction
	55	In crossover
	56	Backing
	59	Unknown travel direction of the other motor vehicle

Another Vehicle Encroaching Into This Vehicle's Lane

600		From adjacent lane (opposite direction)
610	60	From adjacent lane (same direction)-over left lane line
620	61	From adjacent lane (same direction)-over right lane line
	62	From opposite direction over left lane line
	63	From opposite direction over right lane line
630	64	From parallel/diagonal parking lane
710	65	Entering intersection-turning into same direction
711	66	Entering intersection-straight across path
712		Entering Intersection-turning across path
713	67	Entering intersection-turning into opposite direction
729	68	Entering intersection-intended path unknown
730		Entering driveway, alley access, etc.
740	70	From driveway, alley access, etc. -turning into same direction
741	71	From driveway, alley access, etc.-straight across path
742	72	From driveway, alley access, etc. -turning into opposite direction
759	73	From driveway, alley access, etc.-intended path unknown
	74	From entrance to limited access highway
760		Entering from "Yield" entrance (ramp/channel)
797		Encroaching -other
798	78	Encroaching-details unknown
799		Other vehicle initiated critical event-details unknown

Pedestrian, Pedacylist Or Other Non-Motorist

800	80	Pedestrian in roadway
801	81	Pedestrian approaching roadway
	82	Pedestrian unknown location
810	83	Pedalcyclist/other non-motorist in roadway
811	84	Pedalcyclist/other non-motorist approaching roadway
	85	Pedacyclist or other non-motorist unknown location
829		Pedestrian/Pedalcyclist/other non-motorist unknown location

Object Or Animal

830	87	Animal in roadway
831	88	Animal approaching roadway
	89	Animal unknown location
840	90	Object in roadway
841	91	Object approaching roadway

	92	Object unknown location
859		Animal or object-unknown location
Other		
994		More than two vehicles involved
998	98	Other event / not applicable / no collision
Unknown		
999	99	Unknown Critical Event

V27 Corrective Action Attempted

Definition: Describes the actions taken by the driver of this vehicle in response to the impending danger. Because this variable focuses upon the driver's action just prior to the first harmful event it is coded independently of any maneuvers associated with this vehicle's Accident Type (V23).

SAS Name: P_CRASH3 [V27NZ.]

Attribute Codes:

1992-1998	1999–Later	
0		Not Applicable/ No Corrective Action Attempted
1		Braked/slowed
5		Backed
	0	No driver present
	1	No avoidance maneuver
	2	Braking (no lockup)
	3	Braking (lockup)
	4	Braking (lockup unknown)
	5	Releasing brakes
2	6	Steered to left
3	7	Steered to right
11	8	Braked and steered to left
12	9	Braked and steered to right
04	10	Accelerated
13	11	Accelerated and steered to left
14	12	Accelerated and steered to right
15		Steered in both directions
94		More than two vehicles involved
97		Corrective action attempted-no details
98		Other single or multiple corrective action
	98	Other actions
99	99	Unknown if driver attempted any corrective action

V28 Vehicle Control After Corrective Action

Definition: Assesses the stability of the vehicle during the period immediately after the attempted corrective action up to the initial impact in the crash sequence. The stability of the vehicle prior to a corrective action is not considered.

In 1995, the name and definition of this variable changed to reflect the control of the vehicle at the time of the critical event and the first harmful event, not the control as a result of any corrective action.

SAS Name: P_CRASH4 [V28NZ.]

Attribute Codes 1992-1994

0 = No driver present
1 = Vehicle control maintained after corrective action
2 = Vehicle rotated (yawed) clockwise
3 = Vehicle rotated (yawed) counter-clockwise
4 = Vehicle slid/skid longitudinally-no rotation
5 = Vehicle slid/skid laterally-no rotation
9 = Vehicle rotated (yawed) unknown direction
20 = Combination of 02-09
94 = More than two vehicles involved
98 = Other or unknown type of vehicle control was lost after corrective action
99 = Unknown if vehicle control was lost after corrective action

V28 Precrash Vehicle Control

Definition: Assesses the stability of the vehicle during the period immediately prior to this vehicle's initial involvement in the crash sequence.

When this variable was introduced in 1995 the attribute codes were the same as the previous V28 except that 5 " *Vehicle slid/skid laterally-No Rotation* was deleted. In 1999 extensive additions and deletions were made.

SAS Name: PCRASH4 [V28Z.]

Attribute Codes

1995-1998	1999-Later	
0	0	No driver present
1		Vehicle control maintained
2		Vehicle rotated (yawed) clockwise
3		Vehicle rotated (yawed) counter-clockwise
4		Vehicle slid/skid longitudinally-no rotation
9		Vehicle rotated (yawed) unknown direction
20		Combination of 02-09
94		More than two vehicles involved
98		Other or unknown type of vehicle control was lost
	1	Tracking

2	Skidding longitudinally-rotation less than 30 degrees
3	Skidding laterally-clockwise rotation
4	Skidding laterally-counterclockwise rotation
7	Other vehicle loss of control (specify)
9	Precrash stability unknown

V29 Vehicle Path After Corrective Action

Definition: Identifies the consequences of the corrective action identified in variable *V27* and further reports the results of the vehicle's precrash stability coded in variable *V28*. The response for this variable must relate directly to the response coded for variable *V27*.

1995, the name and definition of this variable changed to reflect the control of the vehicle at the time of the critical event and the first harmful event, not the control as a result of any corrective action.

SAS Name: P_CRASH5 [V29Z.]

Attribute Codes 1992-1994

0 = No corrective action
1 = Vehicle stayed in travel lane where corrective action was initiated
2 = Vehicle stayed on roadway but left travel lane where corrective action was initiated
3 = Vehicle stayed on roadway, not known if left travel lane where corrective action was initiated
4 = Vehicle departed roadway
5 = Corrective action initiated off roadway
94 = More than two vehicles involved
99 = Vehicle path unknown

V29 Precrash Location

Definition: Identifies the path of this vehicle prior to its first involvement in the crash sequence, and further reports the results of the vehicle's precrash stability coded in variable V28.

SAS Name: PCRASH5 [V29NZ.]

Attribute Codes

1995-1998	1999-Later	
0	0	No driver present
1	1	Vehicle stayed in travel lane
2	2	Vehicle stayed on roadway but left travel lane
3	3	Vehicle stayed on roadway, not known if left travel lane
4	4	Vehicle departed roadway
6	5	Vehicle remained off roadway
7	6	Vehicle returned to roadway
	7	Entered roadway
94		More than two vehicles involved
99	99	Vehicle path unknown

V30 Rollover Type

Definition: Indicates if a rollover occurred (tripped or untripped). Rollover is defined as any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis. Rollover can occur at any time during the crash.

Prior to 1992, information pertaining to rollover is in the variable *Rollover (V15).* In 1992 V30 was added to the Vehicle file to include more specific rollover information.

SAS Name: ROLLOVER [V30N.]

Attribute Codes 1992-Later

0 = No rollover
10 = Untripped rollover
20 = Tripped rollover-by curb
21 = Tripped rollover-by guardrail
22 = Tripped rollover-by ditch
23 = Tripped rollover-by soft soil
28 = Tripped rollover-other
29 = Tripped rollover-unknown mechanism
99 = Rollover, unknown whether untripped or tripped

In 1992, variables **V31-V36** were added to the Vehicle file. These variables include the portion of the National Governors Association (NGA) data elements which pertain specifically to crashes involving medium/heavy trucks and buses. These variables provide essential information required to analyze motor carrier crashes, and pertain only to these crashes.

V31 Carrier's Identification Number

Definition: The Carrier's ID is the unique number assigned to the Carrier by the United States Department of Commerce Commission, or the State. This number will be found only on vehicles of interstate for-hire or private carriers in the transportation business. The number can be either a US DOT number (on interstate private carriers) or an ICC MC number (interstate for-hire carriers). (Collected for *Bodytype* (V5) = 50-64, 66-79 only.)

In 2002 the variable changed from numeric to character to preserve leading zeros. The SAS name changed from C_ID_NO to CARIDNUM.

SAS Name: C_ID_NO [V31N.]

Attribute Codes

1992-2001
numeric

0	=	Not Applicable
1-999998	=	U.S. DOT or ICC MC Number
999999	=	Unknown

SAS Name: CARIDNUM [$V31N.]

Attribute Codes

2002
character (length 8)

00000000	=	Not Applicable
00000001-99999998	=	U.S. DOT or ICC MC Number
99999999	=	Unknown

V32 Number of Axles on Vehicle, Including Trailers

Definition: Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5) = 50-64, 66-79 only.)

SAS Name: AXLES [V32N.]

Attribute Codes 1992-Later

0 = Not applicable
2-20 = Number of Axles
99 = Unknown

V33 Cargo Body Type

Definition: Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5) = 50-64, 66-79 only.)

SAS Name: CARG_TYP [V33N.]

Attribute Codes 1992-Later

0 = Not applicable
1 = Bus
2 = Van/enclosed box
3 = Cargo tank
4 = Flatbed
5 = Dump
6 = Concrete mixer
7 = Auto transporter
8 = Garbage/refuse
98 = Other
99 = Unknown cargo body type

V34 Hazardous Materials Placarded

Definition: Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5)= 60, 64, 66-79 only)

SAS Name: HAZ_MAT [V34N.]

Attribute Codes 1992-Later

0 = Not applicable
1 = Yes
2 = No
9 = Unknown

V35 Hazardous Materials Placard Number

Definition: Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5) = 60, 64, 66-79 only)

SAS Name: HAZM_NO

Attribute Codes 1992-Later

0 = Not applicable
1-9998 = (Actual number)
9999 = Unknown

V36 Hazardous Materials Release

Definition: Indicates whether or not any hazardous cargo was released from the vehicle cargo
tank or compartment. Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5)= 60, 64, 66-79 only).

SAS Name: HAZ_MA_R [V36N.]

Attribute Codes 1992-Later

0 = Not applicable
1 = Yes
2 = No
9 = Unknown

V90 Maximum Injury Severity in Vehicle

Definition: Indicates the single most severe injury level reported for any occupant in this vehicle. This variable is derived by comparing the injury severity for each occupant record in this vehicle. The following order of severity codes was used in 2001.

4-Fatal
3- Incapacitating
2-Non- incapacitating
1-Possible Injury
5-Injured, Unknown Severity
0-No Injury
6-Died Prior
9-Unknown if Injured
8-No Person in the Vehicle

From 1999 to 2000 the priority was different: Unknown if Injured had priority over No Injury.

SAS Name: MAX_VSEV [V90Z.]

Attribute Codes 1988-Later

0 = No Injury
1 = Possible Injury
2 = Non-incapacitating Injury
3 = Incapacitating Injury
4 = Fatal Injury
5 = Injured Severity Unknown
6 = Died Prior
8 = No Person in the Vehicle
9 = Unknown

V90I Imputed Maximum Injury Severity in Vehicle

Definition: This imputed variable has the same definition and element values as ***Maximum Injury Severity in Vehicle***, excluding value "9" for unknown maximum injury severity. The variable is derived from the *Hot-deck Imputed Injury Severity (P9)* in the person file.

SAS Name: MXVSEV_I [V90Z.]

1988 -Later

V91 Number Injured in Vehicle

Definition: Derived by counting all the persons with *Injury Severity (P9)* of 1, 2, 3, 4, or 5 in a vehicle. This count includes fatally injured occupants.

SAS Name: NUM_INJV [A91N.]

Attribute Codes 1988-Later

0 = No Person Injured in Vehicle
1-97 = (Actual Number)
98 = No Person in the Vehicle
99 = Unknown if Injured

V91I Imputed Number Injured in Vehicle

Definition: This imputed variable has the same definition and element values as ***Number Injured in Vehicle***, excluding value 98 and 99 for no person coded and unknown injured in vehicle, respectively. This variable is derived from the *Hot-deck Imputed Injury Severity (P9)* variable.

SAS Name: NUMINJ_I

1988 -2002

V92 Driver Drinking in Vehicle

Definition: Reports alcohol use by driver of the vehicle. The variable is derived from the police-reported alcohol involvement variable in the person file.

In 1988, this variable reported alcohol use by any occupant in the vehicle, including the driver. In 1989, this variable was changed from *Alcohol Involved in Vehicle* to *Driver Drinking in Vehicle* to report alcohol use by the driver.

SAS Name: VEH_ALCH [V92Z.]

1988-Later

1 = Alcohol Involved
2 = No Alcohol
8 = No Driver Present
9 = Unknown

V92I Imputed Driver Drinking in Vehicle

Definition: This imputed variable is derived from the *Hot-deck Imputed Police Reported Alcohol Involvement (P11)* variable in the person file. Attribute code 9 for unknown driver drinking in vehicle was imputed and attribute code 8 was converted to attribute code 2.

SAS Name: V_ALCH_I [V92Z.]

1988-Later

D01 Driver Presence

Definition: This variable identifies driverless motor vehicles in transport.

SAS Name: DR_PRES [D1N.]

Attribute Codes 1988-Later

0 = Unattended Vehicle (Driverless, or No Driver Involved)
1 = Driver Operated Vehicle
2 = Hit and Run
9 = Unknown Driver Presence

D02 Violations Charged

Definition: Indicates which violations are charged to drivers.

If a driver has more than one violation the lowest of the attribute codes shown below is chosen.

Starting in 2002 multiple violations for a driver are available in the Violatn file (SAS variable MVIOLATN).

SAS Name: VIOLATN [D2Z.]

1988-1989	1990-1998	1999	2000-Later	
0	0	0	0	None
1	1	1	1	Alcohol or Drugs
2	2	2	2	Speeding
3	3	3	3	Alcohol or Drugs and Speeding
4	4	4	4	Reckless Driving
5	5	5	5	Driving With a Suspended or Revoked License
6	6	6	6	Failure to Yield Right-of-Way
7	7	7	7	Running a Traffic Signal or Stop Sign
	50	50	50	Hit & Run (and No Information)
			95	No Driver Present
		96	96	Not Reported
	97	97	97	Violation Charged-No Details
8	98	98	98	Other Violation
9	99	99	99	Unknown if Charged

D02I Univariate Imputed Violations Charged

Definition: This imputed variable has the same definition and element values as ***Violations Charged***, excluding value 99 for unknown violations charged. (See ***Understanding the GES Imputation Process*** section of this manual.)

1988 -2002

SAS Name: VLTN_I [D2Z.]

D03 Driver Physical/Mental Impairment

Definition: Identifies driver's physical or mental impairment that may have contributed to the cause of the accident. If two or more impairments apply, the lowest of the attribute codes shown below is chosen.

In 1988 and 1989 a distinction was made between impairment for drivers and for non-motorists; the variable for driver impairment was in the Vehicle file and the variable for non-motorist impairment was in the Person file. In 1990 these variables were replaced by a single variable in the Person file*: Person's Physical Impairment* (P18) was used for both driver and non-motorist impairment. See discussion of *Person's Physical Impairment* (P18) for further changes.

SAS Name: DR_IMPMT [D3Z.]

Attribute Codes 1988-1989

0 = No Impairments
1 = Drowsy, Sleepy, Asleep, Fatigued
2 = Ill, Blackout
3 = Emotional (e.g., Depression, Angry, Disturbed)
4 = Drugs-Medication
5 = Other Drugs (Marijuana, Cocaine, etc.)
6 = Restricted to Wheelchair
7 = Impaired Due to Previous Injury
8 = Deaf
50 = Hit-and Run Vehicle
97 = Physical/Mental Impairment-No Details
98 = Other Physical/Mental Impairment
99 = Unknown Physical/Mental Condition

D04 Driver's Vision Obscured By

Definition: Identifies visual circumstances that may have contributed to the cause of the crash.

If a driver's vision is obstructed by more than one item, the lowest of the attribute codes shown below is chosen.

Starting in 2002 multiple obstructions for a driver are available in the Vision file (SAS variable MVISION).

SAS Name: VIS_OBSC [D4N.]

Attribute Codes:

1988-1991	1992-1998	1999	2000-Later	
0	0	0	0	No Obstruction
1				Rain, Snow, Fog, Smoke, Sand, Dust
	1	1	1	Rain, Snow, Smoke, Sand, Dust
2	2	2	2	Reflected Glare, Bright Sunlight, Headlights
3	3	3	3	Curve or Hill
4	4	4	4	Building, Billboard, or Other Design Features (Includes Signs Embankment)
5	5	5	5	Trees, Crops, Vegetation
6	6	6	6	Moving Vehicle (including load)
7	7	7	7	Parked Vehicle
8	8	8	8	Splash or Spray of Passing Vehicle
9	9	9	9	Inadequate Defrost or Defog System
10	10	10	10	Inadequate Lighting System
11	11	11	11	Obstruction Interior to Vehicle
12	12	12	12	Mirrors
13	13	13	13	Head Restraints
14	14	14	14	Broken or Improperly Cleaned Windshield
	15	15	15	Fog
50	50	50	50	Hit & Run Vehicle (And No Information)
			95	No Driver Present
			96	Not Reported
97	97	97	97	Vision Obscured-No Details
98	98	98	98	Other Obstruction
99	99	99	99	Unknown Whether Vision was Obstructed

D05 Driver's Action

Definition: Indicates if the driver was avoiding, swerving, or sliding due to one of the following. If two or more actions were noted on the PAR, the lowest of the attribute codes shown below was chosen.

In 1990 this variable was replaced with *Driver Maneuvered to Avoid* (D6).

SAS Name : DR_ACT [D5Z.]

Attribute Codes 1988-1989

0 = Not Avoiding, Swerving, or Sliding
1 = Severe Crosswind
2 = Wind from Passing Truck
3 = slippery or Loose Surface
4 = Tire Blow-out or Flat
5 = Debris or Objects in Road
6 = Ruts, Holes, Bumps in Road
7 = Animals in Road
8 = Vehicle in Road
9 = Phantom Vehicle
10 = Pedestrian, Pedalcyclist, or Other Non-motorist in Road
11 = Water, Snow, Oil slick in Road
50 = Hit-and Run Vehicle
97 = Avoiding, Swerving, or Sliding-No Details
98 = Other Cause
99 = Unknown Action

D06 Driver Maneuvered to Avoid

Definition: Identifies an action taken by the driver to avoid something or someone in the road. The maneuver may have subsequently contributed to the cause of the crash.

If a driver made more than one avoidance maneuver, the lowest of the attribute codes shown below is chosen.

Starting in 2002 multiple maneuvers for a driver are available in the Maneuver file (SAS variable MDRMANAV).

SAS Name: DRMAN_AV [D6N.]

Coding Attributes

1990-1998	1999	2000-2001	2002	
0	0	0	0	Driver Did Not Maneuver To Avoid
1	1	1	1	Object In Road
2	2	2	2	Poor Road Conditions (Puddle, Ice, Pot Hole, etc.)
3	3	3	3	Animal In Road
4	4	4	4	Vehicle In Road
5	5	5	5	Pedestrian, Pedalcyclist, or Other Non-Motorist In Road
50	50	50	50	Hit & Run (And No Information)
			93	Not on PAR
			94	Not Coded
		95	95	No Driver Present
	96	96		Not Reported
97	97	97	97	Avoidance Maneuver-No details
99	99	99	99	Unknown If Driver Maneuvered To Avoid

D07 Driver Distracted By

Definition: Identifies a distraction which may have influenced driver performance and contributed to the cause of the crash. The distraction can be either inside the vehicle (internal) or outside the vehicle (external).

If a driver had more than one distraction, the lowest of the attribute codes shown below is chosen.

Starting in 2002 multiple distractions for a driver are available in the Distract file (SAS variable MDRDSTRD).

SAS Name: DR_DSTRD [D7N.]

Attribute Codes

1990-1998

0 = Not Distracted
1 = Passengers, Occupants
2 = Vehicle Instrument Display (Radio, CB, Heating)
3 = Phone
4 = Other Internal Distractions
5 = Other Crash ("Rubbernecking")
6 = Other External Distractions
50 = Hit & Run (And No Information)
97 = Distractions-No Details
99 = Unknown if Distracted

1999	2000-2001	2002	
0	0	0	Not Distracted
1	1	1	Looked but did not see
3	3	3	By other occupants
4	4	4	By moving object in vehicle
5	5	5	While talking or listening to phone
6	6	6	While dialing phone
7	7	7	While adjusting climate control
8	8	8	While adjusting radio, cassette or CD
9	9	9	While using other devices integral to vehicle
10	10	10	While using or reaching for other devices
11	11	11	Sleepy or fell asleep
12	12	12	Distracted by outside person or object
13	13	13	Eating or drinking
14	14	14	Smoking related
		93	Not on PAR
		94	Not Coded
	95	95	No driver present
96	96		Not Reported
97	97	97	Inattentive or lost in thought
98	98	98	Other distraction or inattention
99	99	99	Unknown if Distracted

D08 Driver's Zip Code

Definition: The zip code of the driver's address as listed on the police accident report.

This variable was added to the Vehicle file in 1992. It changed from numeric to character in 2002 and the SAS name changed from DR_ZIP_C to DZIPCODE.

SAS Name: DR_ZIP_C [D8N.]

Attribute Codes

1992-1999 numeric	**2000-2001 numeric**	
0		= Not Resident of U.S. or territories or driver not present
	0	= Not Resident of U.S. or territories
1-99998	1-99997	= Zip Code
	99998	= No Driver Present
99999	99999	= Unknown

SAS Name: DZIPCODE [$D8N.]

Attribute Codes

2002
character (length 5)

00000	= Not Resident of U.S. or territories
00001-99997	= Zip Code
99998	= No Driver Present
99999	= Unknown

D09 Speed Related

Definition: This variable indicates whether speed is a contributing factor to the cause of the crash.

This variable was added to the Vehicle file in 1997.

SAS Name: SPEEDREL [D9N.]

Attribute Codes

1997-1999	2000 – Later
0	0 = No
1	1 = Yes
	8 = No Driver Present
9	9 = Unknown

V_A11 Trafficway Flow

Definition: Indicates whether or not the roadway was divided.

This variable has been coded at the Accident level, and been on the Accident file (SAS name TRAF_WAY), since 1988. Starting in 2002 the trafficway flow for each vehicle in a crash is available in the Vehicle file.

SAS Name: VTRAFWAY [A11Z.]

Attribute Codes 2002

1 = Not Physically Divided (Two Way Trafficway)
2 = Divided Highway (Median Strip, Barrier)
3 = One Way Trafficway
9 = Unknown

V_A12 Number of Travel Lanes

Definition: Indicates the number of lanes of travel. If a divided trafficway, the number of travel lanes are only lanes in the direction of travel of the vehicle. If an undivided trafficway, the number of travel lanes are all the lanes regardless of their direction of travel.

This variable has been coded at the Accident level, and been on the Accident file (SAS name NUM_LAN), since 1988. Starting in 2002 the number of lanes for each vehicle in a crash is available in the Vehicle file.

SAS Name: VNUM_LAN [A12Z.]

Attribute Codes 2002

1 = One Lane
2 = Two Lanes
3 = Three Lanes
4 = Four Lanes
5 = Five Lanes
6 = Six Lanes
7 = Seven or More Lanes
9 = Unknown

V_A13 Roadway Alignment

Definition: Horizontal alignment of roadway in the immediate vicinity of the first harmful event.

This variable has been coded at the Accident level, and been on the Accident file (SAS name ALIGN), since 1988. Starting in 2002 the roadway alignment for each vehicle in a crash is available in the Vehicle file.

SAS Name: VALIGN [A13Z.]

Attribute Codes 2002

1 = Straight
2 = Curve
9 = Unknown

V_A14 Roadway Profile

Definition: Vertical alignment of roadway in the immediate vicinity of the first harmful event.

This variable has been coded at the Accident level, and been on the Accident file (SAS name PROFILE), since 1988. Starting in 2002 the roadway profile for each vehicle in a crash is available in the Vehicle file.

SAS Name: VPROFILE [A14Z.]

Attribute Codes 2002

1 Level
2 Grade
3 Hillcrest
8 Sag
9 Unknown

V_A15 Roadway Surface Condition

Definition: Condition of road surface at the time of the crash.

This variable has been coded at the Accident level, and been on the Accident file (SAS name SUR_COND), since 1988. Starting in 2002 the roadway surface condition for each vehicle in a crash is available in the Vehicle file.

SAS Name: VSURCOND [A15Z.]

Attribute Codes 2002

1 = Dry
2 = Wet
3 = Snow or Slush
4 = Ice
5 = Sand, Dirt, Oil
8 = Other
9 = Unknown

V_A16 Traffic Control Device - Vehicle

Definition: Indicates whether or not a traffic control device was present for the vehicle and the type of traffic control device.

If a vehicle is controlled by more than one device, the device coded is based on the following priority:

51 - Officer, Crossing Guard, Flagman, etc
The lowest numbered device shown below
0 - No traffic control device.

This variable has been coded at the Accident level and has been on the Accident file (SAS name TRAF_CON), since 1988. Starting in 2002 a selected traffic control device for each vehicle in a crash is available in the Vehicle file, all traffic control devices for a vehicle are in the Trafcon file (SAS name MTRAFCON), and all traffic control devices for cyclists are in the Biketraf file (SAS name BTRAFCON).

SAS Name: VTRAFCON [A16N.]

Attribute Codes 2002

0 = No Controls

Not at Railroad Grade Crossing

Trafficway Traffic Signals:
01 = Traffic Control Signal (on colors)
04 = Flashing Traffic Control Signal or Flashing Beacon
08 = Other Traffic Signal
09 = Unknown Traffic Signal

Regulatory, School Zone Signs:
21 = Stop Sign
22 = Yield Sign
23 = School Zone Related Sign
28 = Other Sign
29 = Unknown Sign

Warning Signs:
40 = Advisory Speed Sign
41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
42 = Warning Sign For Road Construction
43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
49 = Unknown Type Warning

Miscellaneous, Not at Railroad Crossing:
51 = Officer, Crossing Guard, Flagman, etc

At Railroad Grade Crossing:
61 = Active Devices (e.g., Gates, Flashing Lights, Traffic Signal)
62 = Passive Devices (e.g., Stop Sign, Cross Bucks)

Other:
97 = Traffic Control Present-No Details
98 = Other Traffic Control (whether or not at RR Grade Crossing)
99 = Unknown

V_A18 Speed Limit

Definition: Posted speed limit in miles per hour.

This variable has been coded at the Accident level, and been on the Accident file (SAS name NUM_LAN), since 1988. Starting in 2002 the speed limit for each vehicle in a crash is available in the Vehicle file.

SAS Name: VSPD_LIM [A18Z.]

Attribute Codes 2002

0 = No Statutory Limit (parking lot, alley, etc.)
5-75 = (Actual Speed Limit)
99 = Unknown

The Distract File

The Distract file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Distract file with the Vehicle file. It also contains:

M_D07 Driver Distracted By

Definition: Identifies all distractions which may have influenced driver performance and contributed to the cause of the crash. The distraction can be either inside the vehicle (internal) or outside the vehicle (external).

This variable has been coded at the Driver level, and been on the Vehicle/Driver file (SAS name DR_DSTRD), since 1990. Starting in 2002 multiple distractions for each driver are available in the Distract file.

SAS Name: MDRDSTRD [D7NZ.]

Attribute Codes 2002

0	Not Distracted
1	Looked but did not see
3	By other occupants
4	By moving object in vehicle
5	While talking or listening to phone
6	While dialing phone
7	While adjusting climate control
8	While adjusting radio, cassette or CD
9	While using other devices integral to vehicle
10	While using or reaching for other devices
11	Sleepy or fell asleep
12	Distracted by outside person or object
13	Eating or drinking
14	Smoking related
93	Not on PAR
94	Not Coded
95	No driver present
97	Inattentive or lost in thought
98	Other distraction or inattention
99	Unknown if Distracted

The Factor File

The Factor file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Factor file with the Vehicle file. It also contains:

M_V12 Vehicle Contributing Factors

Definition: Indicates which vehicle factors may have contributed to the cause of the crash.

This variable has been coded at the Vehicle level, and been on the Vehicle/Driver file (SAS name FACTOR), since 1995. Starting in 2002 multiple factors for each vehicle are available in the Factor file.

SAS Name: MFACTOR [V12N.]

Attribute Codes 2002

0 = None
1 = Tires
2 = Brake System
3 =Steering System-Tie Rod, Kingpin, Ball Joint, etc.
4 = Suspension-Springs, Shock Absorbers, McPherson Struts, Control Arms, etc.
5 = Power Train-Universal Joint, Drive Shaft, Transmission, etc.
6 = Exhaust System
7 = Headlights
8 = Signal Lights
9 = Other Lights
10 = Wipers
11 = Wheels
12 = Mirrors
13 = Driver Seating and Control
14 = Body, Doors
15 = Trailer Hitch
50 = Hit-and-Run Vehicle
97 = Vehicle Contributing Factors-No Details
98 = Other Vehicle Contributing Factors
99 = Unknown if Vehicle Has Contributing Factors

The Maneuver File

The Maneuver file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Maneuver file with the Vehicle file. It also contains:

M_D06 Driver Maneuvered to Avoid

Definition: Identifies an action taken by the driver to avoid something or someone in the road. The maneuver may have subsequently contributed to the cause of the crash.

This variable has been coded at the Driver level, and been on the Vehicle/Driver file (SAS name DR_DSTRD), since 1990. Starting in 2002 multiple maneuvers made by each driver are available in the Maneuver file.

SAS Name: MDRMANAV [D6NZ.]

Attribute Codes 2002

2002

0	Driver Did Not Maneuver To Avoid
1	Object In Road
2	Poor Road Conditions (Puddle, Ice, Pot Hole, etc.)
3	Animal In Road
4	Vehicle In Road
5	Pedestrian, Pedalcyclist, or Other Non-Motorist In Road
50	Hit & Run (And No Information)
93	Not on PAR
94	Not Coded
95	No Driver Present
97	Avoidance Maneuver-No details
99	Unknown If Driver Maneuvered To Avoid

The Trafcon File

The Trafcon file includes the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Trafcon file with the Vehicle file. It also includes:

MV_A16 Traffic Control Device - Vehicles

Definition: Indicates whether or not traffic control devices were present for a motor vehicle and the type of traffic control device.

This variable has been coded at the Accident level, and been on the Accident file (SAS name TRAF_CON) since 1988. Starting in 2002 each traffic control device for a vehicle is in the Trafcon file and each traffic control device for a cyclist is in the Biketraf file. Also starting in 2002, a single, selected, traffic control device for a vehicle is available on the Vehicle file (SAS name VTRAFCON).

SAS Name: MTRAFCON [A16N.]

Attribute Codes 2002

0 = No Controls

Not at Railroad Grade Crossing

Trafficway Traffic Signals:
01 = Traffic Control Signal (on colors)
04 = Flashing Traffic Control Signal or Flashing Beacon
08 = Other Traffic Signal
09 = Unknown Traffic Signal

Regulatory, School Zone Signs:
21 = Stop Sign
22 = Yield Sign
23 = School Zone Related Sign
28 = Other Sign
29 = Unknown Sign

Warning Signs:
40 = Advisory Speed Sign
41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
42 = Warning Sign For Road Construction
43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
49 = Unknown Type Warning

Miscellaneous, Not at Railroad Crossing:
51 = Officer, Crossing Guard, Flagman, etc

At Railroad Grade Crossing:
61 = Active Devices (e.g., Gates, Flashing Lights, Traffic Signal)
62 = Passive Devices (e.g., Stop Sign, Cross Bucks)

Other:
97 = Traffic Control Present-No Details
98 = Other Traffic Control (whether or not at RR Grade Crossing)
99 = Unknown

The Violatn File

The Violatn file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Violatn file with the Vehicle file. It also contains:

M_D02 Violations Charged

Definition: Indicates which violations are charged to drivers

This variable has been coded at the Driver level, and been on the Vehicle/Driver file (SAS name VIOLATN), since 1988. Starting in 2002 all violations charged to a driver are available in the Violatn file.

SAS Name: MVIOLATN [D2NZ.]

Attribute Codes 2002

0 = None
1 = Alcohol
2 = Drugs
3 = Speeding
4 = Reckless Driving
5 = Driving With a Suspended or Revoked License
6 = Failure to Yield Right-of-Way
7 = Running a Traffic Signal or Stop Sign
50 = Hit & Run (and No Information)
95 = No Driver Present
96 = Not Reported
97 = Violation Charged-No Details
98 = Other Violation
99 = Unknown if Charged

The Vision File

The Vision file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Vision file with the Vehicle file. It also contains:

M_D04 Driver's Vision Obscured By

Definition: Identifies visual circumstances that may have contributed to the cause of the crash.

This variable has been coded at the Driver level, and been on the Vehicle/Driver file (SAS name VIS_OBSC), since 1988. Starting in 2002 all visual obstructions for a driver are available in the Vision file.

SAS Name: MVISOBSC [D4NZ.]

Attribute Codes 2002

0 = No Obstruction
1 = Rain, Snow, Smoke, Sand, Dust
2 = Reflected Glare, Bright Sunlight, Headlights
3 = Curve or Hill
4 = Building, Billboard, or Other Design Features (Includes Signs, Embankment)
5 = Trees, Crops, Vegetation
6 = Moving Vehicle (including load)
7 = Parked Vehicle
8 = Splash or Spray of Passing Vehicle
9 = Inadequate Defrost or Defog System
10 = Inadequate Lighting System
11 = Obstruction Interior to Vehicle
12 = Mirrors
13 = Head Restraints
14 = Broken or Improperly Cleaned Windshield
15 = Fog
50 = Hit & Run Vehicle (And No Information)
95 = No Driver Present
96 = Not Reported
97 = Vision Obscured-No Details
98 = Other Obstruction
99 = Unknown Whether Vision was Obstructed

The Person File

The Person file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Person file with the Vehicle file.

In the Person file, VEHNO always equals 0 for non-motorists (PER_TYPE = 3,4,5,6 or 8). The Person file also contains:

P02 Person Number

Definition: Assigned to each occupant, pedestrian, or non-motorists involved in the crash. The assumed driver of a hit-and-run vehicle is coded 1. This variable is computer assigned.

SAS Name: PERNO

1988-Later

P03 Person Type

Definition: Indicates the role of the person in the vehicle.

SAS Name: PER_TYPE [P3Z.]

Attribute Codes 1988-Later

Motorists
1 = Driver of a Motor Vehicle in Transport
2 = Passenger of a Motor Vehicle in Transport
9 = Unknown Occupant Type in a Motor Vehicle in Transport

Non-Motorists-Occupant
3 = Occupant of a Motor Vehicle Not in Transport
4 = Occupant of a Non-Motor Vehicle Transport Device

Non-Motorists-Non-Occupant
5 = Pedestrian
6 = Cyclist (Pedalcyclist)
8 = Other or Unknown Non-Occupant

P04 Seating Position

Definition: Indicates the location of the occupants in the vehicle. More than one person can be assigned the same seat position, however this is allowed only when a person is sitting on someone's lap.

SAS Name: SEAT_POS [P4N.]

Attribute Codes

1988-1991	1992-Later
00 = Non-motorist	00 = Non-motorist
11 = Front Seat-Left Side (Driver's Side)	11 = Front Seat-Left Side (Driver's Side)
12 = Front Seat-Middle	12 = Front Seat-Middle
13 = Front Seat-Right Side	13 = Front Seat-Right Side
18 = Front Seat-Other	18 = Front Seat-Other
19 = Front Seat-Unknown	19 = Front Seat-Unknown
21 = Second Seat-Left Side	21 = Second Seat-Left Side
22 = Second Seat-Middle	22 = Second Seat-Middle
23 = Second Seat-Right Side	23 = Second Seat-Right Side
28 = Second Seat-Other	28 = Second Seat-Other
29 = Second Seat-Unknown	29 = Second Seat-Unknown
	31 = Third Seat-Left Side
	32 = Third Seat-Middle
	33 = Third Seat-Right Side
	38 = Third Seat-Other
	39 = Third Seat-Unknown
30 = Sleeper Section of Cab (Truck)	50 = Sleeper Section of Cab (Truck)
40 = Other Passenger in Passenger or Cargo Area	51 = Other Passenger in Passenger or Cargo Area
50 = Trailing Unit	52 = Trailing Unit
60 = Riding on Vehicle Exterior	53 = Riding on Vehicle Exterior
99 = Unknown Seating Position	99 = Unknown Seating Position

P04H Hot-deck Imputed Seating Position

Definition: This imputed variable has the same definition and element values as ***Seating Position,*** excluding 18, 19, 28, 29, 38, 39, and 99 unknown seating position. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: SEAT_H [P4N.]

1988-Later

P05 Safety Equipment Use

Definition: Indicates the occupant's use of available vehicle restraints. The presence of an air bag system does not mean that there are no active belts present.

This variable was dropped from the Person file in 1990 and was replaced with *Restraint System Use* (P15).

SAS Name: SAF_EQMT [P5Z.]

1988-1989

0 = Non-motorist
1 = Child Restraint Used
2 = Manual Lap Belt Used
3 = Manual Shoulder Belt Only Used
4 = Manual Shoulder and Lap Belt Used
5 = Automatic Belt Used
6 = Deployed Air Bag
7 = Motorcycle Helmet Used
8 = Other Restraint / Safety Equipment Used
9 = Restraint Used-Type Unknown
10 = None Used
11 = None Available
99 = Unknown Use or Availability

P06 Ejection

Definition: Refers to occupants being totally or partially thrown from the vehicle as a result of an impact or rollover.

Attribute codes for this variable have changed many times. In 1990, elements *Totally Ejected* and *Partially Ejected* were collapsed into one element and element *Ejected-No Details* was dropped. In 1995, this variable changed back to the original coding scheme in the 1988 Person File. *Ejected – Unknown Degree* was deleted in 1999 but in 2001 it was reinstated. *Not Applicable* was added in 2001.

SAS Name: EJECT [P6N.]

Attribute Codes

1988-1989	1990-1994	1995-1998	1999-2000	2001-Later	
0	0	0	0	0	Not Ejected
1		1	1	1	Totally Ejected
	1				Ejected (Partial or total)
2		2	2	2	Partially Ejected
7		7		7	Ejected – Unknown Degree
				8	Not Applicable
9	9	9	9	9	Unknown

P06I Univariate Imputed Ejection

Definition: This imputed variable has the same definition and element values as ***Ejection***, excluding "9" for unknown ejection. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: EJECT_I [P6N.]

1988 -Later

P07 Age

Definition: Indicates the person's age at the time of the crash, with respect to the person's last birthday.

SAS Name: AGE [P7Z.]

Attribute Codes

1988-2000		2001-Later	
0	= Up to One Year	0	= Up to One Year
1-96	= Years of Age	1-998	= Years of Age
97	= 97 Years or Older		
99	= Unknown	999	= Unknown

P07H Hot-deck Imputed Age

Definition: This imputed variable has the same definition and element values as ***Age***, excluding "99" or “999” for unknown age. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: AGE_H [P7Z.]

1988 -Later

P08 Sex

Definition: Indicates the police reported sex for this person

SAS Name: SEX [P8Z.]

Attribute Codes 1988-Later

1 = Male
2 = Female
9 = Unknown

P08H Hot-deck Imputed Sex

Definition: This imputed variable has the same definition and element values as ***Sex***, excluding "9" for unknown sex. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: SEX_H [P8Z.]

1988 -Later

P09 Injury Severity

Definition: Indicates the police reported injury severity for this person.

SAS Name: INJ_SEV [P9Z.]

Attribute Codes 1988-Later

0 = No Injury (O)
1 = Possible Injury (C)
2 = Non-incapacitating Injury (B)
3 = Incapacitating Injury (A)
4 = Fatal Injury (K)
5 = Injured, Severity Unknown (U)
6 = Died Prior to Crash
9 = Unknown if Injured

P09H Hot-deck Imputed Injury Severity

Definition: This imputed variable has the same definition and element values as ***Injury Severity***, excluding value "9" for unknown if injured. (See ***Understanding the GES Imputation Process*** section of this manual.)

SAS Name: INJSEV_H [P9Z.]

1988 -Later

P10 Taken to Hospital or Treatment Facility

Definition: Indicates whether persons involved in the crash were transported to a hospital or treatment facility.

SAS Name: HOSPITAL [P10Z.]

Attribute Codes 1988-Later

0 = No
1 = Yes
9 = Unknown

P11 Police-Reported Alcohol Involvement

Definition: Indicates that the person (drivers of in-transport motor vehicles and non-motorists only) had consumed an alcoholic beverage. This variable does not indicate that alcohol was a cause of the crash. If a PAR indicates that opened or unopened alcohol bottles were found in the vehicle, then this information **does not** by itself constitute involvement.

SAS Name: PER_ALCH [P11NZ.]

Attribute Codes

1988-1989	1990-1998	1999-2001	2002	
0		1	1	No (Alcohol Not Involved)
	0			Alcohol Not Involved or N/A
		0	0	Not Applicable
1	1	2	2	Yes (Alcohol Involved)
			6	Not on PAR
			7	Not Coded
	7			Alcohol and/or Drugs Involved
8	8	8		Not Reported
9	9	9	9	Unknown (Police-Reported)

P11H Hot-deck Imputed Police-Reported Alcohol Involvement

Definition: The definition and element values are the same as ***Police-Reported Alcohol Involvement*** with the following exceptions: From 1988 to 1993 the imputed variable excludes the attribute code 9 (Unknown – Police Reported) and any person who was coded 8 (Not Reported) for PER_ALCH was coded No Alcohol Involved for ALCH_H. Beginning in 1994 the methodology changed for the attribute 8 – rather than converting it to No Alcohol Involved it was imputed. The SAS name for the imputed variable changed from ALCH_H to PERALC_H in 1994 to reflect this change. In 2002 the PER_ALCH code 8 was replaced by 6 and 7. So from 2002 onward codes 6 and 7, as well as 9, are imputed. (See ***Understanding the GES Imputation Process*** section of this manual.)

1988 – 1993

SAS Name: ALCH_H [P11Z.]

1994 –Later

SAS Name: PERALC_H [P11NZ.]

P12 Non-motorist's Physical/Mental Condition

Definition: Indicates the physical/mental condition for non-motorists. If the person is a driver or occupant of a motor vehicle in transport, they are coded as 0. When two or more circumstances apply, the attribute with the lowest numerical value is coded.

In 1990, this variable was dropped and replaced with *Person's Physical Impairment* (P18).

SAS Name: PHY_COND [P12Z.]

Attribute Codes 1988-1989

0 = Not Applicable-Driver or Occupant of Motor Vehicle in Transport
No Physical/Mental Conditions-Non-occupant
1 = Ill, Blackout
2 = Emotional (e.g. Depression, Angry, Disturbed)
3 = Drugs-Medication
4 = Other Drugs (e.g. Cocaine, Marijuana, etc.)
5 = Walking with Cane or Crutches
6 = Paraplegic or Restricted to Wheelchair
7 = Impaired Due to Previous Injury
8 = Deaf
9 = Blind
10 = No Known Physical/Mental Impairment*
97 = Physical/Mental Impairment-No Details
98 = Other Physical/Mental Impairment
99 = Unknown Physical/Mental Condition

P13 Non-motorist Location

Definition: Reports the location of non-motorists at the time of impact. Intersection locations are coded only if non-motorists were struck in the area formed by a junction of two or more trafficways. Non-intersection location may include non-motorists struck in a junction of a driveway/alley access and a named trafficway. Non-motorists who are occupants of motor vehicles not in transport are coded with respect to the location of the vehicle.

SAS Name: LOCATN [P13Z.]

Attribute Codes 1988-Later

0 = Not Applicable-Driver or Occupant of M.V. in Transport
1 = Intersection-In Crosswalk
2 = Intersection-On Roadway
8 = Intersection-Other
9 = Intersection-Unknown Location
11 = Non-Intersection-In Crosswalk
12 = Non-Intersection-On Roadway
18 = Non-Intersection-Other
19 = Non-Intersection-Unknown Location
20 = In Crosswalk-Unknown if Intersection
98 = Other Location
99 = Unknown Location

P14 Person's Action

Definition: Person's actions are indicated for everyone involved in the crash except the driver of a motor vehicle in transport.

This variable was dropped from the Person file in 1990 and was replaced with the variable *Non-motorist's Action* (P19).

SAS Name: ACTION [P14Z.]

Attribute Codes 1988-1989

0 = Not Applicable-Driver or, if non-driver, No Action

Non-motorist Vehicle Operator:
1 = Failing to have Lights on When Required
2 = Operating without Required Equipment
3 = Improper or Erratic Lane Changing
4 = Failure to Keep in Proper Lane or Running Off Road
5 = Making Improper Entry to or Exit from Trafficway
6 = Operating the Vehicle in Erratic, Reckless, Negligent Manner
7 = Failure of Yield Right of Way
8 = Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
9 = Making Other Improper Turns
10 = Driving on Wrong Side of Road

Motor Vehicle Occupant:
20 = Interfering with Driver

Other Non-motorists:
21 = Darting or Running into Road
22 = Improper Crossing of Roadway or Intersection (Jaywalking)
23 = Walking/Riding with or Against Traffic, Playing, Working, Sitting, Lying, Standing in Roadway
24 = Inattentive (Talking, Eating, etc..)
25 = Jogger
26 = Non-motorist Pushing Vehicle

98 = Other Action
99 = Unknown Action

P15 Restraint System Use

Definition: Police reported occupant use of available vehicle restraints (i.e., belts child safety seat, helmet, or automatic restraints). No distinction is made between manual or automatic restraint; to do so see *Restraint Type* (P16).

This variable replaced *Safety Equipment Use* (P5) in 1990. Starting in 1992 information on air bags is contained in the variable *Air Bag Availability/Function* (P21).

SAS Name: REST_SYS [P15N.]

Attribute Codes:

1990-1991

0 = None Used or Not Applicable
1 = Lap/Shoulder Belt
2 = Lap Belt
3 = Shoulder Belt
4 = Air Bag Deployed
5 = Air Bag Deployed and Lap/Shoulder Belt
6 = Child Safety Seat
7 = Motorcycle Helmet
8 = Restraint Used-Specifics Unknown or Other
9 = Unknown if Used

1992-1994

0 = None Used or Not Applicable
1 = Lap/Shoulder Belt
2 = Lap Belt
3 = Shoulder Belt
6 = Child Safety Seat
7 = Motorcycle Helmet
8 = Restraint Used-Specifics Unknown or Other
9 = Unknown if Used

1995-Later

0 = None Used or Not Applicable
1 = Lap/Shoulder Belt
2 = Lap Belt
3 = Shoulder Belt
5 = Motorcycle Helmet
6 = Child Safety Seat
7 = None Available
8 = Restraint Used-Specifics Unknown or Other
9 = Unknown if Used

P16 Restraint Type

Definition: Provides additional information about the restraint system coded in the variable *Restraint System Use* (P15), distinguishing between automatic and manual type devices used.

This variable was added to the Person File in 1990 and deleted in 1999.

SAS Name: REST_TYP [P16N.]

Attribute Codes 1990 – 1998

0 = None Available or Not Applicable
1 = Automatic (Passive)
2 = Manual (Active)
9 = Unknown Type

P17 Police-Reported Drug Involvement

Definition: Indicates that the person (drivers of in-transport motor vehicles and non-motorists only) had taken drugs. Involvement is not an indication that drugs were in any way cause of the crash, even though it may have been. If the PAR indicates that drugs were found in the vehicle, then this information does not by itself constitute involvement.

This variable was added to the Person File in 1990.

SAS Name: PER_DRUG [P17NZ. in 2001, 2000, 1999, P17N. in 1998]

1990-1998	1999	2000-2001	2002	
0				Drugs Not Involved or Not Applicable
	1	0	0	Not Applicable
	0	1	1	Drugs Not Involved
1	2	2	2	Drugs Involved
			6	Not on PAR
			7	Not Coded
7				Drugs and/or Alcohol Involved
8	8	8		Not Reported
9	9	9	9	Unknown (Police-Reported)

P18 Person's Physical Impairment

Definition: Identifies physical impairments for all drivers and non-motorists which may have contributed to the cause of the crash. These impairments can appear anywhere on the PAR-- in the narrative section, in the violations section, in a column entitled "Contributing Factors" or "Driver Action", etc.

In 1990 this variable replaced *Non-Motorist's Physical / Mental Condition* (P12) in the Person File and *Driver Physical/Mental Impairment* (D3) in the Vehicle File.

If more than one impairment is noted on the Police Accident Report the lowest numbered code shown below is selected. From 2002 on all impairments for a driver or non-motorist are available in the Impair file (SAS variable MIMPAIR).

SAS Name: IMPAIRMT [P18N.]

Attribute Codes 1990-Later

0 = None
1 = Ill, Blackout
2 = Drowsy, Sleepy, Fell Asleep, Fatigued
3 = Requires Cane or Crutches
4 = Paraplegic or Restricted to Wheelchair
5 = Impaired Due to Previous Injury
6 = Deaf
7 = Blind
97 = Physical Impairment-No Details
98 = Other Physical Impairments
99 = Unknown if Physically Impaired

P19 Non-Motorist Action

Definition: Identifies circumstances (actions) that may have contributed to the cause of the crash. The actions coded pertain to non-motorists only [Person Type (P03) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian, 6 (Pedalcyclist) or 8"(Other or Unknown)]. The actions can appear anywhere on the PAR--in the narrative section, in the violations section, in a column entitled "Contributing Factors" or "Driver Action", etc.

If more than one action is noted on the Police Accident Report the lowest numbered code shown below is selected. From 2002 on all actions for a non-motorist are available in the Nmaction file (SAS variable MACTION).

SAS Name: ACTION [P19N.]

Attribute Codes:

1990-1991	1992-Later	
0	0	No Action
		Non-Motorist Vehicle Operator:
1	1	Failing to Have Lights on When Required
2	2	Operating without Required Equipment
3	3	Improper or Erratic Lane Changing
4	4	Failure to Keep in Proper Lane or Running Off Road
5	5	Making Improper Entry to or Exit from Trafficway
6	6	Operating the Vehicle in Erratic, Reckless, Negligent Manner
7	7	Failure to Yield Right of Way
8	8	Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
9	9	Making Other Improper Turn
10	10	Driving on Wrong Side of Road
		Other Non-motorist:
21	21	Darting or Running into Road
22	22	Improper Crossing of Roadway or Intersection (Jaywalking)
23		Walking/Riding with or Against Traffic, Playing, Working, Sitting, Lying, Standing in Roadway
24	24	Inattentive (Talking, Eating, etc.)
25	25	Jogging
26	26	Non-Motorist Pushing Vehicle
	27	Walking with Traffic
	28	Walking Against Traffic
	29	Playing, Working, Sitting, Lying, Standing, Etc. In Roadway
98	98	Other Action
99	99	Unknown Action

P20 Non-Motorist Safety Equipment Use

Definition: Identifies safety equipment worn or carried by the non-motorist [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian, 6 (Pedalcyclist) or 8"(Other or Unknown)].

If more than one item is noted on the Police Accident Report the lowest numbered code shown below is selected. From 2002 on all items for a non-motorist are available in the Safetyeq file (SAS variable MSAFEQMT).

SAS Name: SAF_EQMT [P20NZ.]

Attribute Codes

1990-1998	1999-Later
0	= None Used or Not Applicable
	0 = Not Applicable
	1 = Not Used
1	2= Bicycle Helmet
2	3= Reflective Equipment
3	4= Bicycle Helmet and Reflective Equipment
8	8= Other Safety Equipment
9	9= Unknown if Used

P21 Air Bag Availability/Function

Definition: Indicates whether the vehicle was equipped with an air bag in the seat position of this occupant and, if so; did it deploy.

This variable was added to the Person File in 1992

SAS Name: AIRBAG [P21N.]

Attribute Codes:

1992-1999	2000-Later	
0	0	No Air Bag Available (includes airbags that are switched off)
1	1	Deployed
2	2	Non-Deployed
	8	Not Applicable
9	9	Unknown if Available or Deployed

P22 Non-Motorist Striking Vehicle Number

Definition: This variable identifies the vehicle which made contact with the non-motorist being coded. The value entered must match the vehicle number of the striking vehicle.

This variable was added to the Person File in 1994.

SAS Name: STR_VEH

Attribute Codes 1994-Later

0 = Not Applicable, Occupant of Vehicle
1 – 30 = Assigned Vehicle Number
99 = Unknown

The Impair File

The Impair file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, VEHNO, PERNO, and IMPAIR. CASENUM, VEHNO, and PERNO should be used to merge the Impair file with the Person file.

M_P18 Person's Physical Impairment

Definition: Identifies all physical impairments for all drivers and non-motorists which may have contributed to the cause of the crash. These impairments can appear anywhere on the PAR-- in the narrative section, in the violations section, in a column entitled "Contributing Factors" or "Driver Action", etc.

This variable has been coded at the person level, and been on the Person file (SAS name IMPAIRMT), since 1990. Starting in 2002 all impairments a driver or non-motorist are available in the Impair file.

SAS Name: MIMPAIRMT [P18N.]

Attribute Codes 2002

0 = None
1 = Ill, Blackout
2 = Drowsy, Sleepy, Fell Asleep, Fatigued
3 = Requires Cane or Crutches
4 = Paraplegic or Restricted to Wheelchair
5 = Impaired Due to Previous Injury
6 = Deaf
7 = Blind
97 = Physical Impairment-No Details
98 = Other Physical Impairments
99 = Unknown if Physically Impaired

The Nmaction File

The Nmaction file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and MACTION. CASENUM and PERNO should be used to merge the Impair file with non-motorists from the Person file [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist) or 8"(Other or Unknown)].

M_P19 Non-Motorist Action

Definition: Identifies circumstances (actions) that may have contributed to the cause of the crash. The actions coded pertain to non-motorists only [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian, 6 (Pedalcyclist) or 8"(Other or Unknown)]. The actions can appear anywhere on the PAR-in the narrative section, in the violations section, in a column entitled "Contributing Factors" or "Driver Action", etc.

This variable has been coded at the person level, and been on the Person file (SAS name ACTION), since 1990. Starting in 2002 all actions for a non-motorist are available in the Nmaction file.

SAS Name: MACTION [P19N.]

Attribute Codes 2002

0 No Action

Non-Motorist Vehicle Operator:
1 Failing to Have Lights on When Required
2 Operating without Required Equipment
3 Improper or Erratic Lane Changing
4 Failure to Keep in Proper Lane or Running Off Road
5 Making Improper Entry to or Exit from Trafficway
6 Operating the Vehicle in Erratic, Reckless, Negligent Manner
7 Failure to Yield Right of Way
8 Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
9 Making Other Improper Turn
10 Driving on Wrong Side of Road

Other Non-motorist:
21 Darting or Running into Road
22 Improper Crossing of Roadway or Intersection (Jaywalking)
24 Inattentive (Talking, Eating, etc.)
25 Jogging
26 Non-Motorist Pushing Vehicle
27 Walking with Traffic
28 Walking Against Traffic
29 Playing, Working, Sitting, Lying, Standing, Etc. In Roadway

98 Other Action
99 Unknown Action

The Safetyeq File

The Safetyeq file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and SAF_EQMT. CASENUM and PERNO should be used to merge the Safetyeq file with non-motorists from the Person file [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist) or 8 (Other or Unknown)].

M_P20 Non-Motorist Safety Equipment Use

Definition: Identifies safety equipment worn or carried by the non-motorist [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist) or 8 (Other or Unknown)].

This variable has been coded at the person level, and been on the Person file (SAS name SAF_EQMT), since 1990. Starting in 2002 all items for a non-motorist are available in the Safetyeq file

SAS Name: MSAFEQMT [P20NZ.]

Attribute Codes 2002

0 = Not Applicable
1 = None Used
2 = Bicycle Helmet
3 = Reflective Equipment
4 = Bicycle Helmet and Reflective Equipment
8 = Other Safety Equipment
9 = Unknown if Used

The Biketraf File

The Biketraf file contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and PERNO. CASENUM and PERNO should be used to merge the Biketraf file with cyclists in the Person File (PER_TYPE=6). It also contains:

MB_A16 Traffic Control Device – Cyclist

Definition: Indicates whether or not traffic control devices were present for a cyclist and the types of traffic control device.

This variable has been coded at the Accident level, and been on the Accident file (SAS name TRAF_CON) since 1988. Starting in 2002 each traffic control device for a vehicle is in the Trafcon file and each traffic control device for a cyclist is in the Biketraf file. Also starting in 2002, a single, selected, traffic control device for a vehicle is available on the Vehicle file (SAS name VTRAFCON).

SAS Name: BTRAFCON [A16N.]

Attribute Codes 2002

0 = No Controls

I. Not at Railroad Grade Crossing:

Trafficway Traffic Signals:
1 = Traffic Control Signal (on colors)
4 = Flashing Traffic Control Signal or Flashing Beacon
8 = Other Traffic Signal
9 = Unknown Traffic Signal

Regulatory, School Zone Signs:
21 = Stop Sign
22 = Yield Sign
23 = School Zone Related Sign
28 = Other Sign
29 = Unknown Sign

Warning Signs:
40 = Advisory Speed Sign
41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
42 = Warning Sign For Road Construction
43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
49 = Unknown Type Warning

Miscellaneous, Not at Railroad Crossing:
51 = Officer, Crossing Guard, Flagman, etc

II. At Railroad Grade Crossing:
61 = Active Devices (e.g., Gates, Flashing Lights, Traffic Signal)
62 = Passive Devices (e.g., Stop Sign, Cross Bucks)

III. Other:
97 = Traffic Control Present-No Details
98 = Other Traffic Control (whether or not at RR Grade Crossing)
99 = Unknown

APPENDICES

APPENDIX A: Make/Model Designations

V3 Vehicle Make – SAS Name: MAKE 1988 - Later

Passenger Vehicles (01-69)

01 American Motors
02 Jeep (includes Kaiser-Jeep)
03 AM General
06 Chrysler
07 Dodge
08 Imperial
09 Plymouth
10 Eagle
12 Ford
13 Lincoln
14 Mercury
18 Buick
19 Cadillac
20 Chevrolet
21 Oldsmobile
22 Pontiac
23 GMC
24 Saturn
25 Grumman
29 Other Domestic Make:
Model Code indicates Makes:
001 / Studebaker,Avanti
002 / Checker
398 / Other Domestic Make
399 / Unknown Domestic Make
30 Volkswagen
31 Alfa Romeo
32 Audi
33 Austin/Austin Healey
34 BMW
35 Nissan/Datsun
36 Fiat
37 Honda
38 Isuzu
39 Jaguar
40 Lancia
41 Mazda
42 Mercedes Benz
43 MG
44 Peugeot
45 Porsche
46 Renault
47 Saab
48 Subaru
49 Toyota
50 Triumph
51 Volvo
52 Mitsubishi
53 Suzuki
54 Acura
55 Hyundai
56 Merkur
57 Yugo
58 Infiniti
59 Lexus
60 Daihatsu
61 Sterling
62 Land Rover
63 Kia
64 Daewoo
65 Mini
69 Other Foreign Make
Model Code indicates Makes:
031 Aston Martin
032 Bricklin
033 Citreon
034 Delorean
035 Ferrari
036 Hillman
037J ensen
038 Lamborghini
039 Lotus
040 Maserati
041 Morris
042 Rolls Royce/Bentley
044 Simca
045 Sunbeam
046 TVR
048 Desta
049 Reliant
052 Bertone
053 Lada

Motorcycles (70-79)

70 BSA
71 Ducati
72 Harley-Davidson
73 Kawasaki
74 Moto-Guzzi
75 Norton
76 Yamaha
78 All mopeds other than those above
79 Other motorcycle

Also see:
34 BMW
37 Honda
44 Peugeot
50 Triumph
53 Suzuki

Trucks and Buses (80-98)

80 Brockway
81 Diamond Reo/Reo
82 Freightliner/White
83 FWD
84 International Harvester/Navistar
85 Kenworth
86 Mack
87 Peterbilt
88 Iveco/Magirus
98 Other Truck Make:
Model Code indicates Makes:
801 Autocar
802 Auto-Union-DKW
803 Divco
804 Western Star
805 Oshkosh
806 Hino
807 Scania
850 Truck based motor-home
898 Other truck (e.g., Ward LaFrance, Marmon)
902 NeoPlan (bus)
950 Bus-based motor-home
988 Other bus
989 Unknown bus
998 Other vehicle (i.e., farm vehicle, go-cart)
99 Unknown Make

Also see:
03 AM General
07 Dodge
12 Ford
20 Chevrolet
23 GMC
25 Grumman
35Nissan/Datsun
36 Fiat
38 Isuzu
42 Mercedes Benz
51 Volvo
52 Mitsubishi

1 AMERICAN MOTORS

CODE	MODEL	INCLUDES	YEAR
001	Rambler/American	Rogue, Scrambler, 220, 440,	all
002	Rebel/Matador	Barcelona Classic Brougham, 550, 660, 770, Matador (-78), Marlin	all
003	Ambassador	Brougham, DPL, SST, DL, Limited, 880, 990	all
004	Pacer	Limited, DL	75-80
005	AMX	(2 seater only)	68-70
006	Javelin	SST, AMX (71-74)	all
007	Hornet/Concord	Sportabout, Limited, DL, SC-360, SST, AMX (75-78)	all
008	Spirit/Gremlin	Limited, DL, Custom, X, GT (83-on), AMX (79-on)	all
009	Eagle	Concord based	80-87
010	Eagle SX-4	Spirit Gremlin based	81-84
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

Note: Alliance, Encore, Premier-See Renault - Code "46"

2 JEEP (Includes KAISER-JEEP)

CODE	MODEL	INCLUDES	YEAR
401	CJ-2/CJ-3/CJ-4	Military	-66
402	CJ-5/CJ-6/CJ-7/ CJ-8	Scrambler, Golden Eagle, Renegade, Laredo, Wrangler	67-on
403	YJ-series	Wrangler	86-on
404	Cherokee (84-on)	Limited, Laredo, Pioneer, Briarwood, Grand	84-on
405	Liberty		2002
421	Cherokee (-83)	Wide Track, Chief, Commando, Jeepster	all
431	Grand Wagoneer	Custom, Brougham Limited, Wagoneer	71-91
481	Pickup	J-10, J-20, Honcho	all
482	Comanche	Chief	86-92
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

3 AM GENERAL

CODE	MODEL	INCLUDES	YEAR
401	Dispatcher	Post Office (Jeep)	all
421	Hummer		93-on
466	Dispatcher	DJ-series-Post Office Van	all
498	Other light truck		-
499	Unknown light truck		-
884	Medium/Heavy truck	Military off-road	-
898	Other medium-heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based Motorhome		-
983	Bus flat front (rear engine) Transit		-

988	Other bus	-
989	Unknown bus	-
998	Other vehicle	-
999	Unknown vehicle	-

6 CHRYSLER

CODE	MODEL	INCLUDES	YEAR
009	Cordoba	Crown, 300, LS	75-83
010	New Yorker/Newport/ Fifth Avenue/Imperial	Custom, Royal, Brougham, Town and Country, 300 (-71) (excludes all FWD)	all
014	New Yorker/E Class/ Imperial (90-93)/Fifth Avenue	FWD vehicles, Turbo	83-on
015	Laser	Turbo, XE, XT	84-86
016	LeBaron	Medallion, Salon(RWD), Landau, LX, FWD except GTS or GTC Sport Coupe	77-on
017	LeBaron GTS/GTC	GTS-Turbo	85-on
		GTC-Sport Coupe	87-on
018	Intrepid (Canadian made)		
031	TC (Maserati Sport)	Turbo Convertible	88-91
035	Conquest	TSi, Turbo	87-89
041	Concorde		93-on
042	LHS	New Yorker (94-on)	94-on
043	Sebring		95-on
044	Cirrus		95-on
052	PT Cruiser		2001-on
398	Other automobile		-
399	Unknown automobile		-
441	Town and Country	Minivan	90-on
442	Voyager		2002
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

7 DODGE

CODE	MODEL	INCLUDES	YEAR
001	Dart	Custom, Swinger, Sport, GT, Demon, Special, Special Edition, 170,270,340,360	62-76
002	Coronet/Charger(-78)/ Magnum	Brougham, Custom, Superbee, Crestwood, Deluxe, XE, R/T, SE, 440, 500, Police	-79
003	Polara/Monaco Royal Monaco	Custom, Special, Crestwood, Brougham, Police, Taxi	- 78
004	Viper	RT/10	92-on
005	Challenger	R/T, T/A, Rallye	70-74
006	Aspen	Custom, Special Edition, Police, R/T, Sport	76-80
007	Diplomat	Medallion, Salon, S	77-89
008	Omni/Charger (83 on)	024, DeTomaso Miser, GLH, GLHS, Shelby, Charger 2.2, America, Expo	78-90

009	Mirada			80-83
010	St. Regis		Police, Taxi	79-81
011	Aries (K)		Custom, SE, LE	81-89
012	400		LS	82-83
013	Rampage (car based pickup)		2.2, GT, Sport	82-84
014	600		ES, Turbo	83-88
015	Daytona		Turbo Z, Shelby Z Pacifica, C/S Competition, IROC R/T	84-94
016	Lancer		Pacifica, Turbo, ES, Shelby	85-89
017	Shadow		ES, Turbo	87-on
018	Dynasty			88-on
019	Spirit		ES, Shelby, RT	89-94
020	Neon		Expresso	94-on
033	Challenger		all imported	78-83
034	Colt (excludes Vista)		RS, Turbo, Custom, GTS, DL, E, Premier, Deluxe, Carousel, GT	74-94
035	Conquest		Turbo	84-86
039	Stealth			91-on
040	Monaco			90-92
041	Intrepid			93-on
042	Avenger			95-on
043	Stratus			95-on
398	Other automobile			
399	Unknown automobile			
401	Raider		Sport	86-on
421	Ramcharger			all
422	Durango			98-00
441	Vista		4x4	84-91
442	Caravan		Mini-Ram, SE	84-on
461	B-series vans		Sportsman, Royal, Maxiwagon, Ram B150-B350, Tradesman	all
470	Van derivative		Kary Van	all
471	D50, Colt P/U, RAM50/RAM 100			all
472	Dakota			87-on
481	D, W-series pickup		Ram, Custom, Royal, Miser, D100-D350, W100-W350	all -
482	Ram		1500/2500/3500 P/U	94-on
498	Other light truck			-
499	Unknown light truck			-
850	Truck based motorhome			-
881	Medium/Heavy	CBE		all
882	Medium/Heavy	COE	low entry	all
883	Medium/Heavy	COE	high entry	all
884	Medium/Heavy		unknown engine location	
890	Medium/Heavy	COE	entry position unknown	
898	Other medium/heavy truck			
899	Unknown Medium/heavy truck	-		
950	Bus based motorhome			-
981	Medium bus		(not van based)	-
988	Other bus			-
989	Unknown bus			-

998	Other vehicle		-
999	Unknown vehicle		-

8 IMPERIAL

CODE	MODEL	INCLUDES	YEAR
010	Imperial	Lebaron	-76
		Mark Cross, Frank Sinatra editions	81-83
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

9 PLYMOUTH

CODE	MODEL	INCLUDES	YEAR
001	Valiant/Duster (-76)/ Scamp	100, 200, Brougham, Signet, Custom, Special 340/360, 340, 360, Twister	-76
002	Satellite/Belvedere	Belvedere I/II, GTX, Roadrunner (-74), Sebring, Sebring Plus, Superbird, Brougham	-74
003	Fury	I, II, III, Roadrunner (75),	-74
		Salon, VIP, Sport, Suburban	75-78
004	Gran Fury	Sedan, Brougham, Custom Sport, Suburban	75-89
005	Barracuda	Formula, S, 340, AAR, Cuda, Gran Coupe	65-74
006	Volaré	Custom, Premier, Roadrunner (76-on), Police	76-80
007	Caravelle	Turbo, SE	85-89
008	Horizon	TC-3, Miser, Turismo 2.2, Custom, SE, Duster (85-on), America, Expo	78-90
011	Reliant (K)	SE, LE	81-89
013	Scamp (car based pickup)	GT, 2.2	82-84
017	Sundance	Turbo	87-on
019	Acclaim	LX, LE	89-on
020	Neon	Expresso	94-on
031	Cricket		71-72
032	Arrow	Fire Arrow, GS, GT	76-80
033	Sapporo	all imported	78-83
034	Champ/Colt (excludes Vista)	Turbo, Custom-Station Wagon (84-on)	79-94
035	Conquest	TSi	84-89
038	Breeze		96-on
039	Prowler		96-on
037	Laser	RS, Turbo	89-on
398	Other automobile		
399	Unknown automobile		
421	Trailduster		all
441	Vista	4x4	87-on
442	Voyager (minivan)	SE, LX	84-on
461	Van-fullsize (B-series)	Voyager, Sport, Premier	all
471	Arrow pickup (foreign)		all
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

10 EAGLE

CODE	MODEL	INCLUDES	YEAR
034	Summit	DL, LX, ES	89-on
037	Talon	TSI	90-on
040	Premier	LX, ES	88-92
041	Vision		93-on
044	Medallion	DL, LX	88-90
398	Other automobile		-
399	Unknown automobile		-
441	Summit Wagon		92-on
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

12 FORD

CODE	MODEL	INCLUDES	YEAR
001	Falcon	Sprint, GT, Futura	-70
002	Fairlane	Torino thru 1970	-70
003	Mustang/Mustang II	Mach, Boss, Grande, Cobra, Ghia, SVO, GT, LX, Shelby	65-on
004	Thunderbird (all sizes)	Landau, Heritage, Turbo coupe, Elan, Fila, Sport, LX, SC	55-on
005	LTD II	S, Squire, Brougham	77-79
006	LTD/Custom/Galaxie (all sizes)	XL, Landau, Ranch Wagon, Country Squire, S, 500, Brougham, XL GT	65-on
007	Ranchero	Falcon/Fairlane based Torino/LTD II based	-71 72-79
008	Maverick	Grabber	70-78
009	Pinto	Pony, MPG, ESS	71-80
010	Torino/Gran Torino/Elite	GT, Cobra, Sport, Squire, Brougham	71-76
011	Granada	ESS, Ghia	75-82
012	Fairmont	Futura, Sport Coupe	78-83
013	Escort/EXP	L, GL, GLX, SS, GT, LX	81-on
015	Tempo	L, GL, GLX, Sport, 4x4	84-94
016	Crown Victoria		81-on
017	Taurus	MT-5, L, GL, LX, SHO	86-on
018	Probe	GL, LX, GT	88-on
031	English Ford	Cortina	60-on
032	Fiesta	Sport, Ghia	78-80
033	Festiva		88-93
034	Laser		93-on
035	Contour		94-on
036	Aspire		94-on
037	Focus		
398	Other automobile		all
399	Unknown automobile		-
401	Bronco II/Bronco (-77) Explorer	Eddie Bauer, XL, XLT Explorer (90-on)	83-on
402	Escape		2001
421	Bronco-fullsize	Eddie Bauer, Custom, XL, XLT	78-on

422	Expedition			97-on
431	Excursion			2000
441	Aerostar		XLT, Cargo Van	86-on
442	Windstar			94-on
461	E-series vans		Econoline, Clubwagon, Chateau, E150-E350	all
470	Van derivative		i.e: parcel van	all
471	Ranger		Supercab, 4x4, STX, Splash	82-on
472	Courier		Imported pickup	all
473	Sport Trac			2001
481	F-series pickup		F-100 - F-350	all
498	Other light truck			-
499	Unknown light truck			-
850	Truck based motorhome			-
880	F450/550 Pickup > 4,536 GVW			
881	Medium/Heavy	CBE	F-5 thru F-8 L-series, FT-series	all
882	Medium/Heavy	COE	C/CT series, low entry	all
883	Medium/Heavy	COE	C/CLT series, high entry	all
884	Medium/Heavy		unknown engine location	-
890	Medium/Heavy	COE	entry position unknown	-
898	Other medium/heavy		truck	-
899	Unknown medium/heavy		truck	-
950	Bus based motorhome			-
981	Medium bus		B-series (not van based)	all
988	Other bus			all
989	Unknown bus			-
998	Other vehicle			-
999	Unknown vehicle			-

13 LINCOLN

CODE	MODEL	INCLUDES	YEAR
001	Continental/Town Car	Continental (-81), Town Car (82 on)	all 82-on
002	Mark	I, II, III, IV, V, VI, VII, LSC, VIII All Signature/ Designer Series	all
005	Continental (82-on)	All Signature/Designer Series	
011	Versailles		77-80
012	LS		2000
398	Other automobile		-
399	Unknown automobile		-
421	Navigator		97-on
481	Blackwood		2002
498	Other Light Truck		97-on
499	Unknown Light Truck		97-on
998	Other vehicle		-

14 MERCURY (MERKUR: See 56)

CODE	MODEL	INCLUDES	YEAR
002	Cyclone	GT, CJ, Spoiler	-71
003	Capri-domestic	RS, Turbo, GS, Black Magic	79-86

004	Cougar/XR7	XR-7, RS, LS, GS, Eliminator, Brougham, Villager, (includes all body styles)	67-on
006	Marquis/Monterey	Marauder, X-100, Parklane, S-55, Custom, Brougham, Montclair, Grand Marquis	55-on
008	Comet	Caliente, GT, Voyager, 202, Capri (66-67)	62-77
009	Bobcat	Runabout, Villager	75-80
010	Montego	Comet (68-70), GT, MX, Villager, Brougham	67-76
011	Monarch	Ghia	75-80
012	Zephyr	GS, Z-7	78-83
013	Lynx/LN-7 (82-83)	L, LS, GS, RS, XR-3	81-87
015	Topaz	L, LS, GS, 4x4	84-on
017	Sable	LS, GS	86-on
031	Capri-foreign	Capri II	70-77
		2+2	89-94
033	Pantera	de Tamaso	72-74
036	Tracer	L, GL	88-on
037	Mystique		94-on
398	Other automobile		-
399	Unknown automobile		-
401	Mountaineer		96-on
443	Villager	LS, GS	93-on
998	Other vehicle		-
999	Unknown vehicle		-

18 BUICK

CODE	MODEL	INCLUDES	YEAR
001	Special/Skylark	GS, GS-350, GS-400, GS-455, GS, California, Sport wagon, Custom	-72
002	LeSabre/Centurion/ Wildcat	Estate Wagon, Luxus, Invicta, Custom, Limited T-Type	55-on
003	Electra, Electra 225, Park Avenue (91-on)	Limited, Park Avenue, Ultra	60-on
004	Roadmaster	Estate Wagon, Limited	91-on
005	Riviera	S-Type,T-Type	63-on
007	Century	Luxus, T-Type Luxus, T-Type, FWD (82-on), Custom, Regal (72-77)	72-on
008	Apollo/Skylark	Skylark (75), S/R	73-76
010	Regal	Turbo, Luxus, Grand National, GNX, T-Type	78-88
012	Skyhawk	S-Type, Roadhawk, T-Type, GT	75-89
015	Skylark (76-85)	(except 75), S/R, S, Limited, Sport, T-Type	-85
018	Somerset/Skylark	Skylark (86-on), Somerset GS, Regal, Custom, Limited, T-Type	85-on
020	Regal (FWD)	Limited	88-on
021	Reatta		88-91
031	Opel Kadett		-75
032	Opel Manta	1900, Luxus, Rallye, Sports Coupe	-75
033	Opel GT		-75
034	Opel Isuzu	Deluxe, Sport	76-79
398	Other automobile		-
399	Unknown automobile		-
401	Rendezvous		2002
499	Unknown Light Truck		-

998	Other vehicle	-
999	Unknown vehicle	-

19 CADILLAC

CODE	MODEL	INCLUDES	YEAR
003	Deville/Fleetwood (except Limousine)	Coupe de Ville, Sedan de Ville, Fleetwood, Brougham, Fleetwood, 60 Special, etc. d'Elegance, Concourse	all
004	Limousine	Fleetwood 75, Formal de Ville based	all
005	Eldorado	Biarritz, El-doro, Touring Coupe	67-on
006	Commercial Series	Ambulance/Hearse	all
009	Allanté		87-on
014	Seville	Elegante, STS	76-on
016	Cimarron	D'oro	82-88
017	Catera	RWD	97-on
018	CTS		2003
398	Other automobile		-
399	Unknown automobile		-
421	Excalade		
499	Unknown Ligfht Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

20 CHEVROLET

CODE	MODEL	INCLUDES	YEAR
001	Chevelle/Malibu	Classic, Concours, S-3, Laguna, Nomad, 330, Greenbriar, Estate, Deluxe, SS 396/454	64-83
002	Impala/Caprice	Biscayne, Belair, Super Sport, Classic, Classic Brougham, Townsman, Brookwood, Kingswood	55-on
004	Corvette	Stingray	53-on
006	Corvair	Corvair Monza, 500, Corvair Spyder, Corsa	60-69
007	El Camino	Royal Knight, SS	59-on
008	Nova (-79)	Chevy II, LN, LE, Concours SS-350/396, Rally	62-79
009	Camaro	SS, RS, LT, Berlinefta, IROC-Z, Z28	67-on
010	Monte Carlo (RWD)	LS, SS, Aerocoupe, Landau	70-88
011	Vega	GT, Cosworth	71-77
012	Monza	Spyder, 2+2, Towne Coupe	75-80
013	Chevette	S, Scooter, CS	76-87
015	Citation	X-11, Citation II	80-85
016	Cavalier	CS, RS, Z24	82-on
017	Celebrity	CS, Eurosport, VR	82-on
019	Beretta/Corsica	GT	87-on
020	Lumina	(GM-10 based), Z-34, Euro	90-on
031	Spectrum		85-on
032	Nova/GEO Prizm	CL, NUMMI-built vehicles	85-on
033	Sprint/GEO Sprint		85-on
034	GEO Metro	LSi, XFi	89-on
035	GEO Storm	GSi	85-on
036	Monte Carlo (FWD only)	Z34	95-on

037	Malibu		97-on
398	Other automobile		
399	Unknown automobile		
401	S-10 Blazer, Blazer	S-10 p/u based	83-on
402	GEO Tracker	LSi	89-on
403	Geo Tracker		2002
421	Fullsize Blazer, Tahoe	K-series, fullsized p/u based	69-on
431	Suburban	All models	all
441	Astro Van	Minivan	85-on
442	Lumina APV		90-on
443	Ventura		97-on
461	G-series van	Beauville, Chevy Van, Sport Van, G10-G30, Express	all
466	P-series van		all
470	Van derivative	Hi-cube, Parcel Van	all
471	S-10/T-10	4x4	82-on
472	LUV	Imported pickup	all
481	C, K, R, V-series pickup	C10-C30, K10-K30, R10-R30, Vl0-V30, Silverado, C-Kl500, 2500, 3500	all
482	Avalanche		2002
498	Other light truck		
499	Unknown light truck		
850	Truck based motorhome		
881	Medium/Heavy CBE	C50/60/65, M60/65, H70/80/90, J70/80/90, Bison 90, all other CBE	all
882	Medium/Heavy COE low entry	T60/65, all other COE low entry	all
883	Medium/Heavy COE high entry	Titan 90, all other COE high entry	all
884	Medium/Heavy	Unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus	S-60 series	all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

21 OLDSMOBILE

CODE	MODEL	INCLUDES	YEAR
001	Cutlass (RWD-only)	Supreme, S, LS, Salon Brougham, Vista Cruiser, F85 (thru 72), Rallye 350, Hurst Olds, 442, Calais, Classic (88)	62-88
002	Delta 88	Royale, Custom, Delta, Jetstar 88, Delmont 88, Starfire (thru 66), Custom Cruiser	all
003	Ninety-Eight	Regency, Luxury	all
005	Toronado	XSR, Trofeo, Brougham Custom	66-92
006	Commercial Series	Ambulance/Hearse	all
012	Starfire	SX,GT	75-80
015	Omega	All front wheel drive	75-85

016	Firenza	S, LS, SX, Cruiser, GT	82-88
017	Ciera	Cutlass Ciera, Brougham, ES	82-on
018	Calais	GT, ES, 500	85-91
020	Cutlass (FWD)	Supreme	88-on
021	Achieva	SC	92-on
022	Aurora		94-on
024	Alero		
398	Other automobile		
399	Unknown automobile		
401	Bravada		91-on
441	Silhouette		90-on
498	Other light truck		
499	Unknown light truck		
998	Other vehicle		
999	Unknown vehicle		

22 PONTIAC

CODE	MODEL	INCLUDES	YEAR
001	Lemans Tempest (-79)	Safari, T-37, Luxury, Grand Sport, GTO (-73), GT-37, Sprint, Judge, Grand AM (73-75), Grand Lemans	62-79
002	Bonneville/Catalina/ Parisienne	Brougham, Grand Safari, Safari, Grandville, 2+2 Executive, Starchief SE, SSE, SSEi, Parisienne	all
005	Fiero	2M4, 2M6, GT, SE	84-88
008	Ventura	II, SJ, Sprint, GTO (74-on), Custom	71-77
009	Firebird/Trans AM	Esprit, Formula, GTA, Redbird, Yellowbird, Skybird, SE	67-on
010	Grand Prix (RWD)	J, LJ, SJ, Brougham, 2+2	63-87
011	Astre	Safari, SJ, Custom	75-77
012	Sunbird (thru 80)	Safari, Sport, Formula	76-80
013	T-1000/1000		81-87
015	Phoenix	LJ, SJ	77-84
016	J2000/2000/Sunbird Sunfire	Sunbird (84-on), LE, SE, GT, Convertible, GT/SE	82-on
017	6000	STE, SE, LE	82-on
018	Grand AM	SE,LE	all
020	Grand Prix (FWD)	SE	88-on
031	Lemans (88-on)	SE, Tempest (Canadian)	88-on
398	Other automobile		-
399	Unknown automobile		-
401	Aztek		2001
402	Vibe		2003
441	Trans Sport		90-on
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

23 GMC

CODE	MODEL	INCLUDES	YEAR
007	Caballero/Sprint	Sierra Madre del Sur, SP	65-on
398	Other automobile		-
399	Unknown automobile		-
401	Jimmy/Typhoon	S15 based	83-on
421	Fullsize Jimmy Yukon	fullsize pickup based	all
431	Suburban	all models	all
441	Safari (minivan)		86-on
461	G-series van	Rally Van, Vandura, G15-G35, Savana	all
466	P-series van		all
470	Van derivative	Hicube, parcel van, Value Van, Magna Van	all
471	S15fTl5/Sonoma		82-on
481	C, K, R, V-series pickup	C15-35, K15-35, R15-35, VI5-35, Sierra	all
498	Other light truck		-
499	Unknown light truck		-
850	Truck based motorhome		-
881	Medium/Heavy CBE	W5000/6000/7000 series, Brigadier/General models	all
882	Medium/Heavy COE low entry	W60OO/W7000, all other COE, low entry	all
883	Medium/Heavy COE high entry	Astro 95, all other COE, high entry	all
884	Medium/Heavy	Unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus	B6000	all
988	Other Bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		
		-	

24 SATURN

CODE	MODEL	INCLUDES	YEAR
001	SL	SL1, SL2, SL3	91-on
002	SC	SC1,SC2	91-on
003	SW	SW1, SW2	93-on
004	EV1	(electric vehicle)	97-on
005	LS		2000
006	LW		2000
398	Other automobile		-
399	Unknown automobile		-
401	Vue		2002
998	Other vehicle		-
999	Unknown vehicle		

25 GRUMMAN

CODE	MODEL	INCLUDES	YEAR
441	LLV	Postal vehicle	all
442	Step-in van	Multi-stop, step van	all
498	Other light truck		-
499	Unknown light truck		-
850	Truck based motorhome		-
881	Medium/Heavy CBE		all
882	Medium/Heavy COE low entry		all
883	Medium/Heavy COE high entry		all
884	Medium/Heavy Unknown		-
	engine location		-
890	Medium/Heavy COE entry position		-
	unknown		-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
983	Bus-flat front, rear engine	Transit	all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

29 OTHER DOMESTIC MANUFACTURER

CODE	MODEL	INCLUDES	YEAR
001	Studebaker/Avanti	Lark, Gran Turismo, Hawk, Cruiser, all associated subseries	-66
002	Checker	Marathon, Superba, Taxi, Aerobus	-82
398	Other make	Desoto, Excaliber, Stutz, Hudson, Packard, Consulier	all
399	Unknown make		-
498	Other Light Truck		-
988	Other Bus		
	-		

30 VOLKSWAGEN

CODE	MODEL	INCLUDES	YEAR
031	Karmann Ghia		-74
032	Beetle 1300/1500	flat windshield	-77
033	Super Beetle	distinguished by curved windshield	71-80
034	411/412	Squareback/Fastback	71-74
035	Squareback/Fastback	Type 3, 1600	-74
036	Rabbit	L, GTI, Sport, LS, Custom, DL, Deluxe	75-84
037	Dasher		74-81
038	Scirocco	16V	75-88
040	Jetta	GL, GLI	80-92
041	Quantum	Synco	82-88
042	Golf	Synco, GTI, Cabriolet, GT, GL	85-92
043	Rabbit pickup	car based pickup	80-83
044	Fox		87-on
045	Corrado		89-on
046	Passat		90-on

047	Jetta III		93-on
048	Golf III		93-on
049	New Beetle		1988
398	Other automobile		
399	Unknown automobile		-
401	The Thing (181)		73-75
441	Vanagon/Camper	Bus, Kombi, Van	all
442	Eurovan		92-on
498	Other light truck		-
499	Unknown light truck		-
998	Other Vehicle		-
999	Unknown vehicle		-

31 ALFA ROMEO

CODE	MODEL	INCLUDES	YEAR
031	Spider	All roadsters, Veloce, 1750/2000 roadsters	all
032	Sports Sedan	All 4 door sedans Milano (86), Giulia, Super,Berlina, Alfetta, 1750/2000 sedans	all
033	Sprint Veloce	All 2-door coupes Alfetta GT, 1750/2000 GTV, Sprint GT	all
034	GTV-6		81-on
035	164		89-on
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

32 AUDI

CODE	MODEL	INCLUDES	YEAR
031	Super 90		70-72
032	100/A6	S, LS, GL, Quattro (89 on)	70-77 89 on
033	Fox		74-79
034	4000	Quattro, Coupe GT, CS, S	80-88
035	5000	Quattro, CS, S, Turbo	78-88
036	80/90	Quattro	88-95
037	200	Quattro	88-92
038	V-8 Quattro		90-94
039	Coupe Quattro		90-93
040	S4/S6		93-on
041	Cabriolet		94-on
042	A4		96-on
043	A3		96-on
044	A8		96-on
045	TT		2000
046	S8		2001
047	Allroad		2001
398	Other automobile		-
399	Unknown automobile		-

998	Other vehicle		-
999	Unknown vehicle		
			-

33 AUSTIN/AUSTIN HEALEY

CODE	MODEL	INCLUDES	YEAR
031	Marina	GT	all
032	America		all
033	Healey Sprite		all
034	Healy 3000	Healy 100	all
035	Mini		all
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		
		-	

34 BMW

CODE	MODEL	INCLUDES	YEAR
031	1600, 2000	Tii, 1800, 2000S	-76
032	Coupe	2800CS, 3.0CS	69-76
033	Bavaria Sedan	2500, 2800	69-74
034	3-series	318i, 318ti, 320i, 325e, 325es, 325I, 328, M3	77-on
035	5-series	524i, 528i, 530i, 533i, 535i, TD	75-on
		525i (wagon), M5, 54OiA, 540I	77-on
036	6-series	630, 633, 635, csi, M6	
037	7-series	733i, 735i, L7, 740i, 750iL	78-on
038	8-series	850	90-on
039	Z3		96-on
040	Z8		
398	Other automobile		-
399	Unknown automobile		-
401	X5	4WD	2000
499	Unknown Light Truck		-

Motorcycles

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc
799	Unknown motored cycle -
998	Other Vehicle -
999	Unknown vehicle

-

35 NISSAN/DATSUN

CODE	MODEL	INCLUDES	YEAR
031	F10		77-78
032	200/240 SX		78-on
033	1200/210/B210	Honeybee	71-82
034	Z-car, ZX	240/260/280Z, 300 ZX,Turbo, 2+2	70-on
035	310		79-82
036	510	PL	68-73
			78-81
037	610	PL	73-76
038	710	PL	74-77
039	810/Maxima	77-on	
040	Roadster	SPL 311, SRL 311, 1600, 2000, convertible	-70
041	PL 411, RL 411		-67
042	Stanza	XE	82-92
043	Sentra		83-on
044	Pulsar	NX, EXA (86-on)	83-90
045	Micra		87-on
046	NX1600/2000		92-on
047	Altima		93-on
398	Other automobile		
399	Unknown automobile		
401	Pathfinder	MPV, 4 x 4	86-on
402	Xterra		2000
441	Van	XE, GXE	87-on
442	Axxess		89-90
443	Quest		93-on
471	Datsun/Nissan Pickup	PL620, King Cab, Hardbody	73-on
498	Other light truck Patrol		(1960)
499	Unknown light truck		
883	Medium/Heavy COE	high entry	all
898	Other medium/heavy truck		all
899	Unknown medium/heavy truck		-
998	Other vehicle		-
999	Unknown vehicle		

-

36 FIAT

CODE	MODEL	INCLUDES	YEAR
031	124 (Coupe/Sedan)	Sport	67-75
032	124 Spider/Racer	Spider 2000/1500	68-83
033	Brava - 131		75-82
034	850 (Coupe/Spyder)		67-73
035	128		72-79
036	X-1/9		75-83
037	Strada		79-83
398	Other automobile	600, 1100	all
399	Unknown automobile		
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		all
899	Unknown medium/heavy truck		-

998	Other vehicle		-
999	Unknown vehicle		

-

37 HONDA (ACURA: See 54)

CODE	MODEL	INCLUDES	YEAR
031	Civic/CRX	1300, 1500, CVCC, DX, EX, VX, S, Si, HF, 4WD Wagon, del Sol	73-on
032	Accord	LX, CVCC, SE-i, LX-i, EX Wagon	76-on
033	Prelude	Si	80-on
034	600	Coupe, Sedan	
	all		
035	S2000		
2000			
037	Insight		
2000			
398	Other automobile	all Hondas not listed above	
	all		
399	Unknown automobile		-
401	Passport		94-on
441	Odyssey		95-on
498	Other Light Truck		94-on
499	Unknown Light Truck		
			94-on

Motorcycles

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc

All Terrain Cycles/Vehicles

CODE	MODEL	
731	0-50cc	includes all ATCs/ATVs
702	51-124	designed soley for off-road use.
703	125-349cc	
704	350-449cc	
705	450-749cc	
706	750cc-over	
709	Unknown cc	
798	Other Motorcycle	
799	Unknown motored cycle	
998	Other vehicle	
999	Unknown vehicle	

38 ISUZU

CODE	MODEL	INCLUDES	YEAR

031	I-Mark	S, RS, Turbo	85-89
032	Impulse	Turbo, RS	84-on
033	Stylus		90-an
398	Other automobile		-
399	Unknown automobile		-
401	Trooper/Trooper II	Deluxe, LS	84-on
402	Rodeo		91-on
403	Amigo		89-94
404	Vehicross		1999
405	Axiom		2000
441	Oasis		96-on
471	P'up (pickup)	4 x 4	all
498	Other light truck		-
499	Unknown light truck		all
881	Medium/Heavy CBE		all
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
884	Medium/Heavy	unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus Conventional front engine		-
982	Bus Front engine/flat front		-
983	Bus Rear engine/flat front		-
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		
		-	

39 JAGUAR

CODE	MODEL	INCLUDES	YEAR
031	XJ-S Coupe	76-on	
032	XJ6/12 Sedan/Coupe	L, XJ, C, 340/420 Sedan	all
033	XKE	V12, Roadster, 120, 2 + 2	all
034	X100	97-on	
035	X-Type		
398	Other automobile	-	
399	Unknown automobile	-	
998	Other vehicle	-	
999	Unknown vehicle	-	

40 LANCIA

CODE	MODEL	INCLUDES	YEAR
031	Beta Sedan - HPG		80
032	Beta Coupe - Zagato		82
033	Scorpion		78
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

41 MAZDA

CODE	MODEL	INCLUDES	YEAR
031	RX2		72-74

032	RX3		72-78
033	RX4		74-78
034	RX7	S, GS, GSL, SE	79-on
035	323/GLC/Protege	DX, Protege (90-on)	77-on
036	Cosmo		76-78
037	626	GT, GS, GSL, SE	79-on
038	808		72-77
039	Mizer		76
040	R-100		-72
041	616/618		-72
042	1800		-72
043	929		88-on
044	MX-6	Turbo	88-on
045	Miata		90-on
046	MX-3		92-on
047	Millenia		95-on
398	Other automobile		-
399	Unknown automobile		-
401	Navajo		91-on
402	Tribute		
441	MPV		89-on
471	Mazda pickup	B-2000, B-2200, B-2600, B-4000, Cab Plus, SE-5, LX	all
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

42 MERCEDES BENZ

CODE	MODEL	INCLUDES	YEAR
031	200/220/230/240/250/ 260/280/300/320/420	Sedan and 5 passenger C only, SE, CD, D, SD, TD, CE, E. **DOES NOT** include **280 SE** (75 on), **300 SD -** see code 037	all
032	230/280 SL	2 seater only	all
033	300/350/380/450/500 SL, 560 SL	2 seater only, 300/500 SL (90-on)	all
034	350/380/420/450/560	SLC	all
035	280/300 SEL	TD, TD-T, CDT	all
036	380/420/450/500/560 SEL and 500/560 SEC/ 350 SDL/300 SDL		all
037	300 SE/380/450 SE	280 S, 280 SE (75 on), 300 SD Sedan, 350 SD	all
038	600, 6.9 Sedan	Pullman	all
039	190	D, TD, 2.3, 2.5	all
040	300	CE Cabriolet	93-on
041	400/500E		92-on
042	220/280C		94-on
398	Other automobile		-
399	Unknown automobile		-
402	G Class		
470	Van derivative	Kurbstar	82-on

498	Other light truck		-
499	Unknown light truck		-
881	Medium/Heavy CBE		all
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
884	Medium/Heavy	Unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Medium bus		all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

43 MG

CODE	MODEL	INCLUDES	YEAR
031	Midget	MKIII, 1500	-79
032	MGB		76-79
033	MGB	GT	67-75
034	MGA		all
035	TA/TC/TD/TF		all
036	MGC	GT	-69
398	Other automobile	Sport Sedan	-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

44 PEUGEOT

CODE	MODEL	INCLUDES	YEAR
031	304		71-73
032	403		-67
033	404		-70
034	504/505	STI, STX, Turbo, S, GL, GLS, Liberte, Station Wagon	70-91
035	604	SL, D	77-84
036	405	Mi-16	89-91
398	Other automobile		-
399	Unknown automobile		-

Motorcycles

CODE	MODEL
701	0-50cc
702	51-124cc
709	Unknown cc
799	Unknown motored cycle
998	Other vehicle
999	Unknown vehicle

45 PORSCHE

CODE	MODEL	INCLUDES	YEAR
031	911	L, S, E, T, SC, Carrera, Slopenose, Speedster, Panorama	all
032	912	E, T	-69
033	914	S, 1.8, 2.0, 914/6	70-76
034	924	Turbo, S	77-88
035	928	S	78-on
036	930	Turbo	79
037	944	Turbo, S	83-91
038	959		89-94
039	968		92-95
040	986		96-on
398	Other automobile	Spyder, Speedster, 356	-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

46 RENAULT

CODE	MODEL	INCLUDES	YEAR
031	LeCar	R5	76-83
032	Dauphine/l0/R-8/ Caravelle	all models	-71
033	12	R12L, R12TL	72-77
034	15	R15, R15TL	73-76
035	16	R16	69-72
036	17	R17, Gordini Coupe, R17TL	73-80
037	RI 8i	Sportwagon	81-on
038	Fuego	TL, TS, GTL, GTS, Turbo	82-85
039	Alliance/Encore, GTA,Convertible	L, DL, Limited, X-37	83-on
041	Alpine	GT	87-on
044	Medallion	DL, LX	87 only
045	Premier		87 only
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

47 SAAB

CODE	MODEL	INCLUDES	YEAR
031	99/99E/900	S, Turbo, Cabriolet	all
032	Sonnett	II, III, V-4	68-74
033	95/96/97		-73
034	9000	S, Turbo, CS (93-on)	85-on
398	Other automobile	Monte Carlo 850	all
399	Unknown autmobile		-
998	Other vehicle		-
999	Unknown vehicle		-

48 SUBARU

CODE	MODEL	INCLUDES	YEAR
031	DL/FE/G/GF/GL/GLF/ STD/Loyale	4 wheel drive, Turbo	72-94
032	Star		70-71
033	360		69-70
034	Legacy	Brighton, Outback, Outback II	89-on
035	XT, XT6	4WD Turbo, convertible, DL	86-on
036	Justy	DL, GL	87-94
037	SVX		92-on
038	Impreza		93-on
043	Brat	DL, GL	78-on
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

49 TOYOTA

CODE	MODEL	INCLUDES	YEAR
031	Corona	Mark 11, Custom, 1900, 2000, Deluxe	-82
032	Corolla	1100, 1200, 1600, SR-5, LE,	69-85
		Deluxe, Custom, FX16	86-on
033	Celica	1900, 2000, GT, ST, GTS	71-on
034	Supra	Celica Supra, Soarer	79-92
035	Cressida		78-92
036	Crown	2300, 2600	-71
037	Carina	2000	72-73
038	Tercel	Corolla Tercel, 4WD Wagon	80-on
039	Starlet		81-84
040	Camry	LE, Deluxe, XLE, Coupe	83-on
041	MR-2		85-95
042	Paseo		92-on
043	Avalon		95-on
045	Echo		
046	Prius		
398	Other automobile	2000 GT Coupe (1960s)	all
399	Unknown automobile		-
401	4-Runner		85-on
402	RAV-4		96-on
403	Highlander		
404	Matrix		
421	Landcruiser		76-on
422	Sequoia		
441	Minivan(84-90)/ Previa (91-on)	LE, Cargo	84-on
471	Pickup	SR-5, Extra Cab, Sport, LN44,	74-on
		Chinook, Wonder Wagon	
472	Takoma		95-on
481	T-100		93-on
482	Tundra		
498	Other light truck		-
499	Unknown light truck		-

998	Other vehicle	-
999	Unknown vehicle	-

50 TRIUMPH

CODE	MODEL	INCLUDES	YEAR
031	Spitfire	I, II, III, IV, 1500	-81
032	GT-6	MK3	67-73
033	TR4	TR2, TR3, TR4A	-68
034	TR6		69-76
035	TR7/8		75-81
036	Herald	Vitesse	60-74
037	Stag		60-74
398	Other automobile	2000, 1200 series	-
399	Unknown automobile		-

Motorcycles

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc
799	Unknown motored cycle
998	Other vehicle
999	Unknown vehicle

51 VOLVO (includes Volvo/White and Volvo/GM Heavy Trucks)

CODE	MODEL	INCLUDES	YEAR
031	122	S	58-68
032	142/144/145	S, E, GL, GLS, Deluxe	67-74
033	164	S, E	69-75
034	240/242/244/245	DL, GL, GLE, GLT, Deluxe	75-on
035	262/264/265	GL	76-82
036	1800	E, S, ES	60-73
037	P-544		47-65
038	760	Turbo	83-90
	780		87-92
039	740	GLE, GE, Turbo, GL	85-92
040	940	BLE, Turbo, SE	91-on
041	960		92-on
042	850	GLT, Wagon	93-on
045	80 Series		
046	40 Series	S40,V40	
047	60 Series		
398	Other automobile		-
399	Unknown automobile		-

881	Medium/Heavy CBE		all
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
884	Medium/Heavy	unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
989	Other medium/heavy truck		all
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Medium bus		all
988	Other bus		all
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

52 MITSUBISHI

CODE	MODEL	INCLUDES	YEAR
031	Starion	2+2, LE, Turbo	83-90
032	Tredia	L, LS, Turbo	83-88
033	Cordia	L, Turbo	83-88
034	Galant	ECS, Sigma (thru-88)	85-on
035	Mirage	L, Turbo	85-on
036	Precis		90-on
037	Eclipse		90-on
038	Sigma		89-90
039	3000 GT		91-on
040	Diamante		92-on
046	Lancer		
398	Other automobile		-
399	Unknown automobile		-
401	Montero	Sport	85-on
441	Minivan	LS	87-on
442	Expo	LRV, Sport	92-95
471	Pickup	Mighty Max, SPX, 4x4	all
498	Other light truck		-
499	Unknown light truck		-
882	Medium/Heavy COE	low entry, FUSO FE	all
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus Conventional front engine		all
982	Bus Front engine/flat front		all
983	Bus Rear engine/flat front		all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

53 SUZUKI

CODE	MODEL	INCLUDES	YEAR
031	SA310	GLX	86-on
034	Swift	GTi,GTX	89-on
398	Other automobile		-
399	Unknown automobile		-
401	Samurai	Standard, Deluxe	85-95
402	Sidekick		89-on
403	X-90		96-on
498	Other light truck		-
499	Unknown light truck		-

Motorcycles

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc

All Terrain Cycles/Vehicles

CODE	MODEL	INCLUDES	YEAR
731	0-50cc	includes all ATCs/ATVs	
732	51-124	designed soley for off-road use.	
733	125-349cc		
734	350cc or greater		
739	Unknown cc		
799	Unknown motored cycle		
998	Other vehicle		
999	Unknown vehicle		

54 ACURA

CODE	MODEL	INCLUDES	YEAR
031	Integra	RS, LS	86-on
032	Legend/RL		86-on
033	NSX	NSX -T	91-on
034	Vigor/TL	TL2.5/TL3.2	92-on
035	CL	Coupe	96-on
038	RSX		
398	Other automobile		-
399	Unknown automobile		-
401	SLX		96-on
421	Other Light Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

55 HYUNDAI

CODE	MODEL	INCLUDES	YEAR
031	Pony		84-88

032	Excel	GL, GLS	84-94
033	Sonata		89-on
034	Scoupe		91-95
035	Elantra		92-on
036	Accent		95-on
038	XG300		
398	Other automobile		-
399	Unknown automobile		-
401	Santa Fe		
499	Unknown Light Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

56 MERKUR

CODE	MODEL	INCLUDES	YEAR
031	XR4Ti	Turbo	85-89
032	Scorpio	Tu rbo	87-90
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

57 YUGO

CODE	MODEL	INCLUDES	YEAR
031	GV	GVX, Cabriolet	86-92
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

58 INFINITI

CODE	MODEL	INCLUDES	YEAR
031	M30		90-92
032	Q45		90-on
033	G20		91-96
034	J30		93-on
035	I30		96-on
398	Other automobile		-
399	Unknown automobile		-
401	T30		97-on
498	Other Light Truck		97-on
499	Unknown Light Truck		97-on
998	Other vehicle		-
999	Unknown vehicle		-

59 LEXUS

CODE	MODEL	INCLUDES	YEAR
031	ES-250/ES-300		90-on
032	LS-400		90-on
033	SC-300/SC-400	2 door Coupe	92-on
034	GS-300		94-on
035	IS-300		
036	SC 430		2002
398	Other automobile		-
399	Unknown automobile		-
421	LX-450		96-on
498	Other light Truck		96-on
499	Unknown Light Truck		96-on
998	Other vehicle		-
999	Unknown vehicle		-

60 DAIHATSU

CODE	MODEL	INCLUDES	YEAR
031	Charade		90-92
398	Other automobile		-
399	Unknown automobile		-
401	Rocky		90-92
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

61 STERLING

CODE	MODEL	INCLUDES	YEAR
031	827S	Li	86-91
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

62 ROVER

CODE	MODEL	INCLUDES	YEAR
401	Discovery (LR)		94-on
402	Defender 90 (LR)		94-on
421	County LWB (RR)/County Classis (RR)		all
422	Defender 90 (LR)		
422	4.0 SE (RR)		95-on
498	Other Light Truck		all
499	Unknown Light Truck		all
998	Other vehicle		-
999	Unknown vehicle		-

63 KIA

CODE	MODEL	INCLUDES	YEAR
031	Sephia		all
032	Spectra		
033	Rio		
034	Optima		
398	Other automobile		-
399	Unknown automobile		-
401	Sportage		96-on
441	Sedona		
498	Other Light Truck		-
499	Unknown Light Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

64 Daewoo

CODE	MODEL	INCLUDES	YEAR
031	Lanos		
032	Nubira		
033	Leganza		
399	Unknown Automobile		-

65 MINI

CODE	MODEL	INCLUDES	YEAR
031	Cooper		

69 OTHER FOREIGN

CODE	MODEL	INCLUDES	YEAR
031	Aston Martin	Lagonda, Vantage, Volante, Saloon	all
032	Bricklin		all
033	Citreon		all
034	Delorean		all
035	Ferrari		all
036	Hillman		all
037	Jensen	Healy	all
038	Lamborghini	Countach 5000S, Jalpa	all
039	Lotus	Europe, Esprit	all
040	Maserati	Biturbo	all
041	Morris	Minor	all
042	Rolls Royce/Bentley	Cloud/shadow series	all
044	Simca		all
045	Sunbeam		all
046	TVR		all
048	Desta		all
049	Reliant		all
052	Bertone	X/19	all

053	Lada		all
398	Other make	Morgan, Singer	all
399	Unknown make		-

84 INTERNATIONAL HARVESTER

CODE	MODEL	INCLUDES	YEAR
421	Scout	Scout II, Utility pickup, SS-2, Roadstar, 800 series, Traveler, Terra Traveltop	all
431	Travelall	1010-1210, 100-200	all
466	Multistop Van	Metro RM, 120-160, MS 1210, MS 1510	all
481	Pickup	R-100-500, 900A-1 500C/D, 1010-1510	all
498	Other light truck		
499	Unknown light truck		
850	Truck based motorhome		
881	Medium Heavy - CBE	Loadstar/Fleetstar, Paystar, CBE Transtar, 4200, S-series Mixer	all
882	Medium/Heavy COE low entry	CO, VCO, DCO, 190-1950, Cargostar, LFM, 5370	all
883	Medium/Heavy COE high entry	DCO, DCOT, UCO, VCOT, 405-series, COE Transtar, Unistar, Conco 707B, 9600	all
884	Medium/Heavy	unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck	firetruck-Rl4O-R301, C08190	all
899	Unknown medium/heavy truck		-
950	Bus based Motorhome		all
981	Conventional bus	Rl53-1853 - Loadstar, 1603-1853	all
982	Bus-flat front, front engine	173FC,183FC	all
983	Bus-flat front, rear engine	183RE, 193RE-transit	all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

Vehicle Classification: Motored Cycle/ATC/ATV

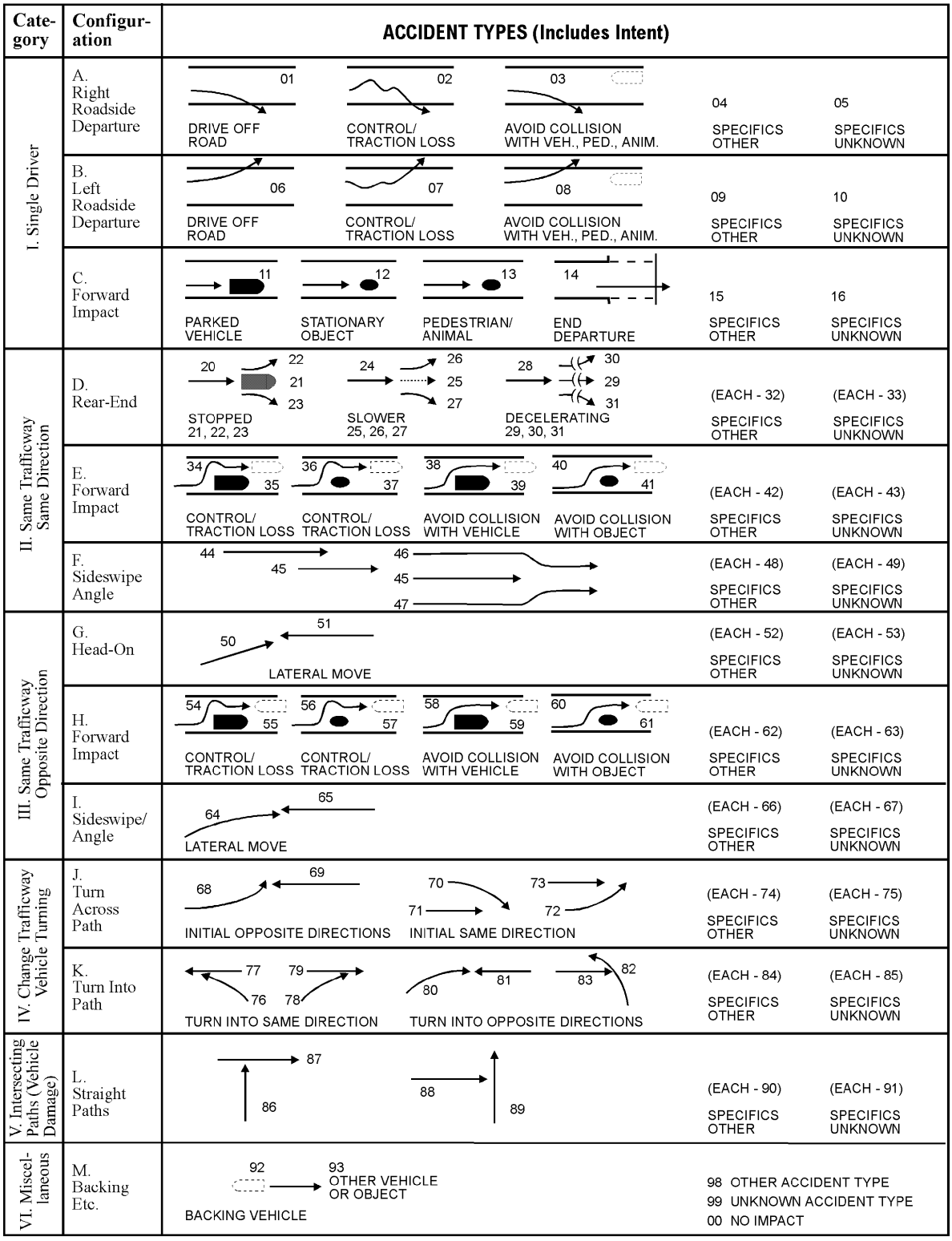
Vehicle Make				Make	Vehicle Model	Model
	MC	ATC	ATV	Code	Motored Cycles	Code
BMW	x			34	0-50cc	701
Honda	x	x	x	37	51-124cc	702
Peugeot	x			44	125-349cc	703
Triumph	x			50	350-449cc	704
Suzuki	x	x	x	53	450-749cc	705
BSA	x			70	750cc-or greater	706
Ducati	x			71	Unknown cc	709
Harley-Davidson	x			72	All Terrain Cycles/Vehicles	
Kawasaki	x	x	x	73	0-50cc	731
Moto-Guzzi	x		x	74	51-124cc	732
Norton	x			75	125-349cc	733
Yamaha	x	x	x	76	350cc or greater	734
Other make	x			78	Unknown cc	739
moped				79	Other motored cycle	798
Other make motorized cycle	x	x	x			
Unknown make				99	Unknown	799

Vehicle Classification: Medium/Heavy Trucks and Buses

Vehicle Make			Code	Vehicle Model	Code
	Truck	Bus			
AM General	x	x	03	Truck based motorhome	850
Dodge	x	x	07	Medium/Heavy CBE	881
Ford	x	x	12	Medium/Heavy COE-low entry	882
Chevrolet	x	x	20	Medium/Heavy COE-high entry	883
GMC	x	x	23	Medium/Heavy Unknown	884
Grumman	x	x	25	engine location	
Nissan/Datsun	x		35	Medium/Heavy COE-entry	890
Fiat	x		36	position unknown	
Isuzu	x	x	38	MediunVHeavy - Other	898
Mercedes Benz	x	x	42	Unknown medium/heavy truck	899
Volvo	x	x	51		
Mitsubishi	x		52		
Brockway	x		80	Bus based motorhome	950
Diamond	x		81	Bus-conventional front engine	981
Reo/Reo				Bus - front engine/flat front	982
Freightliner/White	x		82	Bus - rear engine/flat front	983
FWD	x		83	Other Bus	988
International	x	x	84	Unknown Bus	989
Harvester/Navistar					
Kenworth	x		85	Other vehicle	998

Mack	x	86	Unknown vehicle
999			
Peterbilt	x	87	
lveco/Magirus	x	88	
Other Make		98	Autocar 801
			Auto-Union-DKW 802
			Divco 803
			Western Star 804
			Oshkosh 805
			Hino 806
			Scania 807
			Truck based motorhome 850
			Other truck: e.g., Maron, Ward LaFrance 898
			Neoplan (bus) 902
			Bus based motorhome 950
			Other bus 988
			Unknown bus 989
			Other vehicle 998

APPENDIX B: V23 Accident Type Diagram



APPENDIX C: Summary Statistics

The following two tables provides a summary of descriptive statistics from the GES data files. Table 1 represents the actual number of records or unweighted sample and Table 2 represents the national estimates or weighted sample for the given descriptive from 1988 - 2002. These statistics will provide the user with a benchmark to compare against numbers obtained from the analytical files.

Table 1: Unweighted Sample

Year	*Crashes*	*Vehicles*	*People*	*Drivers*	*Occupants*	*Pedestrians*	*Pedalcyclists*
1988	48,831	83,633	122,738	82,708	119,914	1,554	1,021
1989	44,105	74,778	110,896	74,354	107,447	1,880	1,315
1990	46,290	80,154	117,141	79,716	113,439	1,995	1,468
1991	42,600	73,833	108,955	73,481	105,580	1,723	1,348
1992	46,197	80,566	118,933	80,152	115,346	1,891	1,415
1993	55,644	96,544	143,525	96,209	138,759	2,589	1,845
1994	55,759	97,441	143,743	97,109	139,221	2,442	1,715
1995	53,749	95,803	140,512	95,477	136,890	1,909	1,336
1996	56,030	100,861	147,903	100,500	144,332	1,820	1,305
1997	55,562	100,032	145,890	99,688	142,366	1,838	1,266
1998	54,006	97,362	141,372	97,074	138,545	1,593	1,165
1999	52,913	94,846	137,048	94,549	134,095	1,736	1,108
2000	57,392	102,566	146,612	102,283	143,546	1,703	1,128
2001	55,964	100,161	143,281	99,893	140,147	1,732	1,005
2002	54,291	96,424	139,614	96,070	136,362	1,734	1,154

Drivers: PER_TYPE = 1
Occupants: PER_TYPE IN (1,2,9)
Pedestrians: PER_TYPE = 5
Pedalcyclists: PER_TYPE = 6

Table 2: Weighted Sample

Year	Crashes	Vehicles	People	Drivers	Occupants	Pedestrians	Pedalcyclists
1988	6,876,780	12,007,970	17,247,886	11,851,683	17,005,088	121,474	82,535
1989	6,644,549	11,556,267	16,612,033	11,485,928	16,361,647	121,403	85,193
1990	6,462,126	11,315,087	16,298,795	11,252,874	16,061,886	116,405	86,059
1991	6,109,931	10,711,298	15,593,416	10,658,830	15,368,100	98,849	77,045
1992	5,992,938	10,535,596	15,339,372	10,485,244	15,136,291	94,646	71,084
1993	6,094,772	10,725,032	15,767,005	10,688,211	15,546,338	102,261	78,438
1994	6,489,122	11,487,378	16,836,682	11,451,723	16,617,814	101,781	70,862
1995	6,690,061	11,979,882	17,517,709	11,937,794	17,309,929	92,350	74,751
1996	6,761,051	12,082,760	17,704,717	12,043,981	17,490,909	89,992	67,892
1997	6,611,906	11,834,167	17,280,356	11,798,756	17,083,876	83,174	64,599
1998	6,325,242	11,386,502	16,521,887	11,354,181	16,338,158	73,829	59,581
1999	6,271,524	11,220,598	16,068,665	11,182,321	15,910,909	90,768	56,668
2000	6,389,310	11,346,184	16,113,394	11,317,668	15,952,464	83,156	56,350
2001	6,314,117	11,187,914	15,914,491	11,159,551	15,732,540	83,129	50,730
2002	6,304,493	11,168,656	15,737,226	11,129,037	15,569,434	74,491	51,684

Drivers: PER_TYPE = 1
Occupants: PER_TYPE IN (1,2,9)
Pedestrians: PER_TYPE = 5
Pedalcyclists: PER_TYPE = 6

APPENDIX D: Generalized Estimated Sampling Errors

Generalized standard errors were calculated separately for the crash, vehicle, and person characteristics. The values for the GES estimates and an estimate of one standard error are given in the following tables. By adding and subtracting the standard error to the associated estimate, a 95 percent confidence interval for an estimate can be created.

For example, if the estimated number of injured or killed pedestrians in 1995 was 90,000 (rounded to the nearest 1,000). To calculate one standard error for this person estimate, use the table on page 125. Look under the Person Estimate column for the value of 90,000. Look under the Person Standard Error column to the right for the corresponding person error value. For the person estimate of 90,000 the person standard error value is 7,100. The 95 percent confidence interval for this estimate would be approximately 90,000 + or - 1.96 * (7,100) or 76,000 to 104,000.

If the person estimate falls between the values shown on the table linear interpolation will be required. For example, had the person estimate been 92,000 instead of 90,000 the person standard error would need to be calculated. Use linear interpolation from the standard error values for 90,000 and 100,000. One approximate standard error would be 7,100 + 120 = 7,220. The 95 percent confidence interval for this estimate would be approximately 92,000 + or - 1.96 * (7,220) or 78,000 to 106,000.

More information on standard error estimates can be obtained from the National Center for Statistics and Analysis.

1988 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	600	1,000	500	1,000	500
5,000	1,400	5,000	1,200	5,000	1,200
10,000	2,100	10,000	1,800	10,000	1,800
20,000	3,200	20,000	2,900	20,000	2,9000
30,000	4,200	30,000	3,800	30,000	3,800
40,000	5,200	40,000	4,700	40,000	4,700
50,000	6,100	50,000	5,500	50,000	5,600
60,000	6,900	60,000	6,300	60,000	6,400
70,000	7,800	70,000	7,100	70,000	7,200
80,000	8,600	80,000	7,900	80,000	8,000
90,000	9,400	90,000	8,600	90,000	8,800
100,000	10,200	100,000	9,400	100,000	9,500
200,000	17,600	200,000	16,500	200,000	17,000
300,000	24,600	300,000	23,400	300,000	24,200
400,000	31,400	400,000	30,100	400,000	31,300
500,000	38,100	500,000	36,700	500,000	38,300
600,000	44,800	600,000	43,400	600,000	45,400
700,000	51,300	700,000	50,000	700,000	52,500
800,000	57,900	800,000	56,600	800,000	59,500
900,000	64,400	900,000	63,200	900,000	66,600
1,000,000	71,000	1,000,000	69,900	1,000,000	73,800
1,500,000	103,700	2,000,000	137,400	2,000,000	146,800
2,000,000	136,500	3,000,000	207,300	3,000,000	223,000
2,500,000	169,600	4,000,000	279,300	4,000,000	302,200
3,000,000	203,100	5,000,000	353,400	5,000,000	384,000
3,500,000	236,900	6,000,000	429,500	6,000,000	468,200
4,000,000	271,000	7,000,000	507,300	7,000,000	554,700
4,500,000	305,400	8,000,000	586,800	8,000,000	643,300
5,000,000	340,200	9,000,000	667,900	9,000,000	733,900
5,500,000	375,400	10,000,000	750,500	10,000,000	826,300
6,000,000	410,800	11,000,000	834,500	11,000,000	920,600
7,000,000	482,600	12,000,000	919,900	12,000,000	1,016,600

$* SE = e^{a/2+b/2(\ln X)**2}$, *where*	$** SE = e^{a/2+b/2(\ln X)**2}$, *where*	$*** SE = e^{a/2+b/2(\ln X)**2}$, *where*
$a = 9.63$	$a = 9.16$	$a = 9.04$
$b = .067$	$b = .069$	$b = .070$

1989 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	600	1,000	500	1,000	500
5,000	1,400	5,000	1,200	5,000	1,200
10,000	2,100	10,000	1,800	10,000	1,800
20,000	3,200	20,000	2,900	20,000	2,900
30,000	4,200	30,000	3,800	30,000	3,800
40,000	5,200	40,000	4,700	40,000	4,700
50,000	6,100	50,000	5,500	50,000	5,600
60,000	6,900	60,000	6,300	60,000	6,400
70,000	7,800	70,000	7,100	70,000	7,200
80,000	8,600	80,000	7,900	80,000	8,000
90,000	9,400	90,000	8,600	90,000	8,800
100,000	10,200	100,000	9,400	100,000	9,500
200,000	17,600	200,000	16,500	200,000	17,000
300,000	24,600	300,000	23,400	300,000	24,200
400,000	31,400	400,000	30,100	400,000	31,300
500,000	38,100	500,000	36,700	500,000	38,300
600,000	44,800	600,000	43,400	600,000	45,400
700,000	51,300	700,000	50,000	700,000	52,500
800,000	57,900	800,000	56,600	800,000	59,500
900,000	64,400	900,000	63,200	900,000	66,600
1,000,000	71,000	1,000,000	69,900	1,000,000	73,800
1,500,000	103,700	2,000,000	137,400	2,000,000	146,800
2,000,000	136,500	3,000,000	207,300	3,000,000	223,000
2,500,000	169,600	4,000,000	279,300	4,000,000	302,200
3,000,000	203,100	5,000,000	353,400	5,000,000	384,000
3,500,000	236,900	6,000,000	429,500	6,000,000	468,200
4,000,000	271,000	7,000,000	507,300	7,000,000	554,700
4,500,000	305,400	8,000,000	586,800	8,000,000	643,300
5,000,000	340,200	9,000,000	667,900	9,000,000	733,900
5,500,000	375,400	10,000,000	750,500	10,000,000	826,300
6,000,000	410,800	11,000,000	834,500	11,000,000	920,600
7,000,000	482,600	12,000,000	919,900	12,000,000	1,016,600

*	**	***
$SE = e^{a/2+b/2(\ln X)^{**}2}$, *where*	$SE = e^{a/2+b/2(\ln X)^{**}2}$, *where*	$SE = e^{a/2+b/2(\ln X)^{**}2}$, *where*
a = 9.63	*a = 9.16*	*a = 9.04*
b = .067	*b = .069*	*b = .070*

1990 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	700	1,000	400	1,000	400
5,000	1,400	5,000	1,000	5,000	1,000
10,000	2,100	10,000	1,600	10,000	1,500
20,000	3,300	20,000	2,500	20,000	2,400
30,000	4,200	30,000	3,400	30,000	3,100
40,000	5,100	40,000	4,200	40,000	3,900
50,000	5,900	50,000	4,900	50,000	4,500
60,000	6,800	60,000	5,700	60,000	5,200
70,000	7,500	70,000	6,400	70,000	5,800
80,000	8,300	80,000	7,100	80,000	6,500
90,000	9,000	90,000	7,800	90,000	7,100
100,000	9,700	100,000	8,500	100,000	7,700
200,000	16,400	200,000	15,000	200,000	13,400
300,000	22,600	300,000	21,300	300,000	18,900
400,000	28,600	400,000	27,500	400,000	24,300
500,000	34,400	500,000	33,700	500,000	29,600
600,000	40,000	600,000	39,900	600,000	34,800
700,000	45,700	700,000	46,100	700,000	40,100
800,000	51,200	800,000	52,200	800,000	45,300
900,000	56,700	900,000	58,400	900,000	50,600
1,000,000	62,200	1,000,000	64,700	1,000,000	55,800
2,000,000	116,200	2,000,000	128,300	2,000,000	108,800
3,000,000	169,800	3,000,000	194,500	3,000,000	163,200
4,000,000	223,700	4,000,000	263,100	4,000,000	219,100
5,000,000	278,000	5,000,000	334,000	5,000,000	276,400
6,000,000	332,800	6,000,000	406,900	6,000,000	335,200
7,000,000	388,100	7,000,000	481,600	7,000,000	394,900
8,000,000	444,000	8,000,000	558,200	8,000,000	455,900
9,000,000	500,400	9,000,000	636,400	9,000,000	518,100
10,000,000	557,300	10,000,000	716,100	10,000,000	581,300
11,000,000	614,700	11,000,000	797,400	11,000,000	645,500
12,000,000	672,500	12,000,000	808,100	12,000,000	710,600

$* SE = e^{(a/2)+(b/2)(\ln(x))^2}$, *where*	$** SE = e^{(a/2)+(b/2)(\ln(x))^2}$, *where*	$*** SE = e^{(a/2)+(b/2)(\ln(x))^2}$, *where*
$a = 9.93401$	$a = 8.83524$	$a = 8.88000$
$b = 0.06362$	$b = 0.06977$	$b = 0.06800$

1991 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	600	1,000	500	1,000	400
5,000	1,400	5,000	1,100	5,000	1,000
10,000	2,100	10,000	1,600	10,000	1,500
20,000	3,200	20,000	2,600	20,000	2,400
30,000	4,200	30,000	3,500	30,000	3,200
40,000	5,000	40,000	4,300	40,000	4,000
50,000	5,900	50,000	5,000	50,000	4,700
60,000	6,700	60,000	5,800	60,000	5,400
70,000	7,500	70,000	6,500	70,000	6,100
80,000	8,200	80,000	7,200	80,000	6,800
90,000	9,000	90,000	7,900	90,000	7,500
100,000	9,700	100,000	8,600	100,000	8,200
200,000	16,500	200,000	15,200	200,000	14,600
300,000	22,800	300,000	21,600	300,000	20,900
400,000	29,000	400,000	27,800	400,000	27,200
500,000	34,900	500,000	34,000	500,000	33,400
600,000	40,800	600,000	40,200	600,000	39,700
700,000	46,600	700,000	46,400	700,000	46,000
800,000	52,400	800,000	52,600	800,000	52,300
900,000	58,100	900,000	58,900	900,000	58,600
1,000,000	63,800	1,000,000	65,100	1,000,000	65,000
2,000,000	120,300	2,000,000	128,600	2,000,000	130,600
3,000,000	176,900	3,000,000	194,600	3,000,000	199,700
4,000,000	234,000	4,000,000	262,900	4,000,000	271,800
5,000,000	291,700	5,000,000	333,200	5,000,000	346,600
6,000,000	350,200	6,000,000	405,500	6,000,000	423,900
7,000,000	409,400	7,000,000	479,600	7,000,000	503,500
8,000,000	469,300	8,000,000	555,400	8,000,000	585,200
9,000,000	529,900	9,000,000	632,700	9,000,000	668,900
10,000,000	591,100	10,000,000	711,600	10,000,000	754,500
11,000,000	652,900	11,000,000	791,900	11,000,000	842,000
12,000,000	715,400	12,000,000	873,600	12,000,000	931,100

$*\ SE = e^{a+b(\ln X)^2}$, *where*	$**SE = e^{a+b(\ln X)^2}$, *where*	$***\ SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.900441$	$a = 4.460186$	$a = 4.291460$
$b = 0.032292$	$b = 0.034701$	$b = 0.035576$

1992 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,100	5,000	1,000	5,000	900
6,000	1,200	10,000	1,500	10,000	1,400
7,000	1,300	20,000	2,500	20,000	2,200
8,000	1,400	30,000	3,300	30,000	3,000
9,000	1,600	40,000	4,100	40,000	3,700
10,000	1,700	50,000	4,800	50,000	4,400
20,000	2,700	60,000	5,600	60,000	5,100
30,000	3,600	70,000	6,300	70,000	5,800
40,000	4,400	80,000	7,000	80,000	6,500
50,000	5,200	90,000	7,700	90,000	7,200
60,000	6,000	100,000	8,400	100,000	7,800
70,000	6,800	200,000	15,200	200,000	14,200
80,000	7,600	300,000	21,800	300,000	20,600
90,000	8,300	400,000	28,300	400,000	26,900
100,000	9,100	500,000	34,900	500,000	33,200
200,000	16,200	600,000	41,500	600,000	39,600
300,000	23,200	700,000	48,100	700,000	46,000
400,000	30,100	800,000	54,700	800,000	52,400
500,000	36,900	900,000	61,400	900,000	59,000
600,000	43,800	1,000,000	68,100	1,000,000	65,500
700,000	50,700	2,000,000	137,500	2,000,000	134,100
800,000	57,600	3,000,000	210,800	3,000,000	207,100
900,000	64,600	4,000,000	287,500	4,000,000	284,000
1,000,000	71,600	5,000,000	367,200	5,000,000	364,400
2,000,000	143,600	6,000,000	449,700	6,000,000	447,900
3,000,000	219,200	7,000,000	534,700	7,000,000	534,200
4,000,000	298,000	8,000,000	622,100	8,000,000	623,200
5,000,000	379,700	9,000,000	711,700	9,000,000	714,700
6,000,000	464,000	10,000,000	803,400	10,000,000	808,500
6,500,000	507,100	11,000,000	897,100	11,000,000	904,600

$* SE = e^{a+b(\ln X)^2}$, where $a = 4.413218$ $b = 0.035447$	$** SE = e^{a+b(\ln X)^2}$, where $a = 4.294210$ $b = 0.035807$	$*** SE = e^{a+b(\ln X)^2}$, where $a = 4.132995$ $b = 0.036452$

1993 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	900
6,000	1,200	10,000	1,500	10,000	1,400
7,000	1,300	20,000	2,400	20,000	2,200
8,000	1,400	30,000	3,200	30,000	3,000
9,000	1,500	40,000	4,000	40,000	3,700
10,000	1,600	50,000	4,700	50,000	4,400
20,000	2,600	60,000	5,400	60,000	5,100
30,000	3,500	70,000	6,100	70,000	5,700
40,000	4,300	80,000	6,800	80,000	6,400
50,000	5,100	90,000	7,500	90,000	7,000
60,000	5,800	100,000	8,100	100,000	7,600
70,000	6,600	200,000	14,600	200,000	13,700
80,000	7,300	300,000	20,900	300,000	19,600
90,000	8,000	400,000	27,100	400,000	25,400
100,000	8,700	500,000	33,300	500,000	31,300
200,000	15,600	600,000	39,500	600,000	37,100
300,000	22,300	700,000	45,800	700,000	43,000
400,000	29,000	800,000	52,100	800,000	48,900
500,000	35,600	900,000	58,400	900,000	54,800
600,000	42,200	1,000,000	64,700	1,000,000	60,800
700,000	48,800	2,000,000	130,200	2,000,000	122,200
800,000	55,400	3,000,000	199,100	3,000,000	186,900
900,000	62,100	4,000,000	271,000	4,000,000	254,400
1,000,000	68,800	5,000,000	345,600	5,000,000	324,400
2,000,000	137,800	6,000,000	422,700	6,000,000	396,800
3,000,000	210,100	7,000,000	502,000	7,000,000	471,300
4,000,000	285,500	8,000,000	583,500	8,000,000	547,800
5,000,000	363,600	9,000,000	667,000	9,000,000	626,200
6,000,000	444,100	10,000,000	752,400	10,000,000	706,300
6,500,000	485,200	11,000,000	839,600	11,000,000	788,200
7,000,000	526,900	12,000,000	928,600	12,000,000	871,700

$* SE = e^{a+b(\ln X)^2}$, *where*	$** SE = e^{a+b(\ln X)^2}$, *where*	$*** SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.388598$	$a = 4.285811$	$a = 4.222608$
$b = 0.035368$	$b = 0.035587$	$b = 0.035587$

1994 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	900
6,000	1,200	10,000	1,500	10,000	1,400
7,000	1,300	20,000	2,500	20,000	2,300
8,000	1,400	30,000	3,300	30,000	3,100
9,000	1,500	40,000	4,200	40,000	3,800
10,000	1,600	50,000	4,900	50,000	4,500
20,000	2,600	60,000	5,700	60,000	5,200
30,000	3,500	70,000	6,500	70,000	5,900
40,000	4,400	80,000	7,200	80,000	6,500
50,000	5,200	90,000	7,900	90,000	7,200
60,000	6,000	100,000	8,600	100,000	7,800
70,000	6,700	200,000	15,600	200,000	14,100
80,000	7,500	300,000	22,500	300,000	20,300
90,000	8,300	400,000	29,300	400,000	26,400
100,000	9,000	500,000	36,100	500,000	32,600
200,000	16,300	600,000	42,900	600,000	38,700
300,000	23,300	700,000	49,800	700,000	44,900
400,000	30,400	800,000	56,800	800,000	51,100
500,000	37,400	900,000	63,700	900,000	57,400
600,000	44,500	1,000,000	70,800	1,000,000	63,700
700,000	51,500	2,000,000	143,700	2,000,000	128,900
800,000	58,700	3,000,000	220,900	3,000,000	197,800
900,000	65,900	4,000,000	301,900	4,000,000	270,000
1,000,000	73,100	5,000,000	386,300	5,000,000	345,200
2,000,000	147,900	6,000,000	473,700	6,000,000	422,900
3,000,000	227,000	7,000,000	564,000	7,000,000	503,100
4,000,000	309,800	8,000,000	656,800	8,000,000	585,600
5,000,000	395,900	9,000,000	752,200	9,000,000	670,300
6,000,000	485,000	10,000,000	849,800	10,000,000	756,900
6,500,000	530,700	11,000,000	949,700	11,000,000	845,500
7,000,000	577,000	12,000,000	1,051,700	12,000,000	935,900

$* SE = e^{a+b(\ln X)^2}$, *where*	$** SE = e^{a+b(\ln X)^2}$, *where*	$*** SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.347699$	$a = 4.283883$	$a = 4.206542$
$b = 0.035898$	$b = 0.036063$	$b = 0.035915$

1995 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	900
6,000	1,200	10,000	1,600	10,000	1,400
7,000	1,300	20,000	2,500	20,000	2,300
8,000	1,400	30,000	3,300	30,000	3,100
9,000	1,500	40,000	4,200	40,000	3,800
10,000	1,600	50,000	4,900	50,000	4,500
20,000	2,600	60,000	5,700	60,000	5,100
30,000	3,500	70,000	6,400	70,000	5,800
40,000	4,300	80,000	7,100	80,000	6,400
50,000	5,100	90,000	7,800	90,000	7,100
60,000	5,900	100,000	8,500	100,000	7,700
70,000	6,600	200,000	15,300	200,000	13,700
80,000	7,400	300,000	22,000	300,000	19,600
90,000	8,100	400,000	28,500	400,000	25,300
100,000	8,800	500,000	35,100	500,000	31,000
200,000	15,800	600,000	41,700	600,000	36,800
300,000	22,700	700,000	48,200	700,000	42,500
400,000	29,400	800,000	54,900	800,000	48,300
500,000	36,200	900,000	61,500	900,000	54,000
600,000	43,000	1,000,000	68,200	1,000,000	59,800
700,000	49,800	2,000,000	137,300	2,000,000	119,300
800,000	56,600	3,000,000	210,100	3,000,000	181,500
900,000	63,500	4,000,000	286,100	4,000,000	246,100
1,000,000	70,400	5,000,000	365,000	5,000,000	313,000
2,000,000	141,700	6,000,000	446,500	6,000,000	381,900
3,000,000	216,800	7,000,000	530,400	7,000,000	452,600
4,000,000	295,200	8,000,000	616,700	8,000,000	525,100
5,000,000	376,500	9,000,000	705,000	9,000,000	599,300
6,000,000	460,600	10,000,000	795,400	10,000,000	675,100
6,500,000	503,600	11,000,000	887,700	11,000,000	752,300
7,000,000	547,200	12,000,000	981,900	12,000,000	831,000

$*\ SE = e^{a+b(\ln X)^2}$, *where*	$**SE = e^{a+b(\ln X)^2}$, *where*	$***\ SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.362086$	$a = 4.329914$	$a = 4.289002$
$b = 0.035627$	$b = 0.035631$	$b = 0.035157$

1996 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	500	1,000	400	1,000	400
5,000	1,100	5,000	1,000	5,000	1,000
6,000	1,200	10,000	1,600	10,000	1,500
7,000	1,300	20,000	2,500	20,000	2,300
8,000	1,500	30,000	3,300	30,000	3,100
9,000	1,600	40,000	4,100	40,000	3,800
10,000	1,700	50,000	4,900	50,000	4,400
20,000	2,600	60,000	5,600	60,000	5,100
30,000	3,500	70,000	6,300	70,000	5,700
40,000	4,300	80,000	7,000	80,000	6,300
50,000	5,000	90,000	7,700	90,000	6,900
60,000	5,800	100,000	8,400	100,000	7,500
70,000	6,500	200,000	14,900	200,000	13,100
80,000	7,200	300,000	21,300	300,000	18,500
90,000	7,900	400,000	27,500	400,000	23,700
100,000	8,500	500,000	33,800	500,000	28,900
200,000	15,000	600,000	40,000	600,000	34,100
300,000	21,100	700,000	46,200	700,000	39,200
400,000	27,100	800,000	52,500	800,000	44,300
500,000	33,100	900,000	58,800	900,000	49,400
600,000	39,000	1,000,000	65,100	1,000,000	54,600
700,000	44,900	2,000,000	129,800	2,000,000	106,400
800,000	50,800	3,000,000	197,400	3,000,000	159,600
900,000	56,700	4,000,000	267,600	4,000,000	214,300
1,000,000	62,700	5,000,000	340,300	5,000,000	270,300
2,000,000	122,600	6,000,000	415,200	6,000,000	327,700
3,000,000	184,300	7,000,000	492,100	7,000,000	386,200
4,000,000	247,800	8,000,000	570,900	8,000,000	445,900
5,000,000	313,000	9,000,000	651,500	9,000,000	506,700
6,000,000	379,800	10,000,000	733,900	10,000,000	568,500
6,500,000	413,700	11,000,000	817,800	11,000,000	631,300
7,000,000	448,000	12,000,000	903,300	12,000,000	695,100

$*\ SE = e^{a+b(\ln X)^2}$, *where*	$**SE = e^{a+b(\ln X)^2}$, *where*	$***\ SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.521508$	$a = 4.374631$	$a = 4.417590$
$b = 0.034180$	$b = 0.035149$	$b = 0.034001$

1997 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,100	5,000	1,000	5,000	1,000
6,000	1,200	10,000	1,600	10,000	1,600
7,000	1,300	20,000	2,500	20,000	2,500
8,000	1,400	30,000	3,300	30,000	3,300
9,000	1,500	40,000	4,100	40,000	4,100
10,000	1,600	50,000	4,900	50,000	4,800
20,000	2,600	60,000	5,600	60,000	5,600
30,000	3,500	70,000	6,400	70,000	6,300
40,000	4,300	80,000	7,100	80,000	7,000
50,000	5,100	90,000	7,800	90,000	7,700
60,000	5,900	100,000	8,500	100,000	8,300
70,000	6,600	200,000	15,200	200,000	14,800
80,000	7,400	300,000	21,800	300,000	21,000
90,000	8,100	400,000	28,300	400,000	27,200
100,000	8,800	500,000	34,800	500,000	33,300
200,000	15,700	600,000	41,300	600,000	39,400
300,000	22,400	700,000	47,800	700,000	45,600
400,000	29,000	800,000	54,400	800,000	51,700
500,000	35,500	900,000	60,900	900,000	57,800
600,000	42,100	1,000,000	67,600	1,000,000	64,000
700,000	48,600	2,000,000	135,900	2,000,000	127,200
800,000	55,200	3,000,000	207,700	3,000,000	193,100
900,000	61,800	4,000,000	282,600	4,000,000	261,400
1,000,000	68,500	5,000,000	360,400	5,000,000	332,000
2,000,000	136,500	6,000,000	440,800	6,000,000	404,700
3,000,000	207,600	7,000,000	523,500	7,000,000	479,300
4,000,000	281,500	8,000,000	608,400	8,000,000	555,700
5,000,000	358,000	9,000,000	695,500	9,000,000	633,700
6,000,000	436,800	10,000,000	784,500	10,000,000	713,400
6,500,000	477,000	11,000,000	875,300	11,000,000	794,600
7,000,000	517,000	12,000,000	968,000	12,000,000	877,200

$* SE = e^{a+b(\ln X)^2}$, *where*	$** SE = e^{a+b(\ln X)^2}$, *where*	$*** SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.424135$	$a = 4.331394$	$a = 4.390740$
$b = 0.035154$	$b = 0.035572$	$b = 0.034978$

1998 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	500
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,600
7,000	1,300	20,000	2,500	20,000	2,400
8,000	1,400	30,000	3,300	30,000	3,200
9,000	1,500	40,000	4,000	40,000	3,900
10,000	1,600	50,000	4,800	50,000	4,600
20,000	2,500	60,000	5,500	60,000	5,200
30,000	3,300	70,000	6,200	70,000	5,900
40,000	4,100	80,000	6,900	80,000	6,500
50,000	4,900	90,000	7,500	90,000	7,100
60,000	5,600	100,000	8,200	100,000	7,700
70,000	6,300	200,000	14,600	200,000	13,200
80,000	7,000	300,000	20,800	300,000	18,400
90,000	7,600	400,000	26,800	400,000	23,500
100,000	8,300	500,000	32,900	500,000	28,500
200,000	14,700	600,000	38,900	600,000	33,400
300,000	20,900	700,000	45,000	700,000	38,300
400,000	27,000	800,000	51,100	800,000	43,100
500,000	33,000	900,000	57,100	900,000	48,000
600,000	39,000	1,000,000	63,200	1,000,000	52,800
700,000	45,000	2,000,000	125,800	2,000,000	101,200
800,000	51,100	3,000,000	191,000	3,000,000	150,200
900,000	57,100	4,000,000	258,600	4,000,000	200,200
1,000,000	63,200	5,000,000	328,600	5,000,000	251,000
2,000,000	125,000	6,000,000	400,500	6,000,000	302,800
3,000,000	189,300	7,000,000	474,400	7,000,000	355,400
4,000,000	255,900	8,000,000	550,100	8,000,000	408,800
5,000,000	324,500	9,000,000	627,500	9,000,000	463,000
6,000,000	395,100	10,000,000	706,400	10,000,000	517,900
6,500,000	431,000	11,000,000	786,900	11,000,000	573,600
7,000,000	467,400	12,000,000	868,900	12,000,000	629,900

* $SE = e^{a+b(\ln X)^2}$,where $a = 4.415376$ $b = 0.034778$	* $SE = e^{a+b(\ln X)^2}$,where $a = 4.371851$ $b = 0.035013$	* $SE = e^{a+b(\ln X)^2}$,where $a = 4.551937$ $b = 0.033125$

1999 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,500
7,000	1,300	20,000	2,400	20,000	2,300
8,000	1,400	30,000	3,200	30,000	3,100
9,000	1,500	40,000	3,900	40,000	3,800
10,000	1,600	50,000	4,600	50,000	4,400
20,000	2,500	60,000	5,300	60,000	5,100
30,000	3,300	70,000	6,000	70,000	5,700
40,000	4,100	80,000	6,700	80,000	6,300
50,000	4,800	90,000	7,300	90,000	6,900
60,000	5,500	100,000	8,000	100,000	7,500
70,000	6,200	200,000	14,200	200,000	13,000
80,000	6,900	300,000	20,200	300,000	18,200
90,000	7,600	400,000	26,100	400,000	23,300
100,000	8,300	500,000	32,000	500,000	28,400
200,000	14,600	600,000	37,800	600,000	33,400
300,000	20,800	700,000	43,700	700,000	38,300
400,000	26,800	800,000	49,600	800,000	43,300
500,000	32,800	900,000	55,500	900,000	48,200
600,000	38,800	1,000,000	61,400	1,000,000	53,200
700,000	47,700	2,000,000	122,100	2,000,000	103,000
800,000	50,700	3,000,000	185,400	3,000,000	154,000
900,000	56,700	4,000,000	251,000	4,000,000	206,200
1,000,000	62,700	5,000,000	318,800	5,000,000	259,600
2,000,000	124,100	6,000,000	388,600	6,000,000	314,100
3,000,000	187,800	7,000,000	460,300	7,000,000	369,600
4,000,000	253,800	8,000,000	533,600	8,000,000	426,200
5,000,000	321,800	9,000,000	608,600	9,000,000	483,700
6,000,000	391,700	10,000,000	685,200	10,000,000	542,100
6,500,000	427,300	11,000,000	763,100	11,000,000	601,400
7,000,000	463,300	12,000,000	842,600	12,000,000	661,500

* $SE = e^{a+b(\ln X)^2}$, *where*	* $SE = e^{a+b(\ln X)^2}$, *where*	* $SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.414534$	$a = 4.348017$	$a = 4.452860$
$b = 0.034746$	$b = 0.034987$	$b = 0.033682$

2000 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,500
7,000	1,200	20,000	2,400	20,000	2,400
8,000	1,300	30,000	3,100	30,000	3,100
9,000	1,400	40,000	3,900	40,000	3,800
10,000	1,500	50,000	4,600	50,000	4,500
20,000	2,400	60,000	5,300	60,000	5,100
30,000	3,200	70,000	5,900	70,000	5,700
40,000	4,000	80,000	6,600	80,000	6,300
50,000	4,700	90,000	7,200	90,000	6,900
60,000	5,400	100,000	7,900	100,000	7,500
70,000	6,100	200,000	14,000	200,000	13,000
80,000	6,800	300,000	19,900	300,000	18,200
90,000	7,500	400,000	25,700	400,000	23,200
100,000	8,200	500,000	31,500	500,000	28,200
200,000	14,600	600,000	37,300	600,000	33,200
300,000	20,800	700,000	43,100	700,000	38,100
400,000	26,900	800,000	48,900	800,000	43,000
500,000	33,300	900,000	54,700	900,000	47,900
600,000	39,100	1,000,000	60,600	1,000,000	52,800
700,000	45,300	2,000,000	120,400	2,000,000	101,800
800,000	51,400	3,000,000	182,800	3,000,000	151,900
900,000	57,600	4,000,000	247,400	4,000,000	203,000
1,000,000	63,800	5,000,000	314,300	5,000,000	255,200
2,000,000	127,300	6,000,000	383,100	6,000,000	308,400
3,000,000	193,900	7,000,000	453,600	7,000,000	362,700
4,000,000	263,100	8,000,000	525,900	8,000,000	417,800
5,000,000	334,800	9,000,000	599,800	9,000,000	473,800
6,000,000	408,700	10,000,000	675,200	10,000,000	530,700
6,500,000	446,400	11,000,000	752,100	11,000,000	588,400
7,000,000	484,600	12,000,000	830,300	12,000,000	646,900

$* SE = e^{a+b(\ln X)^2}$, *where*	$* SE = e^{a+b(\ln X)^2}$, *where*	$* SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.336620$	$a = 4.335260$	$a = 4.481530$
$b = 0.035240$	$b = 0.034980$	$b = 0.033490$

2001 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,400
7,000	1,200	20,000	2,300	20,000	2,200
8,000	1,300	30,000	3,100	30,000	2,900
9,000	1,400	40,000	3,800	40,000	3,600
10,000	1,500	50,000	4,500	50,000	4,200
20,000	2,400	60,000	5,200	60,000	4,800
30,000	3,200	70,000	5,900	70,000	5,400
40,000	4,000	80,000	6,500	80,000	6,000
50,000	4,700	90,000	7,100	90,000	6,500
60,000	5,400	100,000	7,800	100,000	7,100
70,000	6,100	200,000	13,800	200,000	12,200
80,000	6,800	300,000	19,600	300,000	17,100
90,000	7,400	400,000	25,300	400,000	21,900
100,000	8,100	500,000	30,900	500,000	26,500
200,000	14,400	600,000	36,600	600,000	31,100
300,000	20,500	700,000	42,200	700,000	35,700
400,000	26,500	800,000	47,900	800,000	40,300
500,000	32,500	900,000	56.600	900,000	44,900
600,000	38,500	1,000,000	59,300	1,000,000	49,400
700,000	44,500	2,000,000	117,500	2,000,000	95,200
800,000	50,500	3,000,000	178,000	3,000,000	141,700
900,000	56,500	4,000,000	240,800	4,000,000	189,100
1,000,000	62,600	5,000,000	305,500	5,000,000	237,500
2,000,000	124,600	6,000,000	372,100	6,000,000	286,800
3,000,000	189,400	7,000,000	440,400	7,000,000	337,000
4,000,000	256,600	8,000,000	410,300	8,000,000	388,100
5,000,000	326,100	9,000,000	581,700	9,000,000	439,900
6,000,000	397,700	10,000,000	654,600	10,000,000	492,400
6,500,000	432,200	11,000,000	728,800	11,000,000	545,700
7,000,000	471,200	12,000,000	804,300	12,000,000	599,700

$* SE = e^{a+b(\ln X)^2}$, *where*	$* SE = e^{a+b(\ln X)^2}$, *where*	$* SE = e^{a+b(\ln X)^2}$, *where*
$a = 4.350780$	$a = 4.337980$	$a = 4.443040$
$b = 0.035070$	$b = 0.034850$	$b = 0.033350$

APPENDIX E: Analytical Data Classification of Select GES Variable

Several variables in the GES are classified or collapsed according to analytical needs. In various NCSA's published reports and analysis, select GES variables have been given a standard classification. This section will attempt to show how GES variables are classified, assisting users in understanding and duplicating statistics presented in NCSA's published reports.

Earlier publications using only GES data included the fatal crash data from the GES, but this method is no longer in practice. For analytical purposes, fatal crashes and fatalities are extracted from the Fatality Analysis Reporting System (FARS), not GES. FARS contains data on a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico. To be included in FARS, a crash must involve a motor vehicle traveling on a trafficway customarily open to the public and result in the death of a person (occupant of a vehicle or nonmotorist) **within 30 days of the crash**. Since FARS contains records on ***all*** fatal crashes, it's a more accurate representation of fatal crashes and fatalities than the ***sample*** contained in GES.

It is important to note that these are NCSA's classifications and are subject to modification.

The following tables show the specific coding scheme of select GES variables that are used in NCSA's publications and analysis:

Univariate Maximum Injury Severity in Crash

GES DESCRIPTION	CODE	CRASH SEVERITY CLASS
	1988 - Later	
No Injury	0	Property-Damage-Only Crash
Possible Injury	1	Injury Crash
Nonincapacitating	2	Injury Crash
Incapacitating	3	Injury Crash
Fatal*	4	Fatal Crash
Unknown Injury Severity	5	Injury Crash
Died Prior	6	Property-Damage-Only Crash
No Person Coded in the Crash	8	Property-Damage-Only Crash

* Fatal counts from the FARS are used in NCSA's publications and analysis.

Injury Severity

GES DESCRIPTION	CODE	INJURY SEVERITY CLASS
	1988 - Later	
No Injury (O)	0	Not Injured
Possible Injury (C)	1	Injured
Nonincapacitating (B)	2	Injured
Incapacitating (A)	3	Injured
Fatal (K)*	4	Killed
Unknown Injury Severity (U)	5	Injured
Died Prior	6	Not Injured

* Fatality counts from the FARS are used in NCSA's publications and analysis.

Body Type

BODY TYPE CLASS	GES CODES	
	1988 - 1991	**1992-Later**
Passenger Cars	1-11 (and 17 starting in 1999)	
Passenger Vehicles	1-11, 14-22, 24-41, 43-48 (for 1993 & later add new body type codes **24 & 25**)	
Light Trucks/ Vans/Utility Vehicles	14, 20-41, 47, 48	14-22, 28-41, 45, 48 (for 1993 & later add new body type codes **24 & 25**)
Medium Trucks	(60,68) and (***Vehicle Trailing*** = 0 or 9)	(60,64,78) and (***Vehicle Trailing*** = 0 or 9)
Heavy/Combination Trucks	((60,68) and (***Vehicle Trailing***=1-4)) or 65	((60,64,78) and ***(Vehicle Trailing***=1-4)) or 66
Large Trucks	60, 65, 68	60, 64,66,78
Buses	50-59	
Motored Cycles	70-79	80-89
Other Vehicles	12, 42, 63, 80-89 (for 1990 and 1991 add new body type code **13**)	12, 13, 23, 42, 65, 90-97

Note: In 1993 & later, when **School Buses** includes body type code **24** (van-based school bus) and **Transit Buses** includes body type code **25** (van-based transit bus).

Person Type

GES DESCRIPTION	CODE	PERSON TYPE CLASS
	1988 - Later	
Driver of a Motor Vehicle in Transport	1	Driver
Passenger of a Motor Vehicle in Transport	2	Passenger
Occupant of a Motor Vehicle Not in Transport	3	Other Nonmotorist
Occupant of a Non-Motor Vehicle in Transport	4	Other Nonmotorist
Pedestrian	5	Pedestrian
Cyclist (Pedalcyclist)	6	Pedalcyclist
Other or Unknown Non-Occupant	8	Other Nonmotorist
Driver, Passenger, or Unknown Occupant Type in a Motor Vehicle in Transport	1,2,9	Occupant

Restraint System Use

GES DESCRIPTION	CODE			RESTRAINT CLASS
	1988-1991	1992-1994	1995-later	
None Used or Not Applicable	0			Restraint Not Used
Lap/Shoulder Belt	1			Restraint Used
Lap Belt	2			Restraint Used
Shoulder Belt	3			Restraint Used
Air Bag Deployed	4	-	-	Restraint Used
Air Bag Deployed & Lap/Shoulder Belt	5	-	-	Restraint Used
Child Safety Seat	6			Restraint Used
Motorcycle Helmet	7		5	Restraint Used
None Available	-	-	7	Restraint Not Used
Restraint Used - Specifics Unknown or Other	8			Restraint Used
Unknown if Used	9			Restraint Use Unknown

Univariate Traffic Control Device

CONTROL DEVICE CLASS	GES CODES	
	1988 - 1989	**1990 - later**
None	00	
Traffic Signal	01, 02, 03, 04, 08, 09	01, 04, 08, 09
Stop Sign	11	21
Other	12-14, 18,19,21,31,32,97,98	22,23,28,29, 40-43,49,51,61,62,97,98