



U.S. DEPARTMENT  
OF TRANSPORTATION

National Highway  
Traffic Safety  
Administration

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

***Analytical User's Manual  
1988-2000***





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# **NASS GES Analytical User's Manual**

## **1988 - 2000**

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



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## **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 problems 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 which 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.

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## 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, the 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, and 2000 data files are available. For information on obtaining a copy of any of these data files, contact:

Marjorie Saccoccio, DTS-44  
DOT/Transportation Systems Center  
Kendall Square  
Cambridge, MA 02142

or

GES data can be obtained by downloading any of the published files from the Internet, at <ftp://www.nhtsa.dot.gov/ges>. The files are available in SAS and sequential ASCII file formats.



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## 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. The PARs are 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,

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- 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.

Within each of these groups a systematic sample of crashes is selected, based on different sampling ratios. 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 2000 approximately 57,000 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

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## GES SAS Files

### Overview

Once the GES data are coded onto an electronic file, a Statistical Analysis System (SAS) data file is created. SAS is a software system for data analysis.

The SAS data file for 2000 GES consists of four individual data sets: the *Accident File*, *Vehicle/Driver File*, *Event File*, and *Person File*. The *Accident File* contains information describing environmental conditions and roadway characteristics at the time of the crash. The *Vehicle/Driver File* contains information describing the vehicles involved in the crash and their drivers. It includes information such as: make/model of the vehicle, model year of the vehicle, driver maneuvered to avoid, and driver distracted by. 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 injury severity. An innovation in the 2000 GES is the addition of the *Event File*, which contains a brief description of each harmful event in a given crash including the vehicles or objects involved and the general area of vehicle damage. This file enables the analyst to determine the sequence and makeup of the harmful events involved in a crash. 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.

### Using the SAS File

The following SAS program shows how to use the GES file. This program counts injured pedestrians by the severity of their injury and their age.

```
1  LIBNAME GES2000 'path';
2  LIBNAME LIBRARY 'path';
3  DATA PEDES;
4      SET GES2000.PERSON;
5      IF PER_TYPE = 5;
6
7  PROC FREQ;
8      TABLE AGE*INJ_SEV;
9      TITLE "PEDESTRIANS BY INJURY SEVERITY AND AGE";
10  RUN;
```

The LIBNAME statements in line 1 and 2 define the path where the GES2000 data files and library are stored. These statements enable the computer to find the GES SAS data sets and to associate the GES formats with the variables in the data sets.

In line 3, the program creates a working data set called "PEDES". The data set name can be any 8 alphanumeric characters, "PEDES" was chosen to identify the members of the data set.

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Line 4 identifies the original data set that the working data will be created from. The first part of "GES2000.PERSON" refers back to the line 1. This should be the same as what follows the "LIBNAME" in line 1.

The second part of "GES2000.PERSON" refers to the internal SAS name saved when the data set was created.

Line 5 keeps only pedestrian records. PER\_TYPE = 5 are pedestrians. (See Person Type variable) Lines 7 through 9 produce the output. The PROC FREQ in line 7 counts the frequency of pedestrians by each age and injury severity combination for the just created data set. The TABLE statement in line 8 produces the table containing these frequencies. Line 9 adds a title to the produced table. In this case, the title is "PEDESTRIANS BY INJURY SEVERITY AND AGE".

Line 6 is not required, however, it was added to make the program easy-to-read. Similarly, lines 4 and 5 are indented to signify these lines are executed on the "PEDES" working data set, but do not need to be indented. Lines 8 and 9 are indented to indicate they refer to the "PROC FREQ" statement.

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<b>Understanding the GES Imputation Process</b>
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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 provide 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:

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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:

<b>No</b>	<b>60</b>
<b>Yes</b>	<b>40</b>
<b>Unknown</b>	<b><u>5</u></b>
<b>Total</b>	<b>105</b>

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

<b>No</b>	<b>60/100</b>
<b>Yes</b>	<b>40/100</b>

The new variable, *EJECT\_I* would have these values:

<b>No</b>	<b>63</b>
<b>Yes</b>	<b><u>42</u></b>
<b>Total</b>	<b>105</b>

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*, *HOURLY*, *DAY OF WEEK*, *VIOLATIONS CHARGED*, *PERSON TYPE*, *SEATING POSITION*, *DRUG & ALCOHOL*

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*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” in their labels. For example, 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.

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## 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 were 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.

The variable called WEIGHT that produces the national estimates is available on each of the three levels.

The example from p. 5 would become:

```
1      LIBNAME GES2000 'path';
2      LIBNAME LIBRARY 'path';
3      DATA PER;
4          SET GES2000.PERSON (KEEP=PER_TYPE AGE INJ_SEV WEIGHT);
5          IF PER_TYPE = 5;
6
7      PROC FREQ;
```

8	TABLE AGE * INJ_SEV;
8.1	WEIGHT WEIGHT;
9	TITLE "PEDESTRIAN INJURY SEVERITY BY AGE";
10	RUN;

Line 8.1 produces the national estimates.

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 Variable List

Listed below are all variables that are contained in the GES data files. From 1988 through the present, quite a few changes were made to the data files. These changes include modifications, deletions, and additions of variables. The asterisk (\*) denotes the variables that changed within the 1988 through 2000 operation of the GES. For more detailed information, refer to the ***GES Variables and Definitions*** section of this manual.

### ***ALL LEVELS***

***(Appears on the Accident, Vehicle, Person, & Event Files)***

<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
Case Number	CASENUM	17
Primary Sampling Unit	PSU	17
Case Stratum	STRATUM	17
Region of the Country	REGION	17
Case Weight	WEIGHT	17
Police Jurisdiction	PJ	17

### ***ACCIDENT FILE***

<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
A1 Month of the Crash	MONTH	18
A1B Year of the Crash	YEAR	18
A1C Day of the Week	WEEKDAY	18
A2 Hour of the Crash	HOUR	19
A2A Minute of the Crash	MINUTE	19
A3 Number of Vehicles Involved	VEH_INVL	20
A3A Number of Vehicles Coded*	VEH_COD	20
A3B Number of Persons Involved*	PER_INVL	20
A3C Number of Persons Coded*	PER_COD	21
A4 Number of Non-Motorists Involved	NON_INVL	21
A4A Number of Non-Motorists Coded*	NON_COD	21
A5 Land Use	LAND_USE	22
A5A Percentage Rural	RUR_URB	22
A6 First Harmful Event*	EVENT1	23
A7 Manner of Collision*	MAN_COL	24
A8 Interstate Highway	INT_HWY	24
A9 Relation to Junction*	REL_JCT	25
A10 Relation to Roadway*	REL_RWY	26
A11 Trafficway Flow	TRAF_WAY	26

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A12	Number of Travel Lanes	NUM_LAN	26
A13	Roadway Alignment	ALIGN	27
A14	Roadway Profile	PROFILE	27
A15	Roadway Surface Condition	SUR_COND	28
A16	Traffic Control Device*	TRAF_CON	29
A17	Traffic Device Functioning*	DEV_FUNC	30
A18	Speed Limit*	SPD_LIM	30
A19	Light Condition*	LGHT_CON	31
A20	Atmospheric Condition	WEATHER	31
A21	School Bus Related	SCHL_BUS	32
A24	Pedestrian/Cyclist Crash Type*	PED_ACC	32
A25	Work Zone*	WRK_ZONE	35
A26	NHS Roadway Type*	NHS_RWTP	35
A90	Maximum Injury Severity in Crash	MAX_SEV	36
A91	Number Known Injured in Crash	NUM_INJ	36
A92	Alcohol Involved in Crash	ALCOHOL	37
A18H	Hot-deck Imputed Speed Limit	SPDLIM_H	30
A1CI	Imputed Day of the Week*	WKDY_I	18
A2I	Imputed Hour of the Crash	HOUR_I	19
A2AI	Imputed Minute of the Crash	MINUTE_I	20
A6I	Imputed First Harmful Event	EVENT1_I	24
A7I	Imputed Manner of Collision	MANCOL_I	24
A9I	Imputed Relation to Junction	RELJCT_I	25
A13I	Imputed Roadway Alignment	ALIGN_I	27
A14I	Imputed Roadway Profile	PROFIL_I	28
A15I	Imputed Roadway Surface Condition	SURCON_I	28
A16I	Imputed Traffic Control Device	TRFCON_I	30
A19I	Imputed Light Condition	LGTCO_I	31
A20I	Imputed Atmospheric Condition	WEATHR_I	32
A90I	Imputed Maximum Injury Severity	MAXSEV_I	36
A91I	Imputed Number Known Injured In Crash	NO_INJ_I	37
A92I	Imputed Alcohol Involvement	ALCHL_I	37

### ***EVENT FILE***

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
E1	Crash Event Sequence Number	EVENTNUM	38
E2	Vehicle Number - This Vehicle	VEHNUM	38
E3	General Area of Damage - This Vehicle	GAD	38
E4	Vehicle Number (Other Vehicle) or Object Contacted	OBJCONT	39
E5	General Area of Damage - Other Vehicle	OBJGAD	40

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## ***VEHICLE/DRIVER FILE***

	<i><b><u>Variable Description</u></b></i>	<i><b><u>SAS Name</u></b></i>	<i><b><u>Page</u></b></i>
V1	Vehicle Number	VEHNO	41
V2	Hit and Run	HIT_RUN	41
V3	Vehicle Make*	MAKE	41
V4	Vehicle Model*	MODEL	42
V5	Body Type*	BODY_TYP	42
V6	Model Year	MODEL_YR	48
V7	Vehicle Identification Number	VIN	48
V8	Special Use*	SPEC_USE	49
V9	Emergency Use	EMCY_USE	49
V10	Number of Occupants Involved*	OCC_INVL	50
V10A	Number of Occupants Coded*	OCC_COD	50
V10B	Number of Occupants*	NUMOCCS	50
V11	Travel Speed*	SPEED	51
V12	Vehicle Defects*	DEFECT	51
V12	Vehicle Contributing Factors*	FACTOR	51
V13	Vehicle Trailing*	TRAILER	52
V14	Jackknife*	JACKNIFE	52
V15	Rollover*	ROLLOVER	52
V16	Fire Occurrence	FIRE	53
V17	Damage Area*	DAM_AREA	53
V18	Damage Severity	VEH_SEV	54
V19	Manner of Leaving Scene*	TOWED	54
V20	Most Harmful Event*	V_EVENT	55
V20A	Most Harmful Event Number*	MHENUM	56
V21	Movement Prior to Critical Event*	MANEUVER	56
		P_CRASH1	57
V22	Vehicle Role	VEH_ROLE	58
V23	Accident Type*	ACC_TYPE	58
V24	Initial Point of Impact*	IMPACT	59
V25	Damage Areas*	DAM_AREA	59
V26	Critical Event*	P_CRASH2	60
V27	Corrective Action Attempted*	P_CRASH3	64
V28	Vehicle Control After Corrective Action*	P_CRASH4	65
V28	Precrash Vehicle Control*	PCRASH4	65
V29	Vehicle Path After Corrective Action*	P_CRASH5	66
V29	Precrash Location*	PCRASH5	66
V30	Rollover Type*	ROLLOVER	67
V31	Carrier's Identification Number*	C_ID_NO	67
V32	Number of Axles, Including Trailers*	AXLES	68
V33	Cargo Body Type*	CARG_TYP	68
V34	Hazardous Materials Placarded*	HAZ_MAT	68

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V35	Hazardous Materials Placard Number*	HAZM_NO	69	
V36	Hazardous Materials Release*	HAZ_MA_R	69	
V90	Maximum Injury Severity in Vehicle	MAX_VSEV	69	
V91	Number Injured in Vehicle	NUM_INJV	70	
V92	Driver Drinking in Vehicle*	VEH_ALCH	70	
D1	Driver Presence*	DR_PRES	71	
D2	Violations Charged*	VIOLATN	71	
D3	Driver Physical/Mental Impairment*	DR_IMPMT	72	
D4	Driver's Vision Obscured By*	VIS_OBSC	73	
D5	Driver's Action*	DR_ACT	73	
D6	Driver Maneuvered to Avoid*	DRMAN_AV	74	
D7	Driver Distracted By*	DR_DSTRD	75	
D8	Driver's Zip Code*	DR_ZIP_C	75	
D9	Speed Related*	SPEEDREL	76	
V5H	Hot-deck Imputed Body Type	BDYTYP_H	48	
V17H	Hot-deck Imputed Damage Area*	DAM_AR_H	53	
V20H	Hot-deck Imputed Most Harmful Event	V_EVNT_H	56	
V24H	Hot-deck Imputed Initial Point of Impact	IMPACT_H	59	
V2I	Imputed Hit and Run	HITRUN_I	41	
V6I	Imputed Model Year	MDLYR_I	48	
V21I	Imputed Movement Prior to Critical Event	MANEUV_I	57	
V22I	Imputed Vehicle Role	VROLE_I	58	
V90I	Imputed Maximum Injury in Vehicle	MXVSEV_I	70	
V91I	Imputed Number Injured in Vehicle	NUMINJ_I	70	
V92I	Imputed Driver Drinking in Vehicle	V_ALCH_I		71
D2I	Imputed Violations Charged Severity	VLTN_I	72	

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***PERSON FILE***

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
P1	Vehicle Number	VEHNO	77
P2	Person Number	PERNO	77
P3	Person Type	PER_TYPE	77
P4	Seating Position*	SEAT_POS	78
P5	Safety Equipment Used*	SAF_EQMT	79
P6	Ejection*	EJECT	79
P7	Age	AGE	80
P8	Sex	SEX	80
P9	Injury Severity	INJ_SEV	81
P10	Taken to Hospital or Treatment Facility	HOSPITAL	81
P11	Police-Reported Alcohol Involvement*	PER_ALCH	82
P12	Non-Motorist's Physical/Mental Condition*	PHY_COND	83
P13	Non-Motorist's Location	LOCATION	83
P14	Non-Motorist's Action*	ACTION	84
P15	Restraint System Use*	REST_SYS	85
P16	Restraint Type*	REST_TYP	85
P17	Police-Reported Drug Involvement*	PER_DRUG	86
P18	Person's Physical Impairment*	IMPAIRMT	86
P19	Non-Motorist Action*	ACTION	87
P20	Non-Motorist Safety Equipment Use*	SAF_EQMT	88
P21	Air Bag Availability/Function*	AIRBAG	88
P22	Non-Motorist Vehicle Striking Number*	STR_VEH	89
P4H	Hot-deck Imputed Seating Position	SEAT_H	78
P7H	Hot-deck Imputed Age	AGE_H	80
P8H	Hot-deck Imputed Sex	SEX_H	81
P9H	Hot-deck Imputed Injury Severity	INJSEV_H	81
P11H	Hot-deck Imputed Police-Reported Alcohol Involvement	PERALC_H	82
P6I	Imputed Ejection	EJECT_I	80



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## GES Variables and Definitions

The following list includes GES variables and their definitions from the 1988 through 2000 data files. Changes are identified by the appropriate year. The variable definition may have notes attached to help clarify the changes. All variables are numeric with the exception of V7 (VIN). The SAS variable names appear in parentheses "()". If the SAS variables have associated formats, then the format name will appear in brackets "[ ]". For some variables the format name has changed over the years. If a format name changed in the last three years the change is noted in the brackets below. For format names prior to 1998 a SAS PROC CONTENTS of the data set should be consulted, unless the earlier names are specified below.

The following six variables appear on the Accident, Event, Vehicle, and Person data files.

<b>GES Case Number (CASENUM):</b>	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.
<b>Primary Sampling Unit (PSU):</b>	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.
<b>Police Jurisdiction (PJ):</b>	The number (range 1 through 120) of the police jurisdiction from which the PAR was originally sampled.
<b>Region of the Country (REGION):</b>	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)
<b>Case Stratum (STRATUM):</b>	The number (1 through 4) of the category in which the PAR was originally listed in GES PAR Program or Stratification Record.
<b>GES Case Weight (WEIGHT):</b>	This is the variable used to produce national estimates from the data.

***ACCIDENT FILE***

**A1 Month of the Crash**

**Definition:** The month in which the crash occurred.

**1988 - Later**

**SAS Name: (MONTH) [A1Z.]**

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

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**A1B Year of the Crash**

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

**1988 - Later**

**SAS Name: (YEAR)**

---

**A1C 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.

**1988 - Later**

**SAS Name: (WEEKDAY) [A1CZ.]**

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



**A1CI Univariate Imputed Day of Week**

**Definition:** This imputed variable have 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)

**1988 - Later**

**SAS Name: (WKDY\_I) [A1CZ.]**

---

**A2 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". But for one minute after midnight to fifty-nine minutes after midnight the hour is coded as "00". "99" is coded for unknown hour.

**1988 - Later**

**SAS Name: (HOUR) [A2Z.] [no format prior to 2000]**

99 = unknown

---

**A2I 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.)

**1988 - Later**

**SAS Name: (HOUR\_I) [A2Z.] [no format prior to 2000]**

99 = unknown

---

**A2A 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.

**1988 - Later**

**SAS Name: (MINUTE) [A2AZ.] [no format prior to 2000]**

99 = unknown

---

**2AI     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.)

**1988 - Later**

**SAS Name: (MINUTE\_I) [A2AZ.] [no format prior to 2000]**

99 = unknown

---

**A3     Number of Vehicles Involved**

**Definition:** The number of vehicles involved in the crash. This number includes hit and run vehicles, but does not include phantom vehicles (a vehicle which may have caused the crash but left the scene).

**1988 - Later**

**SAS Name: (VEH\_INVL)**

---

**A3A     Number of Vehicles Coded\***

**Definition:** This variable is calculated by counting the number of vehicles listed in the vehicle file for a crash. This number may be different from the number of vehicles involved (A3) because information on phantom vehicles is not included in the vehicle file. In most cases, information on phantom vehicles is not available on the PAR. (\* **Note: This variable was dropped from the accident file in 1990.**)

**1988 - 1989**

**SAS Name: (VEH\_COD)**

---

**A3B     Number of Persons Involved\***

**Definition:** The number of persons involved in the crash. A value "99" represents unknown number of persons involved. 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". (\* **Note: This variable was dropped from the accident file in 1990.**)

**1988 - 1989**

**SAS Name: (PER\_INVL)**

---

**A3C 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. (\* **Note: This variable was dropped from the accident file in 1990.**)

**1988 - 1989**

**SAS Name: (PER\_COD)**

---

**A4 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) . A value "00" is coded if there were no non-motorists involved. (**Note: From 1988 - 1998 the range was 0 - 25 and in 1999 it was changed to 0 - 98.**)

**1988 - Later**

**SAS Name: (NON\_INVL)**

---

**A4A 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. (\* **Note: This variable was dropped from the accident file in 1990.**)

**1988 - 1989**

**SAS Name: (NON\_COD)**

**A5 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. Population figures were taken from the 1980 County and City Data Book published by the Census. If city or town population is less than 25,000 or the population was not listed in the County/City Book, then "8" is coded. (**\*Note: In 1995, population figures were taken from the 1994 County and City Data Book published by the 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.**)

**1988 - Later**

**SAS Name: (LAND\_USE) [A5Z.]**

- 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

---

**A5A Percentage Rural\***

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

**1988 - 1996**

**SAS Name: (RUR\_URB) [A5AZ.]**

- 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

**A6 First Harmful Event\***

**Definition:** Indicates the first property damaging or injury producing event in the crash. (\*Note: In 1990, element value "97" *Other - No Details* has been deleted. In 1992, element value "50" *Pavement Surface Irregularity* has been added and element value numbering has been modified. Element value "4" *Gas Inhalation*, has been deleted. In 1999, element "4" Gas Inhalation was added and "50" was renumbered to "7".)

**SAS Name:** (EVENT1) [A6NZ. in 2000, V20NZ. in 1999, A6NZ. in 1998]

**1988 - 1991    1992 - 1998    1999 - Later**

*Noncollision*

1	1	1
2	2	2
3	3	3
4		4
5	5	5
6	6	6
	50	7
8	8	8
9	9	9
10	10	10

*Noncollision*

Rollover/Overturn
Fire/Explosion
Immersion
Gas Inhalation*
Jackknife
Noncollision Injury (Injured in Vehicle, or Fell From Veh.)
Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.)*
Other Noncollision
Noncollision - No Details
Thrown or Falling Object

*Collision with Object Not Fixed*

21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29

*Collision with Object Not Fixed*

Pedestrian
Cycle or Cyclist (Pedalcyclist or Pedalcycle)
Railway Train
Animal
Motor Vehicle in Transport
Parked Motor Vehicle (or Other M.V. Not in Transport)
Other Type Non-Motorist
Other Object Not Fixed
Object Not Fixed - No Details

*Collision with Fixed Object*

31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
48	58	58
49	59	59

*Collision with Fixed Object*

Ground
Building
Impact Attenuator/Crash Cushion
Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
Guardrail
Concrete Traffic Barrier or Other Longitudinal Barrier Type
Post, Pole or Support (Sign Post, Utility Post)
Culvert or Ditch
Curb
Embankment
Fence
Wall
Fire Hydrant
Shrubbery or Bush
Tree
Boulder
Other Fixed Object*
Fixed Object - No Details*

*Other/Unknown*

97 = Other - No Details (1988-1989 only)
99

*Other/Unknown*

Unknown

**A6I 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.)

**1988 - Later**

**SAS Name:** (EVENT1\_I) [A6NZ. in 2000, V20NZ. in 1999, A6NZ. in 1998]

---

**A7 Manner of Collision**

**Definition:** Indicates the orientation of the vehicles in a collision. If a non-collision, it is classified as such. (Note: In 1999 "8" Other was removed.)

**1988 - Later**

**SAS Name:** (MAN\_COL) [A7N. in 2000, 1999, A7Z. in 1998]

- 0 = Not Collision with Motor Vehicle in Transport
- 1 = Rear-End
- 2 = Head-On
- 3 = Rear-to-Rear
- 4 = Angle
- 5 = Sideswipe, same direction
- 6 = Sideswipe, opposite direction
- 8 = Other\* (deleted in 1999)
- 9 = Unknown

---

**A7I 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.)

**1988 - Later**

**SAS Name:** (MANCOL\_I) [A7N. in 2000, 1999, A7Z. in 1998]

---

**A8 Interstate Highway**

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

**1988 - Later**

**SAS Name:** (INT\_HWY) [A8Z.]

- 0 = No
- 1 = Yes
- 9 = Unknown

**A9 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.. (\* Note: In 1992, this variable has been modified into two categories: *Non-Interchange Area* and *Interchange Area*.)

Element value numbering has been modified. In 1995, two elements values were added: "06" and "16" On A Bridge. In 1999 "07" and "17" Crossover Related were added.).

SAS Name: (REL\_JCT) [A9N. in 2000, 1999, A9NZ. in 1998]

**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 - Later**

*Non-interchange Area*

00 = Non-Junction  
 01 = Intersection  
 02 = Intersection Related  
 03 = Driveway, Alley Access, Etc.  
 04 = Entrance/Exit Ramp  
 05 = Rail Grade Crossing  
 06 = On A Bridge\* (added in 1995)  
 07 = Crossover Related\* (added in 1999)  
 08 = Other, Non-interchange  
 09 = Unknown, Non-interchange

*Interchange Area*

10 = Non-Junction  
 11 = Intersection  
 12 = Intersection Related  
 13 = Driveway, Alley Access, Etc.  
 14 = Entrance/Exit Ramp  
 16 = On A Bridge\* (added in 1995)  
 17 = Crossover Related\* (added in 1999)  
 18 = Other Location in Interchange  
 19 = Unknown, Interchange Area  
 99 = Unknown if Interchange

---

**A9I      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.)

**1988 - Later**

SAS Name: (RELJCT\_I) [A9N. in 2000, 1999, A9NZ. in 1998]

**A10      Relation to Roadway**

**Definition:** Indicates the location of the first harmful event. (\*Note: In 1999 the element values were extensively redone.)

**SAS Name:** (REL\_RWY) [A10N. in 2000, 1999, A10Z. in 1998]

**1988 - 1998**

- 1 = On Roadway
- 2 = On Shoulder or Parking Lane
- 3 = Off Roadway/Shoulder/Parking Lane
- 4 = On Median
  
- 8 = Other
  
- 9 = Unknown

**1999 - Later**

- 1 = On Roadway
- 2 = On Shoulder\*
- 3 = On Median\*
- 4 = On Roadside\*
- 5 = Outside Trafficway\*
- 6 = Off Roadway - Location Unknown\*
- 7 = In Parking Lane\*
- 8 = Gore\*
- 10 = Separator\*
- 99 = Unknown\*

---

**A11      Trafficway Flow**

**Definition:** Indicates whether or not the roadway was divided.

**1988 - Later**

**SAS Name:** (TRAF\_WAY) [A11Z.]

- 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.

**1988 - Later**

**SAS Name:** (NUM\_LAN) [A12Z.]

- 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 in the immediate vicinity of the first harmful event.

**1988 - Later**

**SAS Name:** (ALIGN) [A13Z.]

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.)

**1988 - Later**

**SAS Name:** (ALIGN\_I) [A13Z.]

---

**A14 Roadway Profile**

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

**1988- Later**

**SAS Name:** (PROFILE) [A14Z.]

1 = Level  
2 = Grade  
3 = Hillcrest  
8 = Other  
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.)

**1988- Later**

**SAS Name: (PROFIL\_I) [A14Z.]**

---

**A15 Roadway Surface Condition**

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

**1988 - Later**

**SAS Name: (SUR\_COND) [A15Z.]**

- 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.)

**1988 - Later**

**SAS Name: (SURCON\_I) [A15Z.]**

## **A16 Traffic Control Device\***

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

(\* Note: In 1990, element values "2" and "3" have been deleted, element value "14" *Warning Signs* was separated out into its own category, and element value numbering has changed.)

**SAS Name:** (TRAF\_CON) [A16N.]

### **1988 - 1989**

00 = No Controls

*Not at Railroad Grade Crossing*

*Traffic Signals:*

01 = Traffic Control Signal (on colors) w/o Pedes. Signal

02 = Traffic Control Signal (on colors) w/ Pedes. Signal

03 = Traffic Control Signal (on colors) Pedes. Signal Not Known

04 = Flashing Traffic Control Signal or Flashing Beacon

08 = Other Traffic Signal

09 = 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 (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

### **1990 - Later**

00 = 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 or Warning 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

**A16I Univariate Imputed Traffic Control Device**

**Definition:** This imputed variable has the same definition and element values as *Traffic Control Device*, excluding "99" for unknown traffic control device. See *Understanding the GES Imputation Process* section of this manual.)

**1988 - Later**

**SAS Name: (TRFCON\_I) [A16N.]**

---

**A17 Traffic Device Functioning\***

**Definition:** Indicates whether or not the traffic control device was functioning. (\* **Note: This variable is not available after 1989.**)

**1988 - 1989**

**SAS Name: (DEV\_FUNC) [A17Z.]**

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

---

**A18 Speed Limit**

**Definition:** Actual posted speed limit in miles per hour.

**1988 - Later**

**SAS Name: (SPD\_LIM) [A18Z. in 2000, 1998, no format in 1999]**

0 = No Statutory Limit (parking lot, alley, etc.)  
05-75 = (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.)

**1988 - Later**

**SAS Name: (SPDLIM\_H) [A18Z. in 2000, 1998, no format in 1999]**

**A19 Light Condition**

**Definition:** General light conditions at the time of the crash, taking into consideration the existence of external roadway illumination fixtures. (\*Note: In 1999 "6" Dawn or Dusk was removed.)

**1988 - Later**

**SAS Name:** (LGHT\_CON) [A19N. in 2000, 1999, A19Z. in 1998]

- 1 = Daylight
- 2 = Dark
- 3 = Dark but Lighted
- 4 = Dawn
- 5 = Dusk
- 6 = Dawn or Dusk\* (1988 - 1998 only)
- 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.)

**1988 - Later**

**SAS Name:** (LGTCO\_N\_I) [A19N. in 2000, 1999, A19Z. in 1998]

---

**A20    Atmospheric Conditions**

**Definition:** General atmospheric conditions at the time of crash.

**1988 - Later**

**SAS Name:** (WEATHER) [A20Z.]

- 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 Conditions

**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.)

1988 - Later

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.

1988 - Later

SAS Name: (SCHL\_BUS) [A21Z.]

0 = No

1 = Yes

---

## 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. (\* **Note: Starting in 1989, four-digit codes have been 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 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.

1988 - Later

SAS Name: (PED\_ACC) [A24Z.] [no format prior to 2000]

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 = The 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 Make 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  
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  
620 = 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\** (added in 1989)

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”. (\*Note: This variable was added to the accident file in 1995.)

**1995 - Later**

**SAS Name: (WRK\_ZONE) [A25Z.]**

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. This variable also indicates if this roadway is considered “urban”, “rural”, or “urban or rural”. (\*Note: This variable was added to the accident file in 1995 and removed in 1999.)

**1995 - 1998**

**SAS Name: (NHS\_RWTP)[A26Z.]**

00 = Not NHS Roadway

*Urban*

01 = Eisenhower Interstate (EIS)

02 = Congressional High Priority Route

03 = STRAHNET Route

04 = STRAHNET Major Connector

05 = Other NHS Route

09 = 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

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. This variable is derived from injury severity variable in the person file.

**1988 - Later**

**SAS Name: (MAX\_SEV) [A90Z.]**

- 0 = No Injury
- 1 = Possible Injury
- 2 = Non-incapacitating
- 3 = Incapacitating
- 4 = Fatal
- 5 = Unknown Injury Severity
- 6 = Died Prior
- 8 = No Person Coded 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.)

**1988 - Later**

**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 an crash.

**1988 - Later**

**SAS Name: (NUM\_INJ) [A91N. in 2000, 1998, no format in 1999]**

- 00 = No Person Injured/Property Damage Only Crash
- 98 = No Person Coded
- 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 coded and unknown number injured, respectively.

**1988 - Later**

**SAS Name:** (NO\_INJ\_I) [A91N. in 2000, 1998, no format in 1999]

---

**A92 Alcohol Involved in Crash**

**Definition:** This is a derived variable based on police-reported alcohol involvement on the person file. This variable indicates alcohol use for a driver, a pedestrian, or a cyclist in the crash:.

**1988 - Later**

**SAS Name:** (ALCOHOL) [A92Z.]

1 = Alcohol Involved  
2 = No Alcohol Involved  
8 = No Person Coded  
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 element value “8” was added to element value “2”. This imputed variable was derived from the hot-deck imputed police reported alcohol involvement on the person file.

**1988 - Later**

**SAS Name:** (ALCHL\_I) [A92Z.]

***EVENT FILE***

**E1      Crash Event Sequence Number**

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

**2000 - Later**

**SAS Name: (EVENTNUM)**

1 - xx = (Event Number)

---

**E2      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=01) impacts the other vehicle's (OBJCONT=2) right side (OBJGAD=02) .

**2000 - Later**

**SAS Name: (VEHNUM)**

1 - xx = (Vehicle Number)

---

**E3      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.]**

**2000- Later**

00 = Non-Collision  
01 = Front  
02 = Right Side  
03 = Left Side  
04 = Back  
05 = Top  
06 = Undercarriage  
11 = Front Right Corner  
12 = Front Left Corner  
13 = Back Right Corner  
14 = Back Left Corner  
99 = Point of Impact Unknown

**E4 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.]

**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 Shrubby or Bush  
 145 Tree  
 146 Boulder  
 158 Other Fixed Object\*  
 159 Fixed Object - No Details\*

*Unknown*

999 Unknown

**E5      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.]

**2000- Later**

. = Not a Motor Vehicle in Transport

01 = Front

02 = Right Side

03 = Left Side

04 = Back

05 = Top

06 = Undercarriage

11 = Front Right Corner

12 = Front Left Corner

13 = Back Right Corner

14 = Back Left Corner

99 = Point of Impact Unknown

**VEHICLE/DRIVER FILE**

**V1      Vehicle Number**

**Definition:** Number assigned to all motor vehicles in transport. Numbers assigned must be consecutive starting with "1" for each crash. (These numbers are computer assigned.)

**1988 - Later**

**SAS Name: (VEHNO)**

---

**V2      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.

**1988 - Later**

**SAS Name: (HIT\_RUN) [V2Z.]**

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

---

**V2I      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.)

**1988 - Later**

**SAS Name: (HITRUN\_I) [V2Z.]**

---

**V3      Vehicle Make**

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

**1988 - Later**

**SAS Name: (MAKE) [V3Z.]**

---

**V4      Vehicle Model**

**Definition:** A numerical code indicating the model of each motor vehicle in transport. See Appendix A.

**1988 - Later**

**SAS Name: (MODEL)**

---

**V5      Body Type\***

(\* Note: After 1989, there were numerous changes made to this variable.)

**1988 - 1989**

**SAS Name: (BODY\_TYP) [V5NZ.]**

*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 ( $\leq 10,000$  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,  $\leq 10,000$  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

**V5      Body Type\***

(\* Note: In 1990, element values "11" and "12" were modified. Element values "13" *Limousine* and "22" *Step Van or Walk-in Van* were added. Element values "33", "34", and "47" were deleted.)

**1990 - 1991**

**SAS Name: (BODY\_TYP) [V5NZ.]**

*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 ( $\leq 10,000$  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,  $\leq 10,000$  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

## V5 Body Type\*

(\* Note: In comparing 1992 element values to previous years, there were quite a few changes which include modifications, deletions, and additions of element values. The asterisk (\*) denotes change. Element values "11", "12", "13", "14", "20", "21", "30", "31", "60", and "65" have been modified. Element values "15", "16", "17", "19", "23", "33", "45", "64", and "64" were added. Some of the existing element value numbering has changed. In 1993, element values "24" and "25" have been added. Also, for the GVWR, kilograms were used, not pounds. In 1999 "17" was added.)

### 1992 - Later

**SAS Name: (BODY\_TYP) [V5N. in 2000, 1999, V5NZ. in 1998]**

#### *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\*
- 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 ( $\leq 4,536$ 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,  $\leq 4,536$  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

**V5H 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. in 2000, 1999, V5NZ. in 1998]

---

**V6 Model Year**

**Definition:** The model year of the vehicle(s) involved in the crash. (\*Note: In 1999 the actual model year was coded for all vehicles.)

1988 - Later

**SAS Name:** (MODEL\_YR) [V6Z. in 2000, 1998, no format in 1999]

1940 = all vehicles manufactured for 1940 model year and before.(Changed in 1999)\*  
1941-2001 = (Actual Value)  
9999 = Unknown

---

**V6I 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.)

1988 - Later

**SAS Name:** (MDLYR\_I) [V6Z. in 2000, 1998, no format in 1999]

---

**V7 Vehicle Identification Number**

**Definition:** A vehicle identification number is a 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, any positions past the 11th character were blanked out. The positions that were blanked out contain the serial number which can uniquely identify the vehicle. For more detailed information on VINs in the GES, see Appendix D.

1988 - Later

**SAS Name:** (VIN)

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

---

**V8 Special Use\***

**Definition:** Indicates if 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.

(\* Note: In 1992, element value "7" was modified. Element value "8" was deleted and values "10", "11", and "12" were added.)

**SAS Name:** (SPEC\_USE) [V8N. io 2000, 1999, V8NZ. in 1998]

**1988 - 1991**

0 = No Special Use  
1 = Taxi  
2 = Vehicle Used as School Bus  
3 = Vehicle Used as Other Bus  
4 = Military  
5 = Police  
6 = Ambulance  
7 = Fire truck  
  
8 = Other (Farm or Construction Equip., Etc.)  
  
9 = Unknown

**1992 - Later**

00 = No Special Use  
01 = Taxi  
02 = Vehicle Used as School Bus  
03 = Vehicle Used as Other Bus  
04 = Military  
05 = Police  
06 = Ambulance  
07 = Fire Truck and Car\*  
10 = Hearse\*  
11 = Farm Equipment\*  
12 = Construction Equipment\*  
99 = Unknown

---

**V9 Emergency Use**

**Definition:** Indicates if a "4" through "7" "Special Use" 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.

**1988 - Later**

**SAS Name:** (EMCY\_USE) [V9Z.]

0 = No  
1 = Yes  
9 = Unknown

**V10 Number of Occupants Involved\***

**Definition:** Indicates the actual number of persons (including drivers) that were occupants of this vehicle and were coded. (\* Note: In 1990, this variable changed. The actual value went up to 30 and the variable became the number of Occupants Coded. In 2000 the number of occupants coded is no longer restricted to 30 or less and 99 no longer represents unknown since the number coded is always known.)

**SAS Name: (OCC\_INVL)**

**1988 - 1989**

00-95 = (Actual Value if Total Known)

96 = 96 or more

97 = Unknown - Only Injured Reported

99 = Unknown

**1990 - 1999**

00-30=(Actual Number of Occupants Coded)\*

99 = Unknown

**2000 - Later**

00- xxx=(Actual Number of Occupants Coded)\*

---

**V10A Number of Occupants Coded\***

**Definition:** Derived by counting the number of persons (including drivers) that were occupants of this vehicle. (\* Note: This variable was dropped from the accident file in 1990.)

**1988 - 1989**

**SAS Name: (OCC\_COD)**

00-30 = (Actual Value if Total Known)

99 = Unknown

---

**V10B Number of Occupants\***

**Definition:** Derived by counting the number of persons (including drivers) that were occupants of this vehicle.

**2000 - Later**

**SAS Name: (NUMOCCS)**

00-998 = (Actual Value if Total Known)

999 = Unknown

**V11 Travel Speed\***



**Definition:** Actual miles per hour. (\* Note: In 2000 the highest travel speed is no longer restricted to 97 MPH, and unknown travel speed is coded as 999.)

**SAS Name:** (SPEED) [V11Z. in 2000, 1998, no format in 1999]

**1988 - 1999**

00 = Stopped Vehicle  
 01-96 = (Actual Travel Speed (MPH))  
 97 = Ninety-Seven MPH or Greater  
 99 = Unknown

**2000 - Later**

00 = Stopped Vehicle  
 01-998=(Actual Travel Speed (MPH))  
 999 = Unknown

---

**V12 Vehicle Contributing Factors \***

**Definition:** Indicates which vehicle factors may have contributed to the cause of the crash. Only one “contributing factor” for each vehicle is coded. If a vehicle has multiple “contributing factors” (some of which may not be defects), the lowest numerical value is coded. For example, "02" is coded if both brake system and steering system “contributing factors” were indicated. (\* Note: In 1995, the name of this variable was changed from *Vehicle Defects* to *Vehicle Contributing Factors* to allow for inclusion of all factors that may have contributed to this vehicle’s involvement in the crash.)

**1988 - 1994**

**SAS Name:** (DEFECT)[V12Z.]

00 = None  
 01 = Tires  
 02 = Brake System  
 03 = Steering System - Tie Rod, Kingpin, Ball Joint, etc.  
 04 = Suspension - Springs, Shock Absorbers, McPherson Struts, Control Arms, etc.  
 05 = Power Train - Universal Joint, Drive Shaft, Transmission, etc.  
 06 = Exhaust System  
 07 = Headlights  
 08 = Signal Lights  
 09 = 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 Defects - No Details  
 98 = Other Vehicle Defects  
 99 = Unknown if Vehicle Has Defects

**1995 - Later**

**SAS Name:** (FACTOR) [V12N.]

00 = None  
 01 = Tires  
 02 = Brake System  
 03 = Steering System - Tie Rod, Kingpin, Ball Joint, etc.  
 04 = Suspension - Springs, Shock Absorbers, McPherson Struts, Control Arms, etc.  
 05 = Power Train - Universal Joint, Drive Shaft, Transmission, etc.  
 06 = Exhaust System  
 07 = Headlights  
 08 = Signal Lights  
 09 = 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\*

**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. **(\*Note: In 1999 the variable was recoded.)**

**1988 - 1998**

**1999 - Later**

**SAS Name: (TRAILER) [V13N. in 2000, 1999, V13Z. in 1998]**

0 = No

1 = Yes, One Trailing Unit

2 = Yes, Two Trailing Units

3 = Yes, Three or More Trailing Units

4 = Yes, Number of Trailing Units Unknown

9 = Unknown

1 = No\*

2 = Yes, One Trailing Unit\*

3 = Yes, Two Trailing Units\*

4 = Yes, Three or More Trailing Units\*

5 = Yes, Number of Trailing Units 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. 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

**1988 - Later**

**SAS Name: (JACKNIFE) [V14Z.]**

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. **(\* Note: The coding of this variable changed after 1991. See *Rollover Type (V30)* of this document for revised coding scheme.)**

**1988 - 1991**

**SAS Name: (ROLLOVER) [V15Z.]**

0 = No Rollover Noted on PAR

1 = Rollover Occurred

**V16 Fire Occurrence**

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

**1988 - Later**

**SAS Name: (FIRE) [V16Z.]**

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

**1988 - 1989**

**SAS Name: (DAM\_AREA) [V17Z.]**

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.) (\*Note: In 1990, this variable was dropped from the Vehicle File. Since the variable was revised, it was unnecessary to imputed unknowns.)

**1988 - 1989**

**SAS Name: (DAM\_AR\_H) [V17Z.]**

**V18     Damage Severity**

**Definition:** Reports the severity of the vehicle damage.

**1988 - Later**

**SAS Name: (VEH\_SEV) [V18Z.]**

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. (\* Note: In 1990, element value "2" was modified into two different values. Therefore, changing the numbering of existing element values.)

**1988 - 1989**

**SAS Name: (TOWED) [V19Z.]**

1 = Driven  
2 = Towed Away  
  
3 = Abandoned  
4 = Unknown

**1990 - Later**

**SAS Name: (TOWED) [V19N.]**

1 = Driven  
2 = Towed Due to Damage\*  
3 = Towed Not Due to Damage\*  
4 = Abandoned  
9 = Unknown if Towed

**V20 Most Harmful Event\***

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

(\* Note: In 1990, element value "97" *Other - No Details* was deleted. In 1992, element value "50" *Pavement Surface Irregularity* was added and the numbering of some existing values were modified. Also, element value "4" *Gas Inhalation* was deleted. In 1999, element "4" *Gas Inhalation* was added and "50" was renumbered to "7")

**SAS Name: (V\_EVENT)**

[V20Z.]	[V20N.]	[V20NZ.]
1988 - 1991	1992 - 1998	1999 - Later

*Noncollision*

1	1	1
2	2	2
3	3	3
4		4
5	5	5
6	6	6
	50	7
8	8	8
9	9	9
10	10	10

*Noncollision*

Rollover/Overturn
Fire/Explosion
Immersion
Gas Inhalation*
Jackknife
Noncollision Injury
(Injured in Vehicle, or Fell From Veh.)
Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.)*
Other Noncollision
Noncollision - No Details
Thrown or Falling Object

*Collision with Object Not Fixed*

21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29

*Collision with Object Not Fixed*

Pedestrian
Cycle or Cyclist (Pedalcyclist or Pedalcycle)
Railway Train
Animal
Motor Vehicle in Transport
Parked Motor Vehicle (or Other M.V. Not in Transport)
Other Type Non-Motorist
Other Object Not Fixed
Object Not Fixed - No Details

*Collision with Fixed Object*

31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
48	58	58
49	59	59

*Collision with Fixed Object*

Ground
Building
Impact Attenuator/Crash Cushion
Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
Guardrail
Concrete Traffic Barrier or Other Longitudinal Barrier Type
Post, Pole or Support (Sign Post, Utility Post)
Culvert or Ditch
Curb
Embankment
Fence
Wall
Fire Hydrant
Shrubbery or Bush
Tree
Boulder
Other Fixed Object*
Fixed Object - No Details*

*Other/Unknown*

97 = Other - No Details* (1988-1989 only)		
99	99	99

*Other/Unknown*

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.)

**1988 - Later**

**SAS Name:** (V\_EVNT\_H) [V20NZ. in 2000, 1999, V20N. In 1998]

---

**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.

**2000 - Later**

**SAS Name:** (MHENUM)

1 - xx = (Actual 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. (\*Note: In 1992, GES began to collect precrash information. The variable, Vehicle Maneuver, was changed to Movement Prior to Critical Event to be part of the precrash variables. The definition of this variable changed slightly. Some element values were added, modified, or deleted. Also, the SAS name changed after 1991.)

**1988-1991**

**SAS Name:** (MANEUVER) [V21Z.]

- 01 = Going Straight
- 02 = Slowing or Stopping in Traffic Lane
- 03 = Starting in Traffic Lane
- 04 = Stopped in Traffic Lane
- 05 = Passing or Overtaking Another Vehicle
- 06 = Leaving a Parked Position
- 07 = Parked
- 08 = Entering a Parked Position
- 09 = 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

**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. (\* Note: In 1992, element values "16", "17", "18" and "94" were added and "09" *Maneuvering to Avoid* was deleted. In 1995, element value "00" was added and element value "94" *More than Two Vehicles Involved* was deleted. In 1999 "03" Accelerating in traffic lane was added.)

**SAS Name:** (P\_CRASH1)\* [V21NZ. in 2000, 1999, V21N. in 1998]

1992 - 1998	1999 - Later	
00	00	No Driver Present*
01	01	Going Straight
02	02	Decelerating in Traffic Lane
	03	Accelerating in traffic lane*
03	04	Starting in Traffic Lane
04	05	Stopped in Traffic Lane
05	06	Passing or Overtaking Another Vehicle
06	07	Disabled or Parked in Travel Lane*
07	08	Leaving a Parked Position*
08	09	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		More than Two Vehicles Involved* (Deleted in 1995)
98	97	Other
99	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.]

**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.

**1988 - Later**

**SAS Name: (VEH\_ROLE) [V22Z.]**

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 possible values see Appendix B. (\* **Note: Element value "97" was added in 1992 and removed in 1999.**)

**SAS Name: (ACC\_TYPE) [V23N.]**

1988 - 1991	1992 - 1998	1999 - Later	
00	00	00	No Impact
	97		Untripped Rollover*
98	98	98	Other Accident type
99	99	99	Unknown

**V24      Initial Point of Impact\***



**Definition:** Codes the first impact point that produced property damage or personal injury (regardless of *FIRST* or *MOST HARMFUL EVENT*). (\* **Note:** Prior to 1990, this variable did not exist. In 1992, element values "11", "12", "13", and "14" were added to replace element value "7" *Corner*.)

**SAS Name:** (IMPACT) [V24NZ.]

**1990 - 1991**

0 = No Damage/Non-Collision  
1 = Front  
2 = Right Side  
3 = Left Side  
4 = Back  
5 = Top  
6 = Undercarriage  
7 = Corner

9 = Initial Point of Impact Unknown

**1992 - Later**

00 = No Damage/Non-Collision  
01 = Front  
02 = Right Side  
03 = Left Side  
04 = Back  
05 = Top  
06 = Undercarriage  
11 = Front Right Corner  
12 = Front Left Corner  
13 = Back Right Corner  
14 = Back Left Corner  
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 variable reports 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. (\* **Note:** This variable has replaced *Maximum Damage Area (V17)*. The coding and definition for this variable has been enhanced.)

**1990 - Later**

**SAS Name:** (DAM\_AREA) [V25N.] [no format prior to 2000]

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 codes and their meanings are:

- 0 = No damage
- 12000 = Front and right damage
- 12999 = Front and right damage and unknown if damaged in other areas

---

In 1992, variables **V21**, **V26-V29** were added to the vehicle /driver file in the GES. These variables are precrash variables designed to identify: (1) what was this vehicle doing just prior to the critical precrash event, (2) what made this vehicle's situation critical, (3) what was the corrective action, if any, to this critical situation, and (4) what was the location and 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.

**1992 - 1993**

### **SAS Name: (P\_CRASH2)**

00 = Not Applicable/No Collision

#### *1. 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
- 32 = From parallel/diagonal parking lane

##### *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

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. (\* Note: In 1994, all the 2-digit element values have changed to 3-digit numbers. In 1995, two element values were added: "215" and "515". In 1999 there were extensive additions, deletions and renumbering.)

**SAS Name: (P\_CRASH2) [V26Z.] [no format prior to 2000]**

1994 - 1998      1999 - Later

000                      Not Applicable/No Collision

*This Vehicle Loss of Control Due to:*

010	001	Blow out or flat tire*
020	002	Stalled engine*
030	003	Disabling vehicle failure (e.g., wheel fell off)*
040	004	Minor vehicle failure*
050	005	Poor road conditions (puddle, pothole, ice, etc.)*
060	006	Excessive speed*
099		Other or unknown reason*
	008	Other cause of control loss*
	009	Unknown cause of control loss*

*This Vehicle Traveling:*

	010	Over the lane line on left side of travel lane*
	011	Over the lane line on right side of travel lane*
100	012	Over left edge of roadway*
101	013	Over right edge of roadway*
199		Unknown which edge*
102	014	End departure*
	015	Turning Left at intersection*
	016	Turning right at intersection*
	017	Crossing over (passing through) intersection*
	018	This vehicle decelerating*
	019	Unknown travel direction*

*In Another Vehicle's Lane:*

200	Stopped*
210	Traveling in same direction with lower steady speed*
215	Traveling in same direction while decelerating* (added in 1995)*
220	Traveling 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	050	Other vehicle stopped*
510	051	Traveling in same direction with lower steady speed*
515	052	Traveling in same direction while decelerating* (added in 1995)*
520	053	Traveling in same direction with higher speed*
530	054	Traveling in opposite direction*
	055	In crossover*
	056	Backing*
	059	Unknown travel direction of the other motor vehicle*

*Another Vehicle Encroaching Into This Vehicle's Lane*

600		From adjacent lane (opposite direction)*
610	060	From adjacent lane (same direction) - over left lane line*
620	061	From adjacent lane (same direction) - over right lane line*
	062	From opposite direction over left lane line*
	063	From opposite direction over right lane line*
630	064	From parallel/diagonal parking lane*
710	065	Entering intersection - turning into same direction*
711	066	Entering intersection - straight across path*
712		Entering Intersection - turning across path*
713	067	Entering intersection - turning into opposite direction*
729	068	Entering intersection - intended path unknown*
730		Entering driveway, alley access, etc.*
740	070	From driveway, alley access, etc. - turning into same direction*
741	071	From driveway, alley access, etc. - straight across path*
742	072	From driveway, alley access, etc. - turning into opposite direction*
759	073	From driveway, alley access, etc. - intended path unknown*
	074	From entrance to limited access highway*
760		Entering from "Yield" entrance (ramp/channel)*
797		Encroaching -other*
798	078	Encroaching - details unknown*
799		Other vehicle initiated critical event - details unknown*

*Pedestrian, Pedacyclist Or Other Non-Motorist*

800	080	Pedestrian in roadway*
801	081	Pedestrian approaching roadway*
	082	Pedestrian unknown location
810	083	Pedalcyclist/other non-motorist in roadway*
811	084	Pedalcyclist/other non-motorist approaching roadway*
	085	Pedacyclist or other non-motorist unknown location*
829		Pedestrian/Pedalcyclist/other non-motorist - unknown location*

Object Or Animal			
830	087		Animal in roadway*
831	088		Animal approaching roadway*
	089		Animal unknown location*
840	090		Object in roadway*
841	091		Object approaching roadway*
	092		Object unknown location*
859			Animal or object - unknown location*
Other			
994			More than two vehicles involved*
998	098		Other event / not applicable / no collision*
Unknown			
999	099		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). (\*Note: In 1999 there were extensive additions, deletions and renumbering.)

**SAS Name:** (P\_CRASH3) [V27NZ. in 2000, 1999, V27Z. in 1998]

1992 - 1998	1999 - Later	
00		Not Applicable/ No Corrective Action Attempted*
01		Braked/slowed*
05		Backed*
	00	No driver present*
	01	No avoidance maneuver*
	02	Braking (no lockup)*
	03	Braking (lockup)*
	04	Braking (lockup unknown)*
	05	Releasing brakes*
02	06	Steered to left*
03	07	Steered to right*
11	08	Braked and steered to left*
12	09	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 here. (**\* Note: 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 as a result of any corrective action.** )

**1992 - 1994**

**SAS Name:** (P\_CRASH4) [V28NZ.]

- 00 = No driver present
- 01 = Vehicle control maintained after corrective action
- 02 = Vehicle rotated (yawed) clockwise
- 03 = Vehicle rotated (yawed) counter-clockwise
- 04 = Vehicle slid/skid longitudinally - no rotation
- 05 = Vehicle slid/skid laterally - no rotation
- 09 = 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. (**\* Note: The name and definition changed in 1995. Also, element "05" Vehicle slid/skid laterally - No Rotation was deleted. In 1999 extensive additions and deletions were made)**

**SAS Name:** (PCRASH4) [V28Z. in 2000, 1999, V28NZ. in 1998]

1995 - 1998	1999 - Later	
00	00	No driver present
01		Vehicle control maintained
02		Vehicle rotated (yawed) clockwise
03		Vehicle rotated (yawed) counter-clockwise
04		Vehicle slid/skid longitudinally - no rotation
09		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
	01	Tracking
	02	Skidding longitudinally - rotation less than 30 degrees
	03	Skidding laterally - clockwise rotation
	04	Skidding laterally - counterclockwise rotation
	07	Other vehicle loss of control (specify)
	09	Pre crash 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. (**\* Note: 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 as a result of any corrective action. )

1992 - 1994

**SAS Name:** (P\_CRASH5) [V29Z.]

- 00 = No corrective action
- 01 = Vehicle stayed in travel lane where corrective action was initiated
- 02 = Vehicle stayed on roadway but left travel lane where corrective action was initiated
- 03 = Vehicle stayed on roadway, not known if left travel lane where corrective action was initiated
- 04 = Vehicle departed roadway
- 05 = 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. (\* **Note, the name and definition changed in 1995 and some renumbering and the addition of "7" and deletion of "94" occurred in 1999.**)

**SAS Name:** (PCRASH5) [V29NZ. in 2000, 1999, V29N. in 1998]

1995 - 1998	1999 - Later	
00	00	No driver present*
01	01	Vehicle stayed in travel lane
02	02	Vehicle stayed on roadway but left travel lane
03	03	Vehicle stayed on roadway, not known if left travel lane
04	04	Vehicle departed roadway
06	05	Vehicle remained off roadway*
07	06	Vehicle returned to roadway*
	07	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. (\* **Note: Prior to 1992, information pertaining to rollover was obtained from the variable *Rollover (V15)*. In 1992, this variable was modified to include more specific rollover information.**)

**1992 - Later**

**SAS Name: (ROLLOVER) [V30N.]**

00 = 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/driver file in the GES. These variables include that portion of the National Governors Association (NGA) data elements which pertain specifically to crashes involving medium/heavy trucks and buses. These elements provide essential information required to analyze motor carrier crashes and are not relevant to other 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).

**1992 - Later**

**SAS Name: (C\_ID\_NO) [V31N. in 2000, 1998, no format in 1999]**

000000 = Not applicable  
000001 - 999998 = US DOT or ICC MC number  
999999 = Unknown

**V32     Number of Axles on Vehicle, Including Trailers\***

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

**1992 - Later**

**SAS Name: (AXLES) [V32N. in 2000, 1998, no format in 1999]**

00       = Not applicable  
02 - 20 = (Actual number of axles)  
99       = Unknown

---

**V33     Cargo Body Type\***

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

**1992 - Later**

**SAS Name: (CARG\_TYP) [V33N.]**

00 = Not applicable  
01 = Bus  
02 = Van/enclosed bus  
03 = Cargo tank  
04 = Flatbed  
05 = Dump  
06 = Concrete mixer  
07 = Auto transporter  
08 = Garbage/refuse  
98 = Other  
99 = Unknown cargo body type

---

**V34     Hazardous Materials Placarded\***

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

**1992 - Later**

**SAS Name: (HAZ\_MAT) [V34N.]**

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 (V5 = .60, 64, 66-79)

**1992 - Later**

**SAS Name: (HAZM\_NO)**

0000 = Not applicable  
0001 - 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 (V5 = 60, 64, 66-79).

**1992 - Later**

**SAS Name: (HAZ\_MA\_R) [V36N.]**

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 scanning the injury severity for each occupant record in this vehicle.

**1988 - Later**

**SAS Name: (MAX\_VSEV) [V90Z.]**

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 Coded  
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.

**1988 -Later**

**SAS Name: (MXVSEV\_I) [V90Z.]**

---

**V91 Number Injured in Vehicle**

**Definition:** Computed by counting the total number of injured occupants in this vehicle. It is derived by totaling the number of occupant records in which the variable *Injury Severity (P9)* has a value 1 through 5. This count includes fatally injured occupants.

**1988 - Later**

**SAS Name: (NUM\_INJV)**

1-97 = (Actual Number)  
98 = No Person Coded  
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.

**1988 -Later**

**SAS Name: (NUMINJ\_I)**

---

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

**1988 - Later**

**SAS Name: (VEH\_ALCH) [V92Z.]**

1 = Alcohol Involved  
2 = No Alcohol  
8 = No Person Coded  
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. Element value "9" for unknown driver drinking in vehicle was imputed and element value "8" was added to element value "2".

1988 -Later

SAS Name: (V\_ALCH\_I) [V92Z.]

## D1 Driver Presence

**Definition:** This variable serves to identify driverless motor vehicles in transport.

1988 - Later

SAS Name: (DR\_PRES) [D1N. in 2000, 1999, D1Z. in 1998]

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

## D2 Violations Charged\*

**Definition:** Indicates which violations are charged to drivers. Elements "1" or "2", and "4" through "7" are prioritized in decreasing numerical value ("1" or "2" takes precedence over "4", "4" takes precedence over "5", etc.). Element "3" is entered if the driver is cited for alcohol/drugs and speeding. (\*Note: In 1990, element values '50' and '97' were added. Also, element value numbering was modified. In 1999 " 01", " 02" and "03" changed and "96" was added. In 2000, the element "95", No Driver Present, was added.)

SAS Name: (VIOLATN) [D2NZ. in 2000, 1999, D2Z. in 1998]

1988 - 1989	1990 - 1998	1999	2000 - Later	
0	00	00	00	None
1	01			Alcohol or Drugs
		01	01	Alcohol*
		02	02	Drugs*
2	02	03	03	Speeding*
3	03			Alcohol or Drugs and Speeding
4	04	04	04	Reckless Driving
5	05	05	05	Driving With a Suspended or Revoked License
6	06	06	06	Failure to Yield Right-of-Way
7	07	07	07	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

**D2I     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 -Later**

**SAS Name: (VLTN\_I) [D2NZ. in 2000, 1999, D2Z. in 1998]**

---

**D3     Driver Physical/Mental Impairment\***

**Definition:** Identifies circumstances that may have contributed to the cause of the accident. If two or more circumstances apply, the lowest numerical value is coded. (\* **Note: This variable is not available after 1989.**)

**1988 - 1989**

**SAS Name: (DR\_IMPMT) [D3Z.]**

- 00 = No Impairments
- 01 = Drowsy, Sleepy, Asleep, Fatigued
- 02 = Ill, Blackout
- 03 = Emotional (e.g., Depression, Angry, Disturbed)
- 04 = Drugs-Medication
- 05 = Other Drugs (Marijuana, Cocaine, etc.)
- 06 = Restricted to Wheelchair
- 07 = Impaired Due to Previous Injury
- 08 = Deaf
- 50 = Hit-and Run Vehicle
- 97 = Physical/Mental Impairment - No Details
- 98 = Other Physical/Mental Impairment
- 99 = Unknown Physical/Mental Condition

**D4      Driver's Vision Obscured By\***

**Definition:** Identifies visual circumstances that may have contributed to the cause of the crash. If two or more visual obstructions apply, the lowest numerical value is coded. (\* **Note:** In 1992, element value "15" *Fog* was added and *Fog* was removed from element value "1". In 1999 "96" Not Reported was added. In 2000, "95" No Driver Present was added.)

SAS Name: (VIS\_OBSC) [D4NZ. in 2000, 1999, D4N. in 1998]

1988-1991	1992-1999	2000 - Later
00	00	00 = No Obstruction
01		= Rain, Snow, Fog, Smoke, Sand, Dust*
	01	01 = Rain, Snow, Smoke, Sand, Dust*
02	02	02 = Reflected Glare, Bright Sunlight, Headlights
03	03	03 = Curve or Hill
04	04	04 = Building, Billboard, or Other Design Features (Includes Signs, Embankment)
05	05	05 = Trees, Crops, Vegetation
06	06	06 = Moving Vehicle (including load)
07	07	07 = Parked Vehicle
08	08	08 = Splash or Spray of Passing Vehicle
09	09	09 = Inadequate Defrost or Defog System
10	10	10 = Inadequate Lighting System
11	11	11 = Obstruction Interior to Vehicle
12	12	12 = Mirrors
13	13	13 = Head Restraints
14	14	14 = Broken or Improperly Cleaned Windshield
	15	15 = Fog*
50	50	50 = Hit & Run Vehicle (And No Information)
		95 = No Driver Present*
	96	96 = Not Reported* (added in 1999)
97	97	97 = Vision Obscured - No Details
98	98	98 = Other Obstruction
99	99	99 = Unknown Whether Vision was Obstructed

---

**D5      Driver's Action\***

**Definition:** Indicates if the driver was avoiding, swerving, or sliding due to one of the following. If two or more elements can be describe the driver's action, the lowest numerical element will be coded. (\***Note:** This variable is not available after 1989. It was replaced with *Driver Maneuvered to Avoid (D6).*)

1988 - 1989

SAS Name : (DR\_ACT) [D5Z.]

- 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
- 06 = Ruts, Holes, Bumps in Road

07 = Animals in Road  
 08 = Vehicle in Road  
 09 = 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

---

**D6      Driver Maneuvered to Avoid\***

**Definition:** Attempts to identify 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. (\* **Note: In 1990, this variable has replaced *Driver's Action (D5)*. In 1999 "96" Not Reported was added. In 2000 "95" No Driver Present was added.**)

**SAS Name: (DRMAN\_AV) [D6NZ. in 2000, 1999, D6N. in 1998]**

1990 - 1998	1999	2000 - Later
00	00	00 = Driver Did Not Maneuver To Avoid
01	01	01 = Object In Road
02	02	02 = Poor Road Conditions (Puddle, Ice, Pot Hole, etc.)
03	03	03 = Animal In Road
04	04	04 = Vehicle In Road
05	05	05 = Pedestrian, Pedalcyclist, or Other Non-Motorist In Road
50	50	50 = Hit & Run (And No Information)
		95 = No Driver Present*
	96	96 = Not Reported*
97	97	97 = Avoidance Maneuver - No details
99	99	99 = Unknown If Driver Maneuvered To Avoid



**D7 Driver Distracted By\***

**Definition:** Attempts to capture distractions which may have influenced driver performance and contributed to the cause of the crash. The distractions can be both inside the vehicle (internal) and outside the vehicle (external). (\* **Note: This variable was added to the vehicle/driver file in 1990. In 1999 extensive modifications were made to the codes including the element "95" No Driver Present.**)

**SAS Name: (DR\_DSTRD) [D7NZ. in 2000, 1999, D7N. in 1998]**

1990 - 1998	1999 - Later
00 Not Distracted or N/A	Not Distracted*
01 Passengers, Occupants	Looked but did not see*
02 Vehicle Instrument Display (Radio, CB, Heating)	
03 Phone	By other occupants*
04 Other Internal Distractions	By moving object in vehicle*
05 Other Crash ("Rubbernecking")	While talking or listening to phone*
06 Other External Distractions	While dialing phone*
07	While adjusting climate control*
08	While adjusting radio, cassette or CD*
09	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*
50 Hit & Run (And No Information)	
95	No driver present*
96	Not Reported*
97 Distractions - No Details	Inattentive or lost in thought*
98	Other distraction or inattention*
99 Unknown if Distracted	Unknown if Distracted

**D8 Driver's Zip Code\***

**Definition:** For the purposes of this variable, a driver is considered to reside at the address listed on the police accident report. (\* **Note: This variable was added to the vehicle/driver file in 1992. In 2000 the element 99998 was changed to indicate No Driver Present.**)

**SAS Name: (DR\_ZIP\_C) [D8N. in 2000, 1998, no format in 1999]**

1992-1999	2000 - Later
00000	= Not Resident of U.S. or territories/driver not present
00001- 99998	00000 = Not Resident of U.S. or territories*
	00001-99997= (Actual 5-digit zip code)*
	99998 = No Driver Present*
99999	99999 = Unknown

**D9      Speed Related\***

**Definition:** This variable indicates whether speed is a contributing factor to the cause of the crash. (\***Note:** in 2000 “8” No Driver Present was added.)

**SAS Name:** (SPEEDREL) [D9N.]

**1997 - 1999**

0

1

9

**2000 - Later**

0 = No

1 = Yes

8 = No Driver Present\*

9 = Unknown

**PERSON FILE**

**P1 Vehicle Number**

**Definition:** This is the vehicle number for the in-transport vehicle, in or on which, this occupant was riding. All pedestrians and non-motorists have "00" for vehicle number. (This variable is computer assigned.) Possible range "00" through "30". This variable is used to merge the person level data onto the vehicle level records such that people in the crash can be place in a specific vehicle.

**1988 - Later**

**SAS Name: (VEHNO)**

---

**P2 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 01. (This variable is computer assigned.)

**1988 - Later**

**SAS Name: (PERNO)**

---

**P3 Person Type**

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

**1988 - Later**

**SAS Name: (PER\_TYPE) [P3Z.]**

*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

**P4 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. (**\*Note: In 1992, a third seat position was added. Element value numbering has been modified.**)

**SAS Name:** (SEAT\_POS) [P4N.]

**1988 - 1991**

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

**1992 - Later**

00 = Non-motorist  
 11 = Front Seat - Left Side (Driver's Side)  
 12 = Front Seat - Middle  
 13 = Front Seat - Right Side  
 18 = Front Seat - Other  
 19 = Front Seat - Unknown  
 21 = Second Seat - Left Side  
 22 = Second Seat - Middle  
 23 = Second Seat - Right Side  
 28 = Second Seat - Other  
 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\*  
 50 = Sleeper Section of Cab (Truck)\*  
 51 = Other Passenger in Passenger or Cargo Area\*  
 52 = Trailing Unit \*  
 53 = Riding on Vehicle Exterior\*  
 99 = Unknown Seating Position

**P4H 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.)

**1988 -Later**

**SAS Name:** (SEAT\_H) [P4N.]

**P5 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. (\*Note: This variable was dropped from the Person file in 1990 and was replaced with *Restraint System Use (P15)*.)

1988 - 1989

SAS Name: (SAF\_EQMT) [P5Z.]

00 = Non-motorist  
 01 = Child Restraint Used  
 02 = Manual Lap Belt Used  
 03 = Manual Shoulder Belt Only Used  
 04 = Manual Shoulder and Lap Belt Used  
 05 = Automatic Belt Used  
 06 = Deployed Air Bag  
 07 = Motorcycle Helmet Used  
 08 = Other Restraint / Safety Equipment Used  
 09 = Restraint Used - Type Unknown  
 10 = None Used  
 11 = None Available  
 99 = Unknown Use or Availability

**P6 Ejection\***

**Definition:** Refers to occupants being totally or partially thrown from the vehicle as a result of an impact or rollover. (\*Note: 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. In 1999 "7" was deleted.)

SAS Name: (EJECT) [P6N.]

1988-1989	1990-1994	1995-1998	1999-Later	
0	0	0	0	Not Ejected
1		1	1	Totally Ejected*
	1			Ejected (Partial or total)
2		2	2	Partially Ejected*
7		7		Ejected - No Details*
9	9	9	9	Unknown

**P6I      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.)

**1988 -Later**

**SAS Name: (EJECT\_I) [P6N.]**

---

**P7        Age**

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

**1988 - Later**

**SAS Name: (AGE) [P7Z. in 2000, 1998, no format in 1999]**

00      = Up to One Year  
01-96 = (Actual Age)  
97      = 97 Years or Older  
99      = Unknown

---

**P7H      Hot-deck Imputed Age**

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

**1988 -Later**

**SAS Name: (AGE\_H) [P7Z. in 2000, 1998, no format in 1999]**

---

**P8        Sex**

**Definition:** Indicates the police reported sex for this person

**1988 - Later**

**SAS Name: (SEX) [P8Z.]**

1 = Male  
2 = Female  
9 = Unknown

**P8H 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.)

**1988 -Later**

**SAS Name: (SEX\_H) [P8Z.]**

---

**P9 Injury Severity**

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

**1988 - Later**

**SAS Name: (INJ\_SEV) [P9Z.]**

- 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
- 

**P9H 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.)

**1988 -Later**

**SAS Name: (INJSEV\_H) [P9Z.]**

---

**P10 Taken to Hospital or Treatment Facility**

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

**1988 - Later**

**SAS Name: (HOSPITAL) [P10Z.]**

- 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. (\*Note: In 1990, the element “7” was added and in 1999 some renumbering occurred and “7” was deleted.)

**SAS Name:** (PER\_ALCH) [P11NZ. in 2000, 1999, P11N. in 1998]

1988 - 1989	1990 - 1998	1999 - Later	
0		1	No (Alcohol Not Involved)*
	0		Alcohol Not Involved or N/A
		0	Not Applicable*
1			Yes (Alcohol Involved)
	1	2	Alcohol Involved*
	7		Alcohol and/or Drugs Involved*
8	8	8	Not Reported
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*. From 1988 - 93, the element value "9" for unknown (police-reported) was imputed and element value “8” was added to element value “0”. Beginning in 1994, the element values “8” and “9” were imputed. (\*Note: The methodology to create the hot-deck imputed police-reported alcohol involvement variable was modified slightly in 1994. Therefore, the SAS name of the imputed variable has changed.) (See *Understanding the GES Imputation Process* section of this manual.)

**1988 - 1993**

**1994 -Later**

**SAS Name:** (ALCH\_H) [P11Z.]

**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 "00". When two or more circumstances apply, the element of lowest numerical value is coded. (\*Note: In 1989, element value "50" was deleted. In 1990, this variable was dropped and replaced with *Person's Physical Impairment (P18).*)

**1988 - 1989**

**SAS Name: (PHY\_COND) [P12Z.]**

- 00 = Not Applicable - Driver or Occupant of Motor Vehicle in Transport  
No Physical/Mental Conditions - Non-occupant
- 01 = Ill, Blackout
- 02 = Emotional (e.g. Depression, Angry, Disturbed)
- 03 = Drugs - Medication
- 04 = Other Drugs (e.g. Cocaine, Marijuana, etc.)
- 05 = Walking with Cane or Crutches
- 06 = Paraplegic or Restricted to Wheelchair
- 07 = Impaired Due to Previous Injury
- 08 = Deaf
- 09 = Blind
- 50 = 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.

**1988 - Later**

**SAS Name: (LOCATN) [P13Z.]**

- 00 = Not Applicable - Driver or Occupant of M.V. in Transport
- 01 = Intersection - In Crosswalk
- 02 = Intersection - On Roadway
- 08 = Intersection - Other
- 09 = 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. (\*Note: This variable was dropped from the Person file in 1990 and was replaced with the variable *Non-motorist's Action (P19).*)

**1988 - 1989**

**SAS Name: (ACTION) [P14Z.]**

00 = Not Applicable - Driver or  
No Action - Everyone except a driver

*Non-motorist Vehicle Operator:*

01 = Failing to have Lights on When Required  
02 = Operating without Required Equipment  
03 = Improper or Erratic Lane Changing  
04 = Failure to Keep in Proper Lane or Running Off Road  
05 = Making Improper Entry to or Exit from Trafficway  
06 = Operating the Vehicle in Erratic, Reckless, Negligent Manner  
07 = Failure of Yield Right of Way  
08 = Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone  
09 = 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:** Encodes what was documented on the PAR regarding occupant use of available vehicle restraints (i.e., belts child safety seat, helmet, or automatic restraints). There is no differentiation here regarding the type of restraint (i.e. manual or automatic). This is accomplished by using variable *Restraint Type (P16)*. **(\*Note: This variable has replaced *Safety Equipment Use (P5)* in 1990. In 1992, element values “4” and “5” has been deleted. In 1995, element values were modified.)**

**SAS Name: (REST\_SYS) [P15N.]**

**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. **(\*Note: This variable was added to the Person File in 1990 and deleted in 1999.)**

**1990 - 1998**

**SAS Name: (REST\_TYP) [P16N.]**

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 PAR indicates that drugs were found in the vehicle, then this information does not by itself constitute involvement. **(\*Note: This variable was added to the Person File in 1990. In 1999 some renumbering occurred and "7" was deleted)**

**SAS Name: (PER\_DRUG) [P17NZ. in 2000, 1999, P17N. in 1998]**

1990 - 1998	1999 - Later	
0		Drugs Not Involved or N/A
	0	Not Applicable*
1	1	Drugs Not Involved*
	2	Drugs Involved*
7		Drugs and/or Alcohol Involved
8	8	Not Reported
9	9	Unknown (Police-Reported)

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**P18 Person's Physical Impairment\***

**Definition:** Attempts to identify 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. **(\*Note: In 1990, this variable has replaced *Non-Motorist's Physical/Mental Condition (P12)* in the Person File and *Driver Physical/Mental Impairment (D3)* in the Vehicle File.)**

**1990 - Later**

**SAS Name: (IMPAIRMT) [P18N.]**

- 00 = None
- 01 = Ill, Blackout
- 02 = Drowsy, Sleepy, Fell Asleep, Fatigued
- 03 = Requires Cane or Crutches
- 04 = Paraplegic or Restricted to Wheelchair
- 05 = Impaired Due to Previous Injury
- 06 = Deaf
- 07 = Blind
- 97 = Physical Impairment - No Details
- 98 = Other Physical Impairments
- 99 = Unknown if Physically Impaired

**P19 Non-Motorist Action\***

**Definition:** Attempts to identify circumstances that may have contributed to the cause of the crash. These circumstances ("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. (\* Note: In 1990, this variable replaced *Person's Action (P14)*. Element value "20", Interfering with Driver, was deleted. In 1992, element value "23" was deleted and values "27", "28", and "29" were added.)

1990 - 1991

**SAS Name: (ACTION) [P19N.]**

00 = No Action

*Non-Motorist Vehicle Operator:*

- 01 = Failing to Have Lights on When Required
- 02 = Operating without Required Equipment
- 03 = Improper or Erratic Lane Changing
- 04 = Failure to Keep in Proper Lane or Running Off Road
- 05 = Making Improper Entry to or Exit from Trafficway
- 06 = Operating the Vehicle in Erratic, Reckless, Negligent Manner
- 07 = Failure to Yield Right of Way
- 08 = Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
- 09 = 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)
- 23 = Walking/Riding with or Against Traffic, Playing, Working, Sitting, Lying, Standing in Roadway
- 24 = Inattentive (Talking, Eating, etc.)
- 25 = Jogging
- 26 = Non-Motorist Pushing Vehicle
- 98 = Other Action
- 99 = Unknown Action

1992 - Later

**SAS Name: (ACTION) [P19N.]**

00 = No Action

*Non-Motorist Vehicle Operator:*

- 01 = Failing to Have Lights on When Required
- 02 = Operating without Required Equipment
- 03 = Improper or Erratic Lane Changing
- 04 = Failure to Keep in Proper Lane or Running Off Road
- 05 = Making Improper Entry to or Exit from Trafficway
- 06 = Operating the Vehicle in Erratic, Reckless, Negligent Manner
- 07 = Failure to Yield Right of Way
- 08 = Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
- 09 = 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

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**P20 Non-Motorist Safety Equipment Use\***

**Definition:** Attempts to identify 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)]. (\* **Note: This variable was added to the Person File in 1990. In 1999 None Used and N/A were separated and some renumbering occurred.**)

**SAS Name:** (SAF\_EQMT) [P20NZ. in 2000, 1999, P20N. in 1998]

**1990 - 1998      1999 - Later**

0		None Used or N/A
	0	Not Applicable*
	1	None 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

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**P21 Air Bag Availability/Function\***

**Definition:** Seeks to capture whether the vehicle was equipped with an air bag (in the seat position of this occupant) and, if so; did it deploy. (\***Note: This variable was added to the Person File in 1992. In 2000 the element "8" Not Applicable was added.**)

**SAS Name:** (AIRBAG) [P21N.]

**1992 - 1999      2000 - Later**

0	0	No Air Bag Available
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. (\* **Note: This variable was added to the Person File in 1994.**)

**1994 - Later**

**SAS Name: (STR\_VEH)**





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## ***APPENDICES***

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***Appendix A: Make/Model Designations***

***Appendix B: V23 Accident Type Diagram***

***Appendix C: Summary Statistics***

***Appendix D: Generalized Estimated Sampling Errors***

***Appendix E: Analytical Data Classification of Select GES Variables***



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## ***APPENDIX A: Make/Model Designations***

### **V3      Vehicle Make (MAKE)**

Indicates the make of a vehicle in transport.

#### ***Passenger Vehicles (01-69)***

01 American Motors	30 Volkswagen
02 Jeep (includes Kaiser-Jeep)	31 Alfa Romeo
03 AM General	32 Audi
06 Chrysler	33 Austin/Austin Healey
07 Dodge	34 BMW
08 Imperial	35 Nissan/Datsun
09 Plymouth	36 Fiat
10 Eagle	37 Honda
12 Ford	38 Isuzu
13 Lincoln	39 Jaguar
14 Mercury	40 Lancia
18 Buick	41 Mazda
19 Cadillac	42 Mercedes Benz
20 Chevrolet	43 MG
21 Oldsmobile	44 Peugeot
22 Pontiac	45 Porsche
23 GMC	46 Renault
24 Saturn	47 Saab
25 Grumman	48 Subaru
29 Other domestic	49 Toyota
001 Studebaker/Avanti	50 Triumph
002 Checker	51 Volvo
398 Other make (i.e.,	52 Mitsubishi
Desoto, Excaliber,	53 Suzuki
Stutz, Hudson, Packard)	54 Acura
399 Unknown make	55 Hyundai
	56 Merkur
	57 Yugo
	58 Infiniti
	59 Lexus
	60 Daihatsu
	61 Sterling
	62 Land Rover
	63 Kia
	64 Daewoo
	69 Other foreign

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#### ***Motorcycles (70-79)***

70 BSA	78 All mopeds other than those above
71 Ducati	79 Other motorcycle
72 Harley-Davidson	
73 Kawasaki	Also see:
74 Moto-Guzzi	34 BMW
75 Norton	37 Honda
76 Yamaha	44 Peugeot
	50 Triumph
	53 Suzuki

*Trucks and Buses (80-98)*

80 Brockway	Also see:	03 AM General
81 Diamond Reo/Reo		07 Dodge
82 Freightliner/White		12 Ford
83 FWD		20 Chevrolet
84 International Harvester/Navistar		23 GMC
85 Kenworth		25 Grumman
86 Mack		35 Nissan/Datsun
87 Peterbilt	36 Fiat	
88 Iveco/Magirus		38 Isuzu
98 Other: 801 Autocar		42 Mercedes Benz
802 Auto-Union-DKW		51 Volvo
803 Divco		52 Mitsubishi
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: (01) American Motors\***

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
001 Rambler/American	Rogue, 220, 440, Scrambler	57-69
002 Rebel/Matador	550, 660, 770, Classic Brougham Barcelona, X, Marlin, Matador (-78)	64-78
003 Ambassador	880, 990, SST, DPL, Brougham, DL, Limited	57-74
004 Pacer	DL, Limited	75-80
005 AMX	(2-seater only)	68-70
006 Javelin SST, AMX (1971-1974)		68-74
007 Hornet/Concord	SST, Sportabout, AMX (1975-1978) Limited, DL, SC-360	70-83
008 Spirit/Gremlin	Limited, DL, GT (1983 on), Custom, X, AMX (1979 on)	70-83
009 Eagle	Concord based	80-87
010 Eagle SX-4	Spirit/Gremlin-based	81-84
398 Other (automobile)		40-87
399 Unknown (automobile)		40-87
998 Other vehicle		40-87
999 Unknown (American Motors)		40-87

\* NOTE: Alliance, Encore, Premier (including L, DL, and Limited) is coded under Renault (46).

**MAKE: (02) Jeep\* (Includes Willys\*\*/Kaiser-Jeep)**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Light Trucks		
401 CJ-2/CJ-3/CJ-4	Military	40-66
402 CJ-5/CJ-6/CJ-7/CJ-8 (thru 86; YJ 87 on)	Scrambler, Renegade, Golden Eagle, Laredo, Wrangler	67-96
403 YJ series	Wrangler	86-on
404 Cherokee (1984-on)	Limited, Laredo, Pioneer	84-on
421 Cherokee (thru 1983)	Wide Track, Chief, Commando, Jeepster, 70-83	
431 Grand Wagoneer	Custom, Brougham Limited, Wagoneer	71-91
481 Pick-up	J-10, J-20, Honcho	40-on
482 Comanche	Chief	86-92
498 Other (light truck)		40-on
499 Unknown (light truck)		40-on
998 Other vehicle		40-on
999 Unknown vehicle (Jeep)		40-on

\* Note that Jeep DJ-series are coded under MAKE 03, MODEL 466.

\*\* Willys Jeep can be coded 401, 481, 498 or 499 for MODEL.

**MAKE: (03) AM General**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Light Trucks		
401 Dispatcher	Post Office (Jeep)	65-on
421 Hummer		93-on
466 Dispatcher	DJ-Series, Post Office Delivery Van	65-on
498 Other (light truck)		65-on
499 Unknown (light truck)		65-on
Medium/Heavy Trucks		
884 Medium/Heavy Truck	Military off-road	65-on
898 Other (medium/heavy truck)		65-on
899 Unknown (medium/heavy truck)		65-on
Buses		
950 Bus based motorhome		
983 Bus: Rear engine	Transit	65-on
Flat front		-
988 Other bus		-
989 Unknown bus		-
998 Other vehicle		65-on
999 Unknown (AM General)		65-on

**MAKE: (06) Chrysler**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
009 Cordoba	Crown, 300, LS	75-83
010 New Yorker 5 <sup>th</sup> Avenue ('89)		
/Newport		
013 Rampage 2.2		
Car-based pick up	GT, Sport	82-84
014 New Yorker/Newport/		
5 <sup>th</sup> Avenue/Imperial		
(RWD only) /New Yorker		
Salon/E Class	Custom, Royal, Brougham, Town and Country	0-On
015 Laser	Turbo, XE, XT	84-86
016 LeBaron	Medallion, Salon (RWD), FWD except	77-on
	GTS or GTC Sport Coupe	
017 LeBaron GTS/GTC	GTS-Turbo, GTC-Coupe	82-on
031 TC (Maserati Sport)	Turbo Convertible	88-91
035 Conquest	TSI, Turbo	87-89
041 Concorde		93-on
042 LHS	New Yorker	94-on
043 Sebring		95-on
044 Cirrus		95-on
051 300M		99-on
398 Other (automobile)		65-on
399 Unknown (automobile)		60-on
Light Trucks		
441 Town and Country	Minivan	90-on
498 Other light truck		90-on
499 Unknown light truck		90-on
998 Other vehicle		90-on

999 Unknown (Chrysler) 90-on  
**MAKE: (07) Dodge**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
<b>Automobiles</b>		
001 Dart	170, 270, Custom, GT, Swinger, Demon, 340, 360, Special, Special Edition	60-76
002 Coronet/Magnum/ Charger (thru 1978)	Brougham, Custom, Super Bee, 500, Crestwood Deluxe, XE, R/T, 440	64-79
003 Polara/Monaco/ Royal Monaco	Custom, Special, Police, Taxi, Crestwood, Brougham	64-78
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, S, Salon	77-89
008 Omni/Charger (1983 on)	024, De Tomaso, Miser, Charger 2.2, Custom, Shelby, GLH, GLHS, American 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, C/S Competition, Shelby Z, Pacifica	84-on
016 Lancer Pacifica, Turbo, ES, Shelby		85-89
017 Shadow	ES, Turbo	87-on
018 Dynasty		88-on
019 Spirit	ES, Shelby, RT	89-on
020 Neon	Expresso	94-on
033 Challenger	import	78-83
034 Colt (excludes Vista)	GT, Custom, Carousel, Premier, Deluxe, E, DL, GTS, Turbo, RS	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)		40-on
399 Unknown (automobile)		40-on
<b>Light Trucks</b>		
401 Raider Sport		86-on
421 Ramcharger		74-on
422 Durango		98-on
441 Vista Van	4x4	84-91
442 Caravan	T-Van, Mini Ram Van, LE, 112 and 119 WB, SE, Grand Caravan	84-on
461 B-Series Van	Sportsman, Royal, Maxiwagon, Ram, Tradesman, Ram Wagon, B150-B350	63-on
470 Van Derivative	Kary Van	71-on
471 D50, Colt pickup, Ram 50, Ram 100		79-on
472 Dakota		87-on
481 D, W-Series pickup	Custom, Royal, Ram, Miser, D100-350, W100-350	55-on
482 Ram	1500, 2500, 3500	94-on
498 Other (light truck)		79-on
499 Unknown (light truck)		49-on

## Medium/Heavy Trucks

850 Truck based motor-home	-
881 Medium/Heavy: CBE	66-on
882 Medium/Heavy: COE low entry	67-on
883 Medium/Heavy: COE high entry	67-on
884 Medium/Heavy: unk. engine loc.	62-on
890 Medium/Heavy: COE entry pos. unk.	65-on
898 Other (medium/heavy truck)	30-on
899 Unknown (medium/heavy truck)	66-on

## Buses

950 Bus-based motor-home	-
981 Bus*: Conventional (not van-based) (Engine out front)	66-on
988 Other bus	-
989 Unknown bus	-
998 Other vehicle	40-on
999 Unknown (Dodge)	52-on

**\*\* Use code "981" (bus) if the frontal plane or the engine location is unknown.**

**MAKE: (08) Imperial**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
010 Imperial	LeBaron, Mark Cross, Frank Sinatra editions	50-76, 81-83
398 Other (automobile)		65-83
399 Unknown (automobile)		65-83

**MAKE: (09) Plymouth**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
001 Valiant/Scamp/ Duster (thru 1976)	100, 200, Taxi, Brougham, Signet, Custom, Special, 340, 360, Twister	60-76
002 Satellite/Belvedere	Belvedere I, II, GTX, Road Runner (through 1974), Brougham Sebring, Sebring Plus, Superbird	55-74
003 Fury	I, II, III, Road Runner (1975), Suburban, Salon, VIP, Sport	57-78
004 Gran Fury	Sedan, Brougham, Custom, Sport, Suburban	75-89
005 Barracuda	Formula S, 340, Gran Coupe, AAR, 'Cuda	65-73
006 Volare	Custom, Premier, Road Runner (76 on), Police	76-80
007 Caravelle	Turbo, SE	85-89
008 Horizon	TC-3, Turismo 2.2, Miser, American, Custom, SE, Duster (1985 on), Expo	78-on
011 Reliant(K)	Custom, SE, LE	81-89
013 Scamp-auto based p/u	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	GS, GT, Fire Arrow	76-80
033 Sapporo	import	78-83
034 Champ/Colt import	Turbo, Custom - Station wagon (1984 on)	79-94



(excludes Vista)		
035 Conquest	TSI	84-86
037 Laser	RS, Turbo	89-on
038 Breeze		96-on
039 Prowler		96-on
398 Other (automobile)		40-on
399 Unknown (automobile)		40-on
Light Trucks		
421 Trailduster		74-on
441 Vista	4x4	87-on
442 Voyager (minivan)	SE, Grand Voyager, LE	84-on
461 Van-fullsize (B-series)	Voyager (thru 1983), Sport, Premier	65-on
471 Arrow pickup (foreign)		75-on
498 Other (light truck)		65-on
499 Unknown (light truck)		79-on
998 Other vehicle		65-on
999 Unknown (Plymouth)		64-on

**MAKE: (10) Eagle**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
034 Summit	DL, LX	89-on
037 Talon		90-on
040 Premier	LX, ES	88-92
041 Vision		93-on
044 Medallion	DL, LX	88-90
398 Other (automobile)		88-on
399 Unknown (automobile)		88-on
Light Trucks		
441 Summit Wagon		92-on
498 Other light truck		88-on
499 Unknown light truck		88-on
998 Other vehicle		88-on
999 Unknown (Eagle)		88-on

**MAKE: (12) Ford**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
001 Falcon	Sprint, GT, Futura (through 1969)	50-70
002 Fairlane	Torino (1968-70)	50-70
003 Mustang/Mustang II	Mach, Boss, Grande, Cobra, Ghia, SVO, GT, LX, Shelby	65-on
004 Thunderbird (all sizes)	Town Landau, Heritage, Elan, Turbo coupe, Fila, Sport, LX, SC	55-on
005 LTD II S, Squire, Brougham		77-79
006 LTD/Galaxy/Custom	XL, Landau, Ranch Wagon, Country Squire, S, 500, 500 XL, Brougham	63-on
007 Ranchero	Falcon/Fairlane based, Torino/LTD II based	60-79
008 Maverick	Grabber	70-77
009 Pinto	MPG, Pony, ESS	71-80

010 Torino/Gran Torino/Elite	GT, Cobra, Sport, Squire, Brougham	71-76
011 Granada	Ghia, ESS	75-82
012 Fairmont	Futura, Sport Coupe	78-83
013 Escort/EXP	L, GL, GLX, SS, GT	81-on
015 Tempo	L, GL, GLX, Sport 4 X 4	84-94
016 Crown Victoria		81-on
017 Taurus SHO, MT-5, L, GL, LX		86-on
018 Probe	GL, LX, GT	88-on
031 English Ford	Cortina	60-70
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)	Laser	40-on
399 Unknown (automobile)		40-on
Light Trucks		
401 Bronco II/Bronco (thru 1977)/Explorer	Eddie Bauer, XL, XLT, Explorer (1990 on)	65-on
402 Escape		01-on
421 Bronco-fullsize (1978-on)	Eddie Bauer, Custom, XL, XLT	65-on
422 Expedition		97-on
423 Excursion		01-on
441 Aerostar	XLT, Cargo Van	85-on
442 Windstar		94-on
461 E-Series Van	Econoline, Clubwagon, Chateau, E150-E350	60-on
470 Van Derivative	parcel van	60-on
471 Ranger Supercab (Domestic), 4x4, STX		82-on
472 Courier	Imported pickup	78-on
481 F-Series pickup	F-100 to F-350	40-on
498 Other (light truck)		40-on
499 Unknown (light truck)		40-on
Medium/Heavy Trucks		
850 Truck-based motor-home		-
881 Medium/Heavy - CBE	F-500 through F-800, L-series, FT-series	53-on
882 Medium/Heavy - COE low entry	C/CT series	64-on
883 Medium/Heavy - COE high entry	C/CLT series	67-on
884 Medium/Heavy	unknown engine location	56-on
890 Medium/Heavy - COE	entry position unknown	56-on
898 Other (medium/heavy truck)		65-on
899 Unknown (medium/heavy truck)		56-on
950 Bus-based motor-home		-
981 Bus*: Conventional	B-series (not van based)	64-on
988 Other bus		
989 Unknown bus		65-on
998 Other (vehicle)		40-on
999 Unknown (Ford)		40-on

\*\* Use code "981" (bus) if the frontal plane or the engine location is unknown.

## MAKE: (13) Lincoln

### Model Codes

### Includes

### Model Years

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Automobiles		
001 Continental/Town Car	Continental (thru 81), Town Car (82 on)	40-on
002 Mark	I, II, III, IV, V, VI, VII, LSC, all Signature/Designer series	56-on
005 Continental (82 on)	All Signature/Designer series	82-on
011 Versailles		70-80
012 LS		00-on
398 Other (automobile)		40-on
399 Unknown (automobile)		40-on
998 Other vehicle		40-on
999 Unknown (Lincoln)		40-on
Light Trucks		
421 Navigator		97-on
498 Other (light truck)		97-on
499 Unknown (light truck)		97-on

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**MAKE: (14) Mercury**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
002 Cyclone	GT, CJ, Spoiler	50-71
003 Capri-domestic	RS, Turbo, GS, Black Magic	79-86
004 Cougar/XR7	Villager, Brougham, RS, LS, GS Eliminator	67-on
006 Marquis/Monterey	Marauder, Montclair, X-100, Parklane, S-55, Custom, Brougham, Grand Marquis	55-on
008 Comet	Caliente, Capri (1966-1967), GT, Voyager, 202	62-77
009 Bobcat Runabout, Villager		75-80
010 Montego	GT, MX, Villager, Brougham, Comet (1968-70)	67-76
011 Monarch	Ghia	75-80
012 Zephyr Z7, GS		78-83
013 Lynx/LN7 (1982-83)	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, 2+2	70-94
033 Pantera	DeTomaso	72-74
036 Tracer	L, GL	88-on
037 Mystique		94-on
038 Cougar		
398 Other (automobile)		62-on
399 Unknown (automobile)		50-on
Light Trucks		
401 Moutaineer		96-on
443 Villager	LS,GS	93-on
498 Other Light Truck		
499 Unknown Light Truck		
998 Other vehicle		-
999 Unknown (Mercury)		-

**MAKE: (18) Buick**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
001 Special/Skylark	GS, GS350, GS400, GS455, GS California,	50-72

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002 LeSabre/Centurion/Wildcat	Sport Wagon, Custom Estate wagon, Luxus, Invicta, Custom, 55-on Limited, T-Type	
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, FWD (82-on), Custom, Regal (72-77)	65-on
008 Apollo/Skylark (75)	Skylark (75), S/R	73-76
010 Regal	Turbo, Luxus, Grand National	78-88
012 Skyhawk	S-Type, Road Hawk, T-Type, GT	75-on
015 Skylark (76-85)	S/R, S, Limited, Sport, T-Type	76-85
018 Somerset/Skylark (86 on)	Regal, Custom, Limited, T-Type	85-on
020 Regal (FWD)	Limited	88-on
021 Reatta		88-91
031 Opel Kadett		65-75
032 Opel Manta	1900, Luxus, Rallye, Sports Coupe	70-75
033 Opel GT		69-75
034 Opel Isuzu	Deluxe, Sport	76-79
398 Other (automobile)		65-on
399 Unknown (automobile)		50-on
998 Other (vehicle)		40-on
999 Unknown (Buick)		40-on

**MAKE: (19) Cadillac**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
003 DeVille/Fleetwood (except Limousine)	Coupe de Ville, Sedan de Ville, Brougham, 60-Special, d'Elegance	40-on
004 Limousine	Fleetwood 75, Formal	40-on
005 Eldorado	Biarritz, El-doro, Touring Coupe	67-on
006 Commercial Series	Ambulance/Hearse	40-on
009 Allante		87-on
014 Seville Elegante		76-on
016 Cimarron	D'Oro	82-88
017 Catera	RWD	97-on
398 Other (automobile)		40-on
399 Unknown (automobile)		40-on
Light Trucks		
421 Escalade		98-00
998 Other vehicle		40-on
999 Other (Cadillac)		40-on

**MAKE: (20) Chevrolet**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
001 Malibu/Chevelle	Classic, Counours, Laguna, S-3, Nomad, Deluxe, Greenbriar, Estate, 300, SS-396/454	63-85
002 Caprice/Impala	Classic, Kingswood, Townsman, Estate, Bel Air	55-on

	Brookwood, Super Sport, Biscayne	
004 Corvette	Stingray	53-on
006 Corvair	Monza, 500, Spyder, Corsa	60-69
007 El Camino	Royal Knight	58-on
008 Nova	Chevy II, Chevy Nova, LN, Concours	62-79
009 Camaro	SS, LT, Z-28, Berlinetta, Iroc-Z	67-on
010 Monte Carlo	G-Car	70-88
011 Vega	GT, Cosworth, Kammback	71-77
012 Monza 2+2, Spyder, 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	90-on
031 Spectrum		84-on
032 Nova/Geo Prizm	CL, NUMMI-built vehicles	85-on
033 Sprint/Geo Sprint		85-on
034 Geo Metro	LSI	89-on
035 Geo Storm		90-on
036 Monte Carlo (FWD only)	Z34	95-on
037 Malibu		97-on
398 Other (automobile)		40-on
399 Unknown (automobile)		40-on
Light Trucks		
401 S-10 Blazer, Blazer	S-10 p/u based	83-on
402 Geo Tracker	LSI	89-on
421 Fullsize Blazer, Tahoe	K-series, full-sized p/u-based	69-on
431 Suburban		50-on
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	57-on
466 P-series van		40-on
470 Van derivative	Hi-cube, Parcel Van	65-on
471 S-10, T-10	4x4	82-on
472 LUV	Imported pickup	78-on
475 Van derivative	Hi-cube, Parcel Van	65-on
481 C, K, R, V-series	C10-C30, K10-K30, R10-R30, V10-V30, Silverado	40-on
498 Other (light truck)	Grumman LLV Postal	59-on
499 Unknown (light truck)		40-on
Medium/Heavy Trucks		
850 Truck-based motor-home		-
881 Medium/Heavy - CBE	C50/60/65; M60/65; H70/80/90; J70/80/90; Bison 90; all other CBE	55-on
882 Medium/Heavy - COE low entry	T60/65, all other COE low entry	60-on
883 Medium/Heavy - COE high entry	Titan 90, all other COE	71-on
884 Medium/Heavy - Unknown engine location		51-on
890 Medium/Heavy - COE entry position unknown		65-on
898 Other (medium/heavy truck)		49-on
899 Unknown (medium/heavy truck)		49-on

## Buses

950 Bus-based motorhome		-
981 Bus**: Conventional (Engine out front)	S-60 series	67-on
988 Other bus		
989 Unknown bus		65-on
998 Other vehicle		40-on
999 Unknown (Chevrolet)		40-on

\*\* Use code "981" (bus) if the frontal plane or the engine location is unknown.

**MAKE: (21) Oldsmobile**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
001 Cutlass Supreme, S, LS, Salon, Brougham, Vista Cruiser,	F85 (thru 1972), Rallye 350, Hurst Olds, 442, Calais, Classic (88)	62-88
002 Delta 88	Royale, Custom, Delta, Jetstar 88, Delmont 88, 49 Delta, Starfire (thru 1966)	49-on
003 Ninety-Eight	Regency, Luxury	49-on
005 Toronado	XSR, Trofeo, Brougham, Custom	66-92
006 Commercial Series	Ambulance/Hearse	40-on
012 Starfire	SX, GT	75-80
015 Omega X-body type		75-85
016 Firenza	S, LS, SX, Cruiser, GT	82-88
017 Ciera	Cutlass Ciera, ES, Brougham	82-on
018 Calais	GT, ES, 500	85-91
020 Cutlass (FWD)	Supreme	88-on
021 Achieva	SC	92-on
022 Aurora		94-on
023 Intrigue		
024 Alero		
398 Other (automobile)		40-on
399 Unknown (automobile)		40-on
Light Trucks		
401 Bravada		91-on
441 Silhouette		90-on
498 Other (light truck)		90-on
499 Unknown (light truck)		90-on
998 Other vehicle		90-on
999 Unknown (Oldsmobile)		90-on

**MAKE: (22) Pontiac**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
001 LeMans/Tempest	Safari, T-37, Luxury, Grand Sport, GTO (thru 1973), GT-37, Sprint, Judge, Grand AM (73-75)	62-79
002 Bonneville/Catalina/ Parisienne	Brougham, Grand Safari, Safari, Grandville, 2+2 Executive, Starchief SE, SSE	57-on
005 Fiero	2M4, 2M6, GT, SE	84-88
008 Ventura	II, SJ, Sprint, GTO (74-77)	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 1980)	Safari, Sport, Formula	76-80
013 T-1000/1000		81-87
015 Phoenix	LJ, SJ	77-84
016 J-2000/2000/ Sunbird (1985-on)	LE, SE, GT, Convertible	82-on
017 6000	STE, SE, LE	82-on
018 Grand AM	SE, LE	78-on
020 Grand Prix (FWD)	SE, McLaren Turbo, GTP	88-on
031 Lemans (1988-on)	SE, Tempest (Canadian)	88-on
398 Other (automobile)		65-on
399 Unknown (automobile)		51-on
Light Trucks		
441 Trans Sport		90-on
498 Other light truck		-
499 Unknown light truck		-
998 Other vehicle		-
999 Unknown (Pontiac)		51-on

**MAKE: (23) GMC**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
007 Caballero/Sprint		65-on
398 Other (automobile)		65-on
399 Unknown (automobile)		65-on
Light Trucks		
401 Jimmy/Typhoon	S-15 based	83-on
421 Fullsize Jimmy/Yukon	Full-size pickup based	69-on
431 Suburban		50-on
441 Safari (Minivan)		86-on
461 G-series van	Rally Van, Vandura, G15-G35, Savana	65-on
466 P-series van		65-on
470 Van derivative	Hicube, parcel van, Value Van, Magna Van	65-on
471 S15/T15/Sonoma		82-on
481 C, K, R, V-series pick-up	C15-C35, K15-K35, R15-R35, V15-V35/Sierra	40-on
498 Other (light truck)		40-on
499 Unknown (light truck)		40-on
881 Medium/Heavy - CBE	W5000/6000/7000 series, Brigadier/General model	40-on
882 Medium/Heavy - COE low entry	W6000/W7000, all other COE low entry	40-on
883 Medium/Heavy - COE high entry	Astro 95, all other COE high entry	40-on
884 Medium/Heavy unknown engine location	P5G500, P68042	40-on
890 Medium/Heavy - COE entry position unknown		40-on
898 Other (medium/heavy truck)		40-on
899 Unknown (medium/heavy truck)		40-on
Buses		
950 Bus-based motor-home		40-on
981 Bus** - Conventional	B6000	40-on
988 Other (bus)		40-on
989 Unknown		40-on

998 Other (vehicle)	40-on
999 Unknown (GMC)	40-on

**\*\* Use code "981" (bus) if the frontal plane or the engine location is unknown.**

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**MAKE: (24) Saturn**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
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		00-on
006 LW		00-on
398 Other (automobile)		91-on
399 Unknown (automobile)		91-on
999 Unknown Vehicle		

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**MAKE: (25) Grumman**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Light Trucks		
441 LLV	Postal vehicle	40-on
442 Step-in van	Multi-stop, step van	40-on
498 Other light truck		40-on
499 Unknown light truck		40-on
Medium/Heavy Trucks		
850 Truck-based motorhome		40-on
881 Medium/Heavy CBE		40-on
882 Medium/Heavy COE	low entry	40-on
883 Medium/Heavy COE	high entry	40-on
884 Medium/Heavy Unknown	engine location	40-on
890 Medium/Heavy COE	entry position unknown	40-on
898 Other medium/heavy truck		40-on
899 Unknown medium/heavy truck		40-on
Buses		
983 Bus-flat front, rear engine	Transit	40-on
988 Other bus		40-on
989 Unknown bus		40-on
998 Other vehicle		40-on
999 Unknown (Grumman)		40-on

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**MAKE: (29) Other Domestic**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
001 Studebaker/Avanti	Lark, Gran Turismo, Hawk, Cruiser, all associated subseries	40-66



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002 Checker	Marathon, Superba, Taxi, Aerobus	65-82
398 Other (make)	Desoto, Excaliber, Stutz, Hudson, Packard, Consulier	40-on
399 Unknown (make)		
498 Other Light Truck		
898 Other Medium/Heavy Truck		
988 Other bus		
998 Other Vehicle		

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**MAKE: (30) Volkswagen**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Karmann Ghia		60-74
032 Beetle 1300/1500		48-77
033 Super Beetle		71-80
034 411/412	Squareback, Fastback	71-74
035 Squareback/Fastback	Type 3, 1600	65-74
036 Rabbit	L, GTI Sport, LS, Custom, DL, Deluxe	75-84
037 Dasher		74-81
038 Scirocco	16V	75-88
040 Jetta	GL, GLI	81-92
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		
398 Other (automobile)		40-on
399 Unknown (automobile)		40-on
Light Trucks		
401 The Thing (181)		73-75
441 Vanagon/Camper	Bus, Kombi, Van	55-91
442 Eurovan		92-on
498 Other (light truck)		67-80
499 Unknown (light truck)		65-on
998 Other vehicle		40-on
999 Unknown (Volkswagen)		40-on

**MAKE: (31) Alfa Romeo**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Spider	All roadsters; Veloce, 1750/2000 roadsters	33-80
032 Sports Sedan	All 4-door sedans; Milano (86), Giulia, Super, Berlina, Alfetta, 1750/2000 sedans	33-80
033 Sprint Special	All 2-door coupes; Alfetta GT, 1750/2000 Sedans	33-80
034 GTV-6		81-86
035 164		90-95
398 Other (automobile)		65-on
399 Unknown (automobile)		55-on

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**MAKE: (32) Audi**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Super 90		70-72
032 100/A6	S, LS, GL, Quattro (1989-91)	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	89-92
038 V-8 Quattro		90-94
039 Coupe Quattro		90-93
040 S4/S6		93-on
041 Cabriolet		94-on
042 A4		95-on
043 A3		96-on
044 A8		96-on
045 TT		00-on
398 Other (automobile)		70-on
399 Unknown (automobile)		70-on
998 Other vehicle		70-on
999 Unknown (Audi)		70-on

**MAKE: (33) Austin/Austin Healey**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Marina GT		73-75
032 America		68-71
033 Healey Sprite		59-70
034 Healey 3000	Healey 100	55-67
035 Mini		60-67
398 Other (automobile)		68-75
998 Other vehicle		55-75
999 Unknown (Austin)		55-75

**MAKE: (34) BMW**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 1600, 2002	Tii, 1800, 2000CS	66-76
032 Coupe	2800CS, 3.0CS	69-76
033 Bavaria Sedan	2500, 2800	69-76
034 3-series	318i, 320i, 325e, 325es, 325i, M3, 328	77-on
035 5-series	524i, 525i (wagon) 528i, 530i, 533i, 535i, TD, M5, 540A, 540I	75-on
036 6-series	630, 633, 635, csi, M6	77-on
037 7-series	733i, 735i, L7, 740i, 750iL	78-on
038 8-series	850i	90-on
039 Z3		96-on
398 Other (automobile)		66-on

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399 Unknown (automobile)		66-on
Light Trucks		
401 X5	4WD	00-on
489 Other Light Truck		
499 Unknown Light Truck		
Motorcycles		
701 0-50 cc		70-83
702 51-124 cc		74-on
704 350-449 cc		65-on
705 450-749 cc		70-83
706 750 cc or over		74-on
709 Unknown cc		65-on
799 Unknown (motored cycle)		70-on
998 Other vehicle		65-on
999 Unknown (BMW)		65-on

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**MAKE: (35) Datsun/Nissan**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 F-10		77-78
032 200 SX/240 SX		78-on
033 B210/210/1200	Honeybee	71-82
034 Z-car, ZX	240/260/280/300 ZX, 2+2, Turbo	70-on
035 310		79-82
036 510	PL	68-81
037 610	PL	73-76
038 710	PL	74-77
039 810/Maxima		77-on
040 Roadster	SPL311, SRL311, 1600, 2000, convertible	50-70
041 PL411/RL411		67-87
042 Stanza	XE	82-92
043 Sentra		83-on
044 Pulsar	NX, EXA (1986 on)	83-90
045 Micra		87-on
046 NX 1600/2000		92-on
047 Altima		93-on
398 Other (automobile)		66-on
399 Unknown (automobile)		67-on
Light Trucks		
401 Pathfinder	MPV, 4x4	86-on
402 Xterra		00-on
441 Van	XE, GXE	87-on
442 Axxess		89-90
443 Quest		93-on
471 Pickup PL620, King Cab, Hardbody		73-on
498 Other (light truck)	Patrol (1960)	76-on
499 Unknown (light truck)		67-on
Medium/Heavy Trucks		
883 Medium/Heavy - COE high entry		86-on
898 Other (medium/heavy truck)		86-on

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899 Unknown (medium/heavy truck)	86-on
998 Other Vehicle	50-on
999 Unknown (Nissan)	50-on

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**MAKE: (36) Fiat**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
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	67-83
399 Unknown (automobile)		67-83
Medium/Heavy Trucks		
882 Medium/Heavy - COE low entry		67-83
883 Medium/Heavy - COE high entry		67-83
890 Medium/Heavy - COE entry position unknown		67-83
898 Other (medium/heavy truck)		67-83
899 Unknown (medium/heavy truck)		67-83
998 Other vehicle		67-83
999 Unknown (Fiat)		67-83

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**MAKE: (37) Honda**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Civic/CRX	300, 1500, CVCC, DX, CRX, 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	68-72
035 S200		00-on
037 Insight		00-on
398 Other (automobile)	all Honda's not listed above	68-on
399 Unknown (automobile)		68-on
Light Trucks		
401 Passport		94-on
402 CR-V		97-on
441 Odyssey		95-on
498 Other light truck		94-on
499 Unknown light truck		94-on
Motorcycles		
701 0-50 cc		78-on
702 51-124 cc		65-on
703 125-349 cc		65-on
704 350-449 cc		65-on
705 450-749 cc		70-on
706 750 cc or over		70-on

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709 Unknown cc		65-on
All Terrain Cycles/Vehicles		
731 0-50 cc	Includes all ATCs/ATVs designed solely for off-road use and have 3 or 4 wheel balloon tires.	72-on
732 51-124 cc		72-on
733 125-349 cc		72-on
734 350 cc or greater		72-on
739 Unknown cc		
799 Unknown (motored cycle)		65-on
998 Other vehicle		
999 Unknown (Honda)		65-on

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**MAKE: (38) Isuzu**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 I-Mark	S, RS, Turbo	85-89
032 Impulse	Turbo, RS	84-on
033 Stylus		90-on
398 Other (automobile)		84-on
399 Unknown (automobile)		84-on
Light Trucks		
401 Trooper/Trooper II	Deluxe, LS	84-on
402 Rodeo		91-on
403 Amigo		89-94
404 Vehicross		99-on
441 Oasis		96-on
471 P'up (pickup)	4x4	76-on
498 Other (light truck)		76-on
499 Unknown (light truck)		76-on
Medium/Heavy Trucks		
881 Medium/Heavy - CBE		81-on
882 Medium/Heavy - COE low entry		81-on
883 Medium/Heavy - COE high entry		81-on
884 Medium/Heavy	unknown engine location	81-on
890 Medium/Heavy - COE	entry position unknown	81-on
898 Other (medium/heavy truck)		81-on
899 Unknown (medium/heavy truck)		81-on
999 Unknown Vehicle		
Buses		
950 Bus based motorhome		81-on
981 Bus**: Conv - Engine out front		81-on
982 Bus: Front engine, Flat Front		81-on
983 Bus: Rear engine, Flat Front		81-on
988 Other (bus)		81-on
989 Unknown (bus)		81-on
998 Other vehicle		96-on

\*\* Use code "981" (bus) if the frontal plane or the engine location is unknown.

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**MAKE: (39) Jaguar**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 XJ-S Coupe		76-on
032 XJ6/XJ12 Sedan/Coupe	L, XJ, C, 340/420 Sedans. Vanden Plas	68-on
033 XK-E	V12, Roadster, 120 2+2	62-on
034 X100		97-on
398 Other (automobile)		63-on
399 Unknown (automobile)		63-on
998 Other vehicle		-
999 Unknown (Jaguar)		-

**MAKE: (40) Lancia**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Beta Sedan/HPE		76-80
032 Beta Coupe/Zagato		76-82
033 Scorpion		76-78
398 Other (automobile)		76-82
399 Unknown (automobile)		76-82
998 Other vehicle		76-82
999 Unknown (Lancia)		76-82

**MAKE: (41) Mazda**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 RX2		72-74
032 RX3		72-78
033 RX4		74-78
034 RX7	GLE, SE, GSL, GS, S	79-on
035 GLC/323/Protege	DX, Protege (1990 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		50-72
041 616/618		68-72
042 1800		68-72
043 929		86-on
044 MX-6	Turbo	90-on
045 Miata		90-on
046 MX-3		92-on
047 Milenia		95-on
398 Other (automobile)		50-on
399 Unknown (automobile)		50-on
Light Trucks		
401 Navajo		91-on
402 Tribute		00-on
441 MPV		89-on
471 Madza Pickup	B-2000, B-2200, B-2600, B-4000, SE-5, Cab Plus, LX	72-on

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498 Other (light truck)	65-on
499 Unknown (light truck)	65-on
998 Other vehicle	65-on
999 Unknown (Mazda)	65-on

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**MAKE: (42) Mercedes-Benz**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 200/220/230/240/250/260/ 280/300/320/340	Sedan and 5 passenger "C" only, SE, SD, D, SD, TD, CE, E, <u>DOES NOT</u> include <u>280 SE</u> (1975 on), <u>300 SD and SE</u> - see Code 037	50-on
032 230/280 SL	2-seater only	64-71
033 300/350/380/450/500/560 SL	2 seater only, 300/500 SL (1990 on)	72-on
034 350/380/420/450/560	SLC	73-on
035 280/300 SEL	TD, TD-T, CDT	67-72
036 380/420/450/500/560 SEL, 500/560 SEC/350 SDL/300 SDL		73-on
037 300/380/450 SE	280 S, 280 SC (1975 on), 300 SD Sedan	68-on
038 600, 6.9 Sedan	Pullman	78-79
039 190	D, TD, E, 2.3, 2.5, Turbo	84-on
040 300	CE Cabriolet	93-on
041 400/500E		92-on
042 220/280C		94-on
043 S Class		
044 SL Class		
045 SLK		
046 CL		
047 CLK		
048 E Class		
398 Other (automobile)		65-on
399 Unknown (automobile)		65-on
Light Trucks		
401 M Class		97-on
470 Van derivative	Kurbstar	82-on
498 Other light truck		82-on
499 Unknown light truck		82-on
Medium/Heavy Trucks		
881 Medium/Heavy - CBE		65-on
882 Medium/Heavy - COE low entry		65-on
883 Medium/Heavy - COE high entry		65-on
884 Medium/Heavy - Unknown engine location		65-on
890 Medium/Heavy - COE entry posit unknown		65-on
898 Other (medium/heavy truck)		65-on
899 Unknown (medium/heavy truck)		65-on
950 Bus based motor-home		65-on
981 Bus*: Conv (Engine out front)		65-on
988 Other (bus)		65-on
989 Unknown (bus)		65-on
998 Other vehicle		65-on
999 Unknown (Mercedes-Benz)		50-on

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**MAKE: (43) MG**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Midget MKIII, 1500		60-79
032 MGB		76-79
033 MGB	GT	67-75
034 MGA		55-62
035 TA/TC/TD/TF		40-55
036 MGC	GT	68-69
398 Other (automobile)	Sport Sedan	40-79
399 Unknown (automobile)		40-79
998 Other vehicle		40-79
999 Unknown (MG)		40-79

**MAKE: (44) Peugeot**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 304		71-73
032 403		60-67
033 404		60-70
034 504/505	STI, STX, Turbo, S, GL, GLS, Liberte	70-91
035 604	SL, D	74-84
036 405	Mi-16	89-91
398 Other (automobile)		65-on
399 Unknown (automobile)		60-on
Motorcycles		
701 0-50 CC		65-on
702 51-124 CC		65-on
709 Unknown CC		65-on
799 Unknown (motored cycle)		65-on
998 Other vehicle		65-on
999 Unknown (Peugeot)		60-on

**MAKE: (45) Porsche**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 911	L, S, E, T, SC, Carrera, Slopenose Speedster, Panorama	66-on
032 912	E, T	66-69
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)		65-on
399 Unknown (automobile)		64-on
998 Other vehicle		64-on
999 Unknown (Porsche)		64-on



**MAKE: (46) Renault**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 LeCar	R5	76-83
032 Dauphine/10/R-8/Caravelle		55-71
033 12	R12L, R12TL	72-77
034 15	R15TL	73-76
035 16	R16	69-72
036 17	R17, Gordini Coupe, R17TL	73-80
037 R18i	Sportwagon	81-on
038 Fuego	TL, TS, GTL, GTS, Turbo	82-85
039 Alliance/Encore GTA, Conv	L, DL, Limited, X-37	83-on
041 Alpine	GT	87-on
044 Medallion	DL, LX	87
045 Premier		87
398 Other (automobile)		65-on
399 Unknown (automobile)		55-on
998 Other vehicle		55-on
999 Unknown (Renault)		55-on

**MAKE: (47) Saab**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
031 99/99E/900	S, Turbo, Cabriolet	73-on
032 Sonnet II, III, V-4		68-74
033 95/96/97		60-73
034 9000		85-on
035 9-3		99-on
036 9-5		99-on
398 Other (automobile)		60-on
399 Unknown (automobile)		60-on
998 Other vehicle		60-on
999 Unknown (Saab)		60-on

**MAKE: (48) Subaru**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 DL/FE/G/GF/GL/GLF/ STD/Loyale (1990 on)	4 wheel drive, Turbo	72-94
032 Star		70-71
033 360		69-70
034 Legacy Brighton, Outback, OutbackII		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)		70-on
399 Unknown (automobile)		70-on
401 Forester		
998 Other vehicle		69-on

999 Unknown (Subaru)

69-on

**MAKE: (49) Toyota**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Corona Mark II, Custom, 1900, 2000, Deluxe		66-82
032 Corolla	1100, 1200, 1600, SR-5, LE, Deluxe, Custom, FX16	69-on
033 Celica	1900, 2000, GT, ST, GTS	72-on
034 Supra	Celica Supra, Soarer	79-92
035 Cressida		78-92
036 Crown 2300, 2600		66-71
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
044 Solara		99-on
398 Other (automobile)		73-on
399 Unknown (automobile)		73-on
Light Trucks		
401 4-Runner		81-on
402 RAV-4		96-on
421 Landcruiser		76-on
441 Minivan (1984-90)/ Previa (1991 on)	LE, Cargo	84-on
442 Sienna		98-on
471 Pickup SR-5, Extra Cab, Sport, LN44, Chinook, Wonder Wagon		75-on
472 Tacoma		93-on
481 T-100		93-on
498 Other (light truck)		70-on
499 Unknown (light truck)		73-on
998 Other vehicle		66-on
999 Unknown (Toyota)		66-on

**MAKE: (50) Triumph**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Spitfire	I, II, III, IV, 1500	62-81
032 GT-6	MK3	67-73
033 TR4	TR3, TR2, TR4A	58-74
034 TR6	TR 250	69-76
035 TR7/TR8		75-81
036 Herald	Vitesse	60-74
037 Stag		71-73
398 Other automobile	2000, 1200 series	65-81
399 Unknown (automobile)		58-81
Motorcycles		
701 0-50 cc		65-on

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702 51-124 cc	65-on
703 125-349 cc	50-74
704 350-449 cc	50-70
705 450-749 cc	50-74
706 750 cc or greater	70-83
709 Unknown cc	50-on
799 Unknown (motored cycle)	50-on
998 Other vehicle	50-on
999 Unknown (Triumph)	67-on

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**MAKE: (51) Volvo**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
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	76-89
036 1800	E, S, ES	60-73
037 P-544		47-65
038 760/780	GLE	83-92
039 740	GLE, GT, Turbo, GL	85-92
040 940	GLE, Turbo, SE	91-on
041 960		92-on
042 850	GLT, Wagon	93-on
043 70 Series		98-on
044 90 Series		98-on
045 80 Series	S80	99-on
046 40 Series	S40, V40	00-on
398 Other (automobile)		65-on
399 Unknown (automobile)		47-on
Medium/Heavy Trucks		
881 Medium/Heavy: CBE		81-on
882 Medium/Heavy: COE low entry		81-84
883 Medium/Heavy: COE high entry		81-on
884 Medium/Heavy: unk. eng loc		81-on
890 Medium/Heavy: COE ent pos unk		81-on
898 Other (medium/heavy truck)		81-on
899 Unknown (medium/heavy truck)		81-on
Buses		
950 Bus-based motor-home		65-on
981 Bus*: Conv (Engine out front)		81-on
988 Other (bus)		65-on
989 Unknown bus		65-on
998 Other vehicle		63-on
999 Unknown (Volvo)		63-on

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**MAKE: (52) Mitsubishi**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Starion 2+2, LE, Turbo		83-90

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032 Tredia	L, LS, Turbo	83-88
033 Cordia	L, Turbo	83-88
034 Galant	ECS, Sigma (thru 88)	83-on
035 Mirage L, Turbo		85-on
036 Precis		87-on
037 Eclipse	90-on	
038 Sigma		89-90
039 3000 GT		91-on
040 Diamante		92-on
398 Other (automobile)		83-on
399 Unknown (automobile)		83-on
Light Trucks		
401 Montero	Sport	89-on
441 Mini-Van	LS, Space Wagon	83-on
442 Expo	LRV, Sport	92-95
471 Pickup Mighty Max, SPX, 4x4		83-on
498 Other (light truck)		83-on
499 Unknown (light truck)		83-on
Medium/Heavy Trucks		
882 Medium/Heavy - COE low	FUSO FE	83-on
898 Other (medium/heavy truck)		83-on
899 Unknown (medium/heavy truck)		83-on
Buses		
950 Bus-based motorhome		81-on
981 Bus*: Conventional (Engine out front)		81-on
982 Bus: Front engine, Flat front		81-on
983 Bus: Rear engine, Flat front		81-on
988 Other (bus)		81-on
989 Unknown bus		81-on
998 Other vehicle		81-on
999 Unknown (Mitsubishi)		83-on

**MAKE: (53) Suzuki**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 SA310 GLX		85-on
034 Swift	GTI, GTX	89-on
035 Esteem	95-on	
398 Other (automobile)		85-95
399 Unknown (automobile)		85-on
Light Trucks		
401 Samurai	Standard, Deluxe	85-95
402 Sidekick/Grand Vitara		89-on
403 X-90/Vitara		95-on
498 Other (light truck)		85-on
499 Unknown (light truck)		85-on
Motorcycles		
701 0-50 cc		72-on
702 51-124 cc		72-on
703 125-349 cc		69-on
704 350-449 cc		72-on

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705 450-749 cc		69-on
706 750 cc or over		72-on
709 Unknown cc		
All Terrain Cycles/Vehicles		
731 0-50 cc	includes all ATCs/ATVs designed solely for off-road use and have 3 or 4 wheel balloon tires.	69-on
732 51-124 cc		69-on
733 125-349 cc		69-on
734 350 cc or greater		69-on
739 Unknown cc		
799 Unknown (motored cycle)		69-on
998 Other vehicle		69-on
999 Unknown (Suzuki)		69-on

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**MAKE: (54) Acura**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Integra RS, LS		86-on
032 Legend/RL		86-on
033 NSX	NSX-T	91-on
034 Vigor/TL	TL 2.5/TL 3.2	92-96
035 CL/TL	Coupe	96-on
398 Other (automobile)		86-on
399 Unknown (automobile)		86-on
Light Trucks		
401 SLX		96-on
498 Other Light Truck		
998 Other vehicle		86-on
999 Unknown (Acura)		86-on

**MAKE: (55) Hyundai**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
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
037 Tiburon		98-on
398 Other (automobile)		84-on
399 Unknown (automobile)		84-on
Light Trucks		
401 Santa Fe		00-on
498 Other Light Truck		
499 Unknown Light Truck		
998 Other vehicle		84-on
999 Unknown (Hyundai)		84-on

**MAKE: (56) Merkur**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 XR4TI Turbo		85-89
032 Scorpio	Turbo	87-90
398 Other (automobile)		85-90
399 Unknown (automobile)		85-90
999 Unknown (Merkur)		85-90

**MAKE: (57) Yugo**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 GV	GVX, Cabriolet	86-92
398 Other (automobile)		86-on
399 Unknown (automobile)		86-on
999 Unknown (Yugo)		86-on

**MAKE: (58) Infiniti**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 M30		90-92
032 Q45		90-on
033 G20		91-on
034 J30		93-on
035 I30		96-on
398 Other (automobile)		90-on
399 Unknown (automobile)		90-on

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Light Trucks	
401 QX4	97-98
498 Other Truck	97-on
499 Unknown Light Truck	97-on
999 Unknown (Infiniti)	90-on

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**MAKE: (59) Lexus**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
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		01-on
398 Other (automobile)		90-on
399 Unknown (automobile)		90-on
Light Trucks		
401 RX300		99-on
421 LX-450		96-on
498 Other light truck		96-on
499 Unknown light truck		96-on
999 Unknown (Lexus)		96-on

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**MAKE: (60) Daihatsu**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Charade		90-92
398 Other (automobile)		90-on
399 Unknown (automobile)		90-on
Light Trucks		
401 Rocky		90-92
498 Other (light truck)		90-on
499 Unknown (light truck)		90-on
998 Other vehicle		90-on
999 Unknown (Daihatsu)		90-on

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**MAKE: (61) Sterling**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 827S	Li	86-91
398 Other (automobile)		86-on
399 Unknown (automobile)		86-on
998 Other vehicle		86-on
999 Unknown (Sterling)		86-on

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**MAKE: (62) Land Rover**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Light Trucks		
401 Discovery (LR)		94-on
402 Defender 90 (LR)		94-on
421 County LWB (RR)/County Classic (RR)		40-on
422 4.0 SE (RR)		95-on
498 Other Light Truck		40-on
499 Unknown Light Truck		40-on
998 Other vehicle		40-on
999 Unknown (Land Rover)		40-on

**MAKE: (63) Kia**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
031 Sephia		94-on
398 Other (automobile)		94-on
399 Unknown (automobile)		95-on
Light Trucks		
401 Sportage		95-on
499 Unknown Light Truck		
998 Other vehicle		95-on
999 Unknown (Kia)		95-on

**MAKE: (64) Daewoo**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
031 Lanos		99-0n
032 Nubira		
033 Leganza		
398 Other Automobile		
399 Unknown Automobile		
999 Unknown (Daewoo)		

**MAKE: (69) Other Import**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
031 Aston Martin	Lagonda, Vantage, Volante, Saloon	65-on
032 Bricklin		65-on
033 Citroen		65-on
034 DeLorean		81-on
035 Ferrari		65-on
036 Hillman		65-on
037 Jensen	Healy	65-on
038 Lamborghini	Countach, 5000S, Jalpa	65-on
039 Lotus	Europe, Espirit	67-on



040 Maserati	Biturbo	65-on
041 Morris	Minor	65-on
042 Rolls Royce/Bentley	Cloud/Shadow series	65-on
044 Simca		65-on
045 Sunbeam		65-on
046 TVR		65-on
048 Desta		65-on
049 Reliant (British)		60-on
052 Bertone	X/19	89-on
053 Lada		65-on
398 Other Imported Auto	Morgan, Singer	65-on
399 Unknown make		

**MOTORED CYCLES/ATC/ATV**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Motorcycles		
701 0-50 cc		
702 51-124 cc		
703 125-349 cc		
704 350-449 cc		
705 450-749 cc		
706 750-cc and over		
709 Unknown cc		
798 Other Motorcycle		
All Terrain Cycles/Vehicles		
731 0-50 cc	includes all ATCs/ATVs designed solely for off-road use and have 3 or 4 wheel balloon tires.	
732 51-124 cc		
733 125-349 cc		
734 350 cc or greater		
739 Unknown cc		
799 Unknown (motored cycle)		
898 Other Medium/Heavy Truck		
988 Other bus		

**MAKE: (84) International Harvester/Navistar**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Light Trucks		
421 Scout	Scout II, Utility Pickup, SS-2, Roadstar, Terra	62-80
	Traveltop, 800 Series, Traveler	
431 Travelall	1010-1210, 100-200	63-75
466 Multistop Van	Metro RM 120-160, MS1210, MS1510	60-84
481 Pickup R-100-500, 900A-1500C/D, 1010-1510		51-76
498 Other (light truck)		60-80
499 Unknown (light truck)		51-80
Medium/Heavy Trucks		
850 Truck-based Motorhome		40-on
881 Medium/Heavy - CBE	Loadstar/Fleetstar, Paystar, CBE Transtar,	63-on
	4200, S-series, Mixer	
882 Medium/Heavy - COE low entry	CO, VCO, DCO, 190-1950, Cargostar, LFM, 5370 (Garbage)	73-on

883 Medium/Heavy - COE high entry	DCO, DCOT, UCO, VCOT, 405-series, COE Transtar, Unistar, Conco 707B, 9600	61-on
884 Medium/Heavy - Unknown engine location		48-on
890 Medium/Heavy - COE entry position unknown		64-on
898 Other (medium/heavy)	Fire truck - R140-R306, CO 8190	55-on
899 Unknown (medium/heavy truck)		53-on
Buses		
950 Bus-based motorhome		40-on
981 Bus**: Conventional (Engine out front)	R153-1853, Loadstar, 1603-1853	53-on
982 Bus: Front engine, Flat front	173FC, 183FC	72-on
983 Bus**: Rear engine, Flat front	183RE, 193RE-transit	65-on
988 Other (bus)		53-on
989 Unknown bus		40-on
998 Other vehicle		54-on
999 Unknown (Intl Harvester/Navistar)		65-on

**\*\* Use code "981" (bus) if the frontal plane or the engine location is unknown.**

#### **MAKE: (98) Other Make \***

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Medium/Heavy Trucks		
801 Autocar		53-on
802 Auto-Union-DKW		65-on
803 Divco		65-on
804 Western Star		65-on
805 Oshkosh		65-on
806 Hino		
807 Scania		
808 Sterling Trucks		
850 Truck-based motorhome		
898 Other (medium/heavy)***	Marmon, Ward LaFrance	55-on

**\* Occurs when make is not explicitly listed here.**

**\*\*\* Use code "898" other (truck) if the vehicle's GVWR is unknown.**

Buses		
902 Neoplan (bus)		50-on
950 Bus-based motorhome		40-on
988 Other (bus)		55-on
989 Unknown (bus)		
998 Other (vehicle)	snowmobile, go-cart	45-on



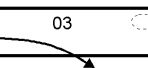
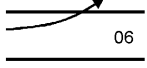
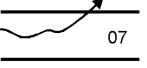
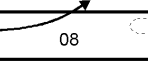
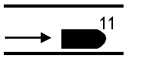
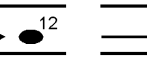
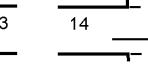
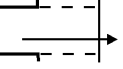

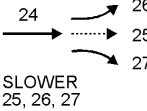
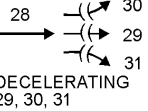

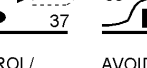
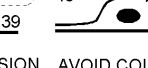
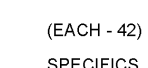

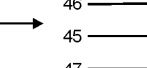
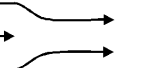
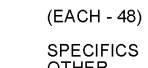
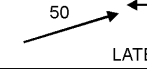



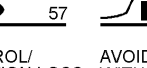
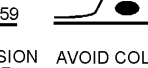
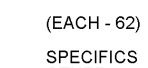
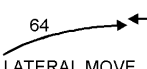
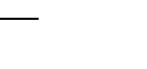

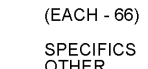

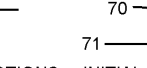
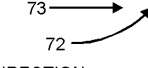
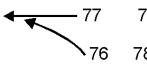
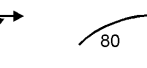
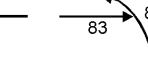
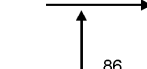
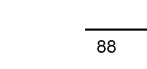

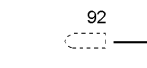


**\* Occurs when make is not explicitly listed here.**

**MAKE: (99) Unknown Make**

<u>Model Codes</u>	<u>Includes</u>	<u>Model Years</u>
Automobiles		
398 Other Automobile		
399 Unknown (automobile)		62-on
Light Trucks		
498 Other Light Truck		
499 Unknown (light truck)		51-on
Motorcycles		
701 0-50 cc		65-on
702 51-124 cc		65-on
703 125-349 cc		65-on
704 350-449 cc		65-on
705 450-749 cc		65-on
706 750 cc or greater		65-on
All Terrain Cycles/Vehicles		
731 0-50 cc	Includes all ATCs/ATVs designed solely for off-road use and have 3 or 4 wheel balloon tires.	65-on
732 51-124 cc		65-on
733 125-349 cc		65-on
734 350 cc or greater		65-on
799 Unknown (motored cycle)		65-on
Medium/Heavy Trucks		
850 Truck-based motorhome		65-on
881 Medium/Heavy - CBE		65-on
882 Medium/Heavy - COE low entry		65-on
883 Medium/Heavy - COE high entry		65-on
884 Medium/Heavy - Unknown engine location		65-on
890 Medium/Heavy - COE entry position unk.		65-on
898 Other (medium/heavy truck)		65-on
899 Unknown (medium/heavy truck)		65-on
Buses		
950 Bus-based motorhome		65-on
981 Bus*: Conventional (Engine out front)		65-on
982 Bus: Front engine, Flat front		76-on
983 Bus: Rear engine, Flat front		65-on
988 Other Bus		65-on
989 Unknown Bus		
998 Other vehicle	snowmobile, go-cart	64-on
999 Unknown	automobile, motored cycle, light truck, or truck	40-on

**\*\* Use code "981" (bus) if the frontal plane or the engine location is unknown.**

## APPENDIX B: V23 Accident Type Diagram

Category	Configuration	ACCIDENT TYPES (Includes Intent)					
I. Single Driver	A. Right Roadside Departure				04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN	
	B. Left Roadside Departure				09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN	
	C. Forward Impact					15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II. Same Trafficway Same Direction	D. Rear-End				(EACH - 32) SPECIFICS OTHER	(EACH - 33) SPECIFICS UNKNOWN	
	E. Forward Impact					(EACH - 42) SPECIFICS OTHER	(EACH - 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle					(EACH - 48) SPECIFICS OTHER	(EACH - 49) SPECIFICS UNKNOWN
III. Same Trafficway Opposite Direction	G. Head-On				(EACH - 52) SPECIFICS OTHER	(EACH - 53) SPECIFICS UNKNOWN	
	H. Forward Impact					(EACH - 62) SPECIFICS OTHER	(EACH - 63) SPECIFICS UNKNOWN
	I. Sideswipe/Angle					(EACH - 66) SPECIFICS OTHER	(EACH - 67) SPECIFICS UNKNOWN
IV. Change Trafficway Vehicle Turning	J. Turn Across Path				(EACH - 74) SPECIFICS OTHER	(EACH - 75) SPECIFICS UNKNOWN	
	K. Turn Into Path				(EACH - 84) SPECIFICS OTHER	(EACH - 85) SPECIFICS UNKNOWN	
V. Intersecting Paths (Vehicle Damage)	L. Straight Paths				(EACH - 90) SPECIFICS OTHER	(EACH - 91) SPECIFICS UNKNOWN	
VI. Miscellaneous	M. Backing Etc.				98 OTHER ACCIDENT TYPE 99 UNKNOWN ACCIDENT TYPE 00 NO IMPACT		



## ***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 - 2000. These statistics will provide the user with a benchmark to compare against numbers obtained from the analytical files. The user can confirm that their program is running properly and/or the file is complete.

***Table 1: Unweighted Sample***

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

*Drivers:* PER\_TYPE = 1  
*Occupants:* PER\_TYPE IN (1,2,9)  
*Pedestrians:* PER\_TYPE = 5  
*Pedalcyclists:* PER\_TYPE = 6

**Table 2: Weighted Sample**

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

*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  $90,000 + \text{or} - 1.96 * (7,100)$  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  $92,000 + \text{or} - 1.96 * (7,220)$  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	2,900
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
$*SE=e^{a/2+b/2(\ln x)^{**2}}, \text{where}$ $a=9.63$ $b=.067$		$**SE=e^{a/2+b/2(\ln x)^{***2}}, \text{where}$ $a=9.16$ $b=.069$		$***SE=e^{a/2+b/2(\ln x)^{***2}}, \text{where}$ $a=9.04$ $b=.070$	

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

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

## 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

$*SE=e^{a+b(\ln x)^2}, \text{where}$   
 $a=4.900441$   
 $b=0.032292$

$**SE=e^{a+b(\ln x)^2}, \text{where}$   
 $a=4.460186$   
 $b=0.034701$

$***SE=e^{a+b(\ln x)^2}, \text{where}$   
 $a=4.291460$   
 $b=0.035576$



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

## 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  
 $a=4.347699$   
 $b=0.035898$

$**SE=e^{a+b(\ln x)^2}$ , where  
 $a=4.283883$   
 $b=0.036063$

$***SE=e^{a+b(\ln x)^2}$ , where  
 $a=4.206542$   
 $b=0.035915$





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

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

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

## 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  
 $a=4.414534$   
 $b=0.034746$

\*SE= $e^{a+b(\ln x)^2}$ , where  
 $a=4.348017$   
 $b=0.034987$

\*SE= $e^{a+b(\ln x)^2}$ , where  
 $a=4.452860$   
 $b=0.033682$

## ***APPENDIX E: Analytical Data Classification of Select GES Variables***

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**

<b>GES DESCRIPTION</b>	<b>CODE</b>	<b>INJURY SEVERITY CLASS</b>
	<b>1988 - Later</b>	
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	1992-1997
Passenger Cars	1-11	
Passenger Vehicles	1-11, 14-22, 24-41, 43-48 (for 1993 & later add new body type codes <b>24 &amp; 25</b> )	
Light Trucks/ Vans/Utility Vehicles	14, 20-41, 47, 48	14-22, 28-41, 45, 48 (for 1993 & later add new body type codes <b>24 &amp; 25</b> )
Medium Trucks	(60,68) and ( <i>Vehicle Trailing</i> = 0 or 9)	(60,64,78) and ( <i>Vehicle Trailing</i> = 0 or 9)
Heavy/Combination Trucks	((60,68) and ( <i>Vehicle Trailing</i> =1-4)) or 65	((60,64,78) and ( <i>Vehicle Trailing</i> =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 <b>13</b> )	12, 13, 23, 42, 65, 90-97

<sup>ES</sup> Note: In 1993 & later, when defining **School Buses** be sure to include body type code **24** (van-based school bus) and when defining **Transit Buses**, be sure to include 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

