



**NATIONAL ACCIDENT SAMPLING SYSTEM**

Data Collection, Coding and Editing Manual  
1980 Continuous Sampling System  
Version Number 3



**U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
WASHINGTON, D.C. 20590**

December 1979

*570 pages*

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION . . . . .	1
1.1 Purpose of the Manual. . . . .	1
1.2 Overview . . . . .	1
1.3 How to Use This Manual . . . . .	2
2.0 DESCRIPTION OF THE SAMPLING FRAME. . . . .	5
2.1 Accidents Which Qualify for Study. . . . .	5
2.1.1 Common Questions and Answers About Incidents Which Qualify for Study . . . . .	16
2.2 Classifying the Accident by Type, Severity and Tow Status. . . . .	18
2.2.1 Common Questions and Answers Regarding Stratification . . . . .	19
3.0 OVERVIEW OF SAMPLING ACTIVITIES. . . . .	23
3.1 General Procedures . . . . .	23
3.1.1 Case Load Assignment Sheet (CLAS) . . . . .	23
3.1.2 Stratification Record . . . . .	24
3.1.3 The NASS Automated Sampling Selection System. . . . .	25
3.1.4 Accident Sampling Worksheet . . . . .	25
3.2 Listing and Sampling Instructions. . . . .	27
3.2.1 Case Load Assignment Sheet. . . . .	28
3.2.2 Stratification Record . . . . .	28
3.2.3 Accident Sampling Worksheet . . . . .	28
3.2.4 Sample Selection Within Stratum/Jurisdiction. . . . .	28
3.3 Sampling in Unusual Circumstances. . . . .	28
4.0 OVERVIEW OF INFORMATION TO BE COLLECTED ON CASES SAMPLED . . . . .	39
4.1 Sequencing of Case Materials . . . . .	39
4.2 Information Required on Field Forms (Mandatory Variables). . . . .	41
4.3 Update Procedures for Hardcopy Field Forms . . . . .	42
4.4 Form Logs--Instructions for Use. . . . .	43
4.5 NASS Criteria for Acceptable Data Completion . . . . .	51
4.6 Special Procedures for Strata "J" & "N" Accidents. . . . .	53
4.6.1 Procedure for Vehicle(s) in Case Strata "J" & "N" . . . . .	53
4.6.2 Procedure for Scene Reconstruction in Case Strata "J" & "N" . . . . .	53
4.6.3 Vehicles Not Affected by Procedures for Strata "J" or "N" . . . . .	53
4.6.4 Usage of Other NASS Forms in Nontow Away Strata "J" or "N". . . . .	55
4.6.5 Selection of Vehicle Form and Scene Procedures When Tow Away Status on Police Report Is Not Indicated or In Error . . . . .	55
4.6.6 Non-Towaway Vehicle Log . . . . .	55
4.6.7 Interface with Special Studies. . . . .	56
5.0 SUBMISSION INSTRUCTIONS. . . . .	57
5.1 Quality Control Checks for PSU Teams . . . . .	57
5.1.1 Quality Control Checks Prior to Remote Data Entry . . . . .	57
5.1.2 Quality Control Checks Resulting from Remote Data Entry . . . . .	58
5.1.3 Check to Make Sure Administrative Procedures are Being Followed. . . . .	58
5.1.4 Check Sampling Procedures . . . . .	58
5.1.5 Check Data Collection Procedures. . . . .	58
5.1.6 Check to Make Sure Updates Are Being Processed Properly . . . . .	58
5.1.7 Check Individual Effort and Accuracy in Collecting Evidence and Skill in Interpretation. . . . .	58
5.2 Case Submission. . . . .	59
6.0 CODING INSTRUCTIONS. . . . .	63

Accident Form  
Pedestrian & Nonmotorist Form  
Vehicle Form  
Driver Form  
Occupant Form

APPENDICES - Uniform Symbols for Scene Marking  
Uniform Symbols for Accident Diagramming  
Photography Instruction

## NASS DATA COLLECTION, CODING AND EDITING MANUAL

1.0 INTRODUCTION1.1 Purpose of the Manual

In order to produce a national traffic accident data base for the evaluation of old and the development of new highway and vehicle safety standards and to identify highway safety needs, a National Accident Sampling System is being developed. Part of the final system will consist of 60-75 small teams of accident investigators situated throughout the 48 contiguous states. At each site (Primary Sampling Unit - PSU), the accident research team will investigate a probability sample of police reported accidents on a continuous basis (Continuous Sampling System - CSS). In addition, provision has been made for short term special studies (Special Studies Subsystem - SSS), ancillary studies and the study of minor and non-police reported accidents.

Zone Centers have been established to provide for the quality control of the CSS and special study data collected. Quality control is carried out through Zone Center site visits to the PSUs and through the review of accident case report materials received at the Zone Center. The Zone Centers provide quality control in the areas of sampling, completeness of data, reliability and validity of data. In addition, the Zone Centers provide data collection forms, coding manuals, annual team evaluations, training, extra PSU staff (when needed), and act as a communication link between the PSU teams and the NASS sampling and data processing contractors.

The purpose of this manual is to provide PSU team members, Zone Centers, the data processing contractor, sampling contractor, training contractors, and the National Center for Statistics and Analysis with a consistent, standardized set of instructions for sampling accidents and collecting, coding and editing the data.

1.2 Overview

The manual includes six substantive sections; each is summarized below.

Section 2.0 Description of the Sampling Frame describes the procedure for determining whether or not the incident reported on a police accident report (PAR) qualifies for inclusion in the study. In addition, the three independent variables by which one stratifies the accidents which qualify for study are explained. Further, the fourteen (14) strata into which the accidents are classified are defined in terms of the values of the three independent variables.

Section 3.0 Sampling Procedures includes the procedures for selecting accidents for investigation from the sampling frame list. Discussed are both the NASS Automated Case Selection System and the manual backup method. Circumstances under which the manual procedures are to be used are also presented.

Section 4.0 Overview of Information to be Collected on Sampled Accidents describes the forms which are to be filled out on each accident, the different records (e.g., injury records), photographs and other information (e.g., crash runs), which make up a completed case report. Also discussed are the mandatory

data items and forms which must be filled out before a case can qualify for submission. Procedures for filling out form logs are described. In addition, the NASS criteria for acceptable data completion are presented. Finally, the special procedures for handling strata "J" & "N" accidents are included.

Section 5.0 Submission Instructions describes when and where to submit case reports. It also describes the Quality Control procedures to be used at the PSU sites.

Section 6.0 Coding Instructions provides the general instructions for collecting and coding the data called for in the field forms. Documentation for each data element includes variable name, element values (attributes), definitions where needed, data sources, collection method, reference materials (if needed), and remarks.

The Appendices contain some of the necessary references, including: (1) the Uniform Symbols for Scene Marking, (2) the Uniform Symbols for Accident Diagramming, and (3) the Photography Instructions.

Other references to be used in NASS not contained in this manual include: (1) the Third Edition of ANSI D16.1-1976; (2) the CRASH 2 User's Manual; (3) SAE J224 (March 1980); (4) Truck Deformation Classification (TDC) - SAE; (5) the NASS Injury Coding Manual; (6) NATB books (see section 6.3, variable V44); (7) Passenger Car and Truck Investigators Manual (see section 6.3, variable V44); (8) the Branham Automobile Reference Book; (9) Diesel and Gasoline Truck Indices; (10) the Branham Motorcycle and Snowmobile Booklet; (11) the MVMA - Passenger Car Specifications (see section 6.3, variable V58); (12) Remote Data Entry System User's Manual; (13) NASS Automated Case Selection System User's Manual; and, (14) the NASS Field Investigation Procedures Manual.

### 1.3 How to Use This Manual

This manual is designed to be updated periodically without the need for replacing the entire document. This will be accomplished via a system for adding, deleting, and changing pages. Additions will be inserted in their proper location and will be identified by a different month and year. Pages which are changed will have the same month and year identifier. Periodically, a NASS Data Collection, Coding and Editing Manual Update Directory will be printed and sent to each PSU team and Zone Center. This manual will indicate the date of the latest version of each page. It is important that all manuals be kept up-to-date and that the update directory is displayed in a place that provides easy access.

When potential data encoding problems are detected in the NASS Data Collection, Coding and Editing Manual or interpretations of specific circumstances (including NASS definitions) are required, the following procedures, outlined by NCSA, will be followed:

- (a) Potential problems that are identified at the team level will be sent to the cognizant Zone Center via Informatics message system.
- (b) The Zone Center will review the potential problem.

- (1) If it is a misinterpretation of the manual, a clarification will be provided by the cognizant Zone Center via Informatics message system (with a telephone follow-up, if necessary).
  - (2) If the potential problem is determined to be valid, the cognizant Zone Center will broadcast the potential problem with a recommended solution to the other three (3) Zone Centers for review and concurrence. The final recommended solution will be sent to NCSA by the cognizant Zone Center for review and approval. This includes all additions, deletions, modifications or substantive interpretations that redefine, broaden or narrow the established definition of NASS variables or attributes.
- (c) Changes or interpretations which affect field data encoding and are approved by the NCSA will be given an effective implementation date and sent to Indiana University for inclusion in the NASS Coding Manual.

The above procedures were not established to restrict team or Zone Center operations but to ensure that program objectives and goals are not inadvertently changed (i.e., a variable is redefined beyond its intended purpose). When defining variables, NCSA must consider their operational utility within the restrictions of the data collection time frame and their intended purpose. Any diversions from these established procedures may destroy the data validity and/or result in serious analysis problems.

## 2.0 DESCRIPTION OF THE SAMPLING FRAME

### 2.1 Accidents Which Qualify for Study

The procedures for properly developing the list of motor vehicle accidents within the study area which qualify for investigation are shown in Figure 2-1 and described below.

Start with a Police Reported Incident--All incidents which meet the criteria of a motor vehicle accident, as defined in ANSI D16.1-1976 (section 2.3.20, page 10), and are (a) reported on the State accident form, or on local (surrogate) accident forms, (b) signed by a police officer, and (c) available through the police agency files, are to be considered for study. Other accident report forms, such as special driver report forms, that do not meet the requirements above are excluded from consideration. If a police report has been filled out by a private person or anyone other than an investigating officer, then it does not qualify for inclusion.

Must Involve a Harmful Event--If the incident does not involve property damage and/or personal injury, do not include it in the list. The presence of a Police Accident Report (PAR) creates a rebuttable presumption that a harmful event has occurred. It is the duty of the investigator to scrutinize any PAR which alleges the absence of a harmful event.

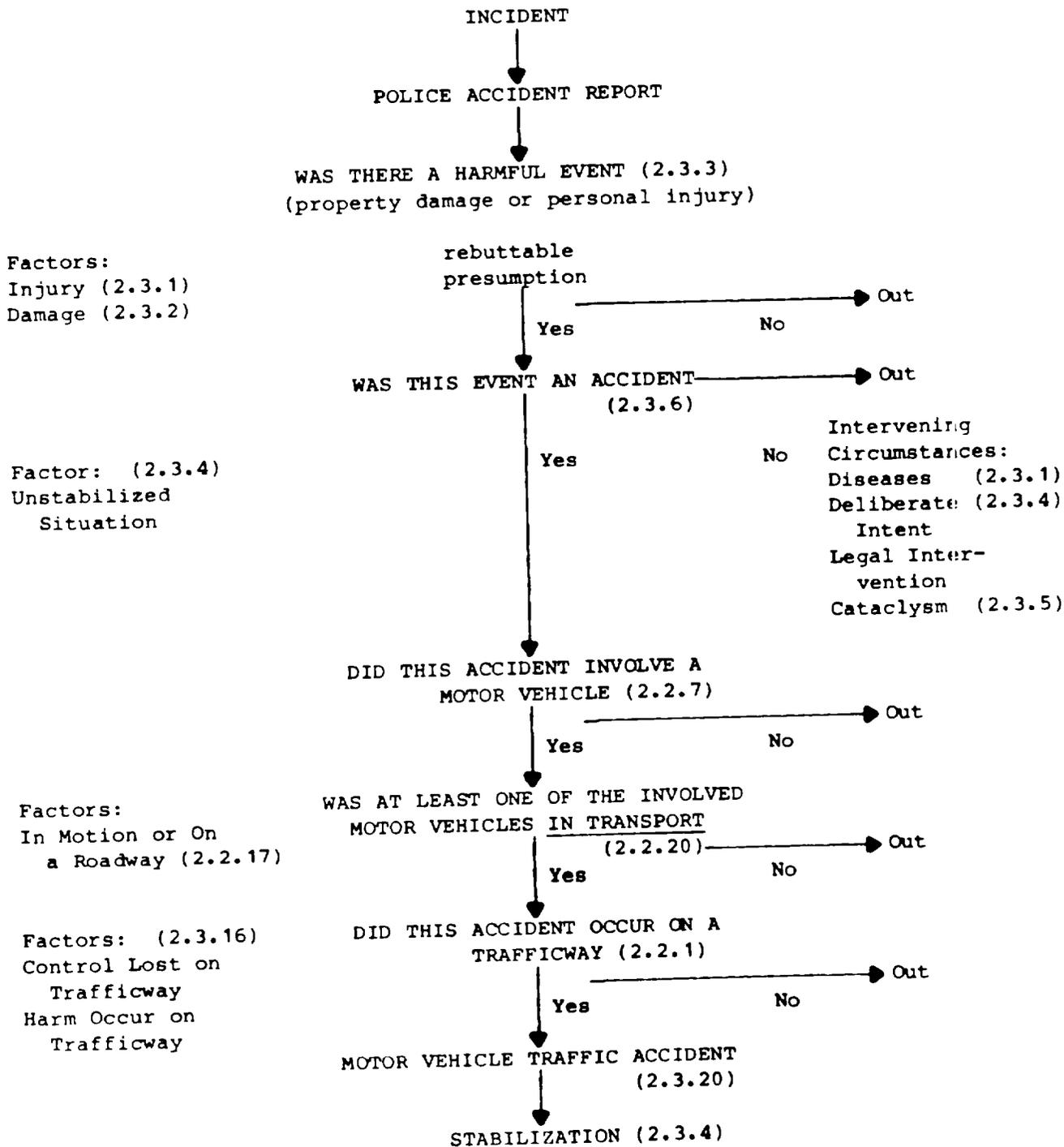
The Harmful Event Must Have Occurred as a Result of an Accident--An accident involves at least one harmful event (ANSI D16.1-1976, section 2.3.3, page 8) produced by an unstabilized situation (ANSI D16.1-1976, section 2.3.4, page 8). There are four (4) ways in which a harmful event occurs that is not a result of an accident. They are: (a) the harmful event results from a diseased condition, (b) the unstabilized situation was the result of deliberate intent, (c) the unstabilized situation was the result of legal intervention, or (d) the harmful event results from a cataclysm (ANSI D16.1-1976, section 2.3.5, page 8). To further clarify the meaning of each of these "intervening circumstances", consider the examples below.

Disease: If the unstabilized situation is initiated by a disease such as cerebral hemorrhage, heart attack, diabetic coma, or epileptic seizure, which affects the driver of a motor vehicle in transport, then any subsequent harmful event which occurs solely to that vehicle or its occupants is not considered an accident. This includes any nonvehicular damage that this vehicle causes. However, if this driver-affected vehicle damages another motor vehicle or injures another person, then it is considered an accident.

Deliberate Intent: A harmful event which has been intentionally produced does not fall within the definition of an unstabilized situation and, thus, is not an accident.

A driver kills himself/herself (suicide) or self-inflicts injury by driving a motor vehicle: (1) against a fixed object, (2) into a body of water, or (3) otherwise misuses a motor vehicle in transport, and this intent is verified in some manner; such intentional events are not motor vehicle accidents. If during such intentional acts other injury or damage occurs that goes beyond the original intent, then these events are accidental and meet the specifications of a motor vehicle accident, unless the contrary can be clearly established.

FIGURE 2-1



A motor vehicle traffic accident (MVTA) originates on a police accident report (PAR). It involves (a) a harmful event not directly resulting from a cataclysm, (b) produced by an unstabilized situation, (c) involving at least one motor vehicle, (d) in transport [in motion or on a roadway] such that (e) the harmful event occurred on a trafficway or the unstabilized situation originated on a trafficway.

Example 1: A driver who intends to commit suicide by driving head-on into another vehicle is involved in an accident, since any harmful event which results to the other vehicle or occupants goes beyond the original intent of the driver.

A person, having announced intent in some manner, causes death, injury, or damage by driving a motor vehicle against persons, motor or other road vehicles, or other property, with homicidal, injury, or damage inflicting intent; such intended acts are not motor vehicle accidents. If, in doing such intended acts, other injury or damage occurs that goes beyond the original intent (i.e., unintended consequences), these events are accidental and meet the specifications of a motor vehicle accident, unless the contrary can be clearly established.

Example 2: A driver (not connected with a law enforcement agency) who intentionally rams another vehicle, intending to inflict harm upon the other vehicle or its occupants, is not involved in an accident. In Example 1 above, if the driver intended to inflict harm upon the other vehicle or its occupants, as well as inflict harm upon himself/herself, then this also would not be an accident.

However, malicious mischief, such as throwing a rock toward a motor vehicle, dropping an object from an overpass, or rolling an object upon a trafficway, is not considered to be deliberate intent unless it is clearly established that the act was directed toward a specified person or motor vehicle.

For the purposes of NASS sampling (given limited information on a PAR), a first harmful event resulting from deliberate intent should not be classified as an accident, except where a subsequent harm occurs to a different vehicle or person such that the harm was an unintended consequence of the original event.

When in doubt, follow the instructions for listing the accident contained in Section 3.0 of this manual and call your Zone Center for guidance.

Legal Intervention: Legal intervention is a type of deliberate intent involving intentional acts by a law enforcement agent, officer, or other official. If in doing such intended acts, injury or damage occurs that goes beyond the original intent, then the other events are accidental and meet the specifications of a motor vehicle accident, unless the contrary can be clearly established. The following are examples of legal intervention and should not be classified as accidents:

- (a) A road block is set up to stop a lawbreaker, and the lawbreaker crashes into it, either intentionally or unintentionally.
- (b) A police unit cuts in front of another vehicle to force it to the curb or shoulder and, as a result, the two vehicles collide.
- (c) A vehicle loses control as a result of bullets fired into it from a police officer's gun, and crashes.

The following are examples of an accident:

- (d) A driver, other than a lawbreaker, crashes unintentionally into a roadblock.
- (e) A lawbreaker, while eluding the police, loses control of his vehicle and crashes into another vehicle.

(f) A police car skids and crashes while chasing a law violator.

If in (c) above, the vehicle had created a harmful event with another vehicle or person, then the presumed unintended consequences of the action would qualify this situation as an accident.

One example which has previously been encountered is as follows: A prisoner jumps out of a police car and is injured. An officer in another car who observes this event, writes a report. Is this an accident? Yes. Although the prisoner exited the car intentionally, the subsequent injury (harmful event) occurred as an unintended consequence of the prisoner's escape attempt, thus constituting this event as an accident. It should be assumed that the injury was an unintended consequence of the prisoner's action unless the contrary can be clearly established.

For the purposes of NASS sampling, the same guidance as given above applies.

Cataclysm: ANSI D16.1-1976 lists the following events as catastrophic: a cloudburst, cyclone, earthquake, flood, hurricane, lightning, tidal wave, torrential rain, tornado, or volcanic eruption. If any one of these events was on-going at the time of the accident and produced the unstabilized situation which lead to the harm, then the event(s) is(are) not considered an accident. The key phrase is "on-going". Consider the following example: A motor vehicle in transport was overwhelmed by a landslide or an avalanche which was a direct result of a cataclysm, such as an earthquake, torrential rain, etc. This circumstance would be considered an accident. However, this exclusion would not apply if a cataclysm were not in existence at the time of the event; nor would this exclusion apply if the motor vehicle was unintentionally driven against any fallen materials covering a trafficway as a result of any landslide or avalanche. As this example points out, the catastrophic event "exclusion" should occur very rarely.

For the purposes of NASS sampling, list any accidents which you believe should be excluded under the cataclysm exception. Confirm their exclusion by relating the events to your Zone Center before drawing the sample.

If an official ruling (e.g., an autopsy revealing a heart attack) or subsequent investigation reveals, after a case has been selected, that one of the exclusions applies, drop the case and notify your Zone Center. When dropping the case, an Accident Form containing an explanation for the decision and the police report should be submitted to the Zone Center for review.

Must Involve A Motor Vehicle as Defined by ANSI--If the police report which has been sampled does not involve at least one motor vehicle as defined by ANSI D16.1-1976 (section 2.2.7, page 5), then it should be returned to the file and not included in the list which qualifies for inclusion.

Example: A bicycle which runs off the road and hits a tree is not a motor vehicle accident and should not be included.

Must Involve a Motor Vehicle in Transport--Use the ANSI D16.1-1976 (section 2.2.20, page 7) definition to determine if the motor vehicles in the accident

are in transport. There must be at least one motor vehicle in the accident in transport for the accident to qualify. (NOTE: Any driverless vehicle of which any portion is located on the roadway is considered as a vehicle in transport.)

Example 1: A bicyclist running into a car which is parked off the roadway does not constitute a motor vehicle accident for this study and would be excluded. If a police report has been filled out on such an incident, return the police report to the file because it does not qualify.

Example 2: Vehicles parked on roads of reduced width, such as can result from snow accumulation and incomplete snow removal, are to be considered in transport if any portion is on the roadway.

Must Involve a Motor Vehicle in Transport on a Trafficway--Exclude accidents which occur in places other than a trafficway. Examples of places which are not on the trafficway include parking lots (except entrances and roadways within parking lots which are customarily used to get from the entrance to a parking aisle) and private driveways. Review carefully the diagrams depicting rural, urban, and divided trafficways in Figures 2-2, 2-3 and 2-4.

Example: An abandoned vehicle, a portion of which is on the roadway is struck by a bicyclist, causing injury to the bicyclist; a police report is filled out by an investigating officer. Is this a motor vehicle accident? Yes it is. This is because there is a police reported incident involving a motor vehicle in transport on a trafficway.

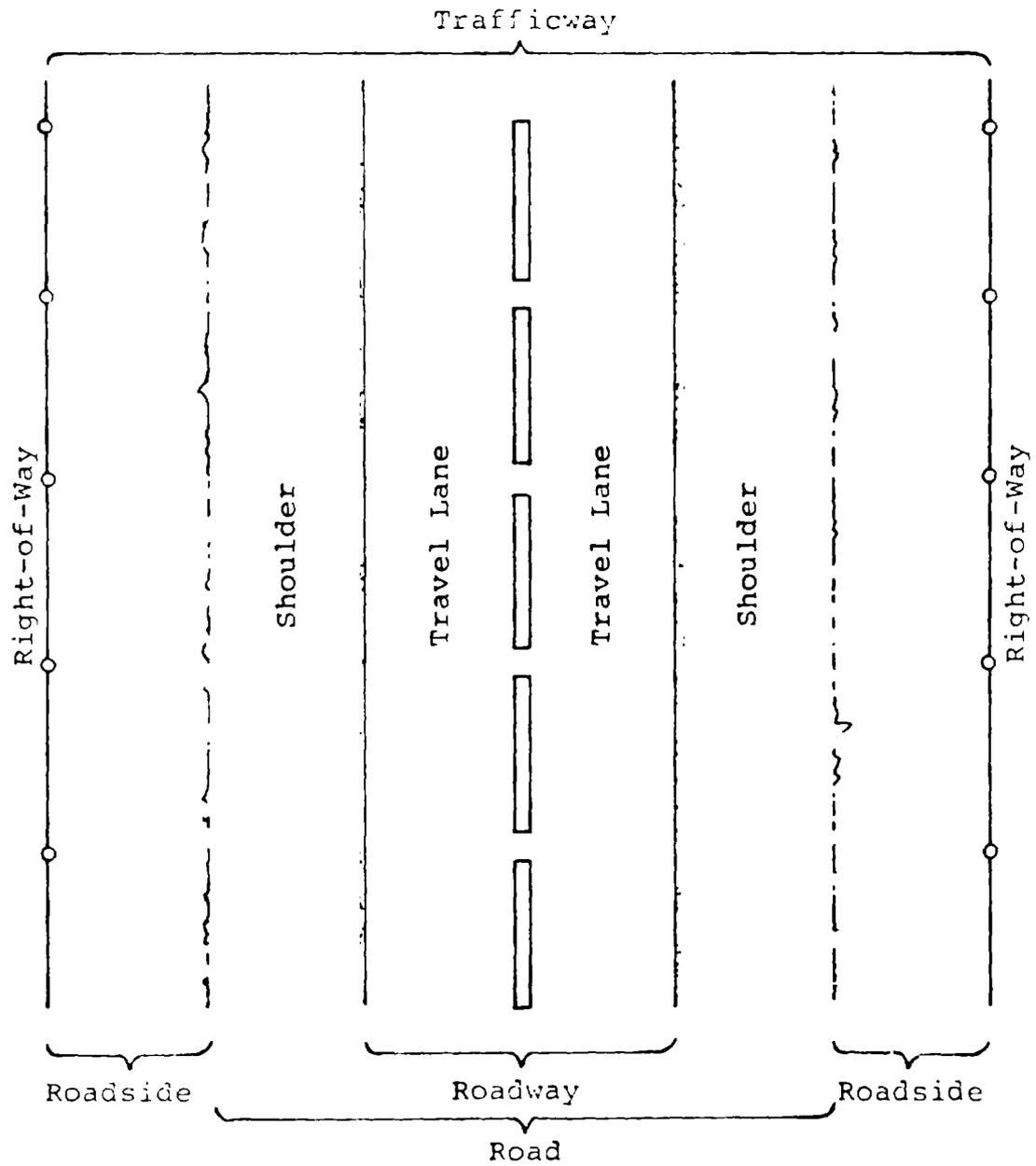
In summary, each of the preceding questions is designed to focus your attention to the specific subset of transportation-related accidents characterized best as "motor vehicle traffic accident". In NASS, you investigate Motor Vehicle Traffic Accidents. To put this subset of accidents which qualify for study in perspective, see Figure 2-5. This figure outlines the major definitional sections of ANSI D16.1-1976 into meaningful groups and shows how the phenomenon of motor vehicle traffic accidents fits into the overall transportation accident picture. Accompanying Figure 2-5 are the primary ANSI definitions of interest to NASS. Figure 2-5 refers to these definitions. These definitions are provided here as both a reference source to you, the NASS investigator, as well as enabling you to understand the larger accident picture to which ANSI refers. Be sure to mark down in your memory the location in this manual of Figures 2-1 and 2-5; together, they can serve as a handy reference source to remind you of what constitutes a "NASS accident".

One sticky problem remains. Ideally, when you pick up a police report, that PAR should only be reporting about one accident. Unfortunately, this is not always true. There are practical and understandable reasons why this occurs. This manual would be remiss if it failed to discuss the issue of stabilization.

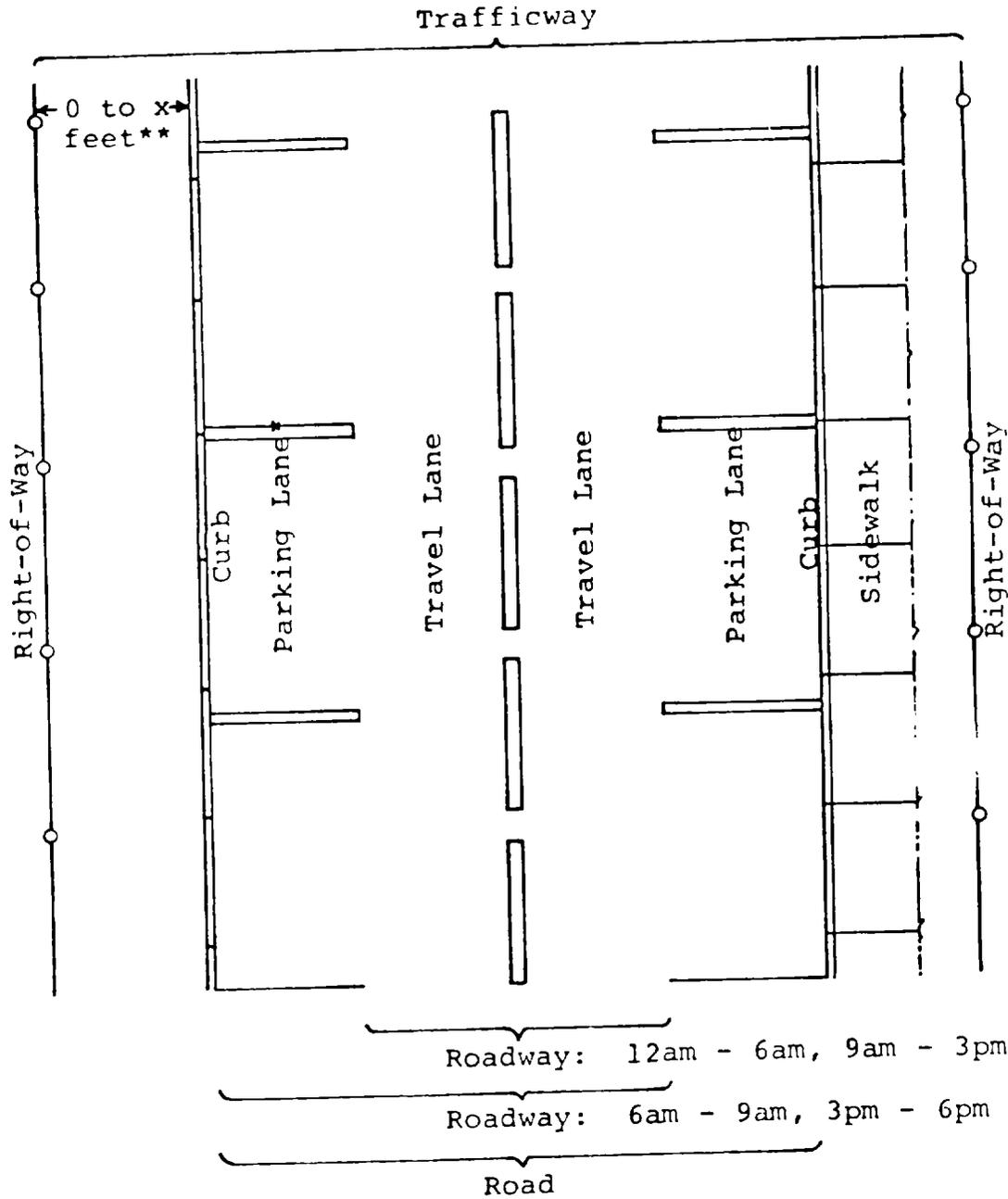
Stabilization--At times, one police report will contain more than one accident. This will happen when events constituting an accident have stabilized (see ANSI D16.1-1976, section 2.3.4, page 8) and units involved in the first sequence are subsequently involved in another accident sequence which is recorded on the same police report. When more than one accident is recorded on a police report, based on the ANSI definition of stabilized, choose the sequence with the highest injury severity. If the severity of the accidents is the same, choose the accident which occurred first.

FIGURE 2-2

Example of a Rural Trafficway



Example of an Urban Trafficway



\* No parking allowed 6 to 9 a.m. or 3 to 6 p.m.

\*\* The actual right-of-way in many cases will not be known. But it is clear that the trafficway always goes from curb to curb or from shoulder to shoulder.

FIGURE 2-4

Example of a Divided Trafficway

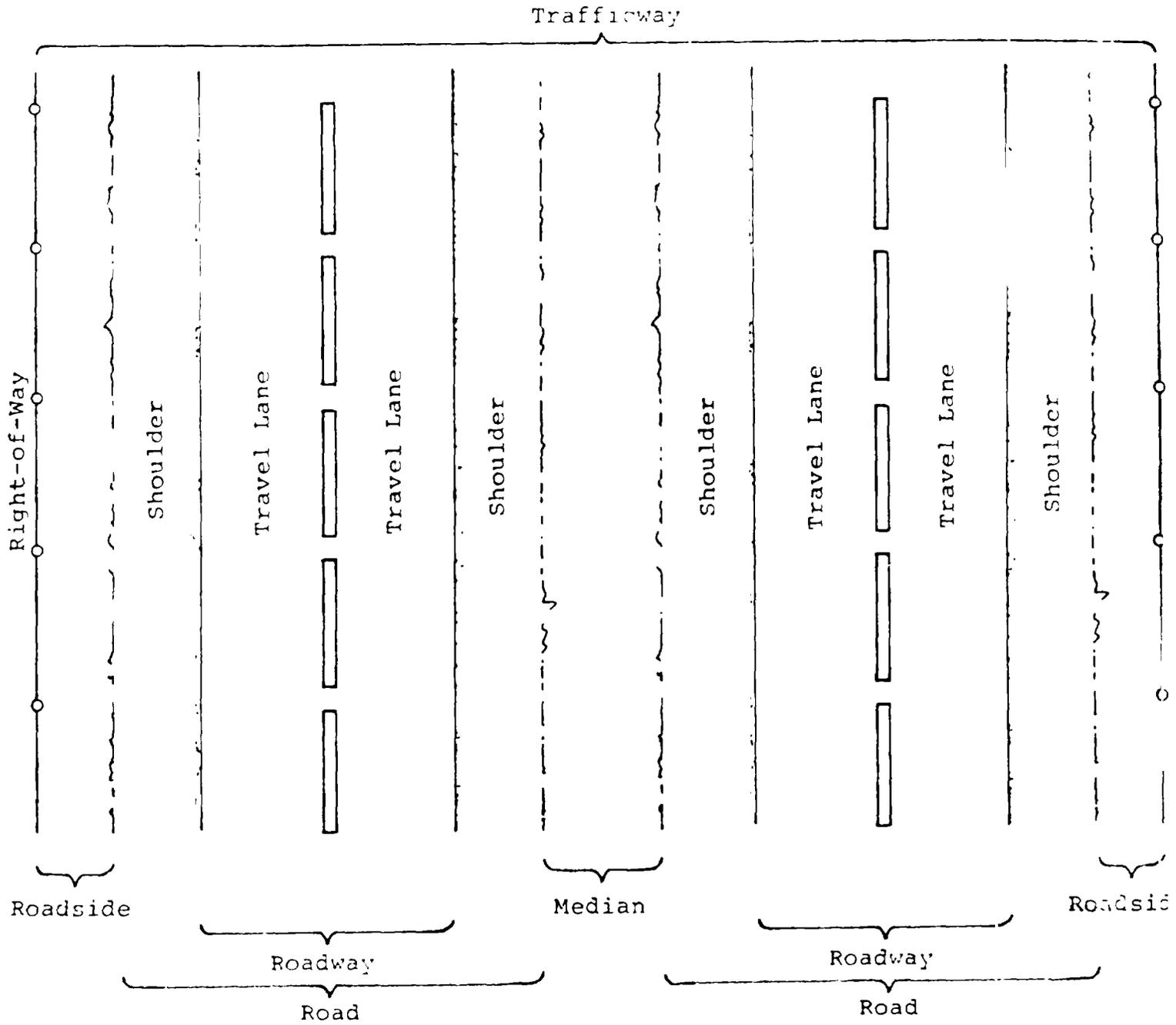


FIGURE 2-5

	<u>ANSI</u>	
Person	2.1.1	
Property	2.1.2	
Transport device	2.1.3	
Animal	- -	
<u>Transport vehicle</u>	2.1.4	
Aircraft	2.1.6	
Watercraft	2.1.7	
<u>Land vehicle</u>	2.1.8	
Railway vehicle	2.2.4	
Road vehicle	2.2.6	
<u>Motor vehicle</u>	2.2.7	
Other road vehicle	2.2.8	
<u>In transport</u>	2.2.20	
<u>Transport way</u>	2.1.5	
Airway	2.1.9	
Waterway	2.1.10	
<u>Land way</u>	2.1.11	
Railway	2.2.3	
Private way	2.2.2	
<u>Traffic way</u>	2.2.1	
Road	2.2.19	
Shoulder	2.2.18	
<u>Roadway</u>	2.2.17	
Roadside	- -	
Median	- -	
<u>Accidents</u>	2.3	
Harmful event	2.3.3	
Injury	2.3.1	
Damage	2.3.2	
Unstabilized situation	2.3.4	
Cataclysm	2.3.5	
<u>Accident</u>	2.3.6	
<u>Transport accident</u>	2.3.7	
Aircraft accident	2.3.8	
Watercraft accident	2.3.9	
Railway accident	2.3.11	
<u>Road vehicle accident</u>	2.3.15	
<u>Motor vehicle accident</u>	2.3.10	
Other road vehicle accident	2.3.12	
or		
<u>Traffic Accident</u>	2.3.16	
	2.3.18	
Nontraffic accident	2.3.17	
	2.3.19	
<u>Motor Vehicle Traffic Accident</u>		
	Traffic Accident	
	Nontraffic Accident	
Motor Vehicle	2.3.20	2.3.21
Other Road Vehicle	2.3.22	2.3.23

## FIGURE 2-5 (Definitions)

- TRANSPORT VEHICLE:** (2.1.4) A transport vehicle consists of one or more devices or animals and their load. Such devices or animals must include at least one of the following: (1) a transport device, or a unit made up of connected transport devices, while idle or in use for moving persons or property from one place to another, (2) an animal or team of animals while in use for moving persons or property other than the animal or team itself from one place to another, or (3) a movable device such as construction, farm, or industrial machinery outside the confines of a building and its premises while in use for moving persons, the device itself, or other property from one place to another. If such a device or animal has a load, the load is part of the transport vehicle. Loads include any persons or property upon, or set in motion by, the device or animal; any persons boarding or alighting from the device or animal; any persons or property attached to and in position to move with the device or animal. If the load upon a transport device includes another transport device, the entire unit including the load is considered to be a single transport vehicle.
- LAND VEHICLE:** (2.1.8) A land vehicle is a transport vehicle which is neither an aircraft nor a watercraft.
- ROAD VEHICLE:** (2.2.6) A road vehicle is any land vehicle other than a railway vehicle.
- MOTOR VEHICLE:** (2.2.7) A motor vehicle is any motorized (mechanically or electrically powered) road vehicle not operated on rails.
- OTHER ROAD VEHICLE:** (2.2.8) An other road vehicle is any road vehicle other than a motor vehicle. Inclusions: animal-drawn vehicle (any type); animal harnessed to a conveyance; animal carrying a person; street car (not on rails); pedalcycle.
- IN TRANSPORT:** (2.2.20) The term "in transport" denotes the state or condition of a transport vehicle which is in motion or within the portion of a transport way ordinarily used for travel by similar transport vehicles. When applied to motor vehicles, "in transport" means in motion or on a roadway.
- TRANSPORT WAY:** (2.1.5) A transport way is any way or place reserved or commonly used for the operation of transport vehicles.
- LAND WAY:** (2.1.11) A land way is the space within property lines or other boundary lines of any transport way that is neither an alley nor a waterway.
- TRAFFICWAY:** (2.2.1) A trafficway is any land way open to the public as a matter of right or custom for moving persons or property from one place to another.
- ROAD:** (2.2.19) Road is that part of a trafficway which includes both the roadway and any shoulder alongside the roadway.
- SHOULDER:** (2.2.18) A shoulder is that part of a trafficway contiguous with the roadway for emergency use, for accommodation of stopped road vehicles, and for lateral support of the roadway structure.
- ROADWAY:** (2.2.17) A roadway is that part of a trafficway designed, improved, and ordinarily used for motor vehicle travel or, where various classes of motor vehicles travel or motor vehicles are segregated, that part of a trafficway used by a particular class. Separate roadways, may be provided for northbound and southbound traffic or for trucks and automobiles.
- HARMFUL EVENT:** (2.3.3) A harmful event is an occurrence of injury or damage.
- INJURY:** (2.3.1) An injury is bodily harm to a person. Exclusions: effects of diseases, such as cerebral hemorrhage, heart attack, diabetic coma, epileptic seizure.

FIGURE 2-5 (Definitions - continued)

- DAMAGE:** (2.3.2) Damage is harm to property that reduces the monetary value of that property. Inclusions: harm to wild animals, or birds, which have monetary value. Exclusions: harm to wild animals, or birds, which have no monetary value. Harm to a snowbank unless, for example, additional snow-removal costs are incurred because of the harm. Mechanical failure during normal operation (e.g., tire blowout, broken fan belt, or broken axle).
- UNSTABILIZED SITUATION:** (2.3.4) An unstabilized situation is a set of events not under human control. It originates when control is lost and terminates when control is regained or, in the absence of persons who are able to regain control, when all persons and property are at rest. Exclusions: (1) Deliberate Intent--suicide, homicide, and other harmful events under human control do not imply the existence of an unstabilized situation. A set of unintended consequences of such acts might be an unstabilized situation. (2) Legal Intervention--legal intervention is a type of deliberate intent involving intentional acts by a law-enforcing agent or other official.
- CATAclysm:** (2.3.5) A cataclysm is a cloudburst, cyclone, earthquake, flood, hurricane, lightning, tidal wave, torrential rain, tornado, or volcanic eruption.
- ACCIDENT:** (2.3.6) An accident is an unstabilized situation which includes at least one harmful event not directly resulting from a cataclysm.
- TRANSPORT ACCIDENT:** (2.3.7) A transport accident is an accident (1) that involves a transport vehicle in transport and (2) in which the first harmful event is not produced by the discharge of a firearm or explosive device.
- ROAD VEHICLE ACCIDENT:** (2.3.15) A road vehicle accident is a transport accident that is either a motor vehicle accident or an other road vehicle accident.
- MOTOR VEHICLE ACCIDENT:** (2.3.10) A motor vehicle accident is a transport accident that (1) involves a motor vehicle in transport, (2) is not an aircraft accident or watercraft accident, and (3) does not include any harmful event involving a railway train in transport prior to involvement of a motor vehicle in transport.
- OTHER ROAD VEHICLE ACCIDENT:** (2.3.12) An other road vehicle accident is a transport accident that (1) involves an other road vehicle in transport and (2) is not an aircraft accident, watercraft accident, motor vehicle accident, or railway accident.
- TRAFFIC ACCIDENT:** (2.3.16) A traffic accident is a road vehicle accident in which (1) the unstabilized situation originates on a trafficway or (2) a harmful event occurs on a trafficway.
- NONTRAFFIC ACCIDENT:** (2.3.17) A nontraffic accident is a road vehicle accident which is not a traffic accident.
- MOTOR VEHICLE TRAFFIC ACCIDENT:** (2.3.20) A motor vehicle traffic accident is a motor vehicle accident which is a traffic accident.

In those cases where an accident, by NASS criteria, other than the one reported on the PAR, is alluded to (e.g., in the narrative), there is a rebuttable presumption that this PAR is the only PAR that will be submitted to report both accidents. This presumption may be overridden if the investigator has knowledge of: (1) another PAR on file, (2) a statement in the narrative indicating that there is, or will be, another PAR, or (3) the dispatcher or other police personnel having knowledge of the accidents and indicating that there is, or will be, another report filed.

Example: The PAR narrative states: "Vehicle #1 had been struck by an unidentified vehicle that did not stop. As driver of Vehicle #1 opened door to get out door caught rear wheels of trailer of Vehicle #2." There is no other mention of the unidentified vehicle which failed to stop anywhere else on the PAR. This PAR contains two separate accidents. The injury severity for both is "no injury"; therefore, the first is used for stratification purposes, independent of the police emphasis on the second.

### 2.1.1 Common Questions and Answers About Incidents Which Qualify for Study

Please find below a list of some common questions which arise when determining if an accident report qualifies for the NASS, CSS sampling frame.

Question: Now that the snow is gone, the potholes remain. If a motor vehicle in transport hits a pothole, causing damage to a tire and wheel or to the exhaust system, is this an eligible case?

Answer: Yes, it is an eligible case. To be eligible, recall that, first, a police report must be filed and, second, that the criteria set forth in ANSI D16.1-1976 (section 2.3, pages 8-10), have been met. In essence, these criteria mandate that the following occurs: (a) a harmful event (damage or injury), (b) involving a motor vehicle, (c) in transport, and (d) that the unstabilized situation originated (i.e., control was lost) on a trafficway or the harmful event occurred on a trafficway. If the parties involved suffered damage to the wheels, suspension, exhaust system, or undercarriage of their vehicles, then you have a valid case; however, ANSI D16.1-1976 specifically excludes damage from mechanical failures during normal operation (section 2.3.2, page 8). The intent is to exclude a "blow-out" accident where the driver brings the vehicle safely to the side of the road without incurring other damage. This exclusion was not meant to exclude an accident where a "blow-out" led to other vehicle damage (e.g., ran into a tree) while the driver was attempting to regain control.

Question: A man driving a motor home slams on his brakes to avoid another vehicle in his lane; he succeeds. However, his young daughter is thrown against the instrument panel and suffers possible injuries. Is this a motor vehicle accident?

Answer: It is a motor vehicle traffic accident involving one vehicle. The other vehicle is not involved.

Question: A car loses control on a trafficway, leaves the trafficway, and does damage to a private lawn. There is no damage to the car and the driver is not hurt. Is this a traffic accident?

Answer: Yes. It would also be a traffic accident if the motor vehicle left the scene before the police arrived (i.e., a hit-and-run vehicle). In these cases, the determining factor is whether or not the private citizen called the police (i.e., considered their lawn damaged), and if the police filed an accident report.

Question: A pulp wood truck is travelling down a public road with an insecure load; the load shifts and all of the wood falls off the truck. The wood bounces and rolls, and then strikes a fence on the side of the road, doing approximately \$500 worth of damage to the fence. There is no damage to anything except the fence and no other vehicles are involved; however, there is a police report made out on the accident. Does this accident qualify for NASS?

Answer: Yes, this situation does qualify for NASS. The harmful event is the damage to the fence.

Question: A power line falls onto a motor vehicle in transport, causing personal damage--is this an applicable case? A tree falls onto a motor vehicle as it was driving down the road--is this an applicable case?

Answer: Both of the above situations, plus many similar ones (e.g., rocks fell onto the vehicle), fall into the category of near cataclysmic events. ANSI D16.1-1976 excludes, from the definition of an accident (section 2.3.6, page 9), harmful events resulting from a cataclysm. To further define this exclusion, the cataclysm must have been on-going at the time the accident happened. Cataclysms are defined in ANSI D16.1-1976 (section 2.3.5, page 8). Therefore, to exclude the situation of an object (power line, rock, etc.) falling on a motor vehicle in transport, the cataclysm which caused the object to fall must have been on-going at the time of the accident. In terms of the specific questions, they are NASS accidents.

Question: We have a rare case where a bystander dropped his gun; it struck the ground and discharged. A bullet struck the windshield of a vehicle in transport. Should this accident be listed as a motor vehicle accident?

Answer: No, this is a firearms accident. However, it is entirely possible that a firearms accident could trigger a traffic accident.

Question: A tow truck is towing a pickup. The pickup truck loses an axle, which subsequently strikes a vehicle parked in a parking lot. Is this a NASS accident?

Answer: Yes it is. A motor vehicle in transport loses part of its cargo (axle of pickup--a harmful event in itself), which strikes (harmful event) a vehicle not in transport. This would be an example of an other non-collision (A10, First Harmful Event, equal "07").

Question: A motor vehicle, parked in a driveway, slipped out of gear and rolled down the drive, across the street, and struck a tree on the other side. Is this an applicable accident?

Answer: It depends on the location of the vehicle when control was lost and the location when the harm occurred. To be an applicable accident, the

control must have been lost on a trafficway or the harmful event must have occurred on a trafficway. If the vehicle was up in its driveway (i.e., outside of the trafficway--it must be clearly beyond the curb or any sidewalk boarding the curb), then control was lost (i.e., control is assumed lost when the gears slipped) off a trafficway. If the tree that was struck was off the trafficway (same as above), then it is not an applicable accident and whether the vehicle is on or off the roadway at impact is irrelevant. Given that you have to make a decision at the police station (must have a police report to start with), scrutinize the police report for any information which would help you in determining the locations of the key elements. If the police report is uninformative concerning these key elements, include the accident for sampling purposes. If selected, a review of the scene should determine whether or not the case remains.

## 2.2 Classifying the Accident by Type, Severity and Tow Status

Before an accident is selected for study, it must be classified by type, injury severity, and tow status. The groups into which the accidents are classified are called strata and are the basis for the stratified sampling procedures (i.e., stratification with variable sampling fraction) described in Section 3.0.

Accident Type Classification--Accidents will be classified into four categories: pedestrians & nonmotorists, motorcycle, truck, or other motor vehicle. For the purpose of this study, pedestrians, pedalcyclists, occupants of nonmotor vehicles, and occupants of motor vehicles not in transport or not in transport on a trafficway, are considered as pedestrians & nonmotorists. To classify the accident by type, first classify each unit in the accident as a pedestrian & nonmotorist, motorcycle, truck, or other motor vehicle. These classifications are defined as follows:

Pedestrian or Nonmotorist - pedestrian; bicyclist; other cyclist; animal related; occupant of vehicle not in transport; other nonmotorist.

Motorcycle - motorcycle; moped (motorized bicycle); other motorcycle (e.g., minibikes, motor scooters, sidecar cycle).

Truck - pickup; van (passenger, cargo, van-based station wagon); truck-based station wagon (e.g., Travelall, etc.); chassis without body; straight truck over 10,000 lbs. GVWR; truck tractor pulling no trailer; truck tractor pulling one or more trailers.

Other Motor Vehicle - (SPECIAL VEHICLES) snowmobiles; farm vehicles, except trucks; dune or swamp buggies; construction equipment other than trucks; ambulance, hearse type only; large limousine, more than four doors; self-propelled campers and motor homes; fire trucks; on or off road vehicles (e.g., Jeep CJ5, Bronco, Blazer, Scout, etc.); (BUSSES) school bus; cross country; transit bus; other bus; (AUTOMOBILES) convertible; 2-door sedan, hardtop, coupe; 4-door sedan, hardtop; 3 or 5-door hatchback coupe; auto with pickup body (e.g., El Camino, Ranchero, etc.); stationwagon (excluding van-based or truck-based station wagon); other automobile.

Classify the accident according to the highest priority unit involved in the accident where pedestrians & nonmotorists are the highest priority followed by motorcycles, trucks, and finally, other motor vehicles. Examples are:

1. If a motorcycle strikes a pedestrian, classify the accident as a pedestrian & nonmotorist accident. The two units involved are a motorcycle and a pedestrian; of the units involved, the one with the highest priority is the pedestrian.
2. If a motorcycle strikes a truck, classify the accident as a motorcycle accident.
3. If a truck strikes a passenger vehicle, classify the accident as a truck accident.
4. If two passenger cars collide, call the accident an other motor vehicle accident.
5. If a truck strikes a motor vehicle not in transport (i.e., parked), with occupants (i.e., nonmotorists), classify the accident as a pedestrian & nonmotorist accident.
6. If a truck strikes a stationary vehicle on a road shoulder with occupants, classify the occupants of the vehicle as nonmotorists and classify the accident as a pedestrian & nonmotorist accident. If the same stationary vehicle above does not have occupants and is struck, the accident would be classified as a truck accident.

Most Severe Police Reported Injury--Classify the accident according to its most severe police reported injury. Locate the injury in one of three classes: (1) fatal injury (K); (2) incapacitating injury (A); or (3) one of the following--non-incapacitating evident injury (B), possible injury (C), no injury (O), or unknown injury (U) [see ANSI D16.1-1976, section 3.1, page 21].

Towaway vs. Non-towaway Accidents--Classify B, C, O, U severity accidents as towaway or non-towaway. If the police report indicates any of the involved in transport vehicles were towed from the accident scene, classify the accident as towaway; otherwise, classify as non-towaway. In areas where the police report does not identify vehicle disposition (i.e., towaway or non-towaway), the final classification (A08, Final Stratification) is determined through the investigation.

#### 2.2.1 Common Questions and Answers Regarding Stratification

Please find below some typical examples of questions involving the classification of accidents.

Question: A vehicle ran off the road, struck a small tree, and continued on, eventually striking a pedestrian. Would this be coded as an other motor vehicle accident, since ANSI requires that in a pedestrian accident (section 2.6.4, page 17), the first harmful event must involve a collision with a pedestrian?

Answer: In NASS we are concerned with what is defined in ANSI as a motor vehicle traffic accident (MVTA) (section 2.3.20, page 10). The components of a MVTA are: (a) a police report, (b) a harmful event, (c) from an unbalanced situation, (d) involving at least one motor vehicle, (e) in transport [in motion or on a roadway], such that (f) the harmful event occurred

on a trafficway or th unstabilized situation originated on a trafficway. Beyond this, we are not concerned with subdividing accidents according to ANSI. Therefore, this accident should be classified as pedestriar accident. The first harmful event is not part of the sampling criteria. Remember that acciGent type, towing, and injury severity are the three independent measures used in deriving the stratification.

Question: Are persons in a train which hits a car considered as nonmotorists? If so, is the accident classified as a pedestrian & nonmotorist accident?

Answer: Trains, on their tracks, which strike or are struck by motor vehicles, are considered as stationary or nonstationary objects for the purposes of NASS. The persons on the train [including the operator(s)] are not considered to have been involved in the accident.

Question: When a hit-and-run accident occurs and no information is available about the striking vehicle, how do you classify the accident on the stratification record?

Answer: You consider this vehicle to have been an other motor vehicle. You then complete the stratification based upon this assumption. If you hav information on the police report that indicates the hit-and-run vehicle was either a truck or a motorcycle, then you treat it appropriately for sampling purposes.

Question: How is a street cleaner classified?

Answer: If a street cleaner vehicle is encountered during ratification, stratify according to model type. Some of these vehicles are essentially straight trucks with the cleaning equipment on the rear bed--stratify these as trucks. Other street cleaning models are essentially special vehicles--stratify them as other motor vehicles. If you cannot determine which model type the vehicle falls under, stratify as other motor vehicle. However, remember that many cities buy only one type, this source could be used as a basis for clarification.

Question: How do you stratify a vehicle not in transport? The vehicle is unoccupied.

Answer: You ignore vehicles not in transport for sampling purposes (but not for CRASH program purposes, when impacted). If the vehicle had been occupied, then its occupants would be considered as nonmotorists and the pedestrian or nonmotorist strata would be used.

Question: It is, at times, difficult to determine whether or not the vehicle was on the roadway from simply reviewing a police accident report. Usually, the PAR merely states that the vehicle was parked. Unless one is familiar with the roadway, how do you determine if the vehicle was in transport or not?

Answer: Being familiar with the area can help a great deal in resolving these types of questions. In large urban areas, or even rural areas, this, of course, is not always going to be possible. First, look at the scene diagram provided by the police (if available). If parking lanes are indicat-

ed, then you know the vehicle was not in transport. If the roadway is narrow and the roadway's width (where indicated) will not support two-way traffic (assuming the roadway was two-way), then the vehicle was in transport. If the police cite the driver for illegal parking, this is a strong indication that the vehicle was in transport (although caution should be exercised since the illegal parking could have occurred due to time violation, parking in yellow curbed areas in the middle of what otherwise would be considered a parking lane, parking by a fire hydrant, etc.). If the PAR does not contain sufficient helpful information, and you are not familiar with the area, then you must presume that, for stratification purposes (only), that the vehicle was not in transport.

Question: A vehicle had several persons riding on top of it. The police spotted the vehicle and started to give chase. The persons jumped off. In the process, one was injured. Is this person an occupant or a nonmotorist? What about the vehicle and its occupants?

Answer: The persons riding on the roof do not fit the appended-to-the-vehicle-for-motion exclusion (e.g., person on a bicycle or skateboard who is holding onto the back of a vehicle for added motion) cited under variables 008, Occupant Number, and 014, Occupants Seat Position; therefore, these persons are occupants of the in transport vehicle. Regarding the injured person, if that injury (harmful event) occurred as a result of exiting from the vehicle, then stabilization did not occur for that person. Therefore, in addition to those in the vehicle, consider the person who was injured while jumping from the vehicle as an occupant also.

Question: A pickup truck was towing (pulling) a friend's passenger car to a service station. The car broke loose and impacted a tree. No damage occurred to the pickup. How would you stratify this accident?

Answer: In general, any motor vehicle on a roadway is in transport. An exception occurs where the vehicle is attached to another vehicle by means of a fixed linkage. The critical issue is whether or not the attached vehicle has any control over its movement. In this instance, the answer depends on how the car and truck were attached. If the car was attached by a tow bar or any other form of fixed linkage, then the car is considered a trailing unit and the accident is stratified as a truck accident. On the other hand, if the linkage was nonfixed (e.g., rope, chain, etc.), then the car was in transport and the accident is stratified as an other motor vehicle accident. A fixed linkage is defined as one which has the property of keeping the towed unit separated from the power unit by a distance which is essentially constant. Included within this definition are cradle linkages where the towed unit has two or more wheels off the ground.

### 3.0 OVERVIEW OF SAMPLING ACTIVITIES

The procedure for designating the sample of accidents will include the following four tasks:

- Task 1: Contact specified police jurisdictions on specified days to process the police accident reports (PARs);
- Task 2: Review PARs at the jurisdiction, listing and classifying them into accident categories (strata) using the NASS Stratification Record form;
- Task 3: Enter the listed PARs into the NASS Automated Case Selection System and identify, from the output, the applicable accidents to be investigated; and,
- Task 4: If the NASS Automated Case Selection System is not accessible, complete a Sampling Worksheet, identifying from the list the accidents that are to be investigated for NASS. Note: in all circumstances, the listed PARs must be entered into the Automated Case Selection System sequentially by sampling date when it again becomes accessible.

Most teams will perform these tasks on Monday and Thursday of each week. The methods to be used by a team to accomplish each of these tasks depends on the PSU. The procedure to be followed by each team is spelled out in Section 3.2.

### 3.1 General Procedures

#### 3.1.1 Case Load Assignment Sheet (CLAS) (See Section 3.2)

Contact each of the jurisdictions indicated on the CLAS on the day specified. Determine the accidents which qualify for NASS that have not been listed on a previous visit. If reliable information on the accident type and severity can be obtained via the telephone, the jurisdiction need not be visited for listing purposes. (Of course, if an accident is subsequently chosen for investigation, a visit will be required.)

For most teams, the jurisdictions are given in two different visitation patterns on the CLAS (and also on the Sampling Worksheet). Thus, some jurisdictions are to be contacted on Monday and Thursday, others are to be contacted on Monday or Thursday (i.e., only one visit each week). For this latter group, the team is to decide which of the days (Monday or Thursday) the jurisdiction will be contacted; once the decision is made, the jurisdiction should continue to be contacted on that day each week. If it should become necessary to change the day of contact for any jurisdiction, your Zone Center should be notified before the change is implemented.

The agencies to be visited on a given day should be contacted by the team in the most convenient way. Plan the trips generally so as to arrive last at the agency with the greatest expected number of PARs. At that time, because all accidents to be listed in the PSU for the day have been recorded, the sampling worksheet can be completed to identify the accidents to be investigated. This will reduce to the fewest, the number of copies of PARs that need be made. Also, the largest number of sample accidents will most likely be selected from the largest jurisdiction in the PSU.

### 3.1.2 Stratification Record (See Section 3.2)

At each agency designated on the bottom of the CLAS, determine the PARs that are to be listed. Enter the jurisdiction name in column (1) of the Stratification Record. Sort the PARs in ascending order by date, time, or PAR number. [If the number of PARs is large, this sorting can be postponed until after the accidents have first been classified by type and severity. The sorting is only needed if the jurisdiction is selected. In this instance, only the accidents with the same type and severity (stratum) need be sorted (see section 3.1.4 below).]

After the PARs have been sorted, the Stratification Record is to be completed. Beginning with the earliest report, determine the stratum in which it belongs:

- a. Determine if a pedestrian or nonmotorist (see P08, Pedestrian or Nonmotorist's Type) was involved,
  - (1) If so, it belongs in one of the A-C strata;
  - (2) If not,
- b. Determine if a motorcycle (in transport) was involved,
  - (1) If so, it belongs in one of the D-F strata,
  - (2) If not,
- c. Determine if a truck (in transport) was involved,
  - (1) If so, it belongs in one of the G-J strata,
  - (2) If not, it belongs in one of the K-N strata.

Next, determine the most severe injury experienced by any accident victim.

- a. If a fatality occurred, a "1" should be placed in the column indicating the appropriate accident type fatality stratum: A, D, G, or K.
- b. If no fatality occurred but an "A" injury occurred, place a "1" in the appropriate column: B, E, H or L.
- c. If neither a fatality nor an "A" injury occurred, a "1" should be placed in one of the six "B, C, O, or U" columns: C, F, I, J, M, or N.
- d. For pedestrian & nonmotorist or motorcycle accident types, the column codes are C or F.
- e. If a truck or other motor vehicle accident occurred and the severity is "B, C, O or U", determine if any in transport vehicle was towed away:
  - (1) If so, place a "1" in column I or M,
  - (2) If not, place a "1" in column J or N.

Repeat the above procedure for each PAR. For each jurisdiction, the numbering within a column of the Stratification Record should begin at "1" for the first PAR entered, and increase for each additional PAR classified into that stratum.

After classifying all applicable PARs and entering 1, 2, 3, etc., in the appropriate column, draw a line across the sheet just below the last PAR for each jurisdiction. Write the word "total" in column (2), transcribe the highest number in each column into this row. Add these numbers. The sum should equal the number of PARs listed. If it does not, recheck your work.

### 3.1.3 The NASS Automated Sampling Selection System

The Automated Sampling Selection System is executed on the days given by the CLAS. Most teams are to execute the Automated Sampling Selection System on two occasions each week: Monday, after contacts at all jurisdictions scheduled for the day have been made, and on Thursday, after all contacts scheduled for that day have been made. A manual, giving instructions for use of the NASS Automated Case Selection System, is provided to each team. Any problems or difficulties that are not identified in the manual should be referred to your Zone Center.

When circumstances develop where the Automated Case Selection System is not accessible for a 24 hour period, cases may be selected for investigation by completion of the Accident Sampling Worksheet. In these instances, the same PARs must be entered in the Automated Case Selection System sequentially by sampling date when the system again becomes available. The cases which were selected manually are to be checked against those selected by the automated system.

### 3.1.4 Accident Sampling Worksheet (See Section 3.2)

The Accident Sampling Worksheet should be completed only when the Automated Case Selection System is not accessible or as otherwise specified by the Zone Center. The worksheet for a team may consist of up to five pages. Complete the information required at the top of the worksheet (day, date, etc.) and gather together all Stratification Records completed for the day.

1. Column (6):  $N_i$ : Transcribe the counts from the rows labeled "Total" on the Stratification Record into Column (6) of the Sampling Worksheets. Ensure that counts are placed in the proper stratum for the correct jurisdiction.
2. Column (7):  $N_i W_i$ : Multiply the column (6) entries by the preprinted column (5) entries, recording the results of each multiplication in column (7). Add the column (7) entries and record the total sum for the worksheet at the foot of column (7) in the row labeled "Total".

At this point, a portion of the CLAS (Table 3-1) is completed as follows:

1. Enter on row 3 (in the column of the CLAS for the contact day) the total of column (7) of the SW;
2. Enter on row 4 of the CLAS the ratio of the entry on row 3 to the entry on row 1; show the quotient to two decimals. This quotient is called the "first sampling interval";
3. Enter on row 5 of the CLAS the product of row 4 times the constant 0.75, show the product to two decimals. This entry is called the "Trial Interval";
4. Now examine the entries in column (5) of the SW, count the number of accidents listed on the SW that have values of  $W_i$  equal to or greater than the Trial Interval given on row 5 of the CLAS. Enter this count on row 6 of the CLAS.

- a. If the entry on row 6 is zero, or greater than or equal to the entry on row 1, then transcribe the entry on row 4 to row 10 of the CLAS and go to row 11 of the CLAS for the next operation.
  - b. If the entry on row 6 of the CLAS is not zero, and less than row 1, all accidents that made up the count are to be in the sample. These are identified as "Certainty Cases". Continue at row 7 of the CLAS.
5. Enter on row 7 of the CLAS, the total weighted accident count for the certainty cases identified in step 6 of the CLAS; this is the total of the column (7) entries on the SW for the certainty accidents. After determining this total, delete (cross out) all column (7) entries on the SW for the certainty cases and determine a new total of the remaining column (7) entries on the SW; enter this total on the SW at the foot of column (7).
  6. Enter on row 8 of the CLAS the remaining number of accidents to be selected. This is the difference between the row 1 and row 6 entries on the CLAS.
  7. Enter on row 9 the remaining weighted accident count. This is the difference between the row 3 and the row 7 entries on the CLAS. This result must equal the new total of the column (7) entries that you have just entered at the foot of column (7) of the SW; if it does not, recheck your work.
  8. Enter on row 10 of the CLAS the second sampling interval; this is the quotient of the entry on row (9) to row (8) of the CLAS. Show the quotient to two decimals.

The following step involves the Sampling Worksheet (SW).

1. Complete column (8)  $N_1W_1$ : Cumulate the column (7) entries on the SW; recording the cumulation in column (8); do not include any column (7) entries for the certainty cases. Thus, each value in column (8) is the sum of all column (7) entries for noncertainty accidents up to and including that row. The last entry in column (8) must equal the new total shown at the foot of column (7). If it does not, recheck your work.

The next steps involve determining the random cumulants using the CLAS form:

1. Multiply row (10), second sampling interval, by the row (2) random number. Record this product (to two decimals) in row (11), first random cumulant; and,
2. Repeatedly add the row (10) interval to the row (11) first cumulant and obtain the remaining cumulants, recording them in rows (12) through (18) on the CLAS.

Transcribe the Random Cumulants onto the Sampling Worksheet (SW) in the following way:

1. Column (9): Random Cumulants--beginning with the first cumulant from the CLAS and starting at the top of the worksheet, locate the first row in column (8) whose entry equals or exceeds the cumulant. Record the First

Random Cumulant in column (9) of this row. Rep at this process until the last row has been reached. (NOTE: If the entry in column (8) is so large that more than one cumulant falls on that row, transcribe all the random cumulants that belong in that row.) At this point, the number of random cumulants transcribed into column (9) should equal the number of accidents to be sampled as given in row (8) of the CLAS. If not, recheck your work.

2. Column (10): Number of Accidents Sampled--Record the number of cumulants (1 or more) appearing in column (9) for the row.
3. Column (11): Selected Cases--Examine the column (6) entry for all rows now having an entry in column (10) (i.e., for which accidents are to be sampled).

a. If the entry in column (6) is less than or equal to the entry in Column (10), then all accidents in the stratum from that jurisdiction are to be investigated.

(1) If the entry in column (6) is greater than the entry in column (10), a further step of sampling is required. In this case, the following must be done on the NASS Sample Selection within Stratum/Jurisdiction (SSSJ) form:

(a) Write the date of contact in the heading of the SSSJ. Transcribe the random number from row 2 of the CLAS for this contact date to row 1 of the SSSJ. Finally, transcribe column (6) of the SW to row 2 of SSSJ and column (10) of the SW to row 3 of SSSJ for the appropriate contact date.

(b) Divide row 2 by row 3 to form the stratum/jurisdiction interval. Record this quotient in row 4.

(c) Multiply row 4 by row 1 to get the first SJ random cumulant. Record this product in row 5.

(d) Repeatedly add the row 4 SJ interval to the row 5 cumulant and obtain the remaining cumulants. Record these in rows 6 through 8, stopping when the random cumulant exceeds row 2.

(2) Round the random cumulants that do not exceed row 2 (SSSJ) up (e.g., 3.1 and 3.8 both are rounded up to 4), and transcribe the numbers onto the Sampling Worksheet, column (11). To identify the selected accidents, examine the stratum entries for the jurisdiction given on the Stratification Record, Table 3-2. These numbers run from one up to the number which occurred [SW - column (6)] and uniquely identify a PAR number, date and time. Choose the accident or accidents whose sequential number (on the SR) matches the random cumulant (SSSJ - row 5) or cumulants (rows 5, 6, etc.).

### 3.2 Listing and Sampling Instructions

The Case Load Assignment Sheet (CLAS), the Stratification Record, the Accident Sampling Worksheet (SW), and the Sample Selection within Stratum/Jurisdiction (SSSJ) form to be used in the Arkansas PSU are attached.

### 3.2.1 Cas Load Assignment Sheet

The CLAS provided is unique for the PSU (Table 3-1). It covers team activities for the period specified in the upper right hand corner; updated versions of the CLAS will be sent to you periodically.

The CLAS lists the jurisdictions the team is to contact, specifies the days the contacts are to be made, and identifies the PARs that are to be listed at each visit. The instructions for completing the entries in the CLAS are given in Section 3.1.1.

### 3.2.2 Stratification Record

All teams will use the same Stratification Record form (Table 3-2). Make xerox copies of the form provided for the use of the team. Instructions for completing the form are given in Section 3.1.2.

### 3.2.3 Accident Sampling Worksheet

The forms provided are unique to the PSU; xerox them for the use of the team (Table 3-3). A set of the forms is to be completed each day that sampling is called for by the CLAS. Instructions for completing the worksheets are given in Section 3.1.4.

### 3.2.4 Sample Selection Within Stratum/Jurisdiction

All teams will use the same Sample Selection within Stratum/Jurisdiction form (Table 3-4). Each team should keep one clean copy of the form in reserve and xerox copies as needed.

## 3.3 Sampling in Unusual Circumstances

The team is to contact jurisdictions, complete the necessary Stratification Records, and complete the Sampling Worksheet on the days scheduled. The following rules are to apply on those unusual occasions when these activities cannot be completed as scheduled.

If contacts and necessary Stratification Records are not completed on the day scheduled:

1. Postpone completion of the Sampling Worksheet until the following day. Inform your Zone Center of the circumstances;
2. Complete the required contacts and Stratification Records on the following day and immediately designate the sample (complete the Sampling Worksheet) as instructed by the CLAS for the day scheduled;
3. If scheduled contacts and necessary Stratification Records are not completed by the end of the day following the scheduled day:
  - a. Designate the sample as instructed by the CLAS for the scheduled day using the accidents listed on the Stratification Records that are available; and,

TABLE 3-1

## CASE LOAD ASSIGNMENT SHEET

PSU: \_\_\_\_\_

Period: January 5 - January 22

Computations to designate sample strata and jurisdictions	Contact Days*					
	Monday 5	Thursday 8	Monday 12	Thursday 15	Monday 19	Thursday 22
1. Number of sample accidents to be selected	5	2	4	3	5	2
2. Random Number	.016	.737	.641	.884	.941	.114
3. Weighted accident count: (Column 7 of last page of SW)						
4. First sampling interval: (3)/(1) (2 decimals)						
5. Trial interval: (4) x .75 (2 decimals)						
6. Number of listed accidents with weight in Col. 5 of SW greater than or equal to the trial interval: a. If the number of cases is zero, or is greater than or equal to row (1), transcribe the row (4) entry above into row (10) below, and skip to step (11). b. If the number of cases is greater than zero and less than row (1), these accidents are in sample with certainty; assign them case numbers, and continue with step (7).						
7. Total weighted accident count for accidents identified in step (6b). (Delete the entry for these cases in Col. 7 of the SW, retotal Col. 7 and complete Col. 8 with remaining cases.)						
8. Remaining number of accidents to be selected: (1) - (6)						
9. Remaining weighted accident count: (3) - (7) (This must equal the new total of Col. 7 on the SW.)						
10. Second sampling interval: (9)/(8) (use 2 decimals)						

TABLE 3-1 (cont'd.)

## CASE LOAD ASSIGNMENT SHEET (cont'd.)

PSU: \_\_\_\_\_

Period: January 5 - January 22

Computations to designate sample strata and jurisdictions	Contact Days*					
	Monday 5	Thursday 8	Monday 12	Thursday 15	Monday 19	Thursday 22
<u>TRANSCRIBE TO COLUMN (9) OF SAMPLING WORKSHEET</u>						
11. First random cumulant: (2) x (10)						
12. Second random cumulant: (11) + (10)						
13. Third random cumulant: (12) + (10)						
14. Fourth random cumulant: (13) + (10)						
15. Fifth random cumulant: (14) + (10)						
16. Sixth random cumulant: (15) + (10)						
17. Seventh random cumulant: (16) + (10)						
18. Eighth random cumulant: (17) + (10)						

\*Contact to list all accidents added to jurisdiction file since the previous contact.



TABLE 3-3

NASS Accident Sampling Worksheet

Day: \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (m.) (day) (yr)

PSU: 53  
 Accident Type: Pedestrian & Nonmotorist

Accident Severity Code (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum ID (4)	$W_i$ (5)	$N_i$ (6)	$N_i W_i$ (7)	$\sum N_i W_i$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Case Number (12)	
K	M & TH		A	25								
	M		25									
	M		50									
	M		75									
	M		100									
	M		75									
	TH		25									
	TH		50									
A	M & TH		B	15								
	M		15									
	M		30									
	M		45									
	M		60									
	M		45									
	TH		15									
	TH		30									
B, C, O, U	M & TH		C	5								
	M		5									
	M		10									
	M		15									
	M		20									
	M		15									
	TH		5									
	TH		10									

... Total count subtotal

NASS Accident Sampling Worksheet

PSU: 53  
 Accident Typ : Motorcycle  
 Day: \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 (mo) (day) (yr)

Accident Severity Code (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum ID (4)	$W_1$ (5)	$N_1$ (6)	$N_1 W_1$ (7)	$\sum N_1 W_1$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Case Number (12)	
K	M & TH		D	25								
	M		25									
	M		50									
	M		75									
	M		100									
	M		75									
	TH		25									
	TH		50									
A	M & TH		E	18								
	M		18									
	M		36									
	M		54									
	M		72									
	M		54									
	TH		18									
	TH		36									
B, C, O, U	M & TH		F	12								
	M		12									
	M		24									
	M		36									
	M		48									
	M		36									
	TH		12									
	TH		24									
Weighted accident count, subtotal												

NASS Accident Sampling Worksheet

Day: \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 (mo) (day) (yr)

PSU: 53

Accident Type: Truck

Accident Severity Code (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum ID (4)	$W_1$ (5)	$N_1$ (6)	$N_1 W_1$ (7)	$\sum N_1 W_1$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Case Number (12)	
K	M & TH	(3)	G	25								
	M			25								
	M			50								
	M			75								
	M			100								
	M			75								
	TH			25								
	TH			50								
	A	M & TH		H	25							
		M			25							
M				50								
M				75								
M				100								
M				75								
TH				25								
TH				50								
B, C, O, U Towaway		M & TH		I	8							
		M			8							
	M			16								
	M			24								
	M			32								
	M			24								
	TH			8								
	TH			16								
	Weighted accident count, subtotal											

NASS Accident Sampling Worksheet

PSU: 53  
 Accident Type: Truck (cont'd.)

Day: \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 (mo) (day) (yr)

Accident Severity Code (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum ID (4)	$W_1$ (5)	$N_1$ (6)	$N_1 W_1$ (7)	$\sum N_1 W_1$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Case Number (12)
B, C, O, U Non-Towaway	M & TH		J	2							
	M			2							
	M			4							
	M			6							
	M			8							
	M			6							
	TH			2							
	TH			4							

Accident Type: Other Vehicle												
Accident Severity Code	Contact Day(s)	Jurisdiction	Stratum ID	$W_1$	$N_1$	$N_1 W_1$	$\sum N_1 W_1$	Random Cumulants	Number of Accidents Sampled	Selected Cases	Case Number	
K	M & TH		K	25								
	M			25								
	M			50								
	M			75								
	M			100								
	M			75								
	TH			25								
	TH			50								
A	M & TH		L	25								
	M			25								
	M			50								
	M			75								
	M			100								
	M			75								
	TH			25								
	TH			50								
Weighted accident count, subtotal												

NASS Accident Sampling Worksheet

Day: \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 (mo) (day) (yr)

PSU: 53  
 Accident Type: Other Vehicle

Accident S verity Code (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum ID (4)	$W_i$ (5)	$N_i$ (6)	$N_i W_i$ (7)	$\sum N_i W_i$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Cas Number (12)	
B, C, O, U Towaway	M & TH		M	5								
	M			5								
	M			10								
	M			15								
	M			20								
	M			15								
	TH			5								
	TH			10								
	B, C, O, U Non-Towaway	M & TH		N	1							
		M			1							
M				2								
M				3								
M				4								
M				3								
TH				1								
TH				2								
Weight d accident count, subtotal												
Weighted Accident Count, Total												

TABLE 3-4

NASS Sample Selection Within Stratum/Jurisdiction

PSU: \_\_\_\_\_

Computation to designate sample cases if, and only if, Column 6 of SW is greater than Column 10 of SW	Contact Date							
1. Random Number	*	*	*	*	*	*	*	*
2. Column (6) of SW								
3. Column (10) of SW								
4. Stratum/Jurisdiction (SJ) Internal (2)/(3) (use two decimals)								
5. First SJ Random Cumulant (4) x (1)				.				
6. Second SJ Random Cumulant (5) + (4)								
7. Third SJ Random Cumulant (6) + (4)								
8. Fourth SJ Random Cumulant (7) + (4)								

\*For each contact date, fill in the random number from row 2 of the Case Load Assignment Sheet (Table 3-1). The same random number is to be used as many times as necessary.

12/80

- b. Postpone contact of the still outstanding jurisdictions until the next scheduled day of contact; at that time, include those PARs that would have been recorded had the jurisdictions been contacted as scheduled.

#### 4.0 OVERVIEW OF INFORMATION TO BE COLLECTED ON CASES SAMPLED

For each case sampled, please include in the case report a copy of the police report, newspaper photos and articles, correspondence, collision diagram with diagram log, slides (including index), the applicable continuous sampling sub-system data collection forms with field logs, medical injury records, driver records, CRASH and RDE output.

All information which could identify the people or occupants involved should be sanitized from all materials submitted with each case. This includes names, addresses, telephone numbers, license plate numbers, driver license numbers, etc. Care should be taken not to over-sanitize the materials.

#### 4.1 Sequencing of Case Materials

Case report forms and miscellaneous materials are to be sequenced in conformity with the guidelines depicted in Figure 4-1. There are seven distinct groupings which may exist with each case, and while the number of groupings may vary with each accident, it is important for the case reviewer (team or Zone Center) that the composition of the six groups be maintained.

The first group contains the police report, newspaper photographs, articles, and other miscellaneous, non-NASS generated materials. This group will give the Zone Center reviewer a general appreciation of the accident from non-NASS sources and facilitates review of sampling. The documents in this group should be bound with either a paper clip or stapled. The group will appear in every case, although it will often be composed only of the police report.

The second group contains the Accident Collision Diagram with Accident Collision Diagram Log, slides, and the slide index; thus, it provides the reviewer with a general overview of the case based upon the NASS investigation. Differences between the two versions (Non-NASS and NASS) are to be expected periodically, and preliminary review of this and the preceding group will alert the reviewer to those differences and their eventual resolution in the final NASS version. This group should appear in every case, bound together with a paper clip.

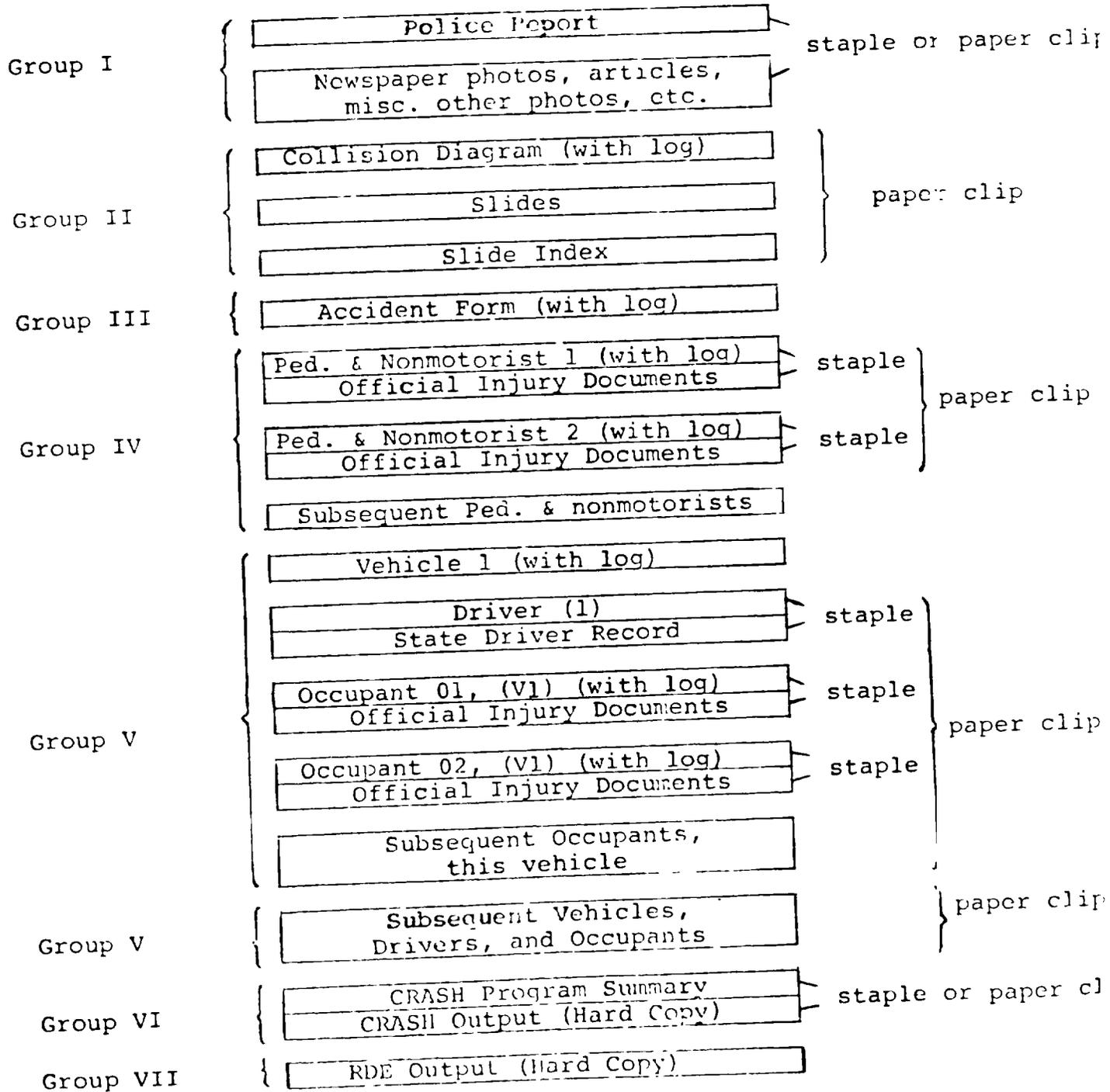
Third, the Accident Form with the Accident Log on the back of the last page forms a group which will appear in every case.

Fourth, all Pedestrian & Nonmotorist Forms (with logs) should be grouped together, beginning with pedestrian & nonmotorist 1. Official injury information obtained for any pedestrian & nonmotorist should be stapled to the back of the respective form. This will collate the injury data to the pedestrian & nonmotorist and save time which might be lost searching through the various forms to make the correct association. Pedestrian & Nonmotorist Forms will appear only in cases where applicable; it is desirable to use a paper clip to bind the forms in this group if there are more than one.

The fifth group contains forms for a vehicle, its driver, the state driver record for that driver, all the occupants contained in the vehicle, and any official injury documents for those occupants. The first form in this group is the Vehicle Form (with log) or Vehicle For Non-Towaway Accident Form. The Driver Form appears next and will have any state driver record stapled to the back of

FIGURE 4-1

SEQUENCE OF CASE MATERIALS



it. This will be followed by the first Occupant Form (with log) for this vehicle which has any official injury documents stapled to the back of it. All additional Occupant Forms (with logs) will follow in chronological order [Occupant 02 (V1), Occupant 03 (V1), etc.]. At least one group of this type will appear in every NASS case. All the forms associated with this group should be bound together with a paper clip. Additional vehicles, their drivers, state driver records, occupants, and official injury documents should be grouped in a similar manner. Thus, each group may be thought to represent a vehicle and its occupants; and each such group physically distinguishes one vehicle and its occupants from any other.

The sixth group is composed of the CRASH Program Summary and the CRASH Output (hard copy), if the program has been exercised for the collision. Upon reviewing the above forms and having become familiarized with the accident, the reviewer is then prepared to evaluate both the appropriateness of using the program and the viability of the various inputs on the CRASH Program Summary. These two items, the summary and any output (always include the input data), should be bound together with a paper clip.

Finally, the seventh group is composed of the Remote Data Entry (RDE) output.

#### 4.2 Information Required on Field Forms (Mandatory Variables)

Case Identification Variables--When using the remote data entry system to enter the field data, certain information is required on each field form (log data are not entered) before it will be accepted. Every field form submitted must have a Primary Sampling Unit Number, a Case Number-Stratification, Record Number, Transaction Code, Version Number, and Investigator I.D. Number. The Record Number and Version Number will be preprinted on each of the forms. Team members should fill out the Primary Sampling Unit Number, Case Number-Stratification, Transaction Code Number, and the Investigator I.D. Number.

Accident Form--For each accident investigated, one Accident Form must be filled out. The additional mandatory information needed on this form is the Date, Number of Vehicle Forms Submitted, and Number of Pedestrian & Nonmotorist Forms Submitted.

Pedestrian & Nonmotorist Form--If a Pedestrian & Nonmotorist Form is submitted, the only additional mandatory data item is the Pedestrian & Nonmotorist Number.

Vehicle Form--For each accident investigated, at least one Vehicle Form (or Vehicle For Non-Towaway Accident Form) must be submitted. The additional mandatory information to be included on this form consists of the assigned Vehicle Number and the Number of Occupant Forms Submitted.

Driver Form--For every Vehicle Form there must be included one Driver Form. The additional mandatory data items to be filled out on the Driver Form are Vehicle Number and Driver Presence in Vehicle.

Occupant Form--When Occupant forms are filled out, Vehicle Number and Occupant Number must always be present.

Treatment of Missing Cases--When accident-involved drivers, vehicles, occupants, pedestrians, or nonmotorists cannot be located or interviewed and all

data items are missing, the appropriate form must be filled out with missing data codes and submitted with the case. One exception to this rule is permitted. In accidents which involve a bus, complete an Occupant Form for every person where information can be obtained (i.e., either through the police or leads which subsequently develop). For those occupants where no information exists, no Occupant Form is required. Once again, this exception is for busses only.

#### 4.3 Update Procedures for Hard Copy Field Forms

Data elements which may be updated in the hard copy case report are restricted to certain variables which appear on either the Driver, Pedestrian & Nonmotorist, or Occupant Forms. No other data will be updated if it is acquired after the initial submission of the case. Note that for RDE, any variable except for the mandatory variables may be updated before the case is forwarded to the Zone Center. Update records have been developed for the variables which are allowable hard copy update candidates. Update records which have been specially designed to accommodate these variables are not to be included with the initial submission of the case; instead, they are retained at the PSU and filled out when the update information arrives. All data elements which the investigator intends to update should be coded with any available appropriate information or the code designating "unknown". In addition, the element number should be circled. This will "signal" that an attempt will be made to update that data element. This procedure applies only to those data elements on the Driver, Pedestrian & Nonmotorist, or Occupant Forms, which are designated below as candidates for updating.

Driver Record Update--This form is to be used if Alcohol Test Results (D24), License Status This Class of Vehicle (D26), License Restrictions (D27, D28), or convictions/suspensions/accidents (D29-D33) are not known at the time of initial submission. The investigator is to complete the required sections prior to initial case submission so that the subsequently acquired information may be associated with the right case and vehicle number. The newly acquired information should be entered on the front of the update form and any supporting documents attached to the back. The driver's name is to be sanitized as well as any attached records before they are forwarded to the Zone Center.

Pedestrian & Nonmotorist Update Record--This form is to be used when the investigator expects to receive official medical data regarding injuries or treatment received by any pedestrian/nonmotorist, and the official medical data were not obtained from the hospital, private physician, etc., before the initial submission. The investigator is to complete the appropriate sections prior to initial case submission so that the subsequently acquired official medical data may be associated with the right case and pedestrian or nonmotorist number. The additional information required on this form allows the investigator to update variables P09, P10, P15, P16, P19 through P60, and P64 based on subsequent receipt of official medical or other official data where necessary. These data would be difficult to update without recorded knowledge regarding the initial coding of Treatment - Mortality (P15), Hospital Stay (P16), and injury data (P19-P60). The data on the specific injuries coded on the initial submission (variables P19-P60) may be combined with the new injury data using the NASS injury coding rules to revise the injury coding on the updated version.

Occupant Form Update Record--This form is similar to the Pedestrian & Nonmotorist Update Record with the exception that the variables have different numbers, and there exists the need to identify both the vehicle and occupant number. It should be used when the investigator expects to receive official medical data after the initial submission. The investigator is to complete the appropriate sections prior to initial case submission so that subsequently acquired official medical data may be associated with the right case, vehicle, and occupant number. Additional information required on this form prior to initial case submission allows the investigator to update variables O09, O10, O20, O21, and O28 through O69, based on subsequent receipt of official medical data. These data would be difficult to update without recorded knowledge regarding the initial coding of Treatment - Mortality (O20), Hospital Stay (O21), and injury data (O28-O69). This information may then be combined with the new injury data using the NASS injury coding rules to revise the variables on the updated version.

Update Filing and Submission Instructions--The investigator must complete each of the sections on the above forms, as required, prior to the initial submission. This allows the new information (update form) to be associated with the corresponding field form in the initial submission, and allows the originally coded data to be combined with the new data (using the NASS injury coding rules).

All update records may then be stored in a three-ring binder and segregated into two sections: (1) Driver Form Update Records, and (2) Pedestrian & Nonmotorist and Occupant Form Update Records. Each new addition of an update record may then be indexed by case number, vehicle number, pedestrian & nonmotorist number, and occupant number. They may also be cross-indexed alphabetically based on the name of the driver, pedestrian/nonmotorist or occupant in the appropriate section. This will facilitate the processing of inquiries from Zone Centers as well as the retrieval of the update record when the driver record or official medical data is received.

The name of the individual and any other descriptive information, unique to the team, which may identify the individual should be sanitized from both the update record and the attached reports after the information from the latter has been included on the update record.

Update records should be accumulated, packaged in an individual 9 1/2 x 12 inch manilla envelope (but not one envelope for each update) which identifies the PSU and is boldly marked: **UPDATES**, and sent to the Zone Center on a periodic basis according to the schedule in Section 5.2. All updates must be submitted to the Zone Center within 120 days from the date the case was sampled.

The update records, described above, will be attached by the Zone Center to the corresponding forms included in the initial submission to the Zone Center.

#### 4.4 Form Logs

The field forms (Accident, Pedestrian & Nonmotorist, Vehicle, Driver, and Occupant) and the Accident Collision Diagram have a unique log printed on the back of the last page. These logs provide information with respect to the acquisition and processing of accident data in the NASS system. This information is used to establish reasonable acquisition expectations, to identify and evaluate

Zone Center quality control effectiveness, and to provide complete and timely feedback to team members. Careful examination of the logs will reveal that minimal effort is required for the investigator to answer the questions, particularly if the entries are made in conjunction with, and at the time, the particular task is accomplished. The form logs also contain sections which will be completed by the Zone Center during the review process.

Accident Log--The sections to be completed by the PSU are identified under the heading "Completed by Team" or "For Team Use". The block at the top of the page labeled "Forms: For Team Use" is an area where the investigator accounts for the number of forms which are required and ultimately included with the case. The information in this section is transcribed to the front of the case envelope before submission to the Zone Center. Many of the forms which are needed under the required component of this section may be identified early in the investigation; thus, this section will serve to aid the investigator in determining the status of the case while it is in progress. At the time of the initial submission, or final submission (if there are to be no updates for the case), the investigator uses this section to verify that the number of forms included in the case report equals the number of forms required, with the exception of medicals. The number of medicals (Official Medical Data) required should reflect the number of people who were treated in a hospital, medical clinic, etc. This is true independent of the ability of the PSU to obtain the data. The number of medicals included in the case report will reflect the number of medicals (on a per person basis) which are included in the case at the time of initial submission.

The block marked "Completed by Team" is to be filled out by appropriate investigator as the different activities described are completed. Each of questions 6 through 17 (discussed below) must be completed before the case is submitted. Question 6, Final Stratification, is filled in with the entry from variable A08, Final Stratification, of the Accident Form. Question 7, Date of Accident, is filled in with the same month, day, and year as is designated under variable A07 on the Accident Form. Question 8, Date Sampled (listed), is the contact day listed on the Case Load Assignment Sheet (CLAS). Question 9, Date Assigned to Investigator(s), is the date the sampled police accident report is turned over to the team member who will investigate the accident. Question 10, Date Scene Field Work Completed, is the date the investigator locates and inspects the accident scene. Question 11, Completing Person, is to be filled in with the initials of the investigator who located and inspected the scene, and who will assume responsibility for the completeness and overall quality of the case. Questions 12, Date Case Reviewed and Approved for Submission to Zone Center, and 13, Completing Person, are provided to record the date and initials of the investigator who reviews the case before it is submitted to the Zone Center. Questions 14, Date Data Entered (RDE), and 15, Completing Person, are to be filled out with the date and the initials of the person who enters the case into the NASS Remote Data Entry system. The status of the case before submission to the Zone Center is recorded under question 16. If the case is complete and requires no updates, box (1) is checked. If the case is to be updated, box (2) is checked, and if the case was dropped, box (3) is checked and the reason noted. Question 17, Date Case Released to Zone Center, is filled in with the date the RDE "release" transaction was completed. Cases are to be released before they are forwarded to the Zone Center. The remainder of the Accident Log is completed by the Zone Center.

Pedestrian & Nonmotorist Log--Each attempt to contact the involved pedestrian or nonmotorist is recorded on the interview contact record portion of the log. The date and time of the contact (military), along with the initials of the contacting investigator, manner of contact, and result of contact are to be recorded for each attempt. A detailed listing of the codes to be used for the different "manners" and "results" of the contact are presented on the back of page 7 of the Pedestrian & Nonmotorist Form. If more than 8 attempts are made to obtain an interview, the investigator should document the 8th through the next to the last attempt (but not including it) under the "Comments:" section on page 8 of the Pedestrian & Nonmotorist Form, and the final attempt (whether successful or not) should be coded in the 8th row of the log. The final entry in the "result" column of the interview contract record portion of the Pedestrian & Nonmotorist Log must be one of the following codes: "07", partial or complete interview; "09", unable to contact or locate; "10", hit and run; "11", fatal--surrogate not available; "12", intensive care--surrogate not available; "13", out of state resident; "14", refused interview; "15", insurance company refusal; or "16", attorney refusal or litigation.

If multiple interviews are obtained, the investigator documents all attempts to contact the principal interviewee. Only a single success is recorded for all other persons. For example, after four unsuccessful attempts to obtain an interview at a single location, four interviews are obtained on the fifth attempt. Five contacts are recorded for one person but only one contact each for the other three.

Questions 48 and 49 are to be filled out with the date and initials of the person who made the decision not to further attempt to obtain a direct or surrogate interview for the pedestrian or nonmotorist under consideration. These questions (48 and 49) are to be left blank if an interview is obtained. Question 50 is to be filled out with the date official medical data are requested. If no official medical data are requested for this pedestrian or nonmotorist, then leave this question blank. Question 51 describes the disposition of official medical data. The responses to question 52, Reason official medical data not obtainable, are listed on the back of page 7. Questions 50, 51, and 52 interact in a determined fashion. The table below shows the interactions and should be referred to whenever the log is being completed.

Q u e s t i o n		
50	51	52
date	1	0
	4	8
blank	2	3, 4
	3	1, 2, 5-7
	9	9

If the official medical injury data are requested but not received at the time of case submission (questions 51 = 4 and 52 = 8), then the investigator should complete a Pedestrian & Nonmotorist Form Update Record. Finally, for question 53, Completing Person, record the initials of the person who completed the Occupant Injury Classification variables (P19-P60).

This completes the information required from the team. The remaining questions are filled out by the Zone Center.

Non-Towaway Vehicle Log--The Non-Towaway Vehicle Log must be completed for all vehicles which are sampled in the nontow away strata "J" or "N". The original stratification (i.e., the character in the case number) is used in making this determination. The only question filled out on the Non-Towaway Vehicle Log is question 10. The investigator who completed the data collection form simply writes in the date and his initials.

Vehicle Log--The Vehicle Log must be completed for all vehicles which fall in a sampling stratum other than "J" or "N". All questions (8-20) on the log should be completed for each vehicle. Questions 8 and 9 report the Source of Vehicle Data and the number of visits made before the vehicle was inspected. To be credited as "inspected", slides of the damaged vehicle must be submitted with the case and the required measurements taken (see section 4.5 below). If the vehicle has been repaired prior to the inspection, photo slides of the repaired vehicle and damaged components (where circumstances permit) along with a completed form are required. Crush dimensions and a CDC/TDC must be provided when data permit. If there is not measurable damage (i.e., in certain pedestrian or nonmotorist type accidents), slides of a vehicle and a completed Vehicle Form will suffice.

Questions 10 and 11 are to be filled out with the date the initial vehicle inspection was attempted and the initials of the investigator. Questions 12 and 13 are used to record the date and initials of the investigator who made the decision not to further attempt to inspect the vehicle. These questions (12 and 13) are filled out whenever a vehicle inspection is not acquired; otherwise, they are left blank. Question 14, Reason vehicle inspection not completed, is filled out for every vehicle. The reasons the vehicle inspection was not completed are listed on the back of page 8 of the Vehicle Form. For example, if the inspection was completed, an "01" is coded. If no inspection was completed, use the appropriate code "02" through "17". Questions 15 and 16 are used to record the date and initials of the investigator who inspected the vehicle. These questions (15 and 16) are filled in when an inspection is completed; they are left blank if no inspection is obtained. The interaction between questions 12 through 16 is shown in the table below.

Q u e s t i o n				
12	13	14	15	16
blank	blank	01	date	initials
date	initials	02-17	blank	blank

The responses for questions 17 (Reason highest total delta V unknown), 18 (Data obtained for this vehicle's most severe impact: regardless of usage), and 19 (CDC/TDC data source) are listed on the back side of page 8 of the Vehicle Form. The table below indicates the valid combinations of responses. The investigator uses his response to question 18 to key into the table. For example, if question 18 is coded "04" [Crush profile only (outside scope of TDC)], then question 17 must be coded "3" [At least one vehicle (which may include this vehicle) is beyond the scope of the CRASH program: regardless of collision conditions], and question 19 must be coded "0" (No data obtained).

Q u e s t i o n					
17	18	19	17	18	19
3-5	00	0	3	07	1,2*
1,3-5	01	1-4	1-5	08	1-4
3	02	1-4	3	09	1-4
3-5	03	0	3-5	10	0
3	04	0	3	11	0
3-5	05	0	1-5	12	1,2*
1,3-5	06	1,2*	3	13	1,2*

\*This code is allowed only where the alteration is so minor that it does not detract from the investigator's confidence in his/her crush measurement.

Question 20, CRASH output on other than highest delta V, is coded yes ("1") if, for any reason, there is a computed delta V for a secondary impact. Otherwise, this question is coded no ("0").

Driver Log--The investigator should be sure that each question (8-17) has been addressed for each driver before completing the log. For questions 8 and 9 the investigator fills in the date and initials of the person who inspected the scene and collected the environmental data for variables D34 through D45. The only time this information would be omitted is the rare case where the accident scene cannot be located.

For question 10, Driver Presence in Vehicle, the investigator indicates whether or not the driver was present. If the driver was not present (code "1") leave the remainder of the Driver Log blank except for question 14 (Reason that official driver records are not obtainable) which is coded "7" (No driver). If a driver was present, questions 11 through 18 are completed. For questions 11 and 12, the investigator records the date this driver's official driver records were requested and the initials of the requesting person. Question 13 is used

to describe the result of the official driver record request at the time the case is submitted to the Zone Center. Question 14 identifies, for those applicable drivers, the reasons why the official driver records were not obtainable. The responses for questions 14 (Reason that official driver records are not obtainable), 15 (Type of Driver Data Obtained), and 16 (Source of Driver Data) can be found on the back of page 5 of the Driver Form. The valid code combinations between questions 11 through 14 are shown in the table below.

Q u e s t i o n			
11	12	13	14
date	initials	1	0
		2	2,4-6
		3	8
blank	blank	2	1,3,6
		blank*	7

\*The situation where no driver is present.

If official driver records are requested but not received at the time of the case submission, the investigator codes a "3" for question 13 and completes a Driver Form Update Record.

Question 15, Type of Driver Data Obtained, enables us to know what type of interview information was obtained. Response "0" (No driver data obtained) means no driver or surrogate interview was obtained. Response "1" (Driver history only) means that an interview was obtained with a person who only had knowledge regarding the driver's background and driving history (i.e., a person who can answer questions D10 through D16 on the Driver Form). Response "2" (Accident circumstances only) means that an interview was obtained with a person who has knowledge regarding the circumstances surrounding the particular accident this driver was involved in (i.e., a person who can provide answers to some or all of the questions asked on pages 2, 3, and 4 of the Driver Form) but who cannot provide any information regarding the driver's background or history (i.e., variables D10 through D16). Response "3" (Driver history and accident circumstances) means that an interview was obtained with a person knowledgeable regarding both the driver's background and history and the circumstances of the accident.

Question 16, Source of Driver Data, tells us the source of the driver data obtained during the interview. Needless to say, the objective in NASS is to interview the driver him/herself--response "1" (Driver). In certain instances (e.g., driver is fatally injured or incapacitated) another person or persons may provide the information. This question (16) allows us to identify the person. Response "2" (Other occupant) is used if the data source was an occupant of the vehicle operated by the driver under consideration. The occupant

may also have been a relative or friend of the driver. In any case, the person's occupant status takes precedence over whatever personal relationship existed. Response "3" (Relative or friend) is used whenever the data source is a relative or friend of the driver and the source was not involved in the accident. Use response "4" (Eyewitness) when the interviewee witnessed the accident. If the person was also a relative or friend, then response "4" (Eyewitness) takes precedence. Response "5" (Combination of 2, 3, or 4) is appropriate when the interview data was obtained from more than one person such that: (1) the driver was not one of the persons, and (2) the interviewees were from different categories. For example, if the data are obtained from two or more relatives or friends, then code "3" (Relative or friend) should be used. If the data are obtained from the driver and another person, then code "1" (Driver). When code "1" (Driver) is used under question 16, indicate in question 15 the type of driver data obtained from the actual driver. When codes "2" through "5" are used for question 16, indicate the total data obtained ("1", "2", or "3") for question 15 from all persons participating.

The valid combinations for questions 15 and 16 are shown in the table below.

Q u e s t i o n			
15	16	15	16
0	0	2	1,2,4,5
1	1-5	3	1-5

For questions 17 and 18, the investigator records the date the official driver record data was entered on the Driver Form (variables D26 through D33) and his/her initials. This date and initials are required even if the information (D26 through D33) is unknown ("9s").

Occupant Log--Each attempt to contact the involved occupant is recorded on the interview contact record portion of the log. The date and time of the contact (military), along with the initials of the contacting investigator, manner of contact, and result of contact are recorded for each attempt. A detailed listing of the codes used for the different "manners" and "results" of the contact are presented on the back of page 7 of the Occupant Form. If more than 8 attempts are made to obtain an interview, the investigator should document the 8th through the next to the last attempt (but not including it) under the "Comments:" section on page 8 of the Occupant Form, and the final attempt (whether successful or not) should be coded in the 8th row of the log. The final entry in the "result" column of the interview contact record portion of the Occupant Log must be one of the following codes: "07", partial or complete interview; "09", unable to contact or locate; "10", hit and run; "11", fatal--surrogate not available; "12", intensive care--surrogate not available; "13", out of state resident; "14", refused interview; "15", insurance company refusal; or "16", attorney refusal or litigation.

If multiple interviews are obtained, the investigator documents all attempts to contact the principal interviewee. Only a single success is recorded for all other persons. For example, after four unsuccessful attempts to obtain an

interview at a single location, four interviews are obtained on the fifth attempt. Five contacts are recorded for one person but only one contact each for the other three.

Questions 49 and 50 are to be filled out with the date and initials of the person who made the decision not to further attempt to obtain a direct or surrogate interview for the occupant under consideration. These questions (49 and 50) are to be left blank if an interview is obtained. Question 51 is to be filled out with the date official medical data are requested. If no official medical data are requested for this occupant, then leave this question blank. Question 52 describes the disposition of official medical data. The responses to question 53, Reason official medical data not obtainable, are listed on the back of page 7. Questions 51, 52, and 53 interact in a determined fashion. The table below shows the valid combinations.

Question		
51	52	53
date	1	0
	4	8
blank	2	3,4
	3	1,2,5-7
	9	9

If the official medical injury data are requested but not received at the time of case submission (questions 51 = 4 and 52 = 8), then the investigator should complete an Occupant Form Update Record.

This completes the information required from the team. The remaining questions are filled out by the Zone Center.

Accident Collision Diagram Log--An Accident Collision Diagram Log is filled out for each accident. Questions 6 through 11 must be addressed before the team's portion of the log is complete. Question 6 identifies whether or not the investigator was able to locate and diagram the scene. Response "1" (Scene not located) is used if the scene could simply not be found. This response is also used if no photo slides of the scene are included in the case materials regardless of whether or not the scene was found and diagrammed. The latter use is done to emphasize the importance of scene documentation. The former use is appropriate where the information is so lacking about the accident that the investigator cannot even say where the accident happened (e.g., PAR sketches accident as occurring on Main Street but provides no reference as to where on Main it occurred). Response "2" (Scene located and roadway data mapped on diagram, but insufficient data even to produce a rough sketch of the collision events) is used where the general area of the accident can be identified but because of a lack of information (e.g., PAR obscure, no interviews) any vehi-

cle's direction of travel and/or the location of the first harmful event cannot be determined. To distinguish between responses "1" and "2", consider the following.

An accident occurs on Highway 1. The PAR does not further identify the location, and no interviews are obtained. Highway 1 is a long road. Because it is not efficient to spend hours searching for evidence, and because the likelihood is low that the evidence you find is related to the accident under consideration, the investigator would code response "1" regardless of any knowledge about the collision itself. However, if the accident was known to have occurred in a certain area of Highway 1 (e.g., on an on/off ramp, near an intersection, etc.), then response "2" is appropriate so long as the direction of travel for at least one vehicle and/or the location of the first harmful event is unknown. If the direction of travel for all vehicles is known and the location of the first harmful event is reasonably located [i.e., within an area of reasonable limits (e.g., a junction)], then code response "3" (Diagram completed).

Questions 7 and 8 record the date and initials of the person who determined whether or not the scene has been located and diagrammed. Question 9 indicates the investigator's confidence in the information depicted on the Accident Collision Diagram. The interactions between questions 6 and 9 are shown in the table below.

Strata (A02-4th Digit)			
A-I, K-M		J & N	
Question		Question	
6	9	6	9
1,2	4	1,2	4
3	1-3	3	3

Question 10, Date slides were collated and indexed, and question 11, Initials, are to be filled in with the date and initials of the person who was responsible for collating the slides and drawing up the slide index. In the rare case where there are no slides (i.e., the scene was not even located and photographed), leave these questions blank.

#### 4.5 NASS Criteria for Acceptable Data Completion

The data completion criteria are used as a standard among all PSUs when determining the minimum acceptable data for completion of a case.

Scene Inspections: The Accident Collision Diagram, with at least a sketch of the physical plant, and slides of the scene are required. No excuse is acceptable. If the photo slides did not turn out, a return visit to the scene is made.

Vehicle Inspections: To be credited as "inspected", slides of the damaged vehicle must be submitted as well as the required measurements. If the vehicle

has been repaired prior to the inspection, photo slides of the repaired vehicle and damaged components (where circumstances permit) along with a completed form are required. Crush dimensions and a CDC/TDC must be provided when data permit. If there is not measurable damage (i.e., in certain pedestrian or non-motorist type accidents), slides of the vehicle and a completed Vehicle Form will suffice. Inspections are not required for "J" or "N" strata vehicles.

Interviews: If the driver, pedestrian, nonmotorist or occupant was contacted and an appropriate form completed (i.e., the information provided is sufficient enough to support that a partial or complete interview was obtained), and submitted, it is recorded as an interview. An interview with either a driver, occupant, relative, or friend is acceptable as a surrogate interview for other occupants--this refers to the occupant interview section of the Occupant Form. Police officers or occupants of other involved vehicles who know the victim only because of the accident cannot be considered as surrogates.

The driver interview section of the Driver Form must be completed through an interview with the driver. However, if an interview cannot be obtained because the driver is fatally injured or incapacitated, the driver history can be obtained from a relative or friend but accident circumstances must be provided by an occupant of the same vehicle or an eyewitness (including occupants of uninvolved vehicles). Also, if the driver is not present in the vehicle, accident circumstances must be provided by an occupant of the same vehicle or an eyewitness.

Official Driver Records: A paper copy or teletype of an official driver record is acceptable. The record must be attached to the case. Other procedures must be established with and previously authorized by the Zone Center with CTM concurrence to be acceptable.

Official Medical Data: A copy of a hospital records department or other clinical institute final discharge medical summary is required. Copies of an emergency room or other abbreviated and advanced medical reports are acceptable with prior Zone Center approval only if established relations dictate (i.e., hospital will not or does not provide a more comprehensive medical report). Copies of physician reports are acceptable when appropriate (i.e., PAR reports victim as injured but driven to private physician). Substitute procedures, including handwritten or transcribed information are acceptable only with the prior approval of the Zone Center with CTM concurrence. Only official copies of autopsy reports are acceptable. Reports from lay coroners and certificates of death are not considered official medical records.

Finally, before alternative methods for acquiring official records (i.e., handwritten copies or telephone transcripts of medical data and driver records) are authorized, all avenues for obtaining the hard copy must be exhausted. Therefore, establishment of PSU relations will be closely monitored by each Zone Center to ensure that teams do not default to alternative methods because they are easier to establish.

#### 4.6 Special Procedures for Strata "J" & "N" Accidents

##### 4.6.1 Procedure for Vehicle(s) in Case Strata "J" or "N"

Do not photograph or inspect any vehicle from an accident sampled in these strata. Instead, the data obtained for these vehicles will be entered on an abbreviated vehicle form, essentially requiring no field effort. This Vehicle For Non-Towaway Accident ("J" or "N") Form is only one page in length and has 16 variables. The police report will be the primary source of information for this form. It is understood that PAR's will not always provide the information for the variables; however, it will supply the majority of the information. In no case should one attempt to find the vehicle simply to code correctly any information missing or inadequately described on the police report. On the other hand, if the police report is not clear on the model type, for example, and you happen to see the vehicle while conducting an interview, you may then enter the correct response for the variable. You may also corroborate vehicle related ambiguities in the police report through the interview. However, you should not collect any data for variables not on the abbreviated vehicle form, inspect, or photograph the vehicle simply because it is readily available.

The CRASH program is not to be exercised for vehicles in strata "J" or "N" since the vehicle procedures and forms unique to these cases have no provision to store any results, and the field inputs for the program will not be collected.

##### 4.6.2 Procedure for Scene Reconstruction in Case Strata "J" or "N"

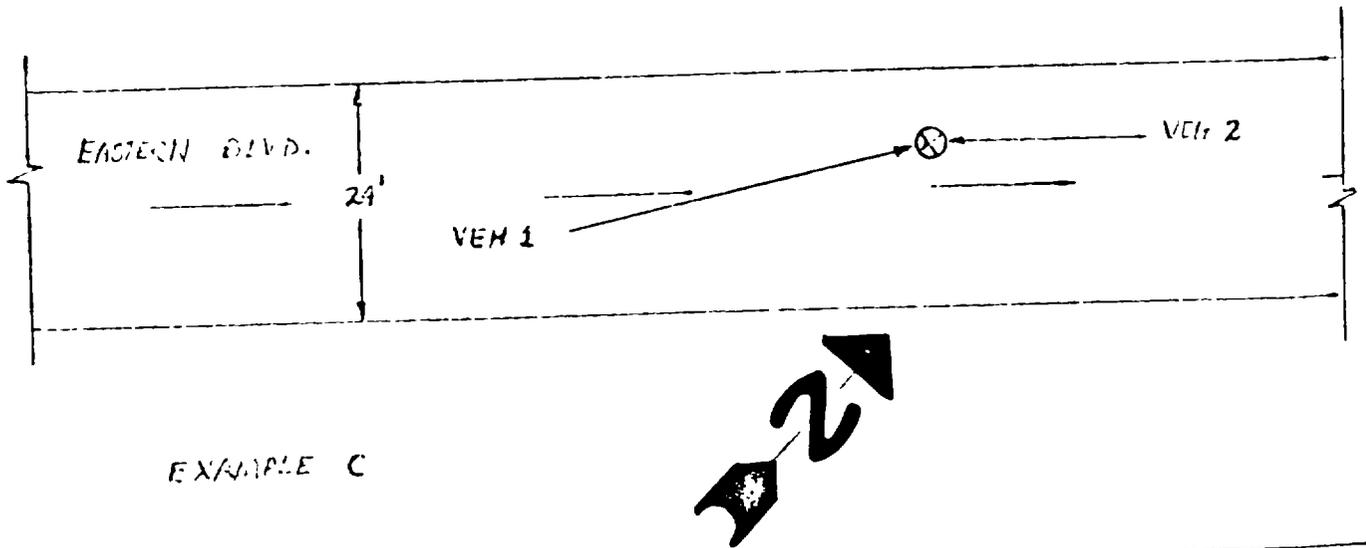
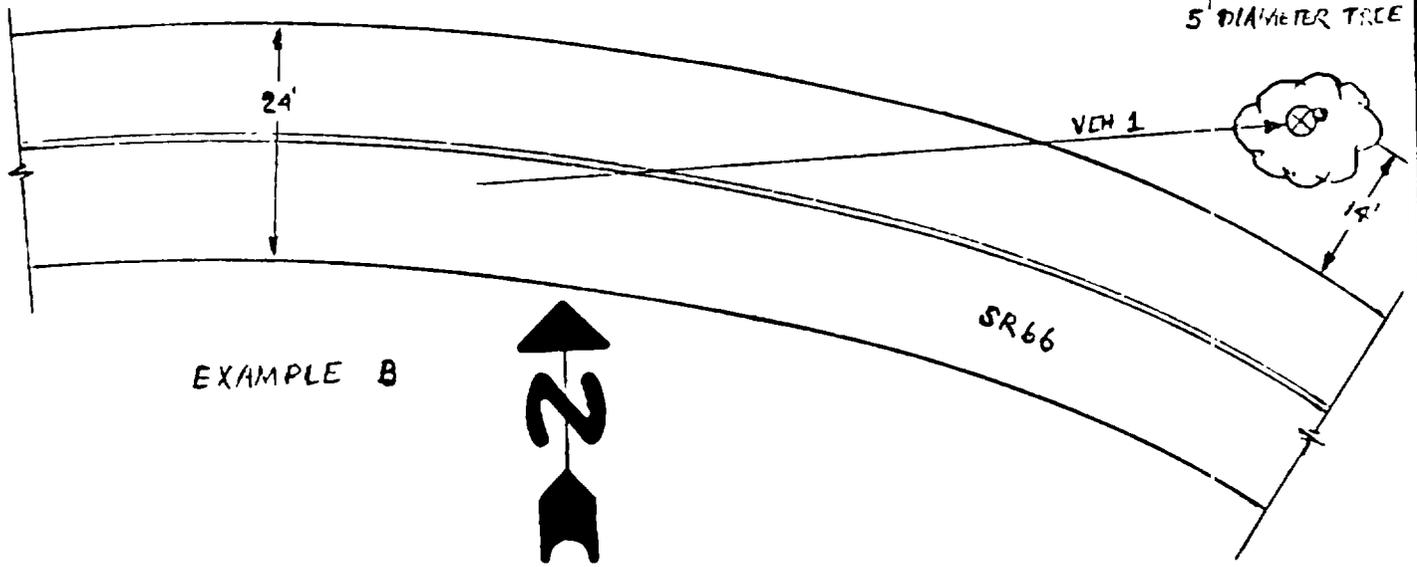
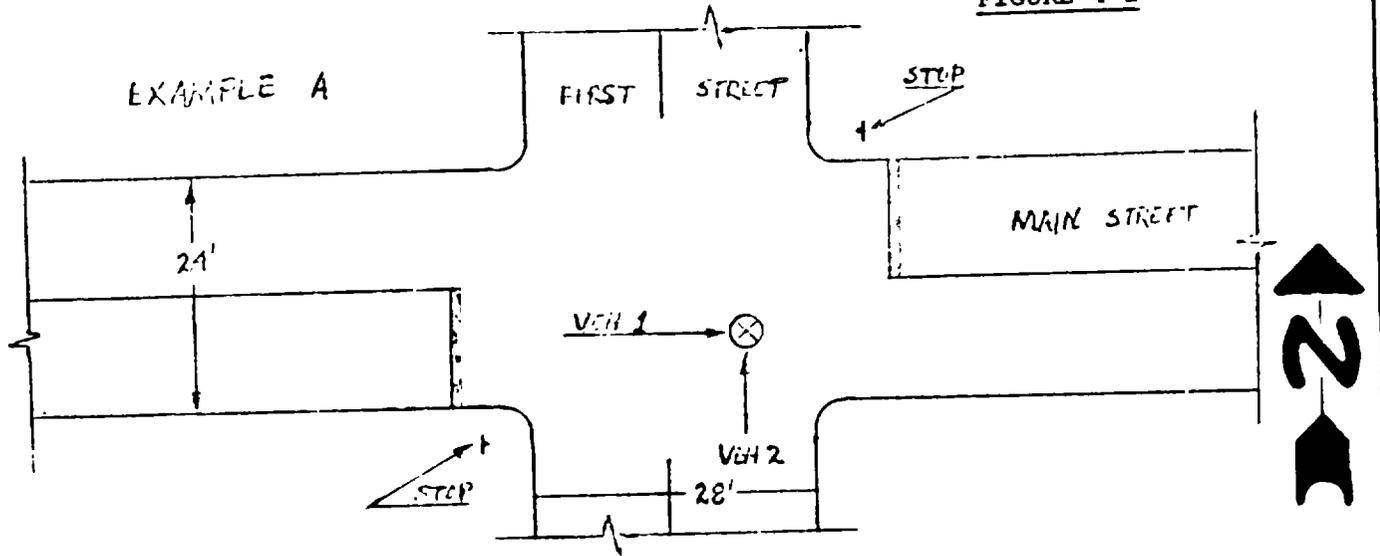
General scene diagrams will be required for these cases, but it is neither necessary nor encouraged that they include representations of the vehicles at their pre-, at-, and post-crash positions. It is only necessary that you locate the first harmful event on the general diagram of the scene. This should be done by drawing an "X" within a circle at the appropriate location. An arrow representing the path of the vehicle prior to impact and leading to the first harmful event should also be included on the diagram. Examples of expected diagrams for accidents in Nontow away strata "J" or "N" are included (Figure 4-2).

Please note that it is still necessary for the investigator to respond to the scene in order to collect the environmental data on both the Accident and Driver Forms for these "J" and "N" accidents. The field work at the scene will also provide the data for the general diagram. Finally, a photograph should be taken along the pre-impact path of each vehicle and oriented toward the location of the first harmful event. Additional photographs are to be taken to depict the type of roadway(s) involved if the coverage leading to the first harmful event was too narrow to represent the entire scene.

##### 4.6.3 Vehicles Not Affected by Procedures for Strata "J" or "N"

The full Vehicle Form (pages 1-9) should be applied in its entirety and the vehicles inspected as well as photographed whether or not they were towed if the accident has been stratified (last character of variable A02) as an "A", "B", "C", "D", "E", "F", "G", "H", "I", "K", "L", or "M". In other words, the abbreviated single page Vehicle For Non-Towaway Accident Form and the instructions to neither inspect, photograph, nor locate vehicles at their pre-, at-,

FIGURE 4-2



or post-crash positions applies only to vehicles in Nontow away (Police - B, C, O, U) strata "J" or "N". Please keep in mind that you will not have independent data regarding restraint usage and occupant contact points when the abbreviated form is used; therefore, you must carefully query the occupants to elicit this information for later use on the Occupant Form.

#### 4.6.4 Usage of Other NASS Forms in Nontow Away Strata "J" or "N"

All other forms--Accident, Pedestrian & Nonmotorist, Driver, and Occupant--are to be applied in their entirety as applicable without regard to the stratification of the case.

#### 4.6.5 Selection of Vehicle Form and Scene Procedures When Tow Away Status on Police Report Is Not Indicated or In Error

Truck or Other Motor Vehicle type accidents which have a police rating of B, C, O, U on the most severely injured occupant are to be stratified as an "I", "J", "M", or "N", based on the vehicle towing criterion. If the police report is designed to address the issue of towing but does not explicitly state whether any vehicle was towed, the investigator is to consider this a Nontow away and stratify the accident in either the "J" or "N" stratum, depending on the accident type (Truck v. Other Motor Vehicle). The investigator should then follow the procedures under Section 4.6.1 and 4.6.2, even if it is subsequently learned that one of the vehicles was towed and the police report was in error (e.g., by failing to make an entry with respect to the issue of towing). This rule also applies where the police indicate all the vehicles were driven from the scene by stating just that, marking through the section dealing with removal of the vehicle (if this is interpreted as inapplicable or vehicle driven from scene), etc.

Conversely, in the above accidents where the police indicate that at least one of the vehicles was towed, the accident should be stratified in either the "I" or "M" stratum, depending on the accident type (Truck v. Other Motor Vehicle). Once it has been stratified in a stratum other than "J" or "N", the Vehicle Form is applicable for each vehicle in the accident, even if it is subsequently determined that none of the vehicles was towed and the police report was in error. Special instructions are provided to PSU's (e.g., Chicago) where the issue of towing is not routinely within the scope of the police report.

#### 4.6.6 Non-Towaway Vehicle Log

The Non-Towaway Vehicle Log (which is printed on the reverse side of the Vehicle For Non-Towaway Accident Form) must be completed for all vehicles in an accident originally stratified as "J" or "N". The log is completed as follows:

- "7" has been precoded in column 13;
- "7" has been precoded in column 14;
- The Month and Day this form was filled out is coded in columns 15-18; and
- Investigator initials are coded in columns 21-23.

When the investigator's initials have been entered, the Non-Towaway Vehicle Log is complete. Only variables V01 and V16 will be assessed by the Zone Center as a part of its case review.

#### 4.6.7 Interface with Special Studies

Special studies are applicable for vehicles involved in accidents sampled in the "J" or "N" stratum. For each of these vehicles, a Special Study Checkoff Form is completed. The Checkoff form is followed just as if the vehicle under consideration were sampled in some stratum other than "J" or "N". The only difference is that variable V76 (Was Sufficient Damage Information Obtained for This Vehicle to Enable the Special Studies Determinations) cannot equal "1" (YES--Vehicle Inspected) since no vehicles in "J" & "N" strata accidents are inspected. In theory only one of the two special studies should even apply to "J" & "N" vehicles (i.e., the roof crash performance assessment). Motorcycles should not be found in a "J" or "N" stratum accident. However, due to the nature of the sampling process, motorcycles can show up in a "J" or "N" stratum accident. In no case where a special study or studies is found to be applicable to a vehicle in a "J" or "N" stratum accident should the vehicle be inspected. This means that for any "J" & "N" vehicle, the applicable special study or studies must be completed without a vehicle inspection.

## 5.0 SUBMISSION INSTRUCTIONS

### 5.1 Quality Control Checks for PSU Teams

Please find below a list of quality control checks to be made by PSU teams.

#### 5.1.1 Quality Control Checks Prior to Remote Data Entry

Each case should be reviewed by a person other than the originating investigator prior to entering them via RDE. This effort tends to minimize encoding errors resulting from values which are either illegal or legal but incorrect. The non-coded items in the case should also be checked. The primary investigator is to be informed (preferably in writing) of any problems detected during this review and that investigator is to assume the responsibility for their resolution. Some suggested areas where problems may occur are as follows:

- Make sure version #4 of all forms has been used.
- Are all official records and slides present?
- Check slides and official records to make sure they correspond to the case submitted (slides and police report shouldn't be placed next to each other because the photocopied police report tends to "bleed" on the slide folders).
- Have portions of update forms been filled out where needed?
- Do the control charts properly reflect how much of the case report has been completed?
- Make sure case reports are properly sanitized.
- Are all data collection forms present?
- Include forms for all persons and vehicles, even if they have not been interviewed or inspected.
- Are the logs properly completed on the forms?
- Make sure case materials are sequenced properly and the case report envelope is stamped and properly identified.
- Make sure 0s and 00s are coded after last reported injury (applies to variables P19-P60 on the Pedestrian & Nonmotorist Form and O28-O69 on the Occupant Form) or in the first row if the person was uninjured.
- Check the police report to make sure drivers and other occupants are paired with the proper vehicles.
- Check to make sure that the coded data are properly and legibly entered on the data collection forms.

Make sure the object contacted and CDC/TDCs on the Vehicle Forms (V25-V42) are filled in with actual values or left blank when no object was contacted or no CDC/TDC applies.

- Make sure vehicle contact points are highlighted with yellow tape in photographs.
- Have "+"s or "-"s been circled for V63 and V64 on the Vehicle Form?

#### 5.1.2 Quality Control Checks Resulting from Remote Data Entry

Inconsistencies, out-of-range values, and other error diagnostics encountered during the RDE are explained in Section 3 and Appendix B of the Remote Data Entry System User's Manual. All errors detected by the computer edits are corrected by the PSU before the case is forwarded to the Zone Center.

#### 5.1.3 Check to Make Sure Administrative Procedures are Being Followed

- Are control charts and activity logs (when used) updated weekly?
- Are monthly reports and sampling materials sent to both the Zone Center and NHTSA?
- Are manuals up-to-date and properly displayed?
- Are needed supplies in stock (e.g., film, etc.)?

#### 5.1.4 Check Sampling Procedures

- Periodically review sampling procedures in team meetings.
- Document any problems in the monthly report.

#### 5.1.5 Check Data Collection Procedures

- Periodically review procedures. Document when meetings are held and any problems discovered with the data collection procedures or forms. Indicate problems in the monthly report or over informatics to your Zone Center. Keep a file of problems encountered and go over them with a Zone Center representative during the next zone site visit.

#### 5.1.6 Check to Make Sure Updates Are Being Processed Properly

- Are the driver record and medical update records filed by case number and cross-indexed alphabetically?
- Do Zone Center and PSU records agree (see Zone Center list of outstanding updates)?

#### 5.1.7 Check Individual Effort and Accuracy in Collecting Evidence and Skill in Interpretation

- Discuss data collection procedures and efficient ways to execute them in team meetings. Discuss how much follow-up effort is needed for obtaining interviews and think about methods other than the phone and personal contact for obtaining more interviews (e.g., letters).

5.2 Case Submission

The final date for the remaining submission of December 1980 cases (exclusive of updates) is 6 February 1981. All remaining updates for 1980 cases are to be submitted by 17 April. This will allow the Zone Centers approximately two weeks to review and enter this new information (updates) on the 1980 version of RDE before it becomes inaccessible to them, as well as the PSUs, on 1 May 1981.

Cases acquired in 1981 shall be submitted to the Zone Centers on an approximate bi-weekly basis, beginning 16 January 1980. The materials for each case are to be ordered in the recommended format discussed above; each case is to be packaged in a separate envelope with the appropriate identification and account of contents on the front of the envelope. These procedures will provide uniformity across teams and, in turn, reduce the variation encountered by the Zone Center upon receipt of the cases. Furthermore, the bi-weekly submission will minimize the peaks and valleys in the Zone Center case review workload.

Submission Schedule--Cases shall be submitted on an approximate bi-weekly basis beginning 16 January 1980, according to the schedule (Table 5-1). Essentially, there will be at least one month to make the initial submission of any case. All cases are to be submitted by the first Friday of the second month following the one in which they were sampled. This means the time available to initially submit a case will range from approximately one to two months, with an average of some 45 days. Interviews, vehicle inspections, and scenes not completed in the allowed time period will not be updated.

Those variables which are allowed updates, but have not been completed within the time available for the initial case submission, should be documented on the appropriate record and submitted as updates in accordance with the schedule.

Cases which are completed (i.e., no updates needed) prior to elapsing of the available time period, should be submitted at the appropriate submission dates.

Case Envelope--Each case is to be submitted in a medium weight manilla envelope, minimum size 9 1/2 x 12 inches. Experience has indicated that for "thick" cases, an envelope 10 x 13 inches in size works better. The PSU number, case number, accounting of case materials, and the status of the case at the time of submission, as shown below, are to be entered in the upper right hand corner of the envelope when the envelope is positioned with its flap on the underside and to the right.

PSU # \_\_\_\_\_ CASE # \_\_\_\_\_  
 CASE COMPLETE     CASE TO BE UPDATED

FORMS: Police \_\_\_\_\_

	<u>Required</u>	<u>Included</u>
Accident. . . . .	_____	_____
Collision Diagram . . . . .	_____	_____
Non-Occupant. . . . .	_____	_____
Vehicle . . . . .	_____	_____
Driver. . . . .	_____	_____
Occupants . . . . .	_____	_____
Medicals. . . . .	_____	_____
CRASH . . . . .	_____	_____
Slides (Number) . . . . .	_____	_____

TABLE 5-1: NASS 1981 CASE SUBMISSION SCHEDULE

## Dates Batches of Materials May Be Sent

DATE	CASES TO BE SUBMITTED - the month refers to the month the accidents were sampled
16 JAN 81	Any completed (i.e., no updates needed) from December or January Any updates from September-December 1980
6 FEB 81	All remaining* from December Any completed from January Any updates from October-December 1980
20 FEB 81	Any completed from January or February Any updates from October-December 1980
6 MAR 81	All remaining* from January Any completed from February Any updates from November-December 1980
20 MAR 81	Any completed from February or March Any updates from November-December 1980 or January
3 APR 81	All remaining* from February Any completed from March Any updates from December 1980 or January
17 APR 81	Any completed from March <u>Final date for updates for 1980</u> Any updates from January-February
1 MAY 81	All remaining* from March Any completed from April Any updates from January-February
15 MAY 81	Any completed from April or May Any updates from January-March
5 JUN 81	All remaining* from April Any completed from May Any updates from February-March
19 JUN 81	Any completed from May or June Any updates from February-April
3 JUL 81	All remaining* from May Any completed from June Any updates from March-April
17 JUL 81	Any completed from June or July Any updates from March-May
7 AUG 81	All remaining* from June Any completed from July Any updates from April-May
21 AUG 81	Any completed from July or August Any updates from April-June

\*All outstanding cases for this month must be submitted at this time. If necessary, complete any appropriate update records for subsequent update submission.

DATE	CASES TO BE SUBMITTED - the month refers to the month the accidents were sampled
4 SEP 81	All remaining* from July Any completed from August Any updates from May-June
18 SEP 81	Any completed from August or September Any updates from May-July
2 OCT 81	All remaining* from August Any completed from September Any updates from June-July
16 OCT 81	Any completed from September or October Any updates from June-August
6 NOV 81	All remaining* from September Any completed from October Any updates from July-August
20 NOV 81	Any completed from October or November Any updates from July-September
4 DEC 81	All remaining* from October Any completed from November Any updates from August-September
18 DEC 81	Any completed from November or December Any updates from August-October
8 JAN 82	All remaining* from November Any completed from December Any updates from September-October
5 FEB 82	All remaining* from December Any updates from October-December 1981

\*All outstanding cases for this month must be submitted at this time. If necessary, complete any appropriate update records for subsequent update submission.

12/80

A rubber stamp, ink pad, and ink have been provided. This information will help the Zone Center effectively sort the case at the inception of the quality control process; the standardized envelopes will facilitate storage and retrieval.

Case update records should be submitted in the same type of envelope. Identify the PSU and boldly mark the front of the envelope: **UPDATES**. The updates will be removed from the envelope and collated with the original forms in their respective cases by the Zone Center.

Shipment of Cases--The envelopes containing the individual cases which are eligible for shipment, according to the schedule shown in Table 5-1, should be packaged in a box or other suitable container and mailed to the Zone Center. The PSU should provide an acknowledgement of delivery card, return receipt, or similar confirmation to ensure the shipment was received by the Zone Center.

## 6.0 CODING INSTRUCTIONS

This section provides the general instructions for collecting and coding the data called for in the field forms. Documentation for each data element includes variable name, element values (attributes), definitions where needed, data sources, collection methodology, reference materials (if needed), remarks, consistency checks, and special processing information.

11/82

ACCIDENT FORM

A01

Variable Name: Primary Sampling Unit Number

Format: 2 column - numeric

Beginning  
Column 01

Element Values:

SEE APPENDIX B OF THE NASS USER'S MANUAL

Source: Defined by NCSA

Remarks:

This variable is a mandatory variable and cannot be changed.

Variable Name: Case Number--Stratification

Format: 4 column alphanumeric

Beginning  
Column 3

Element Values:

Range: 001A-N through 999A-N

Source: Assigned by Automated Sampling System or team according to sampling procedures.

Remarks:

Once a case is selected, the alphabetic character representing this accident's stratum cannot be changed.

The case number is composed of two parts: the first three digits are a consecutive number assigned by the Automated Sampling System or the team ranging from 001 to 999; the second part is the letter of the column in which it is categorized on the NASS Stratification Record (A-N).

No consecutive numbers should be skipped. If a case must be deleted, the number should not be reused. The letter need not correspond to the letter coded in the Final Stratification (A08).

Case numbers 001-500 are reserved for cases selected under the basic CSS sampling procedure.

Case numbers 501-999 are reserved for those cases selected because of special study requirements.

This variable is a mandatory variable and cannot be changed.

Accident Type		Most Severe Police Reported Injury		
		K	A	B,C,O,U
Pedestrian & Nonmotorist		A	B	C
Motorcycle		D	E	F
Truck	tow away	G	H	I
	nontow away	G	H	J
Other Motor Vehicle	tow away	K	L	M
	nontow away	K	L	N

12/80

ACCIDENT FORM

A04

Variable Name: Transaction Code

Format: 1 column numeric

Beginning  
Column 8

Element Values:

Not printed.

Source: Remote Data Entry instructions.

Remarks:

Use code "1" (Original case) for initial submission. RDE (Remote Data Entry) automatically updates the code thereafter.

This variable is a mandatory variable and cannot be changed.

Variable Name: Investigator I.D. Number

Format: 1 column - blank

Beginning  
Column 10

Element Values:

Blank.

Remarks:

This information is not released to analytical users.

Variabl Name: Date (Month, Day, Year)

Format: 5 Digit - numeric

Beginning  
Column 11

Element Values:

Month

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

Day

Range: See DAY OF WEEK on p. 13 of Analytical User's Manual.

Year

81 1981 (precoded value)

Source: Police report.

Remarks:

This variable is a mandatory variable and cannot be changed.

Variable Name: Final Stratification

Format: 1 column - alphanumeric

Beginning  
Column 17

Element Values:

A Ped & Nonmotorist	Police K
B Ped & Nonmotorist	Police A
C Ped & Nonmotorist	Police B, C, O, or Unknown
D Motorcycle	Police K
E Motorcycle	Police A
F Motorcycle	Police B, C, O, or Unknown
G Truck tow away or nontow away	Police K
H Truck tow away or nontow away	Police A
I Truck tow away	Police B, C, O, or Unknown
J Truck nontow away	Police B, C, O, or Unknown
K Other Motor Vehicle tow away or nontow away	Police K
L Other Motor Vehicle tow away or nontow away	Police A
M Other Motor Vehicle tow away	Police B, C, O, or Unknown
N Other Motor Vehicle nontow away	Police B, C, O, or Unknown

Source: Investigator determined--inputs include sampling procedures, vehicle inspections, interviews, and police report (injuries).

Remarks:

The Final Stratification represents how the case should be stratified, given the final information regarding accident type and towing (excluding medical records information) available to the investigator. The type of forms in the case should, therefore, be consistent with this stratification with the exception of the Vehicle Form. The initial stratification (A02, Case Number --Stratification) determines whether you use the short or long vehicle form. Consequently, this variable's value may be different from the stratification for selection purposes in A02, Case Number--Stratification. In other words, differences may occur when it is subsequently learned that the contents of the police report were: (1) incorrectly stratified, (2) inadequate and led to false but necessary assumptions at the time of initial stratification, or (3) in error, for I, J, M, or N cases, where the actual towed status was different than reported by the police. Examples of the three situations are:

1. The PAR indicates that a motorcycle was struck by an automobile. The motorcyclist received an "A" injury. The investigator incorrectly stratified the accident in stratum "L" instead of stratum "E".

A08  
(2)

Variable Name: Final Stratification (cont'd.)

2. The PAR indicated only that a Honda struck a Chevrolet, producing an "A" injury to the Honda driver. The investigator correctly followed the NASC instruction (See Section 2.2, page 18) and stratified the accident in stratum "L". Subsequent investigation revealed that the Honda was a motorcycle, the Chevrolet was a pickup truck, the truck was not in transport, and the truck contained a nonmotorist who was not injured. In this instance, stratum "B" should be chosen for this variable.
3. a. The PAR indicated a car-truck collision resulting in only minor (nonincapacitating) injuries, with the car being reported as towed. Subsequent investigation revealed that the car's driver told the police officer that he would call a wrecker but instead, after the officer left the scene, took a crowbar and altered the damage enabling the vehicle to be driven. In this instance, stratum "J" should be coded for this variable.
  - b. The PAR indicated a car-bus collision resulting in no injuries. Neither vehicle was indicated as "towed". Subsequent investigation revealed that the car's driver had been taken into custody and that a wrecker had, in fact, been called. Stratum "M" is the correct code. (NOTE: In no instance is the investigator to alter the Final Stratification based upon towing that occurred after a vehicle had left the accident scene.)

In addition, it is also possible that the police could have updated the PAR between the time the PAR was stratified and when it was picked up. For example, a person might have been listed originally with incapacitating injuries (A15, Police Reported Accident Severity, equal to "3"). The person later dies (A15 = 4), and the PAR is changed accordingly. When determining the value for this variable, use the latest information that is on the PAR at the time it is obtained from the police agency and becomes a part of this case.

For three of the four categories, a direct mappable relationship exists between the stratification's "accident type" and the Body Type (V14) associated with the accident-involved, in transport, motor vehicles. The relations are:

Pedestrian & Nonmotorist--vehicle type is irrelevant. The presence of a pedestrian or nonmotorist overrides the type of vehicles involved. See Number of Pedestrian & Nonmotorist Forms Submitted (A14) remarks section.

Motorcycle--at least one accident-involved motor vehicle in transport must have a Body Type (V14) coded as a "15", "16", "17", or "18", and there must be no pedestrian or nonmotorist involved.

Truck--at least one accident-involved motor vehicle in transport must have a Body Type (V14) coded as "50"- "60", no motor vehicles in transport may have a Body Type coded as a "15", "16", "17", or "18", and there must be no pedestrian or nonmotorist involved.

Other Motor Vehicle--all accident-involved motor vehicles in transport must have a Body Type (V14) coded as a "01-09", "25-29", "35-44", or "99" [see Hit & Run (A16) remarks section], and there must be no pedestrian or nonmotorist involved.

12/80

ACCIDENT FOR

A09

Variable Name: Sampling Interval

Format: 5 columns - blank

Beginning  
Column 18

Element Values:

This variable is not available to analytical users.

Variable Name: First Harmful Event

Format: 2 columns - numeric

Beginning  
Column 23

Element Values:

Non-Collision

- 01 Overturn
- 02 Fire or explosion
- 03 Immersion
- 04 Gas inhalation
- 05 Fell from vehicle
- 06 Injured in vehicle
- 07 Other non-collision

Collision with

- 08 Pedestrian
- 09 Pedalcyclist
- 10 Railroad train
- 11 Animal
- 12 Motor vehicle in transport - same roadway
- 13 Motor vehicle in transport - other roadway
- 14 Parked motor vehicle
- 15 Other type nonmotorist
- 16 Other object (not fixed)

Collision with Fixed Object

- 18 Buildings
- 19 Culvert or ditch
- 20 Curb or wall
- 21 Divider
- 22 Embankment
- 23 Fence
- 24 Guard rail
- 25 Light support
- 26 Sign post
- 27 Tree or shrubbery
- 28 Utility pole
- 29 Other poles or support
- 30 Impact attenuator
- 31 Other fixed object (specify)
- 32 Bridge or overpass (passing under)
- 33 Bridge or overpass (passing over)
- 99 Unknown

Source: Investigator determined--inputs include the police report, scene inspection, vehicle inspections, and driver interviews.

A10  
(2)

Variable Name: First Harmful Event (cont'd.)

Remarks:

Definitions: See ANSI D16.1-1976, sections 2.3.1 through 2.3.6, pages 8-9. These sections define: injury, damage, harmful event, unstabilized situation, cataclysm, and accident, respectively.

Every motor vehicle traffic accident consists of a series of events. In classification by type, one of the events must be selected before further classification can be made. For uniformity in classification, the "First Harmful Event" is the first property damage or injury-producing event that can be determined to have happened in the accident.

The basis of this classification is the information acquired (scene inspection, interview, etc.) during the NASS investigation. Police reports may prove helpful in selecting the appropriate code, but are not the sole determinant for code selection (i.e., the investigator may select a code which is different from the one indicated by the police report, given the discovery of additional data).

Code "01" (Overturned) includes uncontrolled motorcycles which first contact the ground or pavement surface. Motorcycles which first impact pedestrians, nonmotorists, vehicles, animals, trains, or other objects, are coded "08" through "33". Although a motorcycle can overturn, it cannot be coded (as defined in NASS) as a rollover. For a motorcycle whose First Harmful Event is overturn (A10 equals 01), V54, Rollover, must be coded "0" (No).

Code "07" (Other non-collision) is used whenever a vehicle jackknife is the First Harmful Event. Also included are instances when a vehicle sets an object in motion that strikes or is struck by a vehicle before the object stabilizes. Examples include dislodged cargo, spewed gravel, etc. It may be used in other situations subject to consultation with the Zone Centers.

Code "08" (Pedestrian) refers to any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a nonmotorist conveyance. A nonmotorist conveyance is defined as any human-powered device by which a nonmotorist may move, or by which a pedestrian or nonmotorist may move another nonmotorist, other than by pedaling. A nonmotorist conveyance includes the following: baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, etc. Excluded are pedalcyclists.

Code "09" (Pedalcyclist) refers to any occupant of a pedalcycle (see ANSI D16.1-1976, section 2.2.16, page 6).

Code "12" (Motor vehicle in transport - same roadway) includes all initial impacts between two motor vehicles in transport which occur: (1) in a junction, or (2) not in a junction but on the same roadway. In the latter instance, neither vehicle departed its roadway prior to impact.

**Variabl Name: First Harmful Event (cont'd.)**

Code "13" (Motor vehicle in transport - other roadway) includes only those initial impacts when two motor vehicles in transport collide because one of the vehicles departed its roadway and entered, without previous harm, another roadway. One example of this phenomena occurs when a vehicle crosses through a median and strikes a vehicle in the opposing roadway. A second example involves the situation where a vehicle leaves the roadway and enters an intersecting roadway outside of the junction. This category is to be distinguished from the situation where a motor vehicle in transport leaves its roadway and strikes a motor vehicle not in transport. This latter situation is coded as "14" (Parked motor vehicle).

Code "14" (Parked motor vehicle) includes all initial impacts between a motor vehicle in transport and a motor vehicle neither on a roadway nor in motion.

Code "15" (Other nonmotorist) refers to a person who is not a pedestrian or a pedalcyclist. See variable P08 (Pedestrian or Nonmotorist's Type), attributes "4" and "8". [NOTE: If the first harmful event occurs with a motor vehicle not in transport which contains a nonmotorist (P08 = 5, Occupant of vehicle not in transport), use code "14" (Parked motor vehicle) above.]

Code "16" [Other object (not fixed)] refers to an initial impact between a motor vehicle in transport and any object that is moving or not anchored prior to the accident. For example, rocks which have slid onto the trafficway are not anchored and should take this code. Included in this category is an initial collision between a motor vehicle in transport which leaves its roadway, and a motor vehicle in motion off any trafficway. An example of this situation is where a vehicle loses control and contacts a snowmobile in motion off the trafficway.

Code "21" (Divider) is to be applied when the initial contact is with any barrier type fixed object that is used to separate roadways, with the exception of any supporting bridge structure. This includes all guard rails or other median support structures (except on a bridge). Where the median is paved, gravel, or grass only, then do not use this code. If the median is depressed and the impact occurs with the ground, then code either "22" (Embankment) or "31" (Other fixed object), whichever is more appropriate. If the initial harmful event is with a raised, paved area (concrete or bituminous), the code "20" (Curb or wall), should be used. This is true even if a barrier is anchored in the raised, paved area. In order to use this code ("21"), the barrier type fixed object must have been the cause of the initial harm. Commonly encountered types are illustrated following the impact attenuation illustrations. Other median barriers may be encountered; therefore, the investigator should be sure to photograph them for verification when uncertain.

Code "24" (Guard rail) is used whenever the initial contact is with a guard rail located on the outside of the road surface. Guard rails which are located in gore areas (ANSI D16.1-1976, section 2.5.20, page 15) are considered guard rails, although they are used to redirect traffic at ramp areas. If the trafficway is undivided, it makes no difference on which side of the road the struck guard rail was located. Guard rails which are used as median barriers should be coded "21" (Divider).

Variable Name: First Harmful Event (cont'd.)

Code "29" (Other poles or support) should not be used when the initial impact was with any supporting structure of a bridge (see codes "32" and "33" below).

Code "31" (Other fixed object) refers to any fixed object which is anchored and not moving and not specifically mentioned above. This includes ground; however, ground is not to be coded when the first event is an overturning ("01"). All motor vehicles (including motorcycles) may overturn. For Object Contact (V25, V34), ground (V25, V34 = 46) would be coded for an overturned vehicle, but not on this variable (A10). Collisions which may be classified using this code include (but are not limited to): (1) vehicles which sustain undercarriage damage by straddling the pavement and shoulder and impacting a prominent pavement lip, or (2) free falls or vaults from the road surface to the ground without excessive roll action prior to impact. Delineators and mail boxes would be coded "31" (Other fixed object).

Bridge or overpass (codes "32" and "33") is used when the initial contact was with any part of a bridge structure. If the initial impact was with an impact attenuator protecting a bridge support, then "30" (Impact attenuator) should be used. Code "32" [Bridge or overpass (passing under)] should be used if the roadway is passing under another roadway or railroad tracks. Code "33" [Bridge or overpass (passing over)] should be used if the roadway is passing over a ditch, stream, river, railroad tracks, or another roadway. However, if the roadway is both passing over and passing under at the location of the First Harmful Event, code "32" [Bridge or overpass (passing under)] takes precedence. These codes should not be used when a tunnel is involved.

Handle a tunnel according to the following rules. If the impact is external, code "22" (Embankment) if the impact is to the hill or mountainside. If the impact is to the tunnel entrance (i.e., not protected by guard/bridge rails or impact attenuators), then code "29" (Other poles or support). External impacts to impact attenuators should be coded "30". Internal or external impacts to: (1) median barriers should be coded "21" (Divider); (2) guard/bridge rails should be coded "24" (Guard rail); or (3) curbs (raised, paved medians), walks, or the tunnel wall should be coded "20" (Curb or wall).

Variable Name: First Harmful Event (cont'd.)

Fitch Inertial Barrier - This barrier consists of plastic barrels in which the upper portion is filled with sand. The barrels are clustered at the highway hazard as shown in Figure 1 and, on impact, vehicle energy is attenuated by displacement of sand.

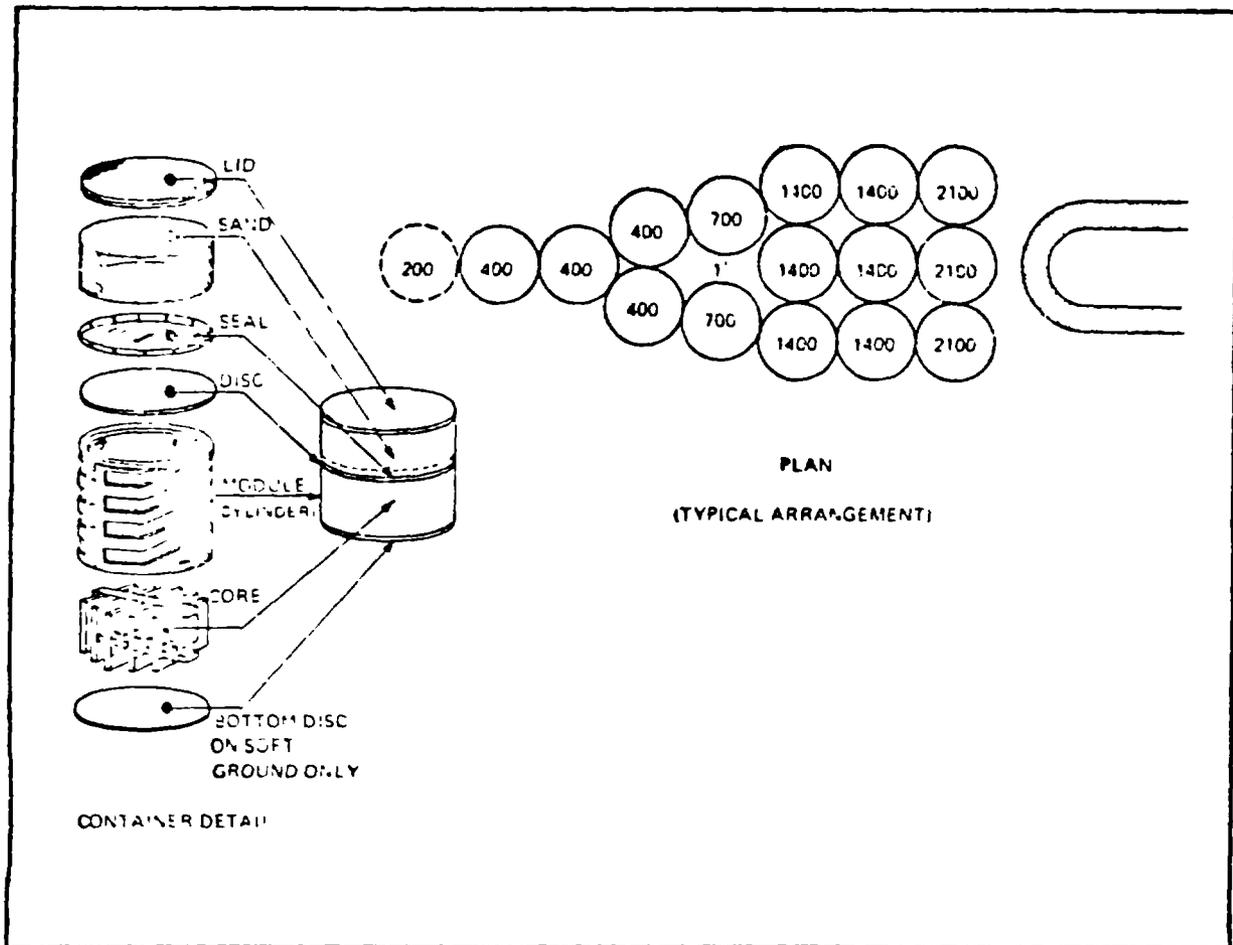


FIGURE 1

**Variable Name: First Harmful Event (cont'd.)**

Torshok Barrier - This barrier consists of a U-shaped (in overhead view) arrangement of protective tubular railing surrounding axially loaded cylinders supported from the highway hazard. Energy absorption is achieved through the compression of the axially loaded cylinders and energy attenuation through the deformation of a steel torus placed between the cylinders (Figure 2).

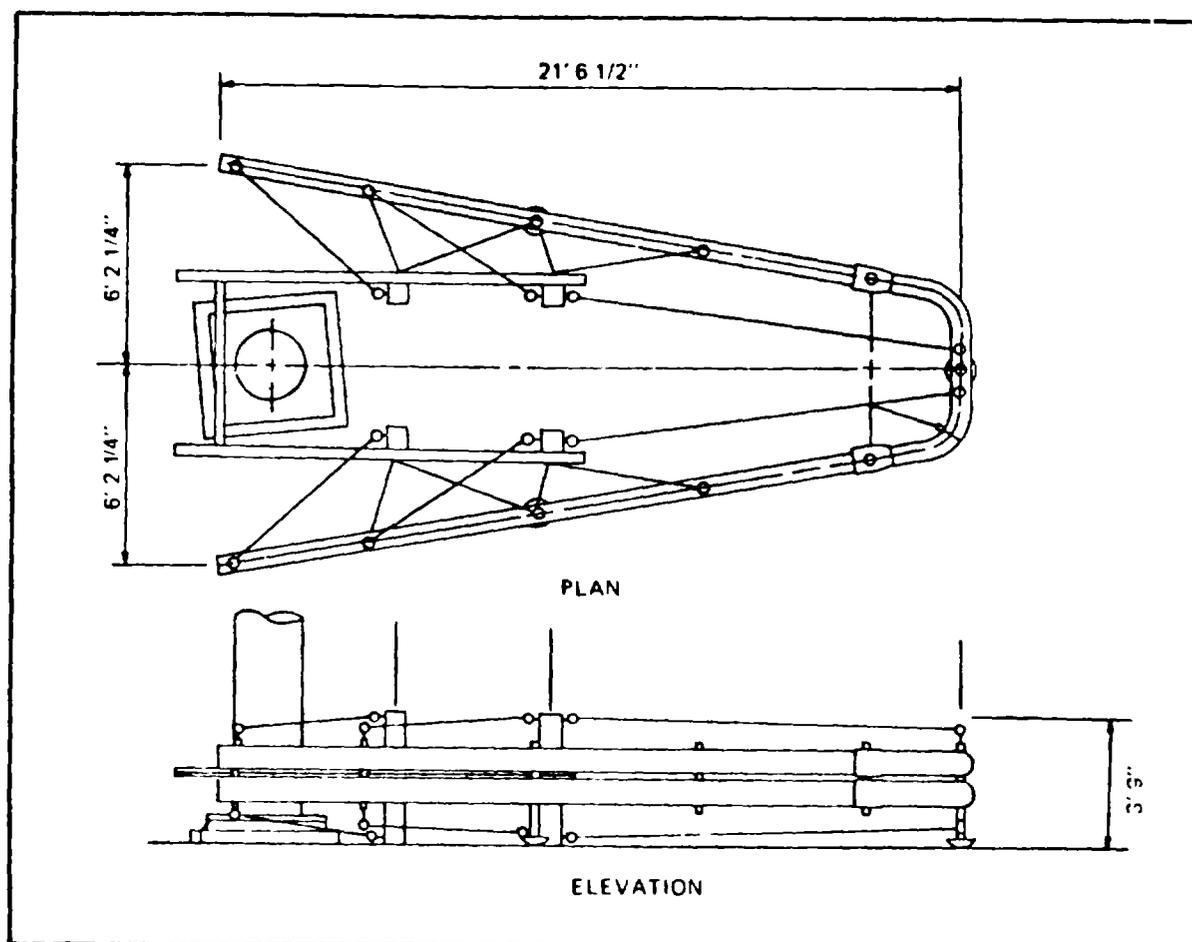


FIGURE 2

Variable Name: First Harmful Event (cont'd.)

Hi-DRO Cushion Crash Barrier - This system consists of plastic cylinders filled with water which are grouped in modular clusters. Energy attenuation is achieved by forcing water out of the plastic cylinders (Figure 3). Overlapping fender (contact) panels are provided as a contact surface and for vehicle guidance.

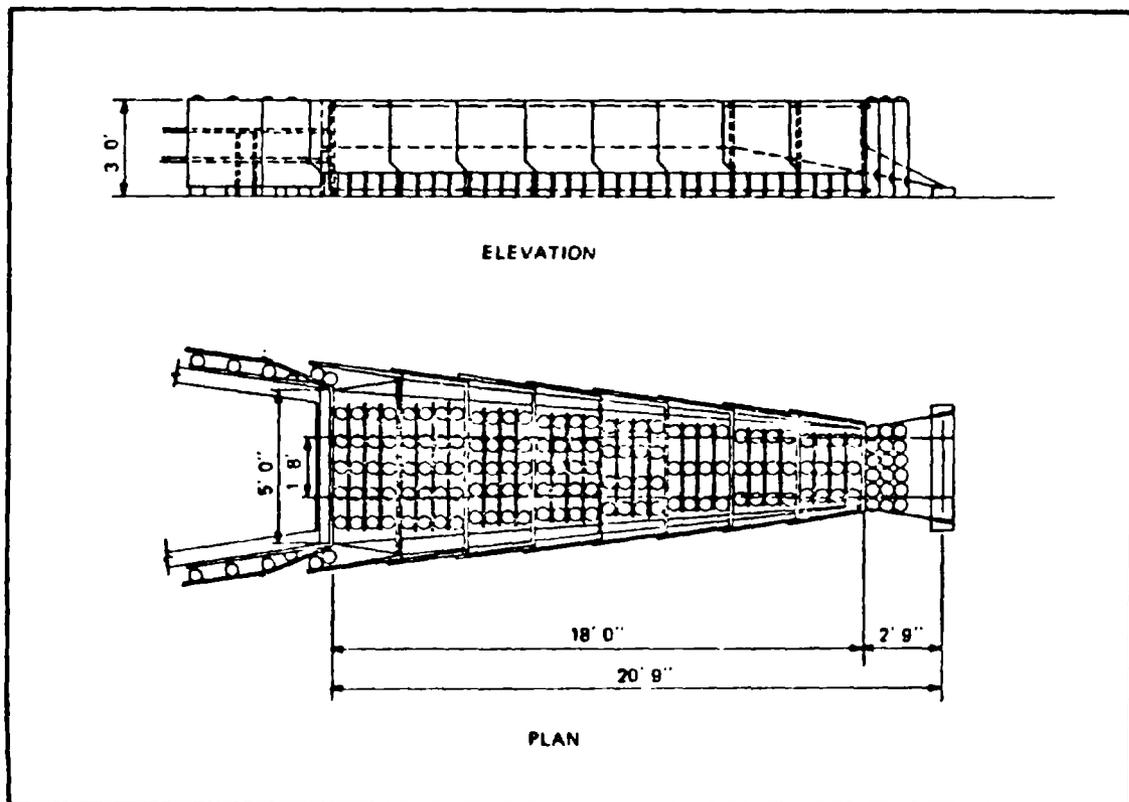


FIGURE 3

**Variable Name: First Harmful Event (cont'd.)**

Modular Crash Cushion (Steel Drum) - This barrier consists of modular clusters of 55 gallon steel drums at a highway hazard site. Fender panels are provided, and energy attenuation is achieved by successive crushing of the drums upon impact (Figure 4).

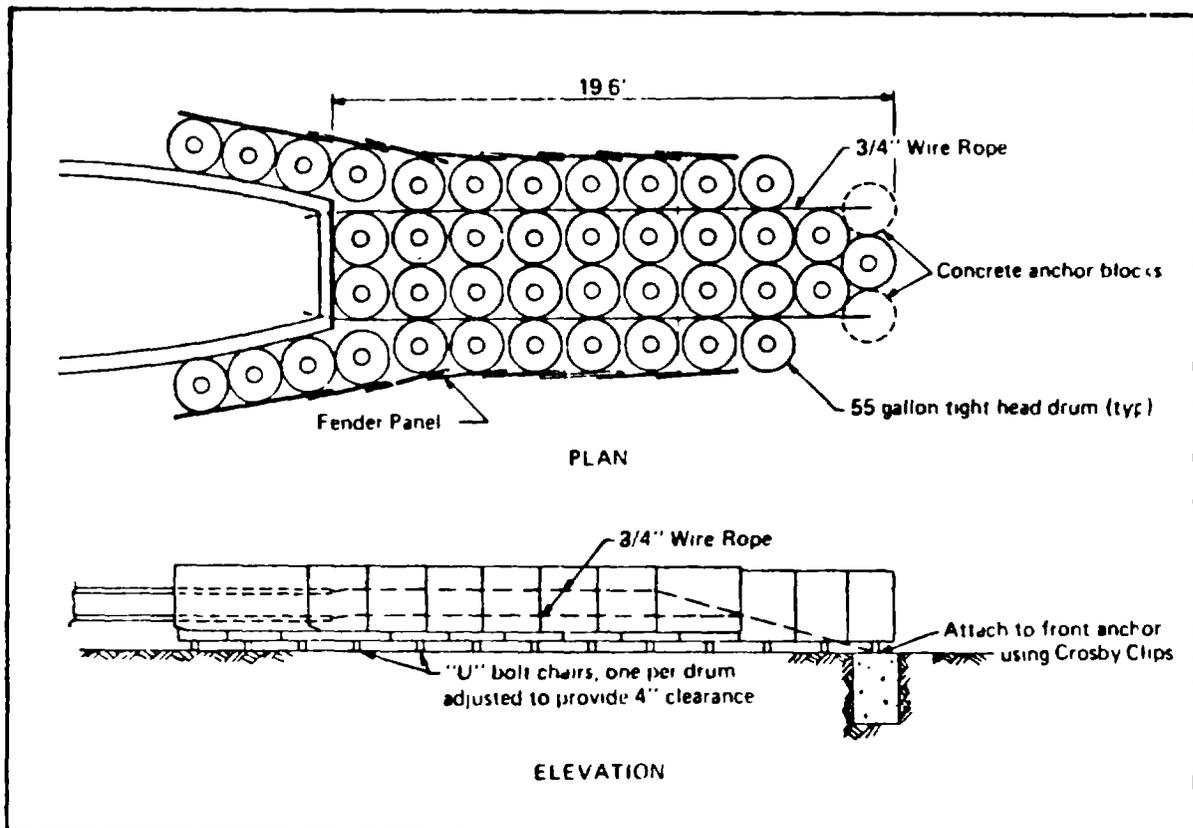


FIGURE 4

**Variable Name: First Harmful Event (cont'd.)**

Vermiculite Concrete Barrier - This barrier consists of a grouping of light-weight cellular concrete modules at the highway hazard site. Energy attenuation is achieved through successive crushing of these concrete modules. Fender panels may also be present (Figure 5).

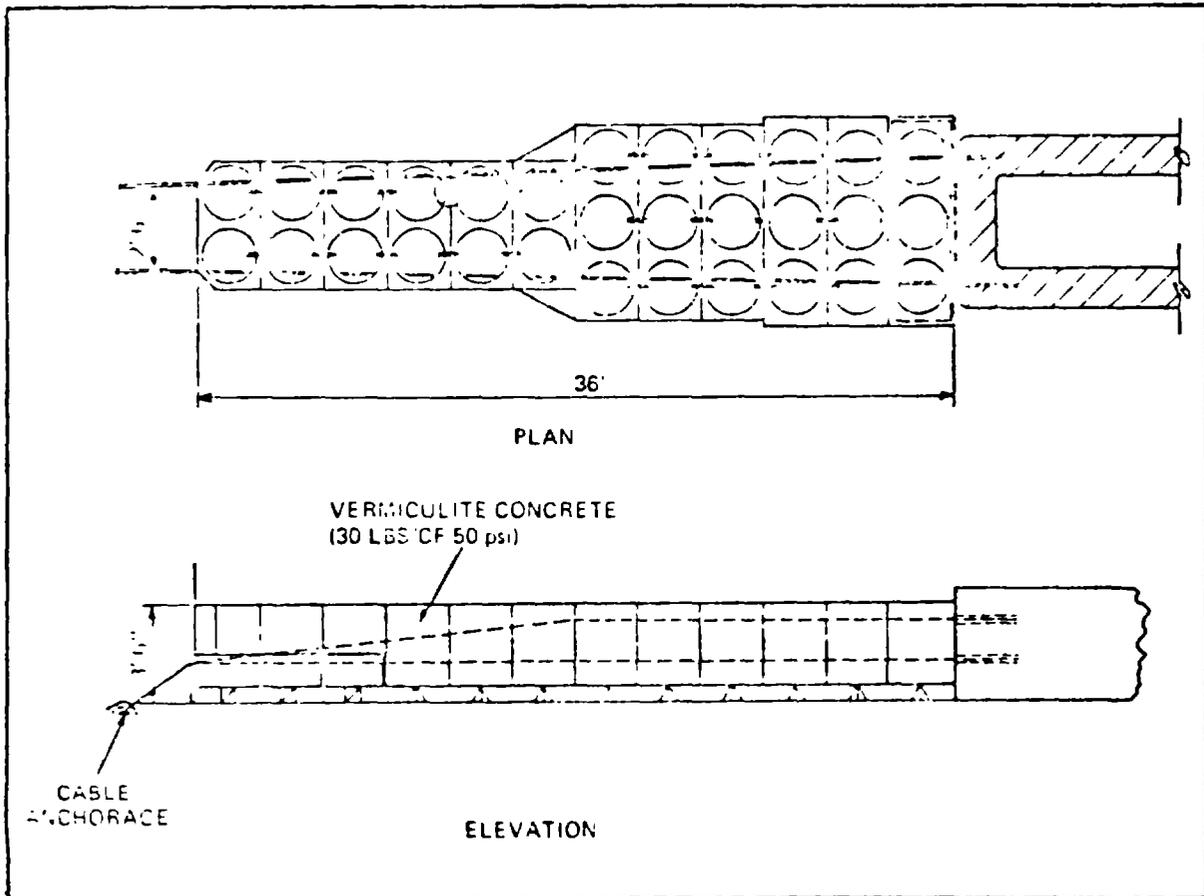


FIGURE 5

Variable Name: First Harmful Event (cont'd.)

Van Zelm Dragnet System - This barrier consists of a net device for vehicle contact which is attached to a steel tape. Each end of the tape is, in turn, run through a Metal Bender which exerts a constant restraining force on the tape as it is pulled through the device, thus, arresting vehicle progress (Figure 6).

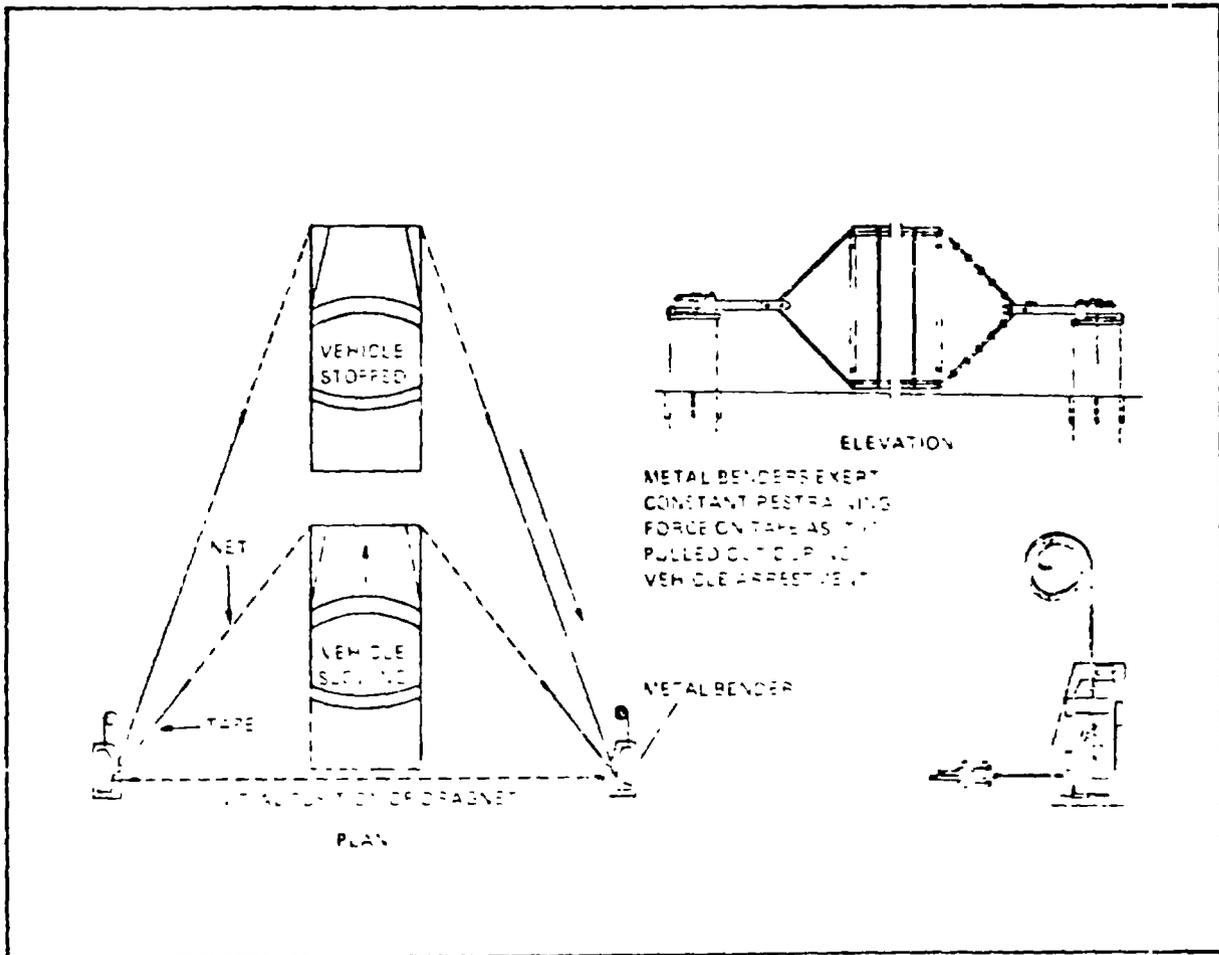


FIGURE 6

**Variable Name: First Harmful Event (cont'd.)**

Goodyear Automobile Tire Cushion - This barrier consists of long runs of discarded tires which are joined together at a highway hazard site. Energy attenuation is achieved by successive collapse of the tires upon impact (Figure 7).

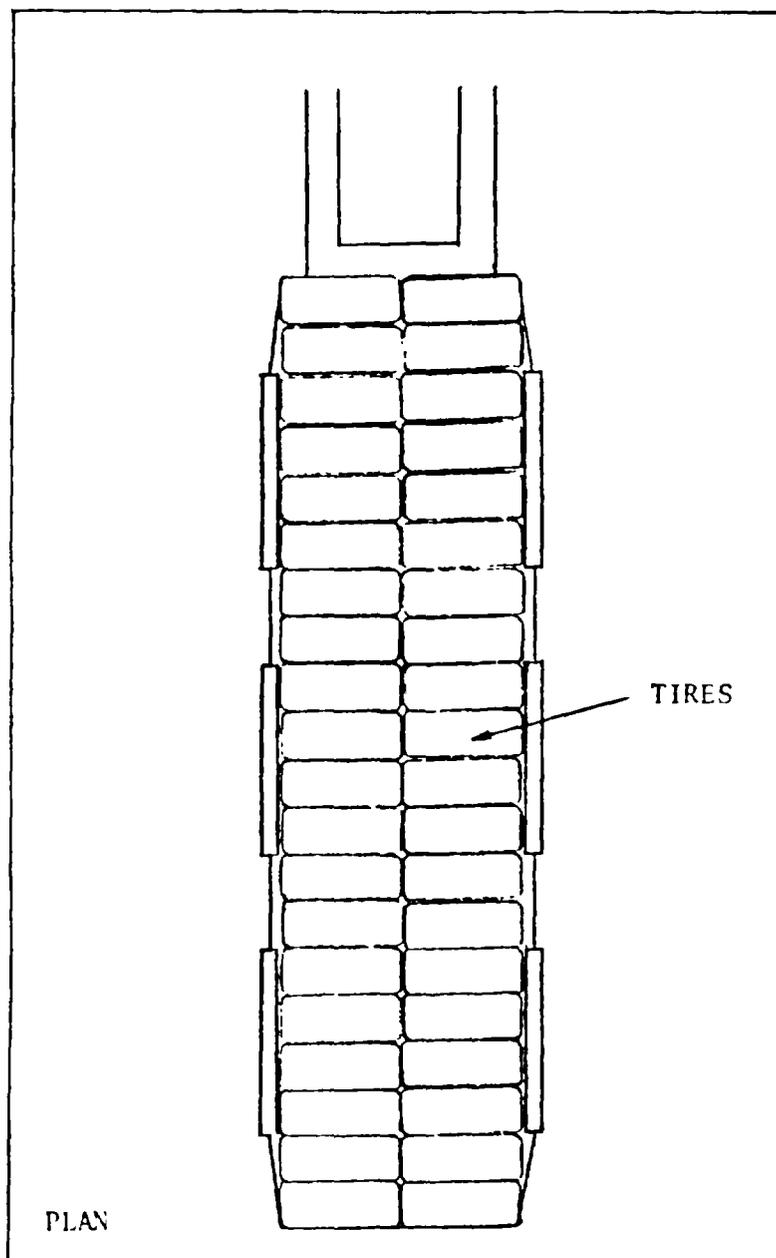
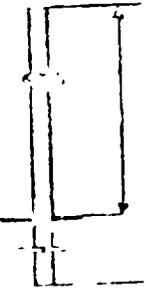
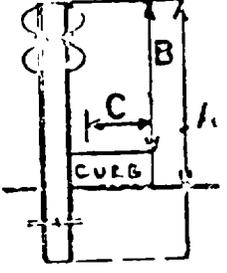
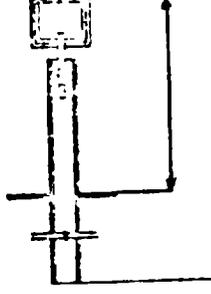
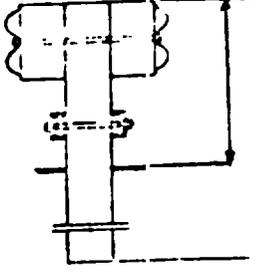
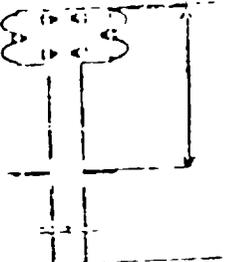
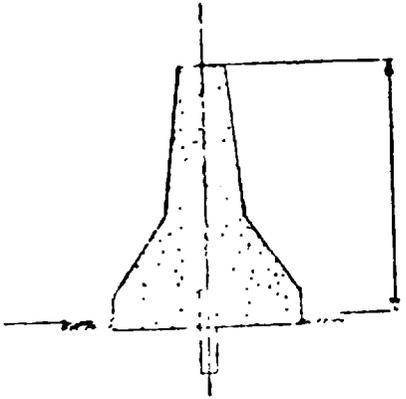
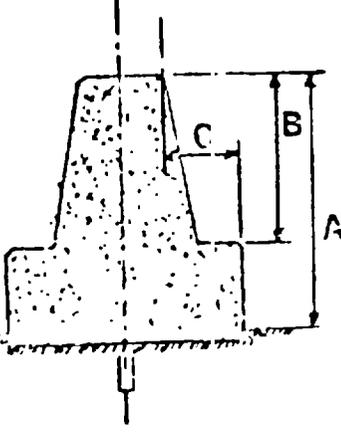


FIGURE 7

Variable Name: First Harmful Event (cont'd.)

COMMON TYPES OF MEDIAN BARRIERS

			
<p>MB1 CABLE 1</p>	<p>MB2 "W" BEAM 2</p>	<p>MB3 BOX BEAM 3</p>	<p>MB4W BLOCKED-OUT "W" BEAM (Wood Post) 4</p>
			
<p>BLOCKED-OUT "W" BEAM (Wood Post) 5</p>	<p>CONCRETE BARRIER 6</p>	<p>CONCRETE BARRIER 7</p>	

Variabl Name: Manner of Collision (Based on First Harmful Event)

Format: 1 column - numeric

Beginning  
Column 25

Element Values:

- 0 Not collision with vehicle in transport
- 1 Rear-end
- 2 Head-on
- 3 Rear-to-rear
- 4 Angle
- 5 Sideswipe, same direction
- 6 Sideswipe, opposite direction
- 9 Unknown

Source: Investigator determined--inputs include the police report, scene inspection, vehicle inspections, and driver interviews.

Remarks:

Code "0" (Not collision with vehicle in transport) means First Harmful Event (A10) was not coded as "12" or "13".

Code "1" (Rear-end) refers to a collision between the rear of one vehicle and the front of another vehicle.

Code "2" (Head-on) refers to a collision where the front end of one vehicle collides with the front end of another vehicle.

Code "3" (Rear-to-rear) refers to a collision where the rear of one vehicle collides with the rear of another vehicle.

Code "4" (Angle) refers to those collisions which are known but cannot be classified with any other code. Included here, also, are endswipes.

Code "5" (Sideswipe, same direction) refers to collisions where the primary direction of force for the two motor vehicles is such that there is minimal side engagement of the two vehicles travelling in the same direction. The resulting damage is primarily restricted to sheet metal involvement with no significant structural engagement (i.e., no frame or A, B, C, etc., pillar engagement which halts the sideswipe). The initial engagement between the two vehicles must not be with the two end planes.

Code "6" (Sideswipe, opposite direction) refers to collisions where the primary direction of force for the motor vehicles is such that there is minimal side engagement of the two vehicles travelling in opposite directions. The resulting damage is primarily restricted to sheet metal involvement with no significant structural engagement (i.e., no frame or A, B, C, etc., pillar engagement which halts the sideswipe). The initial engagement between the two vehicles must not be with the two end planes.

Variable Name: Relation to Roadway (Location of First Harmful Event)

Format: 1 column - numeric

Beginning  
Column :26

Element Values:

- 1 On roadway
- 2 On shoulder
- 3 In median
- 4 On roadside
- 5 Outside right-of-way
- 6 Off roadway - location unknown
- 7 In parking lane
- 9 Unknown

Source: Investigator determined--inputs include the police report, scene inspection, vehicle inspections, and driver interviews.

Remarks:

On this variable, code the location of the First Harmful Event (A10) in accordance with the attribute above which best describes the location.

Code "1" (On roadway) refers to that part of the trafficway designated, improved and ordinarily used for motor vehicle travel (Definition: ANSI D16.1-1976, section 2.2.17, page 6). If the opposing lanes of an undivided roadway are separated such that the separation does not qualify as a median, and the first harmful event occurs in the separation, then code "1" (On roadway) should be used.

Code "1" (On roadway) if a vehicle strikes a curb which is contiguous with the roadway (i.e., parking lane not present) at the location of the impact. Also, it may be used when a vehicle in transport on a roadway impacts another vehicle or object where it protrudes onto the roadway (e.g., side mirrors or a door opened from a parked vehicle in an implicitly designated parallel parking lane).

Code "2" (On shoulder) refers to that part of a trafficway contiguous with the roadway for emergency use, for accommodation of stopped vehicles, and for lateral support of the roadway structure (Definition: ANSI D16.1-1976, section 2.2.18, pages 6-7).

Code "4" (On roadside) refers to a location off the road, but inside the right-of-way (Definition: ANSI D16.1-1976, section 2.2.19, page 7). For example, a guardrail, tree, mailbox, etc., should be coded "4" (On roadside) since the shoulder is assumed to end where the object begins.

Code "6" (Off roadway - location unknown) refers to a location off the roadway, but its relationship to the right-of-way is not known.

Variable Name: Relation to Roadway (Location of First Harmful Event) [cont'd.]

Code "7" (In parking lane) may be used when a vehicle strikes a curb which is contiguous with a parking lane at the location of the impact. Also, it is used when an in transport vehicle enters a designated, implicit or explicit, parallel parking lane area on the road prior to impacting another vehicle or object in that same area [e.g., if you have determined that a struck motor vehicle was in a parking lane and, therefore, not in transport, code "7" (In parking lane) should be used]. If a collision occurs on the road in a nonparallel designated parking area (e.g., angular parking), then this code should be used.

Variable Name: Number of Vehicle Forms Submitted

Format: 2 columns - numeric

Beginning  
Column 27

Element Values:

Range: 01 through 30

Source: Investigator determined--inputs include police report, scene inspection, driver interviews, and other interviewees.

Remarks:

Each accident must have at least one Vehicle Form or Vehicle For Non-Towaway Accident Form submitted. For every form there must be one Driver Form. The value recorded must equal the number of Vehicle Forms or Vehicle For Non-Towaway Accident Forms present in the case.

This variable is a mandatory variable and cannot be changed.

A form must be submitted for each in transport motor vehicle involved in the accident. For example, one vehicle is towing another by a non-fixed linkage (e.g., rope, chain, etc.). Both vehicles are involved in the accident. A form is required for both vehicles. Whereas, if the linkage was fixed (see V07, Vehicle Number, for a definition of "fixed linkage"), only the power unit would be considered in transport.

Hit and run accidents (see variable A16, Hit and Run, for the meaning of this phrase for NASS purposes) occasionally cause some confusion on this variable. A vehicle form is filled out for each in transport vehicle involved in the accident independent of the amount of information collected on the vehicles by the police. Parked vehicles may or may not require a form depending on whether or not they were in transport. A thorough discussion of the sampling frame is found in section 2.0 of the Introduction (pages 5 through 21).

Variabl Name: Number of Pedestrian & Nonmotorist Forms Submitted

Format: 2 columns - numeric

Beginning  
Column 29

Element Values:

Range: 00 through 25

Source: Investigator determined--inputs include police report, scene inspection, driver interviews, and other interviewees.

Remarks:

If any pedestrian or nonmotorist was present in the accident, then the accident (Final Stratification, A08) must be classified as a pedestrian and nonmotorist accident. The value recorded must equal the number of pedestrians and/or nonmotorists for which a form was submitted.

This variable is a mandatory variable and cannot be changed.

**Variable Name: Police Reported Accident Severity**

**Format: 1 column - numeric**

**Beginning  
Column 31**

**Element Values:**

- 0 O - No injury
- 1 C - Possible injury
- 2 B - Nonincapacitating injury
- 3 A - Incapacitating injury
- 4 K - Killed
- 5 Injured, severity unknown
- 6 Died prior to accident
- 9 Unknown

**Source: Police report.**

**Remarks:**

Select the numeric code which represents the most severely injured person on the police report submitted\* with the case: occupant, pedestrian, or non-motorist.

If the police report contains a detailed description of the injuries but does not translate the injuries into the KABCO codes, use the police method for doing so. For example, injuries which are considered to be of an incapacitating nature are classified as "A" (code "3"); nonincapacitating evident injuries are "B" (code "2"); and possible injuries are "C" (code "1"). Property damage only is classified as "O" (code "0").

Code "5" (Injured, severity unknown) if the police report indicates "U" or in any other way communicates the idea that some person was injured but their severity is unknown. This code should not be used if any other person has an injury of known severity.

Code "6" (Died prior to accident) should only be coded: (1) if the police explicitly so indicate that one of the persons died prior to the accident, and (2) no other persons involved in the accident received an injury.

The order of code precedence where more than one person is involved in the accident is as follows: "4", "3", "2", "1", "5", "6", and "0".

\*It is possible that the police would have updated the PAR between the time it was stratified (A02, Case Number--Stratification) and when it was picked up. For example, a person might have been listed originally with incapacitating injuries ("3"). Later the person dies ("4"), and the PAR is changed accordingly. Therefore, use the last information on the PAR at the time it was obtained from the police agency.

Variable Name: Police Reported Accident Severity (cont'd.)

Not all states use the KABCOU scheme. Listed below, by state, are alternative schemes; a mapping to the NASS scheme is provided.

State	PAR Code/Definition	NASS Scheme/Code
Alabama	K = Killed	K - 4
	A = Visible signs of injury, as bleeding wound or distorted member, or had to be carried from scene	A - 3
	B = Other visible injury, as bruises, abrasions, swelling, limping, etc.	B - 2
	C = No visible injury but complaint of pain or momentary unconsciousness	C - 1
	Blank = No documentation of driver or occupants on back of PAR = No set unknown code	O - 0 - 9
Arizona	1 = No injury	O - 0
	2 = Possible injury	C - 1
	3 = Nonincapacitating injury	B - 2
	4 = Incapacitating injury	A - 3
	5 = Fatal	K - 4
	6 = Unknown	U - 5
California	1 = Fatal	K - 4
	2 = Severe wound/distorted member	A - 3
	3 = Other visible injury	B - 2
	4 = Complaint of pain	C - 1
	blank = Occupant present blank = Occupant not present	O - 0 - 9
Colorado	A = Fatal	K - 4
	B = Carried from scene	A - 3
	C = Minor visible injury	B - 2
	D = Pain but no visible injury	C - 1
	E = No injury	O - 0
	I = Unknown	U - 5
Florida	0 = No injury	O - 0
	1 = Fatal (in 12 months) injury	K - 4
	2 = Incapacitating injury	A - 3
	3 = Nonincapacitating, evident injury	B - 2
	4 = Possible injury	C - 1
	= No set unknown code	- 9

Variabl Name: Police Reported Accident Severity (cont'd.)

State	PAR Code/Definition		NASS Scheme/Code	
Nebraska	4	= fatal	K - 4	
	3	= Incapacitating injury	A - 3	
	2	= Nonincapacitating injury	B - 2	
	1	= Possible injury	C - 1	
	0	= No injury	O - 0	
	blank	= Occupant present	O - 0	
	blank = Occupant not present	- 9		
New Jersey	Location of Injury	Type of Injury	Victim's Condition	
	Any entry	Any entry	Killed	K - 4
	Any entry	Any entry	Incapacitated	A - 3
	Any entry	amputation, concussion, internal, fracture/dislocation	Moderate injury Complaint of pain	A - 3
	Eye	burn, bleeding, complaint of pain	Moderate injury Complaint of pain	A - 3
	Any entry	bleeding, contusion, bruise, abrasion	Moderate injury	B - 2
	Any entry (except eye)	complaint of pain	Complaint of pain	C - 1
	-	-	-	O - 0
	U	U	U	- 9
	New York	Location of Injury	Type of Complaint	Victim's Status
Any entry		Any entry	Apparent death	K - 4
Any entry		Any entry	Unconscious, Semi-conscious, Incoherent	A - 3
Any entry		amputation, concussion, internal, severe bleeding, severe burn, moderate burn, fracture - dislocation	Shock, Normal	A - 3
Eye		minor bleeding, minor burn, complaint of pain	Shock, Normal	A - 3
All but eye		minor bleeding, minor burn	Shock, Normal	B - 2
Any entry		contusions-bruise, abrasion	Shock, Normal	B - 2
All but eye		complaint of pain	Shock, Normal	C - 1
-		-	-	O - 0
X		X	X	- 9

Variable Name: Police Report d Accid nt Severity (cont'd.)

<u>State</u>	<u>PAR Code/Definition</u>	<u>NASS Scheme/Code</u>
Pennsylvania	0 = No injury	O - 0
	1 = Death	K - 4
	2 = Major injury	A - 3
	3 = Moderate injury	B - 2
	4 = Minor injury [and]	
	Type of Apparent Injury	
	- amputation	
	- bleeding	
	- broken bone(s)	B - 2
	- burns	
- concussion		
- abrasions/bruises		
- other		
4 = Minor injury [and]		
Type of Apparent Injury		
- shock	C - 1	
- dizziness		
- complaint of pain		
Washington	1 = No injury	O - 0
	2 = Dead at scene	K - 4
	3 = Dead on arrival	K - 4
	4 = Died in hospital	K - 4
	5 = Disabling injury	A - 3
	6 = Nondisabling injury	B - 2
	7 = Possible injury	C - 1
	blank = Unknown	- 9

As a general rule, if the PAR is "blank" where the injury severity is accessed and the person was at the scene during the police investigation, code "0" (No injury). If the PAR is "blank" and the person was not present during the police investigation, code "9" (Unknown).

Variable Name: Hit and Run

Format: 1 column - numeric

Beginning  
Column 32

Element Values:

- 0 No hit-and-run
- 1 Hit motor vehicle (in transport)
- 2 Hit pedestrian or nonmotorist
- 3 Left scene
- 4 Hit parked vehicle or object

Source: Primary source is the police report; the investigator can determine if the police report contains an omission or a commission and modify accordingly.

Remarks:

A hit-and-run may occur when a motor vehicle in transport has contact with: (a) another motor vehicle in transport, (b) a motor vehicle not in transport, (c) a motor vehicle not in transport which contains a nonmotorist, (d) a pedestrian, (e) pedalcyclist, (f) another nonmotorist, or (g) an object. Hit-and-run is only considered 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. The hit-and-run vehicle(s) is (are) the one(s) that departed prior to investigation by the police, or that vehicle which is abandoned at the scene when its occupant(s) fled from the area. The police report indicates that the vehicle was involved in a collision which was investigated, but there is little or no information on that vehicle because of its departure prior to police arrival on-scene.

An exception to this "departed prior to investigation by the police" rule occurs if an occupant, or occupants, of a vehicle are taken, or go, directly from the scene to a medical treatment facility or physician. If doubt exists concerning the departure for treatment, however, assume hit-and-run.

For sampling purposes (A02, Case Number--Stratification and A08, Final Stratification), if the type of vehicle is unknown (V14, Body Type, equals 99), then assume that the hit-and-run vehicle was an "other motor vehicle". If it is known from the police report that the vehicle is a "truck" or "motorcycle", then treat it accordingly for sampling.

Code "1" [Hit motor vehicle (in transport)] when an at-fault vehicle contacts another motor vehicle in transport and subsequently departs the scene.

Code "2" (Hit pedestrian or nonmotorist) when the hit-and-run vehicle contacts a pedestrian, pedalcyclist, motor vehicle not in transport which contains a nonmotorist, or another nonmotorist.

A16  
(2)

Variabl Name: Hit & Run (c nt'd.)

Code "3" (Left scene) when the departing vehicle in a multi-vehicle collision was not at-fault.

Code "4" (Hit parked vehicle or object) is used when contact occurs with: (1) an object (fixed or nonfixed), (2) a motor vehicle not in motion and off the roadway, or (3) a motor vehicle in motion and off the trafficway.

Where more than one category can be chosen (codes "1", "2", "3" or "4"), record the category of lower numerical value.

To help distinguish between codes "1" and "3", consider the following examples. For either code to apply, at least two "in transport" motor vehicles must have been involved in the accident.

Situation A: The last contacted vehicle in a rear-end collision sustains minor damage and departs, and it was determined that the driver was not at-fault--code "left scene".

Situation B: Vehicle 1 strikes vehicle 2, causing vehicle 2 to cross the center line and be struck by vehicle 3. Vehicle 3 departs (it was determined not to be at-fault)--code "left scene".

Situation C: Vehicle 2 crosses the path of vehicle 1 and is struck. Vehicle 2 departs; it was determined that vehicle 2 was at-fault--code "hit motor vehicle".

Situation D: Same as Situation B except that vehicle 1 departs; it was determined to have been at-fault--code "hit motor vehicle".

If there is a reasonable question regarding the fault of the vehicle(s) that left (leave) the scene, assume the vehicle(s) to have been at-fault.

When the presence of a hit-and-run vehicle is indicated (A16 equals codes "1"- "4"), the NASS investigator should include Vehicle and Driver Forms for each such vehicle. If the vehicle was known or assumed to have been in transport at the time of the accident, at least one Occupant Form should be completed. If it can be determined from a reliable source that a vehicle contained "x" number of occupants or nonmotorists (departed scene but was not in transport at time of impact) at the time of its involvement, then submit the appropriate number of forms (Occupant or Pedestrian & Nonmotorist). Although most of the variables on the forms will have element values which are unknown, the forms are necessary to document the presence of the vehicle(s) and its person(s).

Hit-and-run (codes "1" through "4") can also be used if it is alleged by one of the involved parties that another vehicle, not reported by the police, was involved in the accident. However, the allegation must be supported by statements to this effect from an unbiased witness or from the existing physical evidence. An unsupported claim by one of the parties that a hit-and-run vehicle was involved should be coded as no hit-and-run ("0").

If the PAR indicates the presence of a hit-and-run vehicle, but the NASS investigator learns during the investigation that the allegation of the involvement of a hit-and-run vehicle was fabricated, then any information about the fabricated vehicle can be dropped. Caution must be used in this instance. The dropping of a police-reported vehicle must be based on an interviewee's admission or upon reliable evidence collected. Suspicion of falsehood is not an acceptable justification.

Variable Name: Time

Format: 4 columns - numeric

Beginning  
Column 33

Element Values:

Code reported military time of accident.

For example: 1200 - Noon

2400 - Midnight

9999 Unknown

Source: Police report.

Remarks:

Code to the nearest minute (e.g., 10:19 p.m. = 2219 hours). The time coded is taken from the "accident time" block on the PAR (usually at the top of the first page). If this block is left blank, then 9999 (Unknown) is coded.

Variable Name: Light Condition

Format: 1 column - numeric

Beginning  
Column 37

Element Values:

- 1 Daylight
- 2 Dark
- 3 Dark, but lighted
- 4 Dawn
- 5 Dusk
- 9 Unknown

Source: Primary source is the police report; secondary sources include driver interviews and other interviewees.

Remarks:

If element nomenclature differ between the police report and the NASS form, translate the value from the police report into the appropriate NASS value.

If the police report indicates that it was dark only [the PAR having no response to indicate that it was dark, but lighted ("3")], the investigator may select the latter value if it is known that the scene was lighted (at the time) via luminaries or light standards specifically directed at the roadway.

If the police report does not indicate the light conditions (i.e., a failure to check any category), the investigator should select the most representative value when reasonably certain of what it might have been. However, the investigator, as a surrogate for the police in this example, should restrict the selection to "1", "2", or "3". In those cases where the police fail to indicate the condition and the investigator feels it might have been dusk or dawn (both being short, transitory light conditions), the investigator should code "9" (Unknown).

If the police report contains more than one coded, shaded, or checked response for light conditions (e.g., "dark" and "dusk"), then a secondary source of information is to be used. If no other information is available, then code unknown, ("9").

If the police report is in error, code "1", "2", or "3", but do so only when certain of gross error by police.

Variable Name: Atmospheric Condition

Format: 1 column - numeric

Beginning  
Column 38

Element Values:

- 1 Normal (no adverse atmospheric-related driving conditions)
- 2 Rain
- 3 Sleet
- 4 Snow
- 5 Fog
- 8 Other (e.g., smog, smoke, blowing sand or dust, severe crosswinds, etc.) (specify)
- 9 Unknown

Source: Primary source is the police report; secondary sources include driver interviews and other interviewees.

Remarks:

If element nomenclature differ between the police report and the NASS form, translate the value from the police report into the appropriate NASS value.

If the police report does not indicate the atmospheric condition (i.e., a failure to check any category), the investigator should select the most representative value when reasonably certain of what it may have been. The investigator will have information regarding the road surface condition (which is different from the atmospheric condition) on the Driver Form, page 4. This may be helpful, but not necessarily sufficient, to select an element value. Additional information may be obtained by asking this as a specific question on the Driver Form, page 2. The investigator should attempt to resolve the differences between drivers, if possible. In those cases where the police fail to indicate the condition, conflict among drivers cannot be resolved, and/or no interview was obtained, the investigator should code "9" (Unknown).

If the police report contains more than one coded, shaded, or checked response for atmospheric conditions, then a secondary source of information is to be used. If no other information is available, then code unknown ("9").

Code "3" (Sleet) includes hail.

Code "8" (Other) should not be used solely because of cloudy or overcast skies. The element values for this variable are oriented toward precipitation, particle dispersion, or severe crosswinds which may affect the driver's visual ability or the vehicle's controllability.

Variable Name: Land Use

Format: 1 column - numeric

Beginning  
Column 39

Element Values:

- 1 Urban
- 2 Rural
- 9 Unknown

Source: FHWA required state maps.

Remarks:

Federal Highway Administration classification obtainable from the State Highway Department must be used. No other classification is available.

Do not use the police report for selecting this element value.

When the area type cannot be determined from the TA-1 classification map, contact the nearest FHWA office for their assistance. If FHWA is unable to assist, contact the nearest FARS representative since NASS is designed to be compatible with FARS on this issue. Refer problems in obtaining the FHWA classification to Contract Technical Managers (Definition: ANSI D16.1-1976, sections 2.5.1 and 2.5.2, pages 12-13).

**Roadway Type**  
**(Land Use, TA-1 Class, Roadway Function Class)**

The contacts for determining roadway types have been established and are listed on the following pages. The procedure used to determine these contacts follow, for information purposes only.

Investigators should write or call the respective State contact to obtain copies of TA-1 maps or information in this regard.

**WHERE:** To determine the roadway type, the contractor must obtain copies of the TA-1 maps which are located in the State Highway Departments-- usually in their planning section.

**HOW:** The easiest, and quickest, way to determine the exact location of these maps is to contact the Federal Highway Administration's Division Planning and Research Engineer located in each State. These individuals would know who in the State Highway Departments to contact in order to obtain copies of TA-1 maps or information.

**CAUTION:** This highway classification is available from individual States only. The coder should not, under any circumstances, attempt to classify a roadway without examining the TA-1 maps.

### Accident Level Versus Traffic Unit Level Environmental Data

There is a conceptual difference between the accident level and the traffic unit level environmental data. The accident level data are intended to represent the environment at the crash scene. In this sense, one can say that the accident level environmental variables represent at-crash data. On the other hand, the traffic unit level environmental variables are intended to provide the most representative description of the roadway environment that the driver (vehicle) had to cross just prior to the first harmful event. In this sense, one can say that the traffic unit level environmental variables represent the environment just prior to crash.

When determining either the accident or traffic unit level environmental data, the point of focus is at the location of the first harmful event. There are two mutually exclusive sets of locations in which the first harmful event can occur. They are: (1) in a junction (within the prolongation of the lines which form the boundary of the intersecting roadways) and (2) not in a junction. Recall that a junction is merely the area formed by the intersection of two roadways. Further, the roadways can be either a highway, road, or street, or one or both of the roadways can be an alley or driveway. In the latter case, there is a special rule for determining the accident level environment in a junction [see 2(a)(3) below]. Alleys and driveways can (in the vast majority of instances) be distinguished from highways, roads, and streets by the fact that the former are not named. Any exceptions to this "named rule" for distinguishing streets or roads from alleys or driveways should be handled on a case-by-case basis.

To determine the environmental variables, the investigator must begin by determining the location of the first harmful event. In the investigator's judgment, based upon review of the police report, scene inspection, participant interviews and, in some instances, vehicle inspection, the location of the first harmful event is either known or it is obscure. Let us deal with the latter situation first.

1. The location of the first harmful event is obscure. The investigator begins with the police report and adjusts the location determination based upon scene data, interviews, etc. However, if these additional sources fail to clarify the location, then the preponderance of the evidence from the police report must be relied upon. The two situations are as follows:

- (a) The police report depicts the accident as occurring in a junction. Upon review of the actual scene you are unsure as to whether or not the first harmful event actually did or did not occur within the prolongation of the lines forming the boundaries of the intersecting roadways; therefore, assume it did occur in a junction and proceed as if it did (i.e., follow the "in-a-junction" rules); or
- (b) The police report depicts the accident as occurring other than in a junction. Upon review of the actual scene you are unsure as to where the first harmful event actually occurred. Follow the "not-in-a-junction" rules. However, if you do determine from the scene and other evidence that the location of the first harmful event was in a junction, then follow the "in-a-junction" rules.

2. The location of the first harmful event is known. The investigator either follows the rules pertaining to: (a) in-a-junction, or (b) not-in-a-junction to determine the roadway segment or segments for which the environmental variables are reported.

- (a) In-a-junction. First, determine the traffic unit level environmental variables for each in transport vehicle. Go independently to the mouth of the roadway that brought each vehicle into the junction. In the case of a vehicle abandoned in a junction, go to the mouth of the roadway that most likely brought the vehicle into the junction. Verify the identity of each involved roadway. The identity is needed so that each roadway's TA-1 classification can be subsequently determined from a map in-office. Collection of each roadway's classification is required so that the accident level comparison (below) can be accomplished. Next, follow the guidelines presented for variable D34 (Number of Travel Lanes) and determine the total number of lanes for each vehicle's roadway (at the mouth). Finally, determine for each of the remaining variables (D35-D45) the values for each vehicle that are most representative of the driver's (vehicle's) environment back along the vehicle's (driver's) path just prior to its involvement in the collision. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

After completing the traffic unit level environmental variables for each roadway involved, proceed to the accident level environmental variables. Where multiple roadways were involved in the accident's first harmful event, select, according to the following rules, one of the roadways on which a vehicle involved in the first harmful event was travelling just prior to its entrance into the junction:

- (1) Choose the roadway with the higher (lower numerically) TA-1 classification. If the values are the same, then proceed to rule (2). In either case, record the value in variable A21, TA-1 class.
- (2) Choose the roadway with the greater number of lanes (variable D34). If the number of lanes are the same, then proceed to rule (3).
- (3) Choose the roadway on which the most at-fault driver was travelling, except for the alleys and driveways where the street used by the other vehicle is always chosen.

If all of the in transport vehicles involved in the accident's first harmful event came from the same roadway, then select that roadway. Once you have chosen the roadway, complete the accident level environmental variables (A25-A28, A30-A37) based on the values recorded for that roadway's traffic unit level environmental variables (D34-D45). The values will be nearly identical.

- (b) Not-in-a-junction. [NOTE: An accident whose Relation to Junction (A23) was listed as "intersection related" (code "05") is an example of an accident not in a junction.] Determine the traffic unit level environmental variables for each in transport vehicle before attempting to determine the accident level environmental variables. Since the location of the first harmful event is not in a junction, the investigator must proceed, in ac-

cordance with the guidance which follows, to determine both the traffic unit and accident level environmental variables.

If the first harmful event did not occur in a junction, then there are two mutually exclusive locations in which it did occur. These are: (1) off the roadway, or (2) on the roadway.

- (1) Off roadway: For each in transport vehicle involved in the first harmful event, return to the location where the vehicle was last on a roadway. For this determination, "on roadway" means that any part of the vehicle was in contact with the roadway. However, if a vehicle leaves one roadway and enters another roadway other than in the manner that the second roadway was designed to be travelled, ignore the second roadway and return to the location at which the first roadway was last departed. For example: (Situation A) Vehicle leaves roadway X, crosses a field and enters roadway Y. Vehicle crosses roadway Y laterally until it impacts (a) an object (e.g., median barrier), (b) another motor vehicle, or (c) an object on the other side of the roadway. In any of these cases, return to roadway X to record the vehicle's traffic unit level environmental variables. (Situation B) Vehicle leaves roadway X to short-cut traffic ahead. Vehicle, while attempting to merge longitudinally on roadway Y, impacts (a) an object--on or off the roadway, but on the trafficway, or (b) another motor vehicle. In either of these cases, consider the vehicle to be associated with roadway Y.

Once you have determined the location where the vehicle last left the roadway (or each vehicle in the case of an accident involving multiple vehicles which leave their roadway prior to their involvement in the accident), the selection process for the proper values for the traffic unit level environmental variables is the same as for vehicles whose first harmful event was on the roadway. See (2) below for remaining instructions.

- (2) On roadway: Go to the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Determine the number of lanes (D34) for each involved vehicle by selecting the value which provides the most representative description of the driver's roadway leading to this location. Make this determination, and all subsequent traffic unit level environmental determinations (D35-D45), by looking back along the vehicle's path just prior to the impact. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables, use a generalized cross-section of the roadway at the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Record TA-1 Class (A21) for the roadway at this location. In addition, determine the appropriate values for each of the remaining accident level environmental variables (A25-A28, A30-A37).

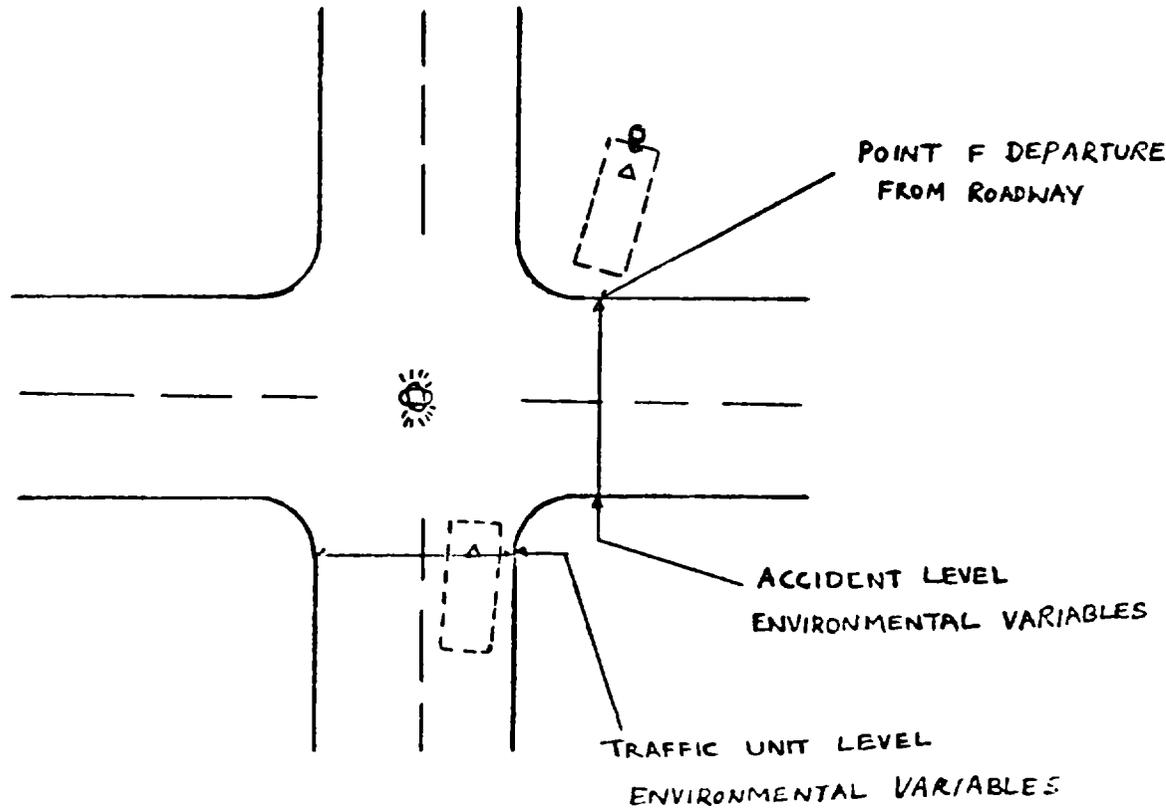
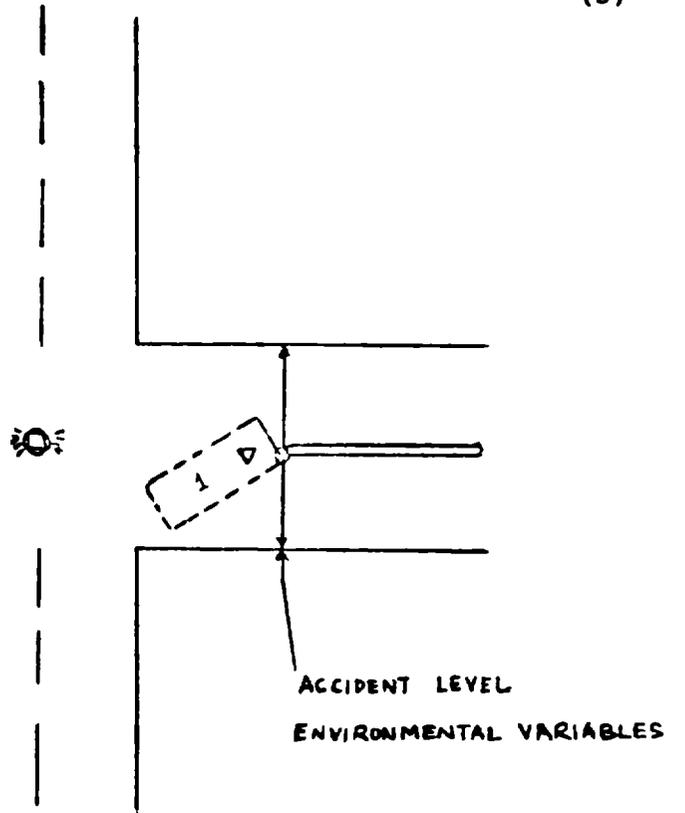
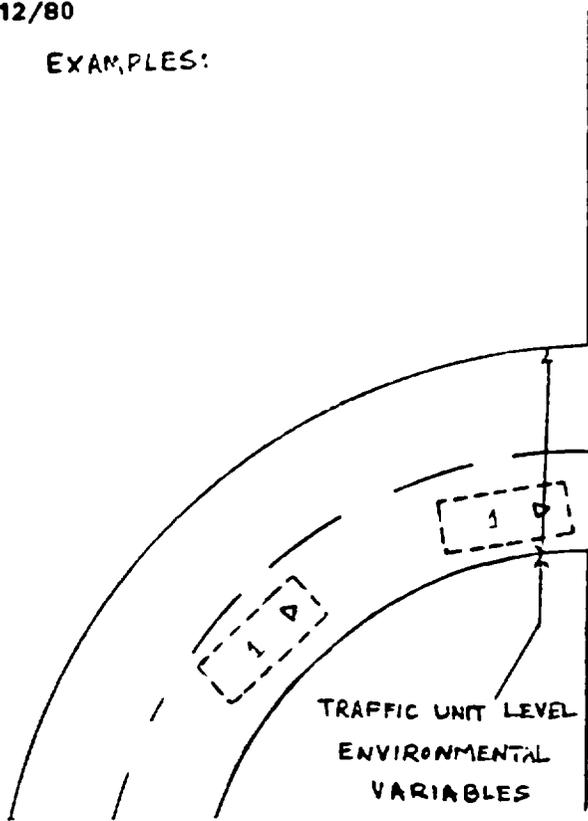
One special rule needs to be considered for the accident level determination. If the location of the first harmful event is one and the same as an area of transition (of any kind: straight-curve, level-grade, wet-dry, concrete-bituminous, etc.) record the transition according to the following rules:

- (01) Choose undivided over divided;
- (02) Choose other divisions over barrier division;
- (03) Choose partial control over full access control;
- (04) Choose no control over partial access controls;
- (05) Choose shoulders over no shoulders;
- (06) Choose two shoulders over one;
- (07) Choose curve over straight;
- (08) Choose grade over level;
- (09) Choose hillcrest or sag over grade;
- (10) Choose other surface types over concrete;
- (11) Choose gravel, dirt, brick or block over bituminous;
- (12) Choose gravel or dirt over brick or block;
- (13) Choose dirt over gravel;
- (14) Choose nondry surface conditions over dry;
- (15) Choose snow or slush over other nondry conditions;
- (16) Choose ice over wet or other conditions; and,
- (17) Choose wet over other conditions.

The location of the first harmful event and the subsequent selection of the accident level environmental variables can occur from a roadway that differs from any roadway on which an in transport vehicle was travelling. In this case the accident and driver level environmental variables may be different. This is true primarily in single vehicle collisions. An example of this occurs when a vehicle is attempting to negotiate a junction, and it impacts an object outside of the junction but on another roadway (different street or different leg of the same street but which has different attributes than the other leg). Further, in the opinion of the investigator, the former roadway is the one most representative of the vehicle's (driver's) environment just prior to the collision. (See next page for examples.) However, there is an exception to this general rule. This exception occurs when the other roadway would not qualify as a NASS roadway if it were not for the "throat" rule (see Variable A23, Relation to Junction, third page, paragraphs 7 and 8). In these instances, the accident level environmental variables should be the same as the traffic unit level environmental variables for the involved in transport vehicle.

For those in transport vehicles not involved in the accident's first harmful event (but involved in the accident), determine the traffic unit level environmental variables for that vehicle from the area preceding the location where that vehicle sustained its initial damage or its occupants were initially injured.

EXAMPLES:



Variable Name: TA-1 Class

Format: 1 column - numeric

Beginning  
Column 40

Element Values:

- 1 Interstate
- 2 Other federal aid primary
- 3 Federal aid secondary
- 4 Federal aid urban arterial
- 5 Federal aid urban collector
- 6 Nonfederal aid arterial
- 7 Nonfederal aid collector
- 8 Nonfederal aid local
- 9 Unknown

Source: FHWA required state maps.

Remarks:

The Federal Highway Administration classification obtainable from the State Highway Department must be used. No other classification source is available.

Do not use the police report for selecting this element value.

When the road classification cannot be determined from the TA-1 Classification map, contact the nearest FHWA office for their assistance. If FHWA is unable to assist, contact the nearest FARS representative, since NASS is designed to be compatible with FARS on this issue. Refer problems in obtaining the FHWA classification to Contract Technical Managers.

Code "1" (Interstate) for on/off ramps that serve an interstate.

A ramp is defined in variable A23, Relation to Junction. Ramps which do not serve an interstate should be classified according to the highest level (lowest numerical) roadway which they connect.

Frontage roads and collector-distributor roads (see ANSI D16.1-1976, sections 2.5.18 and 2.5.19, page 14) are coded as classified on the maps.

Code "8" (Nonfederal aid local) for driveways or alleys when the accident occurs entirely on the driveway or alley.

Variable Name: Roadway Function Class

Format: 1 column - numeric

Beginning  
Column 41

Element Values:

- 1 Principal arterial-interstate
- 2 Principal arterial-other urban freeway  
or expressway
- 3 Principal arterial-other
- 4 Minor arterial
- 5 Urban collector
- 6 Major rural collector
- 7 Minor rural collector
- 8 Local road or street
- 9 Unknown

Source: FHWA required state maps.

Remarks:

The Federal Highway Administration has established a roadway functional system classification scheme. The functional classification maps are only obtainable from the State Highway Department. Use the same contact that was used in obtaining your TA-1 classification maps. In fact, it appears that some overlap between the two classification schemes exists and that in some PSUs, some of the maps used for TA-1 Class (A21) purposes may be one and the same or similar to the required functional classification maps. Use of the functional classification maps is required; no other source is available.

Do not use the police report for selecting this element value.

FHWA has established a hierarchy of roadway functional systems. The basic functional systems are: (1) rural areas, (2) urbanized areas, and (3) small urban areas (under 50,000 in population). Each system is comprised of various functional categories. The categories are shown below.

<u>Rural Area</u>	<u>Urbanized &amp; Small Urban Area</u>
Principal arterials	Principal arterials
Interstate	Interstate
Other	Other freeways and expressways
	Other
Minor arterial roads	Minor arterial streets
Collector roads	Collector streets
Major	
Minor	
Local roads	Local streets

One should be able to recognize how the present attributes evolved from these two categorizations.

Variabl Name: Roadway Function Class (cont'd.)

When the road classification cannot be determined from the functional classification map(s), contact the nearest FHWA office for their assistance. The nearest FARS representative may also be able to assist with problems. Refer problems in obtaining the FHWA classification to your Contract Technical Manager.

Code "1" (Principal arterial-interstate) for on/off ramps that serve an interstate.

A ramp is defined in variable A23, Relation to Junction. Ramps which do not serve an interstate should be classified according to the highest categorial level (lowest numerical) roadway, within the functional system, which they connect. For example, a ramp which connects a local road to a minor arterial road (rural area) would be coded as "4" (Minor arterial).

Frontage roads and collector-distributor roads (see ANSI D16.1-1976, sections 2.5.18 and 2.5.19, page 14) are coded as classified on the maps.

Code "8" (Local road or street) for driveways or alleys when the accident occurs entirely on the driveway or alley.

Variable Name: Relation to Junction

Format: 2 columns - numeric

Beginning  
Column 42

Element Values:

- 01 Non-junction
- 02 Three leg intersection
- 03 Four leg intersection
- 04 More than four leg intersection
- 05 Intersection related
- 06 Interchange area
- 07 Driveway, alley access related
- 08 Entrance or exit ramp
- 09 Railroad grade crossing
- 10 Crossover related
- 99 Unknown

Source: Investigator determined--inputs include scene inspection, the police report, definitions, and driver interviews.

Remarks:

The element value selected is based on the location of the first harmful event. If the first harmful event occurs off the roadway, refer to the section at the point of departure to code this variable. In those off-roadway instances where the departure occurs from within a junction, code either "01" (Non-junction) or "05" (Intersection related). The latter code should be used if the junction was also an intersection (see definition below).

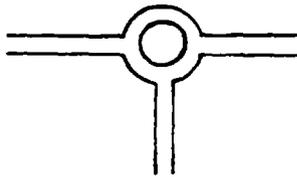
Junction is, in general, the area formed by the connection of two roadways. It includes: (1) all at-grade intersections (ANSI D16.1-1976 section 2.5.12, page 14), (2) connections between a driveway access or alley access and a roadway which is not a driveway access or an alley access, (3) connections between two alley accesses or driveway accesses, or (4) a connection between a driveway access and an alley access.

Intersection (codes "02" through "04") is a type of junction which: (1) contains a crossing or connection of two or more roadways not classified as a driveway access or alley access, and (2) is embraced within the prolongation of the lateral curb lines or, if none, the lateral boundary lines of the roadways. Where the distance along a roadway between two areas meeting these criteria is less than 10 meters (33 feet), the two areas and the roadway connecting them are considered to be parts of a single intersection. The measurement is made from inside-to-inside of the lateral curb/boundary lines.

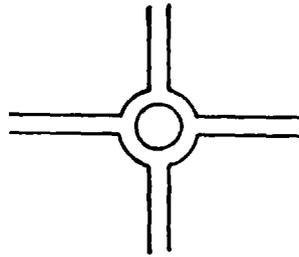
Should the first harmful event occur within the area formed by the prolongation of curb or edge lines of the approach legs of the intersection, it is to be classified as an intersection accident whether or not the collision which occurred was in any way related to the fact of being within an intersection.

Variable Name: Relation to Junction (cont'd.)

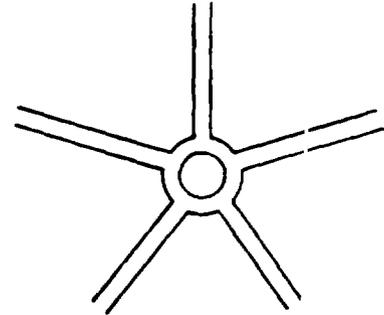
Rotary intersections are to be classified by the number of legs which lead to the inner circle; "Rotary" is defined in variable A29, Interchange Geometry. Below are some examples.



3-leg



4-leg



&gt;4-leg

Intersection related (code "05") means that the first harmful event (A10, First Harmful Event): (1) occurs on an approach to or exit from an intersection; and (2) results from an activity, behavior, or control related to the movement of traffic units through the intersection (for "traffic unit" see ANSI D16.1-1976, sections 2.2.26, 2.2.6, 2.1.8, and 2.1.4)

In a single vehicle accident, the "activity" or "behavior" referred to above must be related to a traffic unit not involved in the accident. However, if multiple traffic units are involved, then an "activity" or "behavior" on the part of any of the involved units could qualify the accident as intersection related (code "05").

If an accident meets the criteria of intersection related ("05") but also meets the criteria for codes "07" through "10", then the appropriate code ("07" through "10") takes precedence. Remember, for codes "07" (Driveway, alley access related) and "10" (Crossover related) to apply, a pedestrian, other nonmotorist associated with a nonmotorist conveyance, or road vehicle (ANSI D16.1-1976, section 2.2.6, page 5) must have been entering or exiting the appropriate area.

If the first harmful event occurs both outside of an intersection and off the roadway, but at least one vehicle involved in the first harmful event departed its roadway from within the intersection, then code "05" (Intersection related) should be used.

An interchange area ("06") is the area around a grade separation (ANSI D16.1-1976, section 2.5.14, page 14) which involves at least two trafficways which are directly connected. Included within its boundaries are: (1) all ramps which connect the roadways, and (2) each roadway entering or leaving the interchange to a point 30 meters (100 feet) beyond the gore or curb return at the outermost ramp connection for the roadway. One may find included within an interchange area intersections, driveway accesses, and, of course, roadway sections which are non-junction.

If the location of the First Harmful Event (A10) is in an interchange area and also is in either an intersection (codes "02" through "04") or on an entrance or exit ramp ("08"), then the intersection (codes "02" through "04") or the ramp ("08") takes precedence.

Variable Name: Relation to Junction (cont'd.)

Driveway access (code "07") is a roadway providing access to property adjacent to a traffic way.

Alley access (code "07") is an unnamed roadway providing access, in general, to the rear of houses or buildings, some of which may be further served by a driveway access.

Code "07" (Driveway, alley access related) is used when the first harmful event (1) occurs in the prolongation of the lines forming the junction, or (2) occurs on a NASS roadway (see below) which approaches or exits from the driveway or alley access junction, and at least one involved pedestrian, other nonmotorist associated with a nonmotorist conveyance (see variable P08, Pedestrian or Nonmotorist's Type), or road vehicle (ANSI D16.1-1976, section 2.2.6, page 5) was entering or exiting from the driveway or alley.

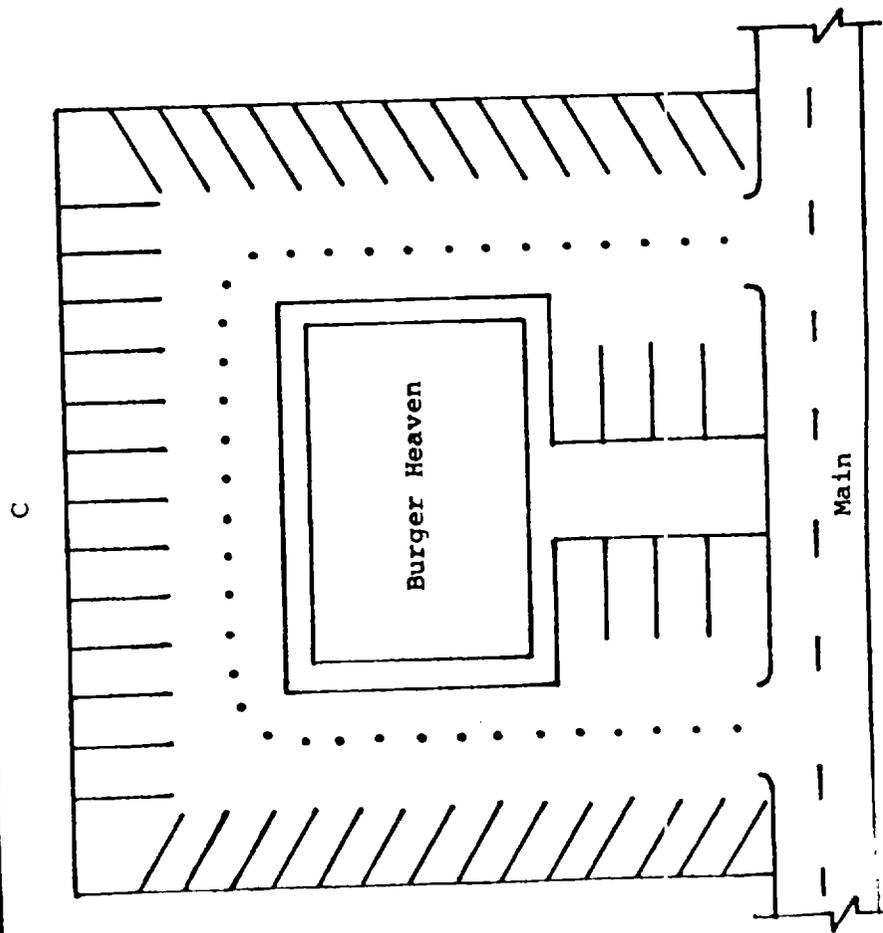
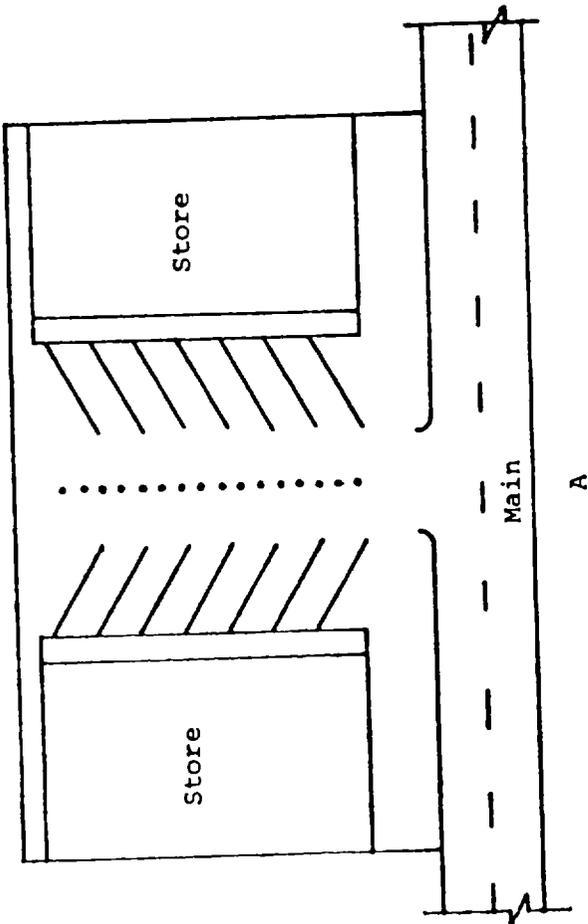
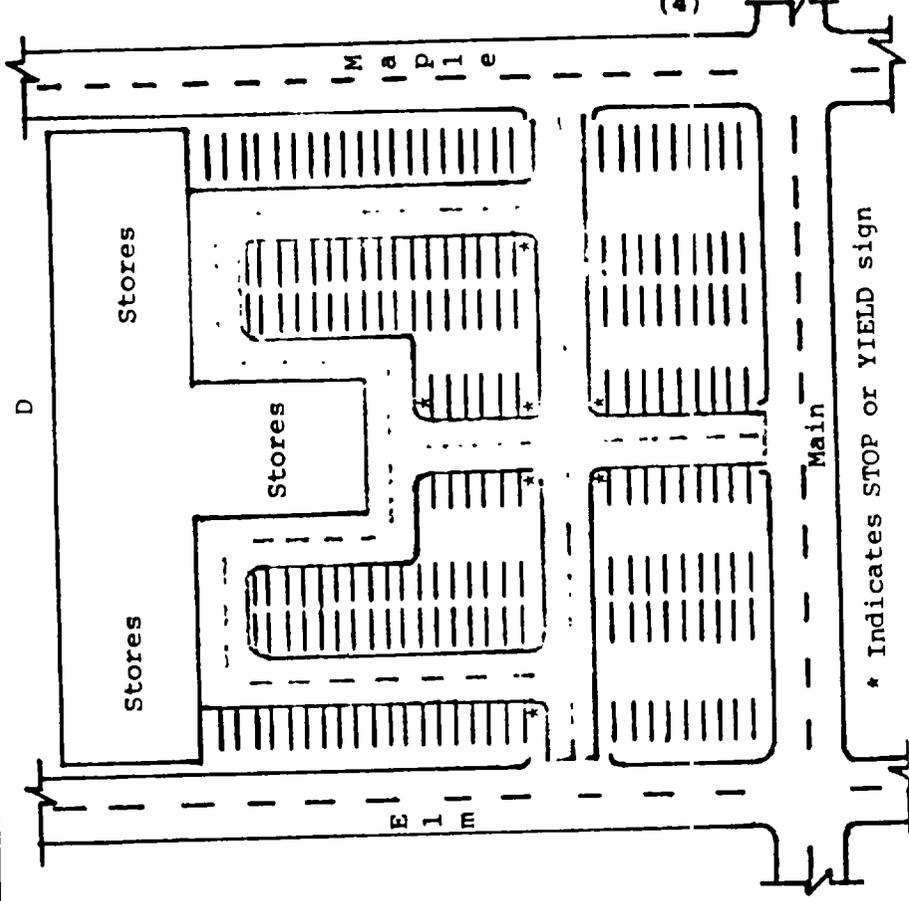
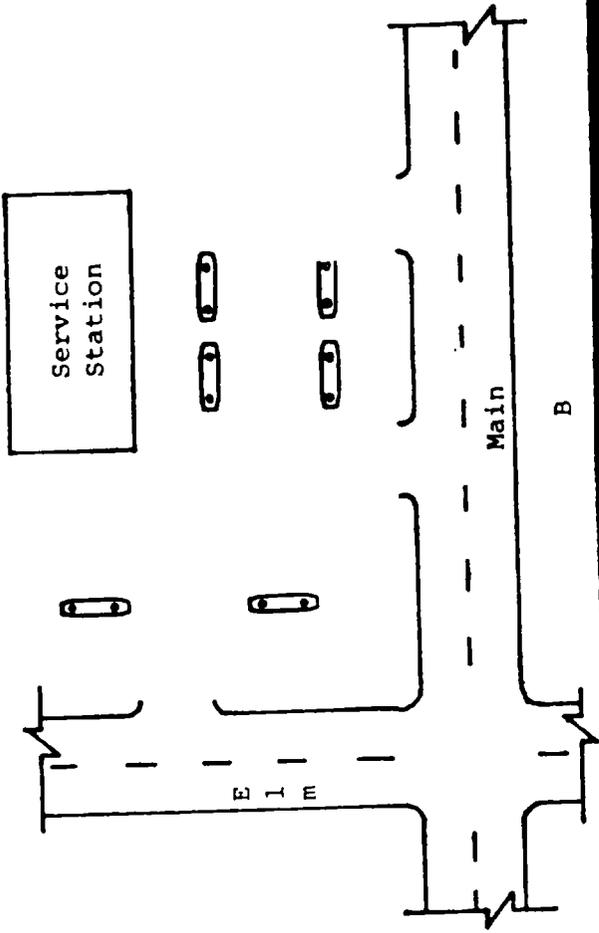
Where a controlled driveway/alley access junction overlaps (inside-to-inside of lateral boundary lines is less than or equal to 10 meters) a three leg intersection, code "03" (Four leg intersection) should be used.

When an uncontrolled driveway/alley access junction is also within the prolongation of a three leg intersection (code "02") and the accident would meet the criteria of driveway, alley access related (code "07"), code either "02" (Three leg intersection) if the first harmful event was within the intersection junction, or "05" (Intersection related) if it was not

For an uncontrolled driveway/alley access junction within ten (10) meters (33 feet) of a three or four leg intersection (inside-to-inside of lateral boundary lines), code "07" (Driveway, alley access related) only if the criteria above are met and the location of the first harmful event is not within the intersection.

Most driveways (but not all) are not roadways in NASS. Examples of non-NASS roadways are: driveways to service stations, residential dwellings, and most apartment complexes, hotels, motels, and other commercial establishments. There are two instances where driveways, which otherwise would not qualify as a NASS roadway, are to be considered as roadways (on the traffic unit level--Driver Form). These two instances occur when a vehicle is exiting the driveway and the location of the First Harmful Event (A10) is in either of the following two areas. The first area is the area within the junction itself formed with the driveway access, or it is on the crossing roadway sufficiently near the junction such that in the investigator's opinion the driveway best represents the driver's pre-crash environment. The second area considered is the "throat" of the driveway. In either instance, the investigator should use the driveway as the roadway described on the vehicle's Driver Form.

An accident is considered to have occurred in the throat if, at the junction of a trafficway and a private way (ANSI D16.1-1976, section 2.2.2, page 5), a motor vehicle in transport is either entering or exiting the private way such that any part of the vehicle is in contact (on or over) with the road (ANSI D16.1-1976, section 2.2.19, page 7) at the location of the first harmful event. If the accident occurred in the throat, then code "07" (Driveway, alley access related) should be used.



Variable Name: Relation to Junction (cont'd.)

In the paragraph above, it is stated that many driveways are not roadways in NASS (e.g., driveways to service stations, residential areas, etc.) unless the first harmful event occurs in a junction, near a junction, or the "throat" rule condition is satisfied. There are driveways, however, which constitute roadways in NASS without having to satisfy these conditions. Certain driveways within parking or shopping lots qualify if they satisfy the three criteria discussed below.

The phrase "open to the public as a matter of right or custom" (ANSI D16.1-1976, section 2.2.1, page 4) causes problems when the property is privately owned. One problem area centers around shopping centers. It has been stated many times that private ownership does not automatically disqualify a case for consideration as a NASS accident. The nature and extent of "land ways" (section 2.1.11, page 4) on private property, and the differences in accident reporting criteria by police, have brought about the narrowing of the definition of a trafficway (section 2.2.1, page 4) to that which can be operationally defined. In parking or shopping lots three criteria have been suggested:

- o There must exist two or more contiguous lanes of travel that are clearly marked;
- o The land way must intersect another land way inside the lot or center; and
- o The junction of the internal land ways must have traffic controls (i.e., STOP or YIELD signs or markings).

The intent is to select those land ways which serve the purpose of getting traffic to and from the parking area; however, the fact that parking is allowed immediately adjacent to the land way does not disqualify it from consideration. The diagram on the preceding page (containing four schematics) does not attempt to cover the entire spectrum of possibilities but only to illustrate some common examples. For situations A, B, and C none of the land ways should be considered as trafficways, since the criteria are not met. However, a NASS accident could occur at each of these if it satisfied the "throat rule" above. In situation D the screened in areas are roadways since they meet the criteria.

An entrance or exit ramp (code "08") is a transition roadway: (1) which connects two roadways, (2) is used for entering or leaving through-traffic lanes, and (3) begins and ends at a gore or curb return. The widening of the roadway, where present, which allows one to diverge from or merge onto the through-traffic lanes is to be considered as an additional lane associated with the connected roadway. A ramp can connect two roadways which cross (either at-grade or with a grade separation) or two which do not cross (e.g., frontage roads). A ramp can form an intersection with a roadway as well as diverge from or merge into one. A ramp can form a channelized intersection. A ramp can also split into two ramps.

A railroad grade crossing (code "09") is the area formed by the at-grade connection of a railroad bed and a roadway. The railroad bed is defined, for NASS purposes, as the area encompassed within: (1) eight feet either side of the center of a single set of tracks, or (2) eight feet beyond the centers of the outside sets in the case of multiple sets.

Variable Name: Relation to Junction (cont'd.)

If the first harmful event occurs in the area formed by the connection of the railroad bed and the roadway, then code "09" (Railroad grade crossing) should be used.

A crossover (code "10") is a designated opening within a median used primarily for "U-turns". To be considered, the nearest lateral boundary line of the crossover must be greater than 10 meters (33 feet) from the nearest lateral boundary line of any roadway (highway, street, ramp, driveway, or alley) which intersects with either side of the roadways which the median divides.

Code "10" (Crossover related) should be used if the first harmful event occurred (1) in the junction of a crossover and a roadway, (2) on any leg of the roads which approach or exit from the crossover and which are just outside of the crossover junction itself (and subject to the provision below), or (3) in the crossover itself, and at least one involved pedestrian, other nonmotorist associated with a nonmotorist conveyance (see variable P08, Pedestrian or Nonmotorist's Type), or road vehicle (ANSI D16.1-1976, section 2.2.6, page 5) was entering, in, or exiting from the crossover.

Median cuts which are directly across from or within 10 meters (33 feet) of the nearest lateral boundary line of any roadway (highway, street, ramp, driveway, or alley) are considered extensions of the roadway and do not count as an additional leg of the junction. The area between the roadways which the median cut serves is considered part of the junction unless the roadways belong to separate trafficways. In this case, consider the area as a separate road segment. If the location of the first harmful event is in the median cut, code the appropriate response--"02" (Three leg intersection), "03" (Four leg intersection), or "07" (Driveway, alley access related).

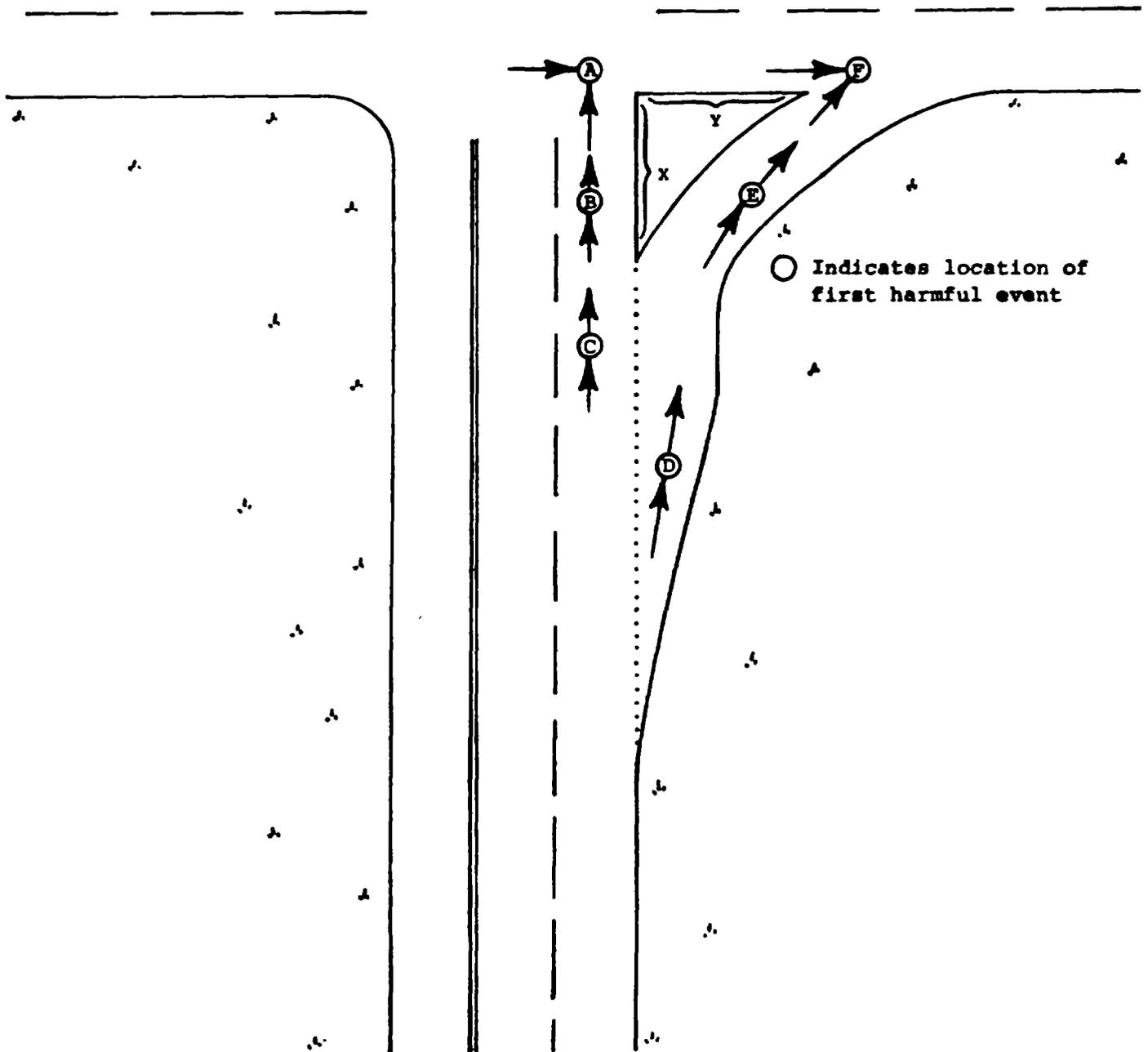
Some at-grade intersections are channelized; some at-grade intersections have ramps. A channel can be distinguished from a ramp (for an at-grade intersection) according to the following criteria (see accompanying figure). Measure the X and Y distances at the island. To be a ramp (code "08") the larger of X or Y must be greater than 16 meters (50 feet) and the smaller of X or Y must not be less than or equal to 10 meters (33 feet). Otherwise, the configuration constitutes a channel. A careful review of the table which accompanies the figure is in order.

An island is defined as a raised, paved surface.

If the first harmful event occurs while going into, within, or coming out of a channel, then code the Relation to Junction as either an intersection (codes "02" through "04"--rare), a non-junction ("01"), or intersection related ("05"), depending upon whether or not the intersection related criteria are met. On the other hand, if the first harmful event occurs in an entrance or exit ramp, then code "08" (Entrance or exit ramp) regardless of whether or not the first harmful event resulted from some action that would qualify as intersection related (code "05").

Variabl Name: Relation to Junction (cont'd.)

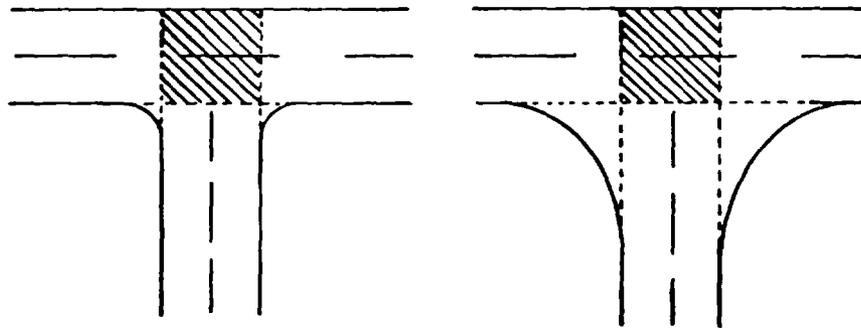
Relation to Junction	Channel	Ramp
Non-junction or Intersection related	(B) (C) (D) (E) (F)	(B) (C)
Three leg or Four leg inter- section--two streets	(A)	(A)
Three leg intersection--street and a ramp		(D) (F)
Entrance or exit ramp		(E)



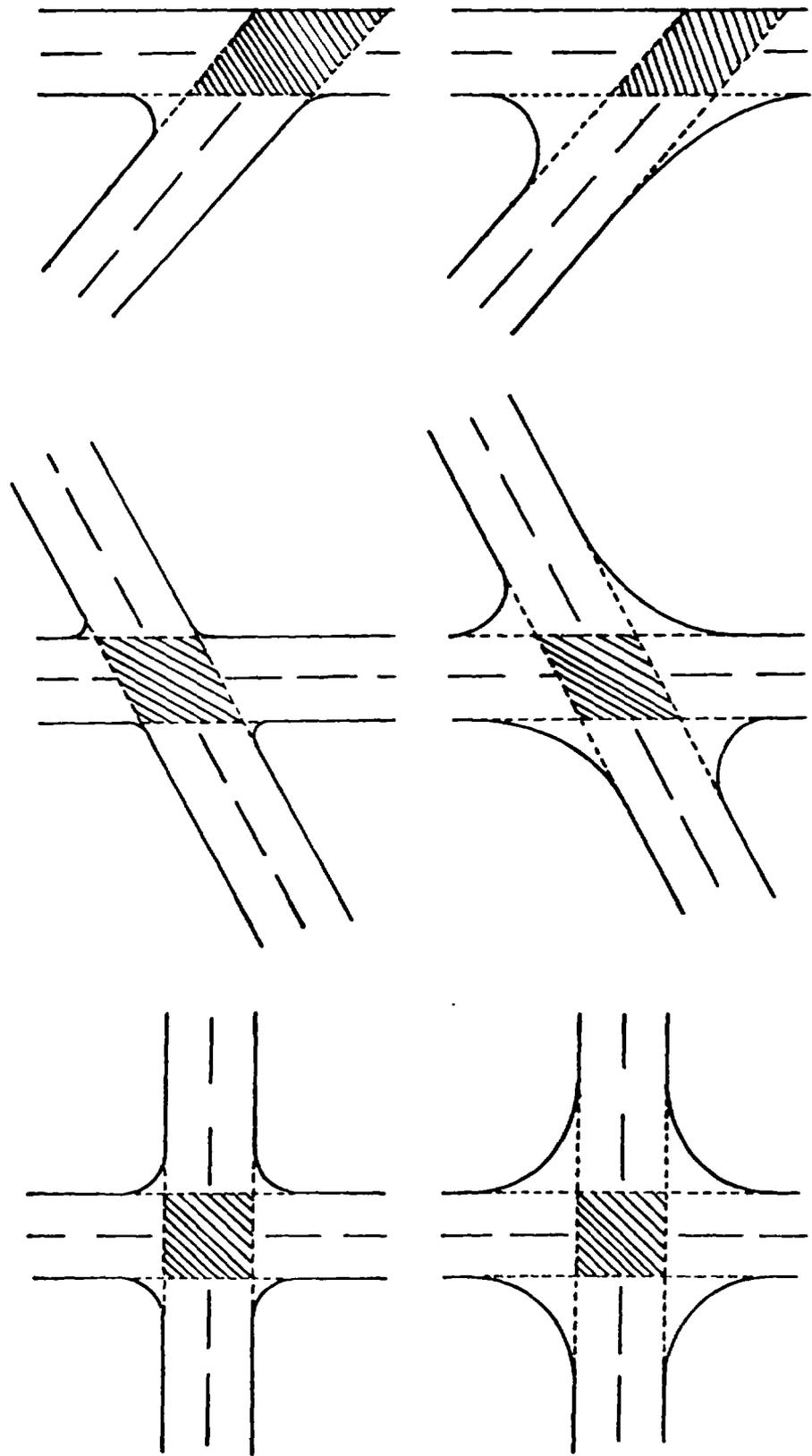
Variable Name: Relation to Junction (cont'd.)

If the at-grade ramp flows into an additional through lane that originates at the ramp termination or the at-grade ramp originates from an additional through lane that terminates at the ramp's origin, then code any first harmful events which occur in the additional through lanes as non-junction ("01"). On the other hand, if the at-grade ramp flows: (1) directly into or from through lanes which neither begin or terminate at the at-grade ramp, or (2) into or from temporary storage lanes (acceleration/deceleration), then code "02" (Three leg intersection) should be used if the first harmful event involved a vehicle entering or exiting the at-grade ramp. The occurrence of a first harmful event in the junction of an at-grade ramp and a roadway should be coded non-junction ("01") or intersection related ("05") when the presence of the at-grade ramp is incidental to the first harmful event (see situation "C" on previous page). Of course, the use of the intersection related code ("05") could be dependent upon what occurs in connection with the intersection which is located beyond the ramp-street junction or with the ramp-street junction itself. [NOTE: If the first harmful event occurs within the junction of a roadway and a ramp, where the ramp involves a grade separation, then interchange area (code "06") should be used.]

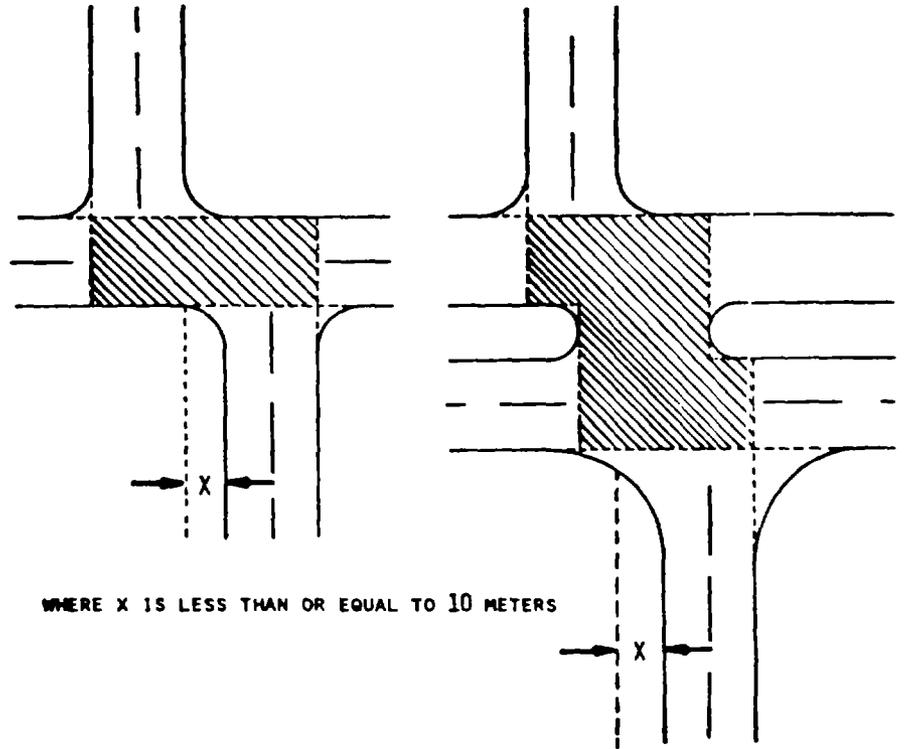
The following examples, although not intended to be inclusive, are presented for the purpose of helping to clarify the meaning of "prolongation" as it is used with respect to junctions.



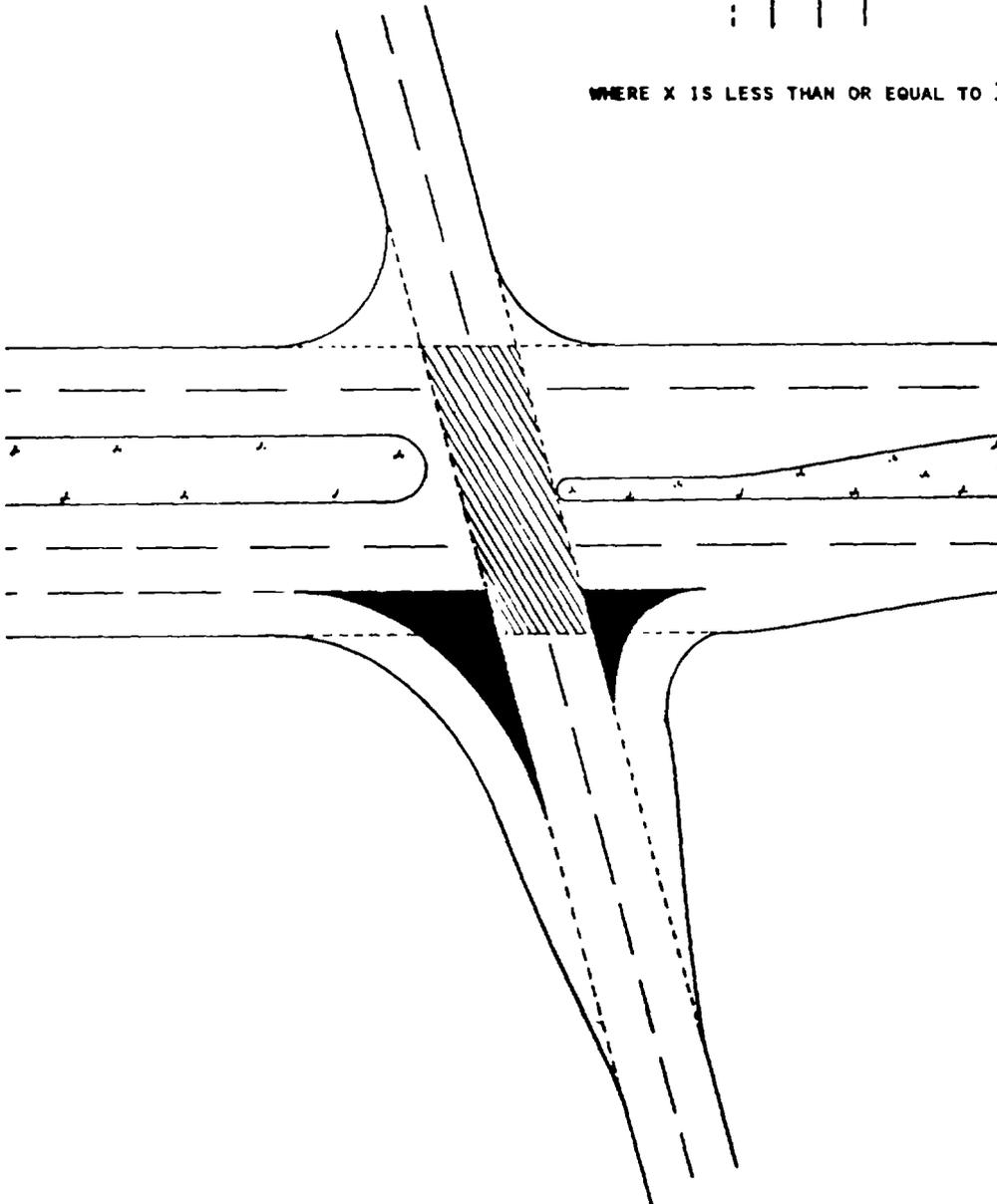
Variable Name: Relation to Junction (cont'd.)



Variable Name: Relation to Junction (cont'd.)

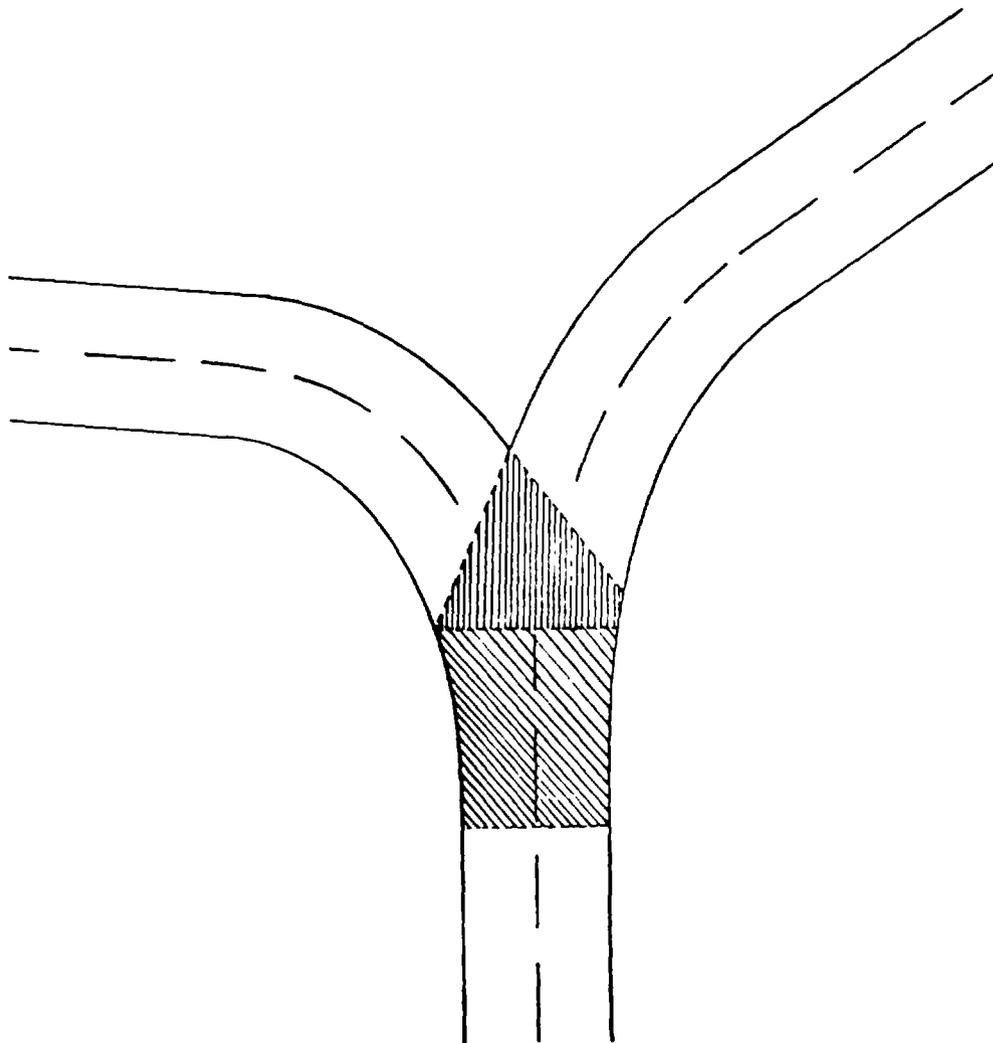


WHERE X IS LESS THAN OR EQUAL TO 10 METERS



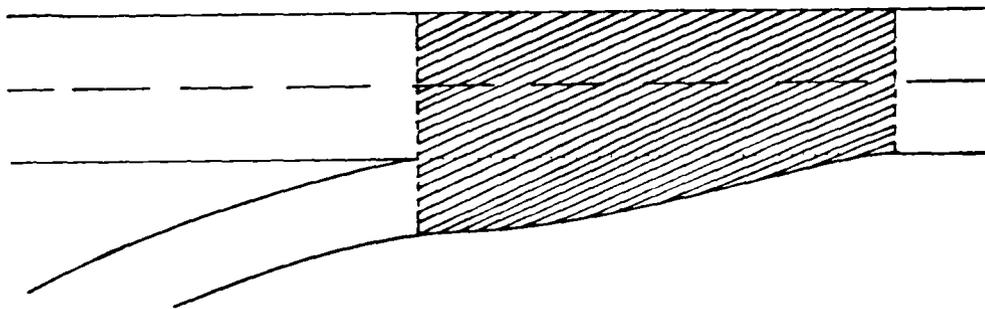
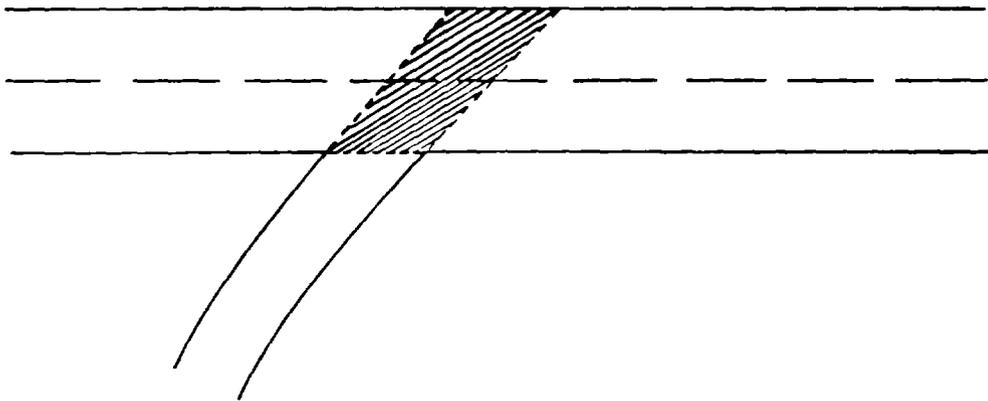
Variable Name: Relation to Junction (cont'd.)

The next example illustrates prolongation in the case of a diverging "Y" type (three leg) intersection (code "02"). Find the location along the Y's stem where the prolongation from the divergence is farthest from the apex. If the distance from the apex to a line perpendicular to the lateral boundary lines of the stem at the farthest point is greater than or equal to 16 meters (50 feet), then consider the first shaded area (vertical hash marks in the example) as the intersection. If the distance is less than 16 meters (50 feet), then add an additional 10 meters (33 feet)--second shaded area (diagonal hash marks in the example)--to the distance and consider both shaded areas as the intersection.



Variable Name: Relation to Junction (cont'd.)

Sketched below are examples of the prolongation associated with the three leg intersection ("02") which results from the junction of a roadway and an at-grade ramp. The examples illustrate both the absence and presence of an acceleration/deceleration lane.

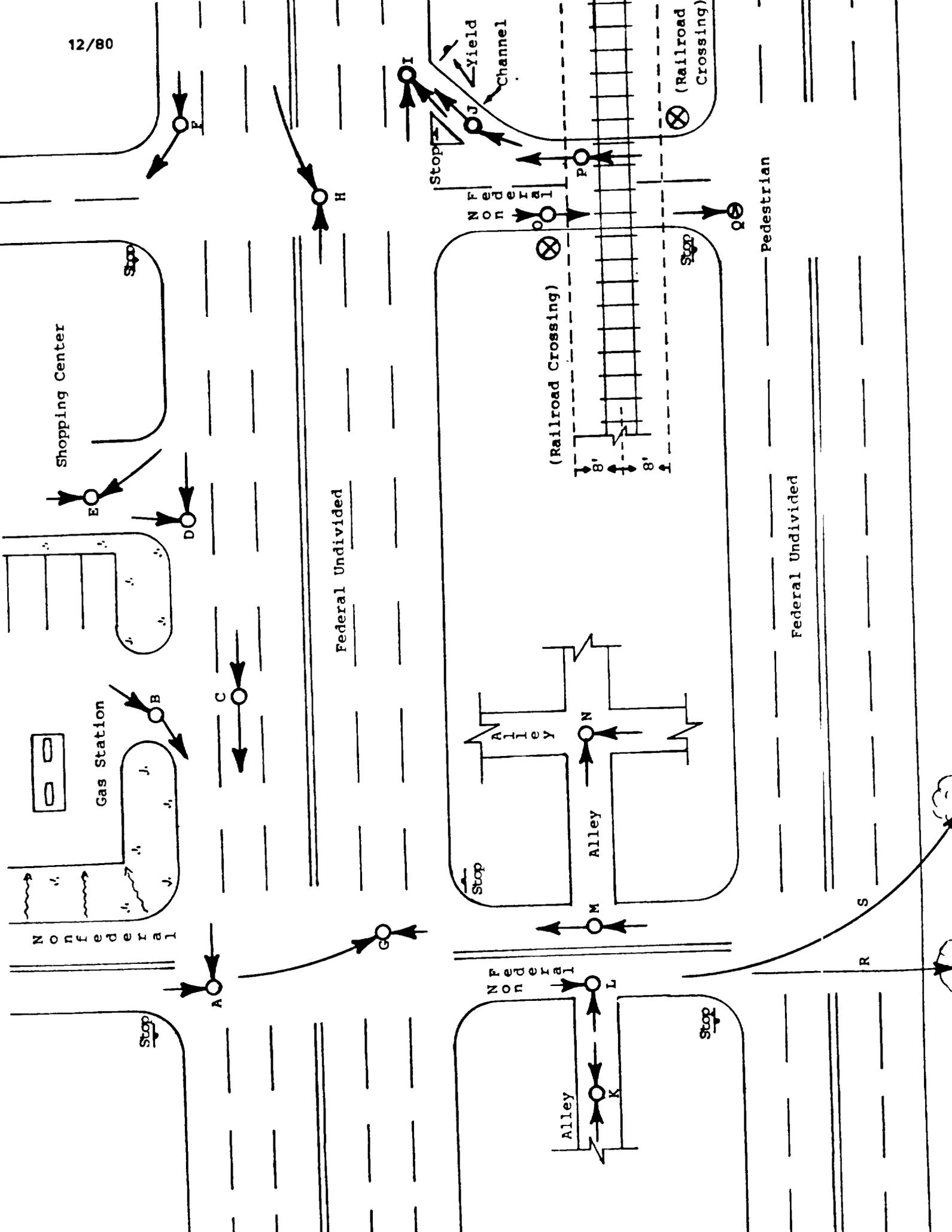


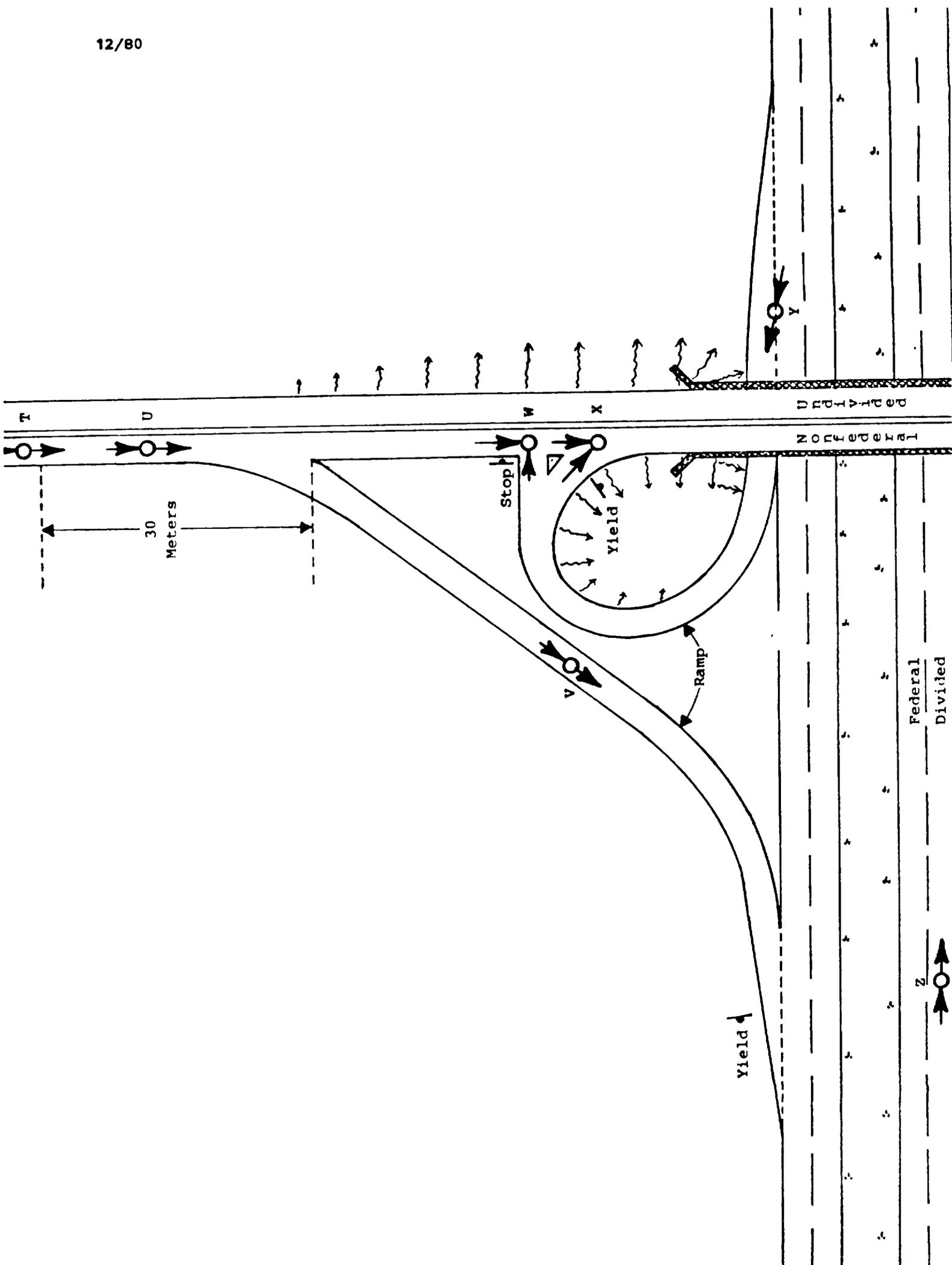
The table on this page and the two pages of diagrams which follow depict a number of exemplary accidents along with the appropriate codes for five accident variables.

Situation	A21 TR-1 Class		A23 Relation to Junction										A25 Number of Lanes	A26 Trafficway Division		A35 Traffic Controls			
	Fed	Non Fed	Nar- junction	Three leg	Four leg	Inter- change area	Driveway alley related	Entrance/ exit ramp	Railroad Crossing	Number	Divided	Undivided	Yes	No	Maybe				
A	✓				✓											✓			
B	✓						✓									✓			
C	✓		✓*													✓			
D	✓						✓									✓			
E										NOT A NASS ACCIDENT									
F	✓		✓*													✓			
G	✓				✓											✓			
H	✓				✓											✓			
I	✓		✓*													✓			
J	✓		✓*													✓			
K	✓		✓													✓			
L	✓						✓									✓			
M	✓		✓*													✓			
N	✓						✓									✓			
O	✓		✓*													✓			
P	✓								✓							✓			
Q	✓															✓			
R	✓		+													✓			
S	✓		✓*													✓			
T	✓		✓													✓			
U	✓						✓									✓			
V	✓							✓								✓			
W	✓															✓			
X	✓															✓			
Y	✓															✓			
Z	✓															✓			

\*Although coded as non-junction in this example, it is recognized that the accident may have occurred due to some event or activity at an intersection [exclusive of the vehicle(s) in this accident]. In those cases A23 (Relation to Junction) would be coded as "05" (Intersection related) rather than "01" (Non-junction), and A35 (Junction Traffic Controls) would be coded, given their existence, on the basis of the applicable code rather than "00" (No controls).

+Intersection related ("05") should be coded for A23 (Relation to Junction).





Variable Name: School Bus Related

Format: 1 column - numeric

Beginning  
Column 44

Element Values:

0 No  
1 Yes

Source: Investigator determined--inputs include police report, vehicle inspections, driver interviews, and other interviewees.

Remarks:

This variable applies to accidents in which a school bus was directly or indirectly involved, such as an accident involving children alighting from a school bus. The school bus does not have to be involved in the accident. If it cannot be determined that a school bus was involved, code "0" (No).

For the purpose of this variable, a school bus is defined as any vehicle manufactured or modified, and used at the time of the accident, for the purpose of transporting children to and from a school on a regular routine basis (V14, Body Type, need not equal 25). The vehicle must be equipped with flashing lights, may have a sway stop arm and traffic may be required to stop for the vehicle when occupants enter or exit.

Variable Name: Number of Travel Lanes

Format: 1 column - numeric

Beginning  
Column 45

Element Values:

- 1 One
- 2 Two
- 3 Three
- 4 Four
- 5 Five
- 6 Six
- 7 Seven or more
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

Code the value on the basis of the location of the first harmful event.

If the first harmful event occurs off the roadway, refer to the section at the point of departure to code this variable.

If the first harmful event is located in the junction of two or more roadways, report the number of lanes in accordance with the accident level versus traffic unit level environmental data discussion which preceded variable A21, TA-1 Class.

A roadway is that part of a trafficway where vehicles travel. A divided trafficway is composed of two or more roadways.

If traffic flows in both directions and is undivided, code the number of lanes in both directions. If the trafficway is divided into two or more roadways, code only the number of lanes for the roadway associated with the first harmful event.

If turn bays, acceleration, deceleration, or two-way left turn lanes exist and are physically located within the cross section of the roadway where the first harmful event occurred, they are to be included in the number of lanes. Channelized lanes which are separated by physical barriers or divisions greater than 4 feet in width are excluded. The channelized lane(s), in this instance, constitute(s) a divided roadway.

The number of lanes counted includes any which are narrowed or rendered unusable by restrictions of the right-of-way cited in variables A38 (Restriction of Roadway at Scene) or A39 (Additional Restriction of Roadway at Scene).

A25

(2)

**Variable Name: Number of Travel Lanes (cont'd.)**

In a number of instances, there will be uncertainty as to the number of lanes due to: (1) nonstandard roadway widths; (2) variability of width in the same roadway due to disrepair and other reasons; or (3) absence of lane lines, center lines, edge lines, etc. The number coded in these cases should represent the number of operational lanes based on customary or observed usage.

On a road that has legal parking such that the legal parking area ends short of the junction of the roadway with another roadway or drive, and the space left between the end of the legal parking area and the beginning of the junction can be utilized for turning by a vehicle on the roadway, do not consider this additional area as another travel lane (regardless of customary or observed usage in this instance). This area should be construed as additional width to the existing travel lane(s). The only time that another lane will be counted at a junction is when that space is expressly designated for turning (e.g., by lane markings, signs, or signals).

If the vehicle was on an entrance or exit ramp (A23, Relation to Junction, code "08"), code the number of lanes for that roadway section (also see A26, Trafficway Division and Median Type, remarks).

If crossover related ("10") is coded for variable A23, Relation to Junction, then code the number of lanes in accordance with the location of the first harmful event as follows: (1) in or near the junction of a crossover and a roadway, code the number of roadway lanes; (2) in the crossover, code the highest number of lanes associated with a roadway from which a motor vehicle involved in the first harmful event entered the crossover.

Variable Name: Trafficway Division and Median Type

Format: 1 Column - numeric

Beginning  
Column 46

Element Values:

- 1 Undivided
- Divided (median width greater than or equal to four feet)
- 2 Paved flush--painted or unpainted (i.e., not curbed)
- 3 Curbed
- 4 Unpaved, uncurbed median (e.g., grass, gravel, etc.)
- 5 Median barrier
- 8 Other median type (specify)
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event. This means that if the accident occurred in a junction, then the rules for selecting the roadway must be followed.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Use.)

A trafficway may include several roadways if it is a divided highway. Trafficways are not divided unless the divider is a barrier or a median four feet or greater (1.2 meters) in width and curbed, unpaved/uncurbed, or paved flush--painted or unpainted. Two-way left turn lanes do not divide a trafficway.

Physical division of roadways (e.g., box beam median) overrides simple lateral division (i.e., greater than four foot separation); therefore, code "5" (Median barrier) takes precedence over codes "2", "3", "4", and "8".

Entrance and exit ramps separated from the primary roadway [i.e., the one used for TA-1 Class (A21) purposes] are not considered divided. These are unique roadways; however, two ramps existing together but separated by a barrier, should be coded as divided.

A channel is considered divided at the location of the first harmful event if the island that separates it from the primary roadway satisfies the median criteria.

Variable Name: Access Control

Format: 1 column - numeric

Beginning  
Column 47

Element Values:

- 1 Full
- 2 Partial
- 3 Uncontrolled
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event. However, if the roadway is an entrance or exit ramp, ANSI (D16.1-1976, section 3.7.4.3, page 27) requires that the ramp be coded in accordance with the roadway of the higher (lower numerically) TA-1 Class (A21) which it connects. Therefore, determine the value for this variable at the general area where the ramp connects with the trafficway of highest TA-1 classification.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Us .)

Code "1" (Full) refers to those situations where the authority to control access is exercised to give preference to through traffic by providing access connection with selected public roads only, by prohibiting crossings at-grade, or by prohibiting direct driveway connections.

Code "2" (Partial) refers to those situations where the authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at-grade and some private driveway connections.

Code "3" (Uncontrolled) refers to those situations where the authority having jurisdiction over a highway, street, or road, does not limit the number of points of ingress or egress except through the exercise of control over the placement and geometrics of connections as necessary for the safety of the travelling public.

In summary, consider the roadway section which was chosen for the reporting of Number of Travel Lanes, A25. If there are no at-grade crossings, then code "1". If at-grade crossings exist but there is an indication that a limiting of access is taking place, then code "2". If no indication of access limiting can be found, then code "3". If a decision cannot be made, code "9".

Variable Name: Direction of Travel Flow

Format: 1 column - numeric

Beginning  
Column 48

Element Values:

- 1 One way
- 2 Two way
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion following A20, Land Us .)

Variable Name: Interchange Geometry

Format: 1 column - numeric

Beginning  
Column 49

Element Values:

- 0 No interchange
- 1 Full diamond
- 2 Partial diamond
- 3 Full cloverleaf
- 4 Partial cloverleaf
- 5 Trumpet
- 6 Directional
- 7 Rotary
- 8 Other (specify)
- 9 Unknown

Source: Primary source is the scene inspection; secondary sources include the police report and driver interviews.

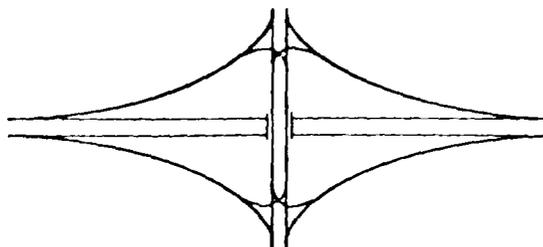
Remarks:

An interchange area is the area around a grade separation (ANSI D16.1-1976, section 2.5.14, page 14) which involves at least two trafficways. Included within its boundaries are: (1) all ramps which connect the roadways, and (2) each roadway entering or leaving the interchange to a point 30 meters (100 feet) beyond the gore or curb return at the outermost ramp connection for the roadway. One may find included within an interchange area intersections, driveway accesses, and, of course, roadway sections which are non-junction.

If the location of the first harmful event was not in an interchange area or in a rotary intersection, code "0" (No interchange).

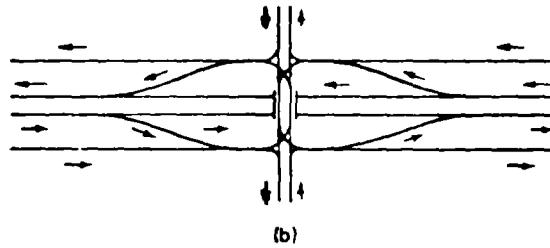
Definitions for codes "1" through "7" were taken from the Transportation and Traffic Engineering Handbook (1976), written by the Institute of Transportation Engineers--pages 645, 646, and 650-655.

A full diamond (code "1") is a four-leg interchange with a single, one-way ramp in each quadrant. All left turns are made directly on the minor highway. Shown below are regular diamond, diamond with "slip" ramps to frontage road, and "split diamond" interchanges.

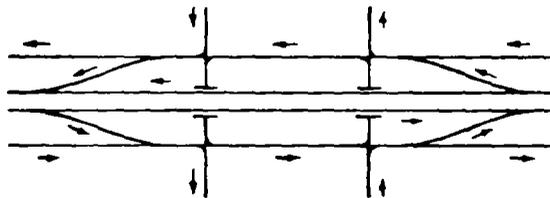


Regular  
Diamond  
Interchange

Variable Name: Interchange Geometry (cont'd.)



Diamond with slip ramp



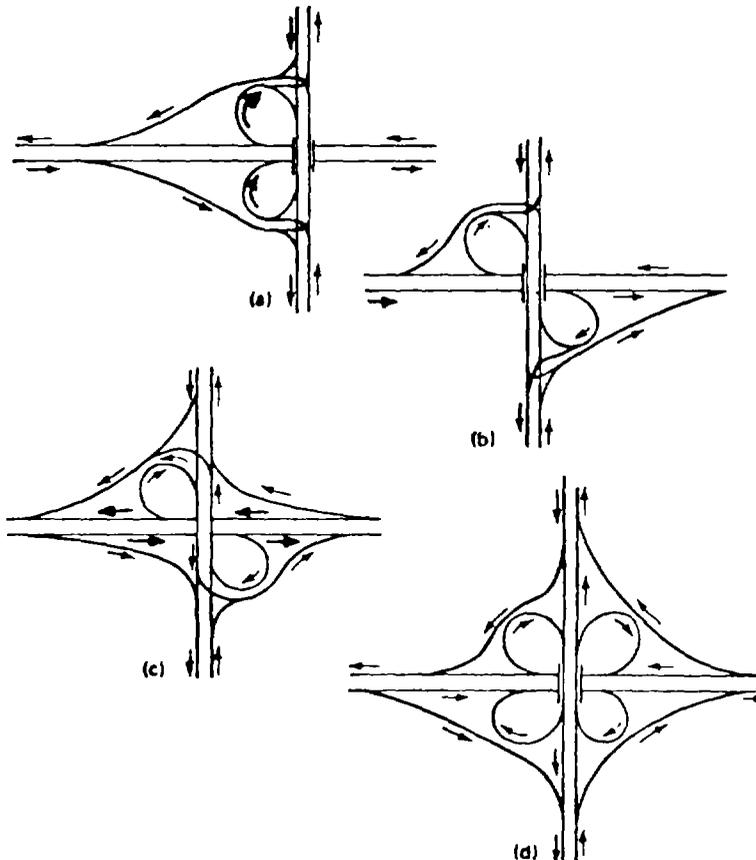
Split Diamond

(c)

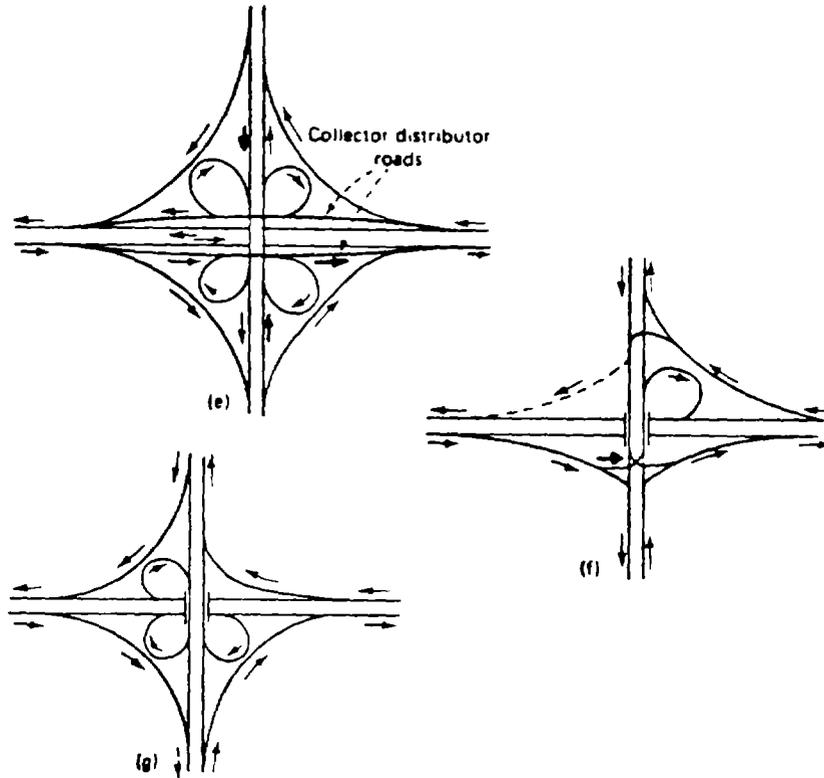
A partial diamond (code "2") is a four-leg interchange that basically fits the diamond configuration but lacks the existence of a single, one-way ramp in at least one quadrant.

A full cloverleaf (code "3") is a four-leg interchange with ramps for two turning movements in each quadrant, one of which is a loop ramp.

A partial cloverleaf (code "4") is a four-leg interchange that has some loop ramps for left turn maneuvers, but either does not have two ramps per quadrant or one loop ramp per quadrant. Typical cloverleaf patterns are shown below.

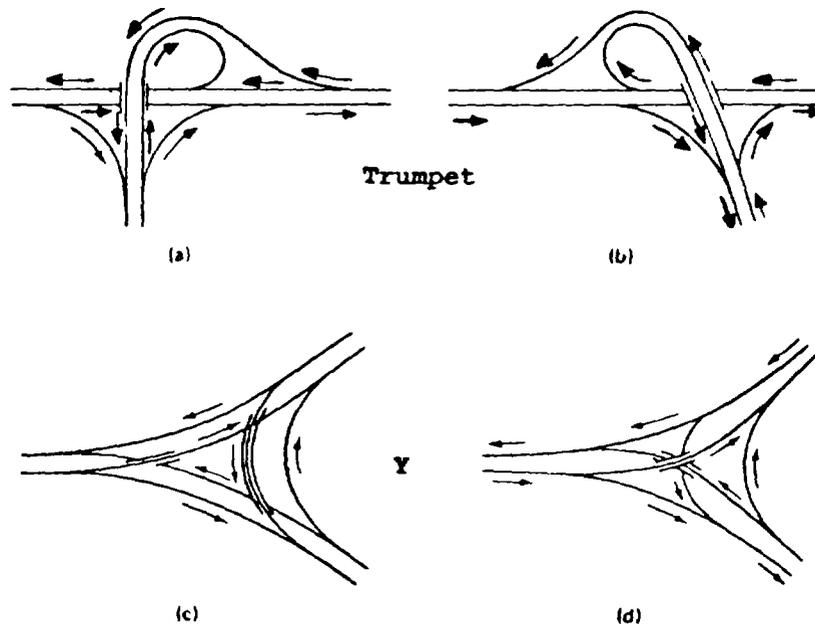


Variable Name: Interchange Geometry (cont'd.)

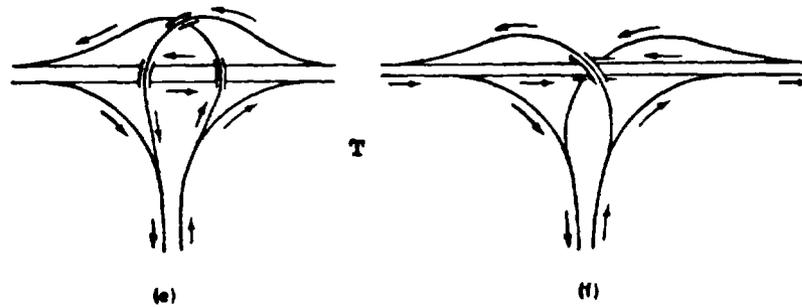


(a), (b), (c), (f), and (g) are examples of partial cloverleaves, while (d) and (e) are full cloverleaves.

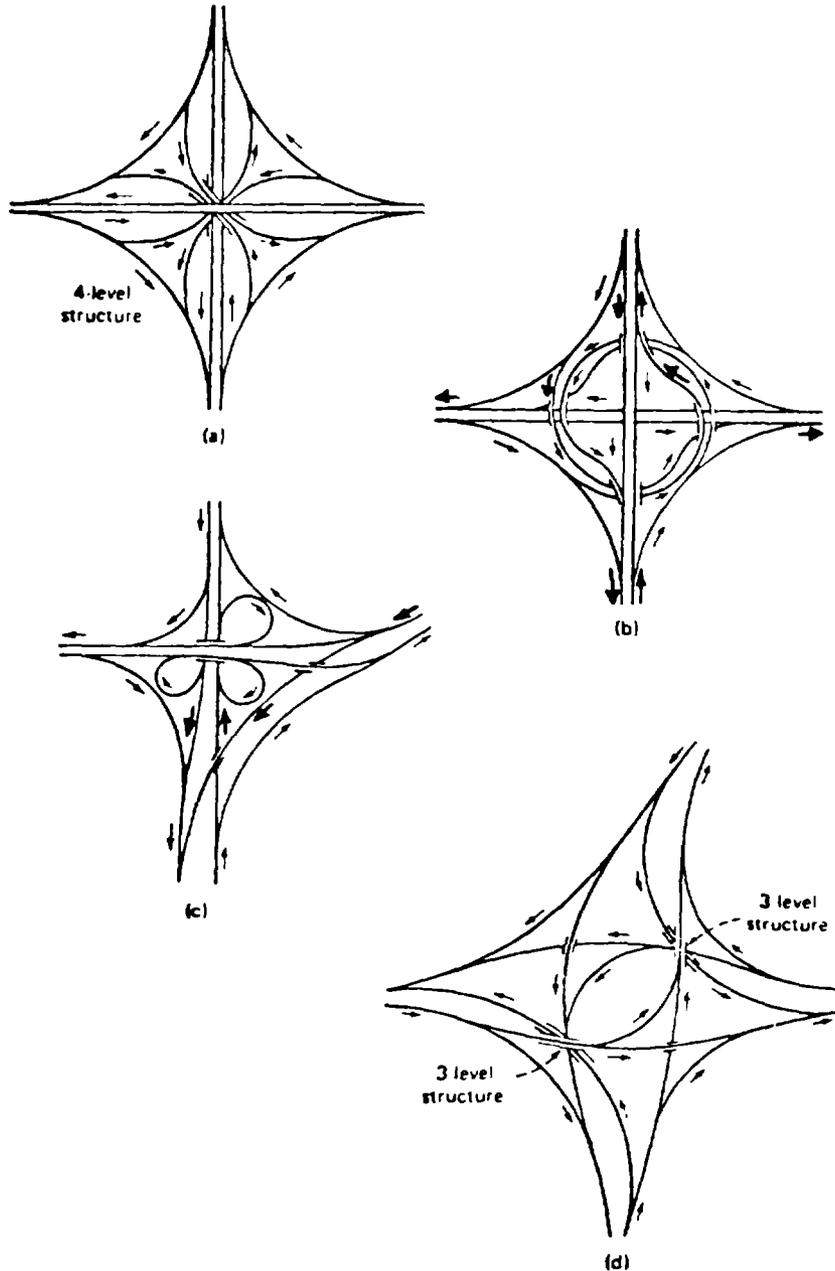
A trumpet (code "5") interchange is one with three approach legs. Code "trumpet" even if the interchange is a "Y" or a "T" interchange. Examples of each of these types is shown below.



Variable Name: Interchange Geometry (cont'd.)

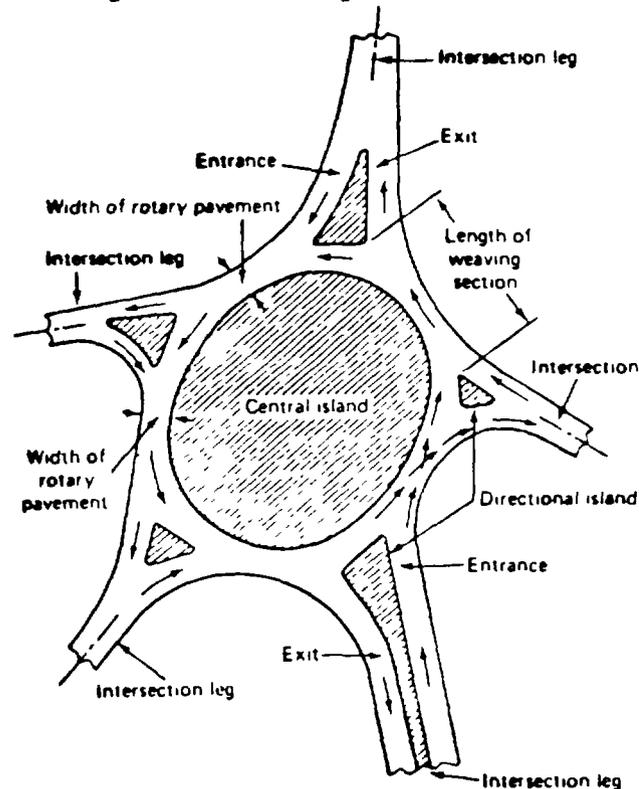


A directional (code "6") interchange is one having more than one highway grade separation with direct or semidirect connections for the major left turning movements. Four of the most common types are shown below. Patterns (a), (b), and (d) show complete directional patterns. Example (c) is a partial directional pattern with three loop ramps.



Variable Name: Interchange Geometry (cont'd.)

A rotary (code "7") intersection is a specialized form of at-grade intersection. It is one through which traffic passes by entering and leaving a one-way roadway connecting all intersection approach legs and running continuously around a central island. Rotary intersections are commonly called traffic circles, but proper design can result in central islands of various rounded shapes. An example of a rotary intersection is shown below.



Use other (code "8") for any interchange design that does not fit in codes "1" through "6" above.

Variable Name: Shoulder Presence

Format: 1 column - numeric

Beginning  
Column 50

Element Values:

- 0 No shoulder
- 1 One shoulder
- 2 Two shoulders
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident report versus traffic unit level environmental data discussion, following A25 Land Use.)

Consider the same lanes which were used to determine the Number of Travel Lanes (A25), and report the presence of shoulders for those same lanes at, and lateral to, the location of the first harmful event, unless at a junction. In the case of a first harmful event located within a junction, identify the appropriate roadway using the criteria under A25, Number of Travel Lanes, and then select the element value based on the leg of that roadway prior to the junction.

A shoulder is defined as that part of a trafficway (1) contiguous with the roadway for emergency use, (2) for accommodation of stopped road vehicles, and (3) for lateral support of the roadway structure (see ANSI D16.1-1976, section 2.2.18, pages 6-7).

Contiguous surfaces fall into two categories--stabilized and unstabilized. Stabilized means that: (1) the surface was paved with a portland cement concrete or bituminous coarse surface on a granular or improved base, or (2) the earth has been covered with a gravel or other granular material. Unstabilized means that the surface is composed of natural earth, with or without turf.

The accommodation criteria is considered satisfied if a minimum of two (2) feet of area contiguous to the roadway is provided. In other words, the entire width of the vehicle under consideration does not have to fit on the contiguous area to qualify the area as a shoulder. If edge lines are present when you measure the lateral distance, measure from the center of the edge line.

Variable Name: Shoulder Presence (cont'd.)

In order to provide lateral support to the roadway, the shoulder's surface condition does not have to be stabilized. If the shoulder surface has separated (i.e., eroded away) to expose the base of the roadway creating an unsafe departure for vehicles then the lateral support criterion is not met. However, it must be emphasized that the "base" must be exposed. Pavement lips or cracking along the edge of the roadway surface do not by themselves constitute a lacking of lateral support.

The area is a shoulder if it is contiguous to the roadway, provides lateral support to the roadway, and is two feet or greater in width. [Note: A separation of opposing lanes which does not constitute a median cannot constitute a shoulder. If the location of the First Harmful Event (A10) occurs in this separation, then for A12, Relation to Roadway, code "1" (On roadway).]

On this variable, the investigator reports the number of shoulders present (codes "1" and "2"). Greater detail regarding the type of shoulders present for each involved roadway is reserved for encoding on the Driver Form (see D38, Shoulder Type - Left, and D39, Shoulder Type - Right).

Code "0" (No shoulder) if the roadway is curbed and has no shoulders; code the appropriate response if there are both curbs (mountable) and shoulders (either code "1" or "2").

Shoulders are still present even if not usable at the time of the accident due to ambient conditions such as plowed snow, parked vehicles, etc.

Variable Name: Roadway Alignment

Format: 1 column - numeric

Beginning  
Column 51

Element Values:

- 1 Straight
- 2 Curve
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

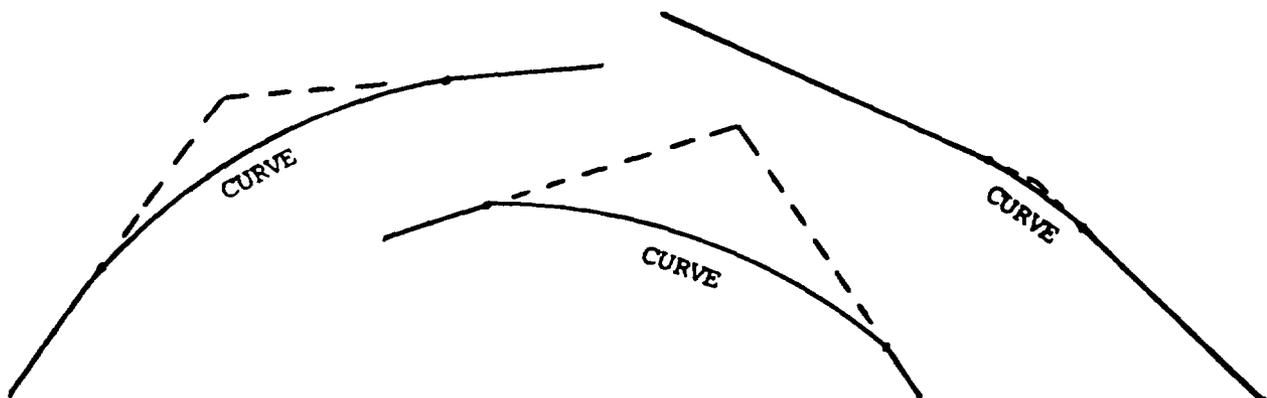
Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Use.)

Code "1" (Straight) refers to a horizontal surface which is tangent.

Code "2" (Curve) refers to a horizontal surface in transition between two points of tangency as in the following examples:



Any perceptually-determined curvature between two tangent sections of a roadway constitutes a curve. It is not necessary to quantify the degree of curvature.

Variable Name: Roadway Profile

Format: 1 column - numeric

Beginning  
Column 52

Element Values:

- 1 Level
- 2 Grade
- 3 Hillcrest
- 4 Sag
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

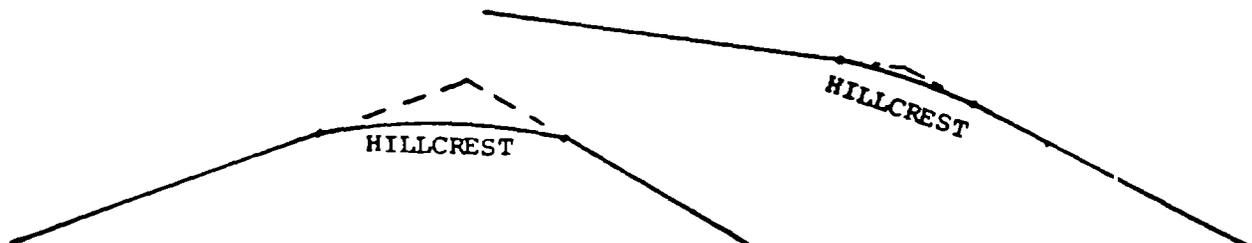
The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Use.)

Code "1" (Level) refers to a tangent surface whose gradient is <2%.

Code "2" (Grade) refers to a tangent surface whose gradient is >2%.

Code "3" (Hillcrest) refers to a surface in vertical transition between two points of tangency as in the following examples:



Code "4" (Sag) refers to a surface in vertical transition between two points of tangency as in the following examples:



Variable Name: Roadway Surface Type

Format: 1 column - numeric

Beginning  
Column 53

Element Values:

- 1 Concrete
- 2 Bituminous (asphalt)
- 3 Brick or block
- 4 Slag, gravel or stone
- 5 Dirt
- 8 Other (specify)
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Use.)

Variable Name: Roadway Surface Condition

Format: 1 column - numeric

Beginning  
Column 54

Element Values:

- 1 Dry
- 2 Wet
- 3 Snow or slush
- 4 Ice
- 5 Sand, dirt or oil
- 8 Other (specify)
- 9 Unknown

Source: Primary sources are the police report and the driver interview; a secondary source is the scene inspection.

Remarks:

The element value selected is based on the location of the first harmful event. In determining the surface condition, the investigator should use police reports, interviews and observation of the site; do not report the conditions which are observed several days following the accident unless they are felt to be the same as those at the time of the accident.

Consider the same lanes which were used to determine the Number of Travel Lanes (A25) and report the surface condition for those same lanes.

It is possible for different surface conditions to exist when multiple roadways are involved. Furthermore, different surface conditions may exist on the same roadway (e.g., intermittent wet and dry sections on the same roadway). The investigator should consider, but not necessarily be restricted by, the information on the police report for making this assessment. Driver Forms should also be consulted, particularly the one whose vehicle was on the above travel lanes which correspond to the first harmful event. Although it may be difficult to ascertain the surface condition for a particular section, the investigator should attempt to select the value which is most representative of the surface condition for those lanes.

If sand, dirt or oil (code "5") occurs in combination with moisture (codes "2", "3", or "4"), code the moisture condition. Code "5" only if the road was otherwise dry.

Asphalt will "bleed". If, in the opinion of the investigator, the bleeding was such as to constitute a road surface detriment, then code "8" (Other). On the other hand, bleeding which is intermittent and insignificant, in terms of area, should be coded as "1" (Dry). If moisture occurs with the bleeding, code "2" (Wet) should be used.

Variable Name: Traffic Controls

Format: 2 columns - numeric

Beginning  
Column 55

Element Values:

- 00 No controls
- 01 Flashing traffic signal
- 02 On colors traffic signal
- 03 Stop sign
- 04 Yield sign
- 05 Physically controlled RR crossing
- 06 Stop signs for RR crossing
- 07 Other RR crossing
- 08 School zone sign
- 09 Traffic controls not functioning
- 10 Pedestrian signal
- 98 Other (specify)
- 99 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Use.)

This variable measures controls which regulate vehicular traffic. Excluded are any controls which solely regulate pedestrians (e.g., Walk/Wait signals).

Pavement markings do not constitute traffic control devices under the present definition.

Information signs (e.g., "no left turn") do not constitute traffic controls (except for designated railroad crossing signs), whereas Stop or Yield signs do.

Code "09" (Traffic control not functioning) should be used for any nonfunctioning traffic control, including a stop sign turned the wrong way or broken off.

**Variable Name: Traffic Controls (cont'd.)**

A traffic control that has been deactivated (e.g., traffic signal that emits no signals) during certain times of the day and was deactivated at the time of the accident should be coded "00" (No controls). A traffic control that has just been installed and not yet activated should also be coded "00". However, a traffic control that is out (e.g., due to a power failure) should be coded "09", unless a temporary control [e.g., stop sign ("03"), police officer ("98"), etc.] has been inserted, in which case the temporary control should be coded.

The investigator should consider the intent of this question. If at the time of the accident there was no intent to control vehicle traffic, then code "00" (No controls); otherwise, code the appropriate value. Statutory controls (e.g., state law requires that when two drivers met at an uncontrolled intersection, the one on the right has the right-of-way) should be coded as "00" (No controls).

Code "01" (Flashing traffic signal) is used for any constant amber/red flashing signal.

Code "02" (On colors traffic signal) is used for any signal which processes through the green, amber, and red cycles. The source of actuation is of no concern unless the signal is activated only by a pedestrian; in this instance, code "10" (Pedestrian signal); otherwise, actuation is disregarded.

Code "05" (Physically controlled by RR crossing) is used if any gates, flashing or light-emitting signals, or watchmen are present to alert motorists to on-coming trains.

Code "07" (Other RR crossing) should be used whenever the only control at a railroad crossing is the state's railroad crossing warning (informational) signal. It can also be used for any other control not cited above.

Codes "05" through "07" should only be used when the first harmful event occurs in the junction of a roadway and a railroad bed [i.e., A23, Relation to Junction, equals "09" (Railroad grade crossing)]. If A23 equals "09", then codes "00", "05", "06", "07", or "09" must be used.

Code "08" (School zone sign) should only be used if the location of the first harmful event is: (1) not in a junction, and (2) during the time the sign was in effect. If the sign was in effect, it does not matter whether or not children were present. (NOTE: Time should be ascertained not only with respect to hour of day, but day of week and the effect of holidays, vacations, etc., as well. Each team should report the particulars regarding their state or local ordinances to their Zone Center.)

Code "10" (Pedestrian signal) should only be used when a signal cycle change can be activated solely by a pedestrian. The signal must control vehicular traffic as well as pedestrian traffic; however, if the signal controls vehicular traffic by any other means than pedestrian activation, code "01" or "02" as applicable.

## Variable Name: Traffic Controls (cont'd.)

If a school guard, police officer, or other officially-designated person controls both pedestrian and vehicular traffic, code "98" [Other (traffic control)].

If variable A23, Relation to Junction, is coded "05" (Intersection related), "07" (Driveway, alley access related), or "10" (Crossover related), then code the traffic control that was applicable for the roadway chosen under variable A25, Number of Travel Lanes. The reported relation to the intersection need not have been due to the presence of a control (see A23, code "05").

Remember, there are no attributes on variable A23, Relation to Junction, n-titled "entrance or exit ramp related" or "railroad grade crossing related". If non-junction ("01") is coded for variable A23, Relation to Junction, then no controls ("00") should be coded on this variable unless: (1) the school zone sign (code "08") criteria are met, (2) the pedestrian signal (code "10") is used, or (3) an applicable other (code "98") traffic control is available.

If the lanes which were used to determine the Number of Travel Lanes (A25) have two or more controls, select one of the values as follows:

select "01" or "02" if combined with any value other than "05", "06" or "07";  
select "03" or "04" if combined with "08", "10", or "98"; and,  
select "05", "06", or "07" if combined with any value.

However, if the other traffic control ("98") is an officially-designated person, then "98" takes precedence over values "00" through "10". In the instance where one of the traffic controls was not functioning (code "09"), select the code of the control that was functioning.

If the intersection is channelized and not divided, and controlled differently on the channel than on the through lanes (e.g., signal and yield sign), report the traffic controls depending on whether the roadway (A25, Number of Travel Lanes) was chosen based on its through lanes or its channelized lanes.

Variable Name: Accident Occurrence in School Zone

Format: 1 column - numeric

Beginning  
Column 57

Element Values:

0 No  
1 Yes  
9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Use.)

Code "1" (Yes) should only be used if a sign or road marking was present and the accident occurred during the time the sign or marking was in effect (i.e., this applies to the applicable time periods before, during, and following school sessions).

Variable Name: Speed Limit

Format: 2 columns - numeric

Beginning  
Column 58

Element Values:

Code actual posted or statutory speed limit in m.p.h.  
99 Unknown

Source: Primary sources are the scene inspection or statutory law.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following A20, Land Use.)

Disregard advisory or other speed signs which do not indicate the legal speed limit. Furthermore, do not confuse advisory signs on entrance /exit ramps or near intersections with the actual legal maximum speed limit.

Do not use the police report for selecting this variable's value.

If no speed limit sign is posted within a "reasonable" distance from the location of the first harmful event along the approach leg of the vehicle for which A25 (Number of Travel Lanes) was selected, the investigator should reference state statutes to obtain the applicable statutory maximum for the scene (local or state).

If a state has a statute that uniformly reduces the maximum allowable speed within or near a construction zone, then code the indicated reduced limit.

Code "99" (Unknown) should be used on roadways which are neither posted nor which have a statutory limit (e.g., parking lot roadways or entrance/exits, service station entrance/exits, or driveways, etc.).

Variable Name: Restriction of Roadway at Scene

Format: 1 column - numeric

Beginning  
Column 50

Element Values:

- 0 No restrictions
- 1 Narrow bridge (as defined)
- 2 Previous accident on roadway
- 3 Maintenance, repair or construction activity on roadway
- 4 Roadway immersion (e.g., standing water)
- 8 Other roadway restriction (specify)
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The element value selected is not restricted to the location of the first harmful event. The intent of this variable is to identify pre-crash conditions which abnormally reduce the width of the travel lanes available to any driver in the accident from the width ordinarily expected.

Element values "1" through "4", and "8" may be coded if the investigator feels any of them are in some way related to the accident as determined from the police report, driver interviews, witnesses, or scene investigation. The investigator should proceed through the list in numerically descending order and code the first element felt to have existed. For example, if both "1" (Narrow bridge) and "2" (Previous accident on roadway) existed, code "1". The second or higher numbered element will be accounted for on the next variable (A39, Additional Restriction of Roadway at Scene).

Code "1" (Narrow bridge) refers to a bridge which satisfies any part of the criteria as follows:

- (1) has only one lane which is 18 feet or less in width,
- (2) has two lanes which, together, are 24 feet or less in width, or
- (3) the total approach width, as measured from the outside edge of the shoulders, is greater than the total bridge width, as measured from curb to curb or parapet-to-parapet.

Code "3" (Maintenance, repair or construction activity on roadway) includes those segments of a divided trafficway where the traffic in one direction is diverted onto the roadway of the opposing direction due to maintenance, repair, or construction activity that has temporarily closed one of the roadways. The segment begins where the roadway associated with the first harmful event is first narrowed due to physical barriers and ends when the same roadway resumes normal travel conditions.

A38

(2)

Variable Name: Restriction of Roadway at Scene (cont'd.)

Code "4" (Roadway immersion) refers to standing or flowing water which reduces the ordinary width of the travel lanes; it is not necessary for the complete width of the lanes to be immersed.

Code "8" (Other roadway restriction) refers to other restrictions such as fallen rocks, objects, cargo, mud slides, deep snow, waiting taxi, police or repair vehicles stopped in travel lanes, vehicles parked in roadway, etc. Make note of the other restriction in the available space. It excludes vehicles in the routine process of pulling into or out of parking lanes which very temporarily narrow or restrict the roadway.

These variables (A38 and A39) are oriented toward permanent or transitorily-fixed objects; therefore, they exclude temporary restrictions to specific sections of road (e.g., extra-wide load pulled by tractor in motion). Should the above mentioned vehicle be stopped on the roadway, it would then be considered a restriction of the right-of-way.

Variable Name: Additional Restriction of Roadway at Scene

Format: 1 column - numeric

Beginning  
Column 61

Element Values:

- 0 No additional restrictions
- 2 Previous accident on roadway
- 3 Maintenance, repair or construction activity on roadway
- 4 Roadway immersion (e.g., standing water)
- 5 More than two restrictions
- 8 Other roadway restriction (specify)
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

If only one restriction existed, it will have been coded under the variable A38, Restriction of Roadway at Scene; therefore, code "0" for this variable (A39).

If a second, but not a third, restriction of the right-of-way existed, and you were prohibited from coding it on the preceding variable (A38, Restriction of Roadway at Scene), select the proper element value for that restriction to code on this variable.

If more than two restrictions of the right-of-way existed, code "5". The initial restriction will have been coded under variable A38 (Restriction of Roadway at Scene), while the remaining ones will be coded as "5" for this variable (A39).

If A38, Restriction of Roadway at Scene, is unknown ("9"), then unknown ("9") should be coded for this variable as well. However, if it is known that only one restriction of the roadway existed but that the nature of the restriction is unknown, then unknown ("9") should be coded for A38, Restriction of Roadway at Scene, and no additional restrictions ("0") coded for this variable.

Variable Name: SS3 - Roof Intrusion

Format: 1 column - numeric

Beginning  
Column 62

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

Code "1" (Yes) means there is one or more roof intrusion special study forms associated with this accident.

Code "0" (No) means there are no roof intrusion special study forms associated with this accident.

"Blank" (not in effect) means that this special study was not active at the time this accident was sampled.

Variable Name: SS4 - Motorcycle

Format: 1 column - numeric

Beginning  
Column 63

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

Code "1" (Yes) means there is one or more motorcycle special study forms associated with this accident.

Code "0" (No) means there are no motorcycle special study forms associated with this accident.

"Blank" (not in effect) means that this special study was not active at the time this accident was sampled.

Variable Name: SS6 through SS13

Format: 8 columns - blank

Beginning  
Column 64

Element Values:

Blank - not in effect

Source: Special study procedures.

Variable Name: Investigator I.D. Number

Format: 1 column - blank

Beginning  
Column 10

Element Values:

Range: Blank

Source: Zone center

Remarks:

This information is not released to analytical users.

Variable Name: Pedestrian or Nonmotorist's Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Range: 01 through 25

Source: Investigator assigned.

Remarks:

Numbers assigned to pedestrians or nonmotorists must be consecutive starting with "01"; no numbers may be skipped. Where two or more pedestrians or nonmotorists can be associated with a vehicle [motor or other (see ANSI D16.1-1976, section 2.2.8, page 5)], pedalcycle, or nonmotorist conveyance (any human-powered device designed for transporting people), assign their numbers in sequence.

The driver (person with steering control) of a pedalcycle is assigned the lowest number sequentially of any of the pedalcyclists specific to that unit (e.g., a pedalcycle for two). The pedalcyclist in front has steering control and therefore is the driver with Pedestrian or Nonmotorist's Number (P07) "01"; the other pedalcyclist in the rear is the passenger with Pedestrian or Nonmotorist's Number (P07) "02".

Numbers assigned to nonmotorists in motor vehicles not in transport are assigned sequentially left to right and front to back.

This variable is a mandatory variable and cannot be changed.

Variable Name: Pedestrian or Nonmotorist's Type

Format: 1 column - numeric

Beginning  
Column 13

Element Values:

- 1 Pedestrian
- 2 Bicyclist
- 3 Other cyclist (specify)
- 4 Animal related
- 5 Occupant of vehicle not in transport
- 8 Other nonmotorist (specify)
- 9 Unknown

Source: Investigator determined--inputs include police report and interviews

Remarks:

A Pedestrian ("1") is defined as any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a nonmotorist conveyance. This includes persons who are in contact with the ground, roadway, etc., but who are holding onto a vehicle.

A nonmotorist conveyance is defined as any human-powered device by which a nonmotorist may move, or by which a pedestrian or nonmotorist may move another nonmotorist, other than by pedaling. A nonmotorist conveyance includes the following: baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, etc. This includes those persons in a nonmotorist conveyance who hold onto a motor vehicle in motion. Excluded are pedalcyclists.

Bicyclist ("2") refers to only those pedalcyclists who were either a driver or passenger on a bicycle. This includes those bicyclists who hold onto a motor vehicle in motion.

Code "3" (Other cyclist) refers to all other pedalcyclists. This includes those pedalcyclists who hold onto a motor vehicle in motion.

Animal related ("4") means that the nonmotorist was either riding on an animal or in an animal-powered conveyance.

Code "5" (Occupant of vehicle not in transport) represents those persons inside a motor vehicle which is not in transport when struck.

Other nonmotorist ("8") includes any other person not included under the above definitions of a pedestrian, bicyclist, other cyclist, animal related, or occupant of a motor vehicle not in transport.

Variable Name: Pedestrian or Nonmotorist's Age

Format: 2 columns - numeric

Beginning  
Column 14

Element Values:

00 Less than one year old  
97 97 years and older  
99 Unknown

Source: Primary source is interviewee; secondary sources include police report and official records (e.g., medical).

Remarks:

Age is recorded at time of accident with respect to the pedestrian's or nonmotorist's last birthday.

Variable Name: Pedestrian r Nonmotorist's Sex

Format: 1 column - numeric

Beginning  
Column 16

Element Values:

- 1 Male
- 2 Female
- 9 Unknown

Source: Primary source is interviewee; secondary sources include police report and official records (e.g., medical).

Remarks:

Self-explanatory.

Variable Name: Pedestrian or Nonmotorist's Height

Format: 2 columns - numeric

Beginning  
Column 17

Element Values:

Range: 12 through 85 inches  
99 Unknown

Source: Investigator determined--inputs include interviewee or official records (e.g., medical).

Remarks:

Code actual height to the nearest inch.

The PAR may be used as a source if it contains this data, but it is superceded if other data exists.

Variable Name: P d strian or Nonmotorist's Weight

Format: 3 columns - numeric

Beginning  
Column 19

Element Values:

Range: 005 through 400 Pounds  
999 Unknown

Source: Investigator determined--inputs include interviewee or official records (e.g., medical).

Remarks:

Code actual weight to the nearest pound.

The PAR may be used as a source if it contains this data, but it is superceded if other data exists.

Variable Name: Months Cycling Experience

Format: 2 columns - numeric

Beginning  
Column 22

Element Values:

Code actual months of previous cycling experience up to 60.  
00 Noncyclist  
61 Greater than 60 months (5 years)  
99 Unknown

Source: Interviewee

Remarks:

Code all current and/or previous months of cycling experience for the type of pedalcycle the nonmotorist operator was riding (e.g., bicycle, unicycle, etc.). Included are operators of children's tricycles. Noncyclist ("00") is coded for all pedestrians, animal related nonmotorists, occupants of vehicles not in transport, other nonmotorists, and passengers, if present, on a pedalcycle.

Variable Name: Pedestrian or Nonmotorist's Location

Format: 2 columns - numeric

Beginning  
Column 24

Element Values:

- 01 Intersection - in crosswalk
- 02 Intersection - sidewalk, median island, other
- 03 Intersection - on roadway
- 04 Intersection - unknown
- 05 Nonintersection - in crosswalk
- 06 Nonintersection - sidewalk, median island, other
- 07 Nonintersection - bike path
- 08 Nonintersection - on road shoulder
- 09 Nonintersection - outside trafficway (includes roadside)
- 10 Nonintersection - on roadway
- 11 Nonintersection - in parking lane
- 12 Nonintersection - unknown
- 99 Unknown

Source: Investigator determined--inputs include scene inspection, interviewee, and police reports.

Remarks:

Intersection (codes "01" through "04") is defined for the purpose of this variable as the area formed by the junction of two trafficways. This definition is broader than the definition used for Relation to Junction (A23) which defines an intersection as that area formed by the prolongation of the lateral curb lines or lateral boundary lines of the roadways. Intersection as used in this variable includes the crosswalks ("01") and sidewalks or median islands ("02") which are within the trafficway but outside the road or roadway.

The remaining codes ("05" through "12") are applicable to all types of pedestrians or nonmotorists. Select the value which best represents the location of the pedestrian or nonmotorist at the time of impact.

Nonmotorists who are occupants of a motor vehicle not in transport are coded with respect to the location of the vehicle.

Code "07" (Nonintersection - bike path) refers to any officially designated path or lane (on or off the road but not within an intersection) on which pedalcyclists have preference. This includes those lanes which are bimodal if the accident occurs when they convert from motor vehicle to pedalcycle (e.g., weekends).

Code "09" (Nonintersection - outside trafficway) should be interpreted as meaning "off road" since the pedestrian or nonmotorist could have been struck on the "roadside". Recall that the road encompasses the roadway and that the trafficway encompasses the road and the roadside.

Variable Name: Treatment - Mortality

Format: 1 column - numeric

Beginning  
Column 26

Element Values:

- 1 Fatal
- Nonfatal
- 2 Hospitalization
- 3 Transported and released
- 4 Treatment - other (specify)
- 5 No treatment
- 9 Unknown

Source: Investigator determined--inputs include interviewee, police report, and medical records.

Remarks:

Official sources (if they exist) take precedence over interview data.

Code "1" (Fatal) when death occurs within 30 days of accident. Death must have occurred as a consequence of injuries sustained in the traffic accident.

Code "2" (Hospitalization) when hospitalization occurs as a result of injury (need not be taken directly to a hospital). See Hospital Stay (P16) for hospitalization criteria.

Code "3" (Transported and released) when the person went directly from the accident scene to a treatment facility (hospital, clinic, doctor's office, etc.), and the person is examined for injuries at the facility. The person need not have been injured. The means of transportation is not a consideration.

Code "4" (Treatment - other) includes doctor treatment, treatment at scene, first aid, self-treatment, hospital (if other than directly from scene but treated and released), etc.

Code "5" (No treatment) includes persons transported to a hospital but who refuse treatment.

If a person survives the injuries and receives treatment at a hospital, but is not admitted for hospitalization, that person's treatment is to be coded as either "3" or "4", depending upon whether the person went directly or indirectly to the hospital. It does not matter if the person is treated for one hour or twelve, only that the person is released following treatment. Nor does it matter if the treatment begins prior to midnight and spans into the following day.

Variable Name: Hospital Stay

Format: 2 columns - numeric

Beginning  
Column 27

Element Values:

00 Not hospitalized  
Code number of days hospitalized up to 30.  
31 31 days or more  
99 Unknown

Source: Investigator determined--inputs include interviewee and medical reports.

Remarks:

Official sources (if they exist) take precedence over interview data.

Code "00" (Not hospitalized) if not injured or injured but not admitted.

Code "00" (Not hospitalized) if fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room.

The basis for the number of days coded is an overnight criterion. Every time a person remains past midnight subsequent to admission, it is one day. The only exception is when a person dies on the same day as the admission.

In the event that the person survives the emergency room but dies subsequent to admission, then code at least "01", even if the person expires the same day as admitted.

If a person is admitted, lives four days in the hospital, then expires, code "04".

Variable Name: Working Days Lost

Format: 2 columns - numeric

Beginning  
Column 29

Element Values:

00 No working days lost  
Code number of days for which work was lost up to 30.  
31 31 days or more  
32 Fatally injured  
99 Unknown

Source: Primary source is the interviewee; a secondary source is the person's employer.

Remarks:

Report the actual number of "work" days lost due to the accident by an employed person or a full-time college student. Children, adolescents, retirees, or unemployed persons are not included.

Employed is defined to mean that the person was scheduled to work at least four hours on each of the days lost. Each such day is counted as a full day so long as the person was scheduled to work at least four hours on the day lost. Do not accumulate the hours and convert to equivalent full-time days; however, indicate on the form if the person works less than full-time but greater than four hours per day by annotating "part-time" or "PT".

If during the interview a reasonable projection of future days lost can be made, then add those days to those already known to have been lost. If a reasonable projection cannot be made, then code "99" (Unknown).

The days lost need not be due to injury.

Days lost include Saturdays, Sundays, afternoon and evening shifts if so scheduled. Do not count double shifts or days at time and one-half pay, etc., as more than one day.

If a person is not employed, not a full-time college student, or works less than four hours per day, then code "00" (No working days lost). This code includes all persons who do not qualify to lose working days. Therefore, if such a person is fatally injured, code "00" (No working days lost) should still be used.

If a person who qualifies to lose working days is fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room, then code "32" (Fatally injured) is used.

If a person who qualifies to lose working days expires twenty days following the accident, code "32" regardless of whether or not the person missed any working days.

Variable Name: Working Days Lost (cont'd.)

If the reported work days lost includes a fraction, round one-half (1/2) day or greater up to a whole day. Less than one-half day should be excluded (rounded down).

If someone gets fired and loses their job as a result of the accident, count only the work days lost between the accident and the date of termination, inclusive.

Do not include days lost by persons who were not directly involved in the accident but who lost days because of it (e.g., husband was not in accident but stayed home to take care of wife who was injured and required assistance).

If no interview is obtained, there is a rebuttable presumption that persons over 65 or under 17 are not employed full-time; for these persons code "00" (No working days lost) should be used.

Variable Name: Relation of Interviewee to Pedestrian or Nonmotorist

Format: 1 column - numeric

Beginning  
Column 01

Element Values:

- 0 No interview
- 1 Same person
- 2 Other accident involved person (specify)  
Uninvolved Person
- 3 Relative or friend
- 4 Other uninvolved person (specify)  
Combination of Persons
- 5 One of which was accident involved
- 6 None of which were accident involved
- 9 Unknown

Source: Element chosen

Remarks:

There is a presumption that the interviewee(s), other than the pedestrian or nonmotorist under consideration (i.e., surrogate codes "02"- "06"), will have sufficient familiarity with the pedestrian or nonmotorist to answer most questions relative to this person's demographic characteristics, treatment-mortality, hospitalization, working days lost, and extent of injuries. Conversely, individuals whose association with this person is limited to and a result of the accident, are presumed to have an insufficient basis for answering the preceding questions.

## NASS Injury Coding Conventions for the Occupant Injury Classification

The NASS has established certain rules and guidelines to meet its needs and to avoid ambiguities in relation to the AIS-80. These are discussed below.

1. The first four rules below are given in the NASS field forms on how to select injuries for coding and are included here for the convenience of the coder.
  - a. If there are six or less injuries listed in the O.I.C. reduction section, code all of the injuries ordered by Source of Data (1st—autopsy, 2nd—hospital/medical, 3rd—emergency room, 4th—private physician, or 5th—unofficial sources) and by AIS severity within source. Order by source
  - b. If there are more than six injuries, order the injuries by source and by AIS severity within source. Code this ordering, injury-by-injury. If a group of ordered injuries has the same source, the same AIS, and the group includes at least the sixth and seventh injuries in the ordering, then a choice must be made as to which injury or injuries to code. Then by severity within source
  - c. Choose the injury or injuries that will enable the maximum number of different ISS body regions to be represented in the coded data. If no new ISS body region can be added then simply code in accordance with the original ordering. Maximize ISS within that source
  - d. If the occupant has less than six injuries, then the number of rows required to be completed is equal to the number of injuries plus one (i.e., no injuries requires one row (e.g., columns 41 to 49, Occupant Form)). In the additional row "not injured" will be coded for all variables including AIS severity. If < 6 rows, close out next row with zeros
  - e. Other points to consider if you must make a choice: try to associate contact points with individual injuries. List individual injured areas if possible, instead of lumping them together into a code of X, Y, or O. For instance, if there are lacerations to both thigh and shin, code both TLLI-1 and LLLI-1 instead of YLLI-1. Individualize injuries
2. If an AIS is determined to be one of two consecutive numbers, but a clear indication cannot be made after reviewing all the information provided, assign the lower AIS. Uncertainty Rule #1—code lower
3. The coder should take care not to code the same injury twice simply because information concerning it is available from two different sources. For example, if the interview is used in gathering data, only the injuries not already coded based upon medical records should be coded. Don't double count
4. Cervical spine strain may, in some cases, still be referred to as "whiplash". "Whiplash" is not a medical term and is not used in AIS-80. If an injury is described as "whiplash", it should be coded as cervical spine acute strain, no fracture or dislocation, NPTM-1. "Whiplash" NPTM-1
5. Neck injuries may sometimes be described as "sprains" and sometimes as "strains". For NASS purposes, neck injuries should be coded as "strains" (see Rule #16 below). No sprains to neck
6. All internal structures of the mouth, with the exception of the teeth, are coded as part of the digestive system (D). Teeth are coded as skeletal (S). Mouth - teeth = D

7. Body region code 0 (whole body) should be used only if 50% or more of the whole body surface (0) is affected. An exception is made for burns affecting more than one body region (see Rule #13 below). Aspect code W (whole region) is used only if 50% or more of the body region is affected. 50% rules
8. When there is uncertainty about the location of minor multiple abrasions, contusions and lacerations to the body surface, they should be aggregated, regardless of their location(s), and the code OW\_\_-1 should be used. Uncertainty Rule #2—whole body
9. An AIS-6 should be used only for injuries specifically coded AIS-6 in the Abbreviated Injury Scale and not because the victim died. Watch your "6"s
10. Burn, flying glass, and inertial force injuries are assigned a noncontact (90) code for injury source (see Rule #18 for further explanation of non-contact injuries). Code 90 injuries
11. The AIS codes individual injuries only. Injuries to bilateral body parts are now coded as two separate injuries (e.g., fractured left tibia and fractured right femur). When the term, bilateral is used to describe hemothorax or pneumothorax with certain chest injuries, it should be emphasized that the results, which are not coded, are present bilaterally, but that the injury per se is still a single injury. Bilateral limited
12. If the medical or interview information indicates a contused knee, elbow, wrist, ankle, etc., and does not specifically state whether the contusion is to the bone or joint, code the injury as integumentary, \_\_CI-1. If the contusion is known to be to the bone, use \_\_CS-; if to the joint, use \_\_CJ-. Example: contused knee, K.CI-1. Uncertainty Rule #3—most superficial system if lesion unknown
13. Burn injuries should be coded using the following guidelines:
- If only one body region is burned, use that body region code (e.g., ARBI-1, burned right upper arm 1°).
  - If more than one body region is burned, but a single injury code will adequately describe the regions affected, use the single injury code (e.g., XRBI-2, burned right whole arm 2°).
  - If more than one body region is burned and one injury code cannot be used to specify the body regions involved, the injury is coded OWBI-\_. This will be the most likely case in coding burns.
  - The Rule of Nines is used in the AIS severity level for (a), (b), and (c) above. See the Rule of Nines diagram on page III-4 of your NASS Injury Coding Manual.
14. The lesion codes P (pain), X (asphyxia), and H (hemorrhage) are NO LONGER VALID. They represent results of injuries and not injuries, per se, and therefore, are not coded. The AIS-80 revision is designed to code the injury itself (e.g., MIUW-3, retroperitoneum injury involving hemorrhage). Pain, asphyxia and hemorrhage not valid
15. In NASS, "not injured" is defined as AIS=0. Code "0" for all OIC variables, including AIS severity, for cases in which there are no injuries, or as the last injury listing for occupants sustaining less than six injuries. Closeout or no injury = 0
16. The following definitions have been used traditionally to differentiate "sprain" and "strain" injuries: Strain versus sprain
- sprain - a joint injury which causes pain and disability depending on the degree of injury to ligaments and muscle tendons near the joint.

strain - an injury to a muscle or musculotendinous unit that results from overstretching and may be associated with a sprain or fracture.

In common medical practice, however, physicians often do not adhere strictly to these definitions, and may use the terms interchangeably. AIS-80 distinguishes sprains from strains. Care should be exercised in selection of the proper code.

17. Lesions to the forehead (except fractures) are coded "face superior", or FS\_\_ - \_\_ in the NASS Injury Coding Manual. Fractures of the frontal bone are coded HAFS-\_\_.

Coding the forehead

18. Definitions and procedures for the NASS for coding injury source for direct, induced, and noncontact injuries:

direct injury - an injury to a particular body region caused by the traumatic contact of that body region with a vehicle component or other object. The vehicle component or other object is coded as the injury source for that injury.

Indirect or Induced Injury - an injury to a particular body region caused by a blow or a traumatic contact in some other body region (e.g., knee/acetabulum). The injury source for an induced injury would be the vehicle component contacted by the other body region (i.e., the occupant contact that initiate the injury mechanism).

Injury source is, therefore, defined as the vehicle component or object that initiated the injury mechanism (induced injury) or directly caused the injury (direct injury).

The noncontact injury source (90) code is to be used only for the following specific types of injuries:

- (1) twisting or stretching of muscles in the arm, leg, back, etc. with no associated contact identifiable (most often these injuries will be minor muscle strain injuries);
- (2) head or neck injuries in which the torso is supported (e.g., by seat back or belt) and head or neck experiences traumatic forces due to inertial motion;
- (3) burns and flying glass injuries.

Injury sources

The following examples should be helpful in illustrating the above definitions.

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
Example 1		
Neck dislocation NPDV-3	<ul style="list-style-type: none"> <li>a. head strikes windshield</li> <li>b. forehead hits roof or convertible top</li> <li>c. head strikes steering assembly</li> <li>d. back hits seatback, no head restraint, head rolls back over seat</li> </ul>	<ul style="list-style-type: none"> <li>a. (01) windshield</li> <li>b. (34) roof or convertible top</li> <li>c. (03) steering assembly</li> <li>d. (90) noncontact injury source</li> </ul>

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
	e. neck forced into lateral flexion by impact forces	e. (90) noncontact injury source
	f. torso restrained by belt, head and neck inertia causes neck injury	f. (90) noncontact injury source
	g. back hits seat back, head hits head restraint, neck is injured	g. (23) head restraint

Example 2

Hip dislocation P.DJ-3	Knee strikes dash, forces transmitted along femur forcing femoral head out of the acetabulum	(05) instrument panel
---------------------------	--	-----------------------

Example 3

Shoulder elbow-wrist fracture/dislocation _ZJ-2	Occupant braced hands on instrument panel, transmitting forces to wrist, elbow, and shoulder	(05) instrument panel
--	--	-----------------------

Example 4

Acute lumbar strain BITM-1	Jackknife over seat belt, rotation about seat belt stretches back muscles	(22) belt restraint
-------------------------------	---	---------------------

Example 5

Muscle strain in arms, back, chest, neck	Strain of muscles from twisting due to impact forces	(90) noncontact injury source
--	--	-------------------------------

19. If only one substantiated anatomic lesion to the brain and the length of unconsciousness are known, the OIC will consist of the four letters describing the anatomic lesion and an AIS of the higher of the anatomic lesion severity or the level of consciousness severity (e.g., cerebral contusion, L.O.C. >24 hr. - H<sub>CB</sub>-5).

Single substantiated brain lesion

20. When no other injury information is available, data from the PAR is to be coded. If specific injuries are detailed, code accordingly. If only a PAR injury severity rating is assigned, code: "Injured, severity unknown". This implies the existence of an unspecified injury of unknown severity. Do not code: "unknown if injured". This denotes lack of knowledge concerning the existence of injury, which is contrary to information documented in the PAR. Consider the five example situations below and code according to the instructions given, for example, in variable 02B et al. (1st O.I.C. - Body Region).

Coding PAR injury data

- a. No interview; no medical; PAR injury severity rating: "K", "A", "B", or "C"; code: "Injured, severity unknown".

- b. No interview; no medical; PAR injury severity rating: "U"; code: "unknown if injured".
- c. No interview; no medical; PAR injury severity rating: "O"; code: "not injured".
- d. No interview; no medical; PAR injury severity rating: "C", in addition "laceration to forehead" is reported; code:

F S L 1 1 ? ? 0 9 and 0 0 0 0 0 0 0 0 0  
 32 33 34 35 36 37 38 39 40      41 42 43 44 45 46 47 48 49

- e. No interview; no medical; no PAR mention of injury; hit & run vehicle/driver reported; code: "unknown if injured".

21. If the PAR is "blank" where the injury severity is accessed and the person was at the scene during the police investigation, code no injury. However, if the person was not present during the police inspection, code unknown if injured.

Presumption of "no injury" or "unknown if injured" from PAR

P19  
P26  
P33  
P40  
P47  
P54

Variable Name: 1st O.I.C. - Body Region  
2nd O.I.C. - Body Region  
3rd O.I.C. - Body Region  
4th O.I.C. - Body Region  
5th O.I.C. - Body Region  
6th O.I.C. - Body Region

Format: 1 column - alphanumeric

Beginning  
Column 32  
41  
50  
59  
68  
77

Element Values:

A Arm (upper)	Q Ankle - foot
B Back - thoracolumbar spine	R Forearm
C Chest	S Shoulder
E Elbow	T Thigh
F Face	W Wrist - hand
H Head - skull	X Upper limb(s) (whole or unknown part)
K Knee	Y Lower limb(s) (whole or unknown part)
L Leg (lower)	O Whole body
M Abdomen	U Injured, unknown region
N Neck - cervical spine	0 Not injured
P Pelvic - hip	9 Unknown if injured

Source: Variable P25, P32, P39, P46, P53, and P60 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, both its O.I.C. and I.S.S. body region and record them on the form. Ordering instructions are on page 7 of the Pedestrian & Nonmotorist Form.

P19  
 P26  
 P33  
 P40  
 P47  
 P54  
 (2)

Variable Name: 1st O.I.C. - Body Region (cont'd.)  
 2nd O.I.C. - Body Region (cont'd.)  
 3rd O.I.C. - Body Region (cont'd.)  
 4th O.I.C. - Body Region (cont'd.)  
 5th O.I.C. - Body Region (cont'd.)  
 6th O.I.C. - Body Region (cont'd.)

For coding the following situations, the correct procedure is:

	R	A	L	S	A	I	S	S	O	
	E	S	E	Y	.	N	O	O	F	
	G	P	S	S	I	J	U	U	D	
	I	E	I	T	.	U	R	R	A	
	O	C	O	E	S	R	C	C	T	
	N	T	N	M	.	Y	E	E	A	
Not injured:	$\frac{0}{32}$	$\frac{0}{33}$	$\frac{0}{34}$	$\frac{0}{35}$	$\frac{0}{36}$	$\frac{0}{37}$	$\frac{0}{38}$	$\frac{0}{39}$	$\frac{0}{40}$	
Injured, severity unknown:	$\frac{0}{32}$	$\frac{0}{33}$	$\frac{0}{34}$	$\frac{0}{35}$	$\frac{7}{36}$	$\frac{9}{37}$	$\frac{7}{38}$	$\frac{0 \text{ or } 9}{39}$	$\frac{1, 2, 3, 4, 5, 6, 7, 8 \text{ or } 9}{40}$	
	$\frac{0}{41}$	$\frac{0}{42}$	$\frac{0}{43}$	$\frac{0}{44}$	$\frac{0}{45}$	$\frac{0}{46}$	$\frac{0}{47}$	$\frac{0}{48}$	$\frac{0}{49}$	
Unknown if injured:	$\frac{9}{32}$	$\frac{9}{33}$	$\frac{9}{34}$	$\frac{9}{35}$	$\frac{9}{36}$	$\frac{9}{37}$	$\frac{9}{38}$	$\frac{9}{39}$	$\frac{9}{40}$	
	$\frac{0}{41}$	$\frac{0}{42}$	$\frac{0}{43}$	$\frac{0}{44}$	$\frac{0}{45}$	$\frac{0}{46}$	$\frac{0}{47}$	$\frac{0}{48}$	$\frac{0}{49}$	

Note: Be sure to complete one additional row with zeros ("0") when the person is injured but has less than six injuries. This is true even when the person is injured but the severity is unknown, or if it is unknown whether or not the person is injured. Refer to the last O.I.C. note on page 7 of the Pedestrian & Nonmotorist Form.

When the person has several injuries from the same Source of Data, one of which is "injured, severity unknown," code this injury last.

P20  
 P27  
 P34  
 P41  
 P43  
 P55

Variable Name: 1st O.I.C. - Aspect of Injury  
 2nd O.I.C. - Aspect of Injury  
 3rd O.I.C. - Aspect of Injury  
 4th O.I.C. - Aspect of Injury  
 5th O.I.C. - Aspect of Injury  
 6th O.I.C. - Aspect of Injury

Format: 1 column - alphanumeric

Beginning  
 Column 33  
 42  
 51  
 60  
 69  
 78

Element Values:

R Right	S Superior - upper
L Left	I Inferior - lower
B Bilateral	W Whole region
C Central	U Injured, unknown aspect
A Anterior - front	0 Not injured
P Posterior - back	9 Unknown if injured

Source: Variable P25, P32, P39, P46, P53, and P60 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, the aspect of the injury and record it on the form.

P21  
P28  
P35  
P42  
P49  
P56

Variable Name: 1st O.I.C. - Lesion  
2nd O.I.C. - Lesion  
3rd O.I.C. - Lesion  
4th O.I.C. - Lesion  
5th O.I.C. - Lesion  
6th O.I.C. - Lesion

Format: 1 column - alphanumeric

Beginning  
Column 34  
43  
52  
61  
70  
79

Element Values:

A Abrasion	P Perforation, puncture
B Burn	R Rupture
C Contusion	S Sprain
D Dislocation	T Strain
E Total severence	V Avulsion
F Fracture	Z Fracture and dislocation
G Detachment, separation	O Other
K Concussion	U Injured, unknown lesion
L Laceration	0 Not injured
M Amputation	9 Unknown if injured
N Crushing	

Source: Variable P25, P32, P39, P46, P53, and P60 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, its lesion and record it on the form.

P22  
 P23  
 P36  
 P43  
 P50  
 P57

Variable Name: 1st O.I.C. - System/Organ  
 2nd O.I.C. - System/Organ  
 3rd O.I.C. - System/Organ  
 4th O.I.C. - System/Organ  
 5th O.I.C. - System/Organ  
 6th O.I.C. - System/Organ

Format: 1 column - alphanumeric

Beginning  
 Column 35  
 44  
 53  
 62  
 71  
 80

Element Values:

A Arteries - veins	N Nervous system
B Brain	O Eye
C Spinal cord	P Pulmonary - lungs
D Digestive	Q Spleen
E Ears	R Respiratory
G Urogenital	S Skeletal
H Heart	T Thyroid, other endocrine gland
I Integumentary	V Vertebrae
J Joints	W All systems in region
K Kidneys	U Injured, unknown system
L Liver	0 Not injured
M Muscles	9 Unknown if injured

Source: Variable P25, P32, P39, P46, P53, and P60 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, its system/organ and record it on the form.

P23  
 P30  
 P37  
 P44  
 P51  
 P58

Variable Name: 1st O.I.C. - Abbreviated Injury Scale  
 2nd O.I.C. - Abbreviated Injury Scale  
 3rd O.I.C. - Abbreviated Injury Scale  
 4th O.I.C. - Abbreviated Injury Scale  
 5th O.I.C. - Abbreviated Injury Scale  
 6th O.I.C. - Abbreviated Injury Scale

Format: 1 column - alphanumeric

Beginning  
 Column 36  
 45  
 54  
 63  
 72  
 81

Element Values:

- 0 Not injured
- 1 Minor injury
- 2 Moderate injury
- 3 Severe injury
- 4 Serious injury
- 5 Critical injury
- 6 Maximum (untreatable)
- 7 Injured, unknown severity
- 9 Unknown if injured

Source: Variable P25, P32, P39, P46, P53, and P60 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, its A.I.S. value and record it on the form.

P24  
P31  
P33  
P45  
P52  
P59

Variable Name: 1st O.I.C. - Injury Source  
2nd O.I.C. - Injury Source  
3rd O.I.C. - Injury Source  
4th O.I.C. - Injury Source  
5th O.I.C. - Injury Source  
6th O.I.C. - Injury Source

Format: 2 columns- numeric

Beginning  
Column 37  
46  
55  
64  
73  
82

Element Values:

00 Not injured

Front

01 Windshield

02 Mirror

03 Steering assembly, including transmission selector lever when column mounted

04 Add-on equipment (e.g., CB, tape deck, air conditioner)

05 Instrument panel and below, excluding foot controls and parking brake

09 Other front object

Side

11 Side interior surface, excluding hardware or armrests

12 Side hardware or armrests

13 A pillar

14 B pillar

15 Other pillar

16 Window glass or frame

19 Other side object

Interior

21 Seat, back support

22 Belt restraint system

23 Head restraint

24 Air cushion

25 Other occupants

26 Interior loose objects

29 Other interior objects

Roof

31 Front header

32 Rear header

33 Roof side rails

34 Roof or convertible top

P24  
P31  
P38  
P45  
P52  
P59  
(2)

Variable Name: 1st O.I.C. - Injury Source (cont'd.)  
2nd O.I.C. - Injury Source (cont'd.)  
3rd O.I.C. - Injury Source (cont'd.)  
4th O.I.C. - Injury Source (cont'd.)  
5th O.I.C. - Injury Source (cont'd.)  
6th O.I.C. - Injury Source (cont'd.)

Floor

41 Floor  
42 Floor or console mounted transmission lever, including console  
43 Parking brake handle  
44 Foot controls including parking brake

Rear

51 Backlight (rear window)  
52 Backlight storage rack, door, etc.  
59 Other rear objects

Exterior of Nonmotorist's Vehicle

61 Hood  
62 Outside hardware (e.g., outside mirror, antenna)  
63 Other exterior surface or tires  
69 Unknown exterior objects

Exterior of Other Motor Vehicle

71 Bumper  
72 Hood edge  
73 Other front of vehicle  
74 Hood  
75 Hood ornament  
76 Windshield, roof rail, A-pillar  
77 Side surface  
78 Side mirrors  
79 Other side protrusions  
80 Rear surface  
81 Undercarriage  
82 Unknown exterior of other motor vehicle

Other Vehicle or Object in the Environment

86 Ground  
87 Other vehicle or object  
89 Unknown vehicle or object

Noncontact Injury

90 Noncontact injury source (e.g., impact force, heat or flame from fire,  
battery acid, etc.)  
97 Injured, unknown source  
99 Unknown if injured

P:4  
P:1  
P:8  
P:5  
P:9  
(1)

Variable Name: 1st O.I.C. - Injury Source (cont'd.)  
2nd O.I.C. - Injury Source (cont'd.)  
3rd O.I.C. - Injury Source (cont'd.)  
4th O.I.C. - Injury Source (cont'd.)  
5th O.I.C. - Injury Source (cont'd.)  
6th O.I.C. - Injury Source (cont'd.)

Source: Investigator determined--inputs include vehicle inspection and interviewee.

Remarks:

Interior flying glass refers to the person being struck by glass which has already fractured and is airborne. This is coded as "90" (Noncontact injury source). This does not refer to a person causing glass to shatter upon impacting it.

Investigator should record only those contact mechanisms which can be documented by some physical evidence (e.g., scuffs, hair, smudges, dents, cracks, etc.). Use page 3 of the Pedestrian & Nonmotorist Form to record the injury source evidence. For those nonmotorists who are occupants of a motor vehicle not in transport (P08, Pedestrian or Nonmotorist's Type, equal to "05"), attach page 7 of a Vehicle Form to the Pedestrian and Nonmotorist Form and document any potential contact points.

P25  
P32  
P39  
P46  
P53  
P60

Variable Name: 1st O.I.C. - Source of Data  
2nd O.I.C. - Source of Data  
3rd O.I.C. - Source of Data  
4th O.I.C. - Source of Data  
5th O.I.C. - Source of Data  
6th O.I.C. - Source of Data

Format: 2 columns - numeric

Beginning  
Column 39  
48  
57  
66  
75  
84

Element Values:

Official	Unofficial
01 Autopsy records with or without hospital/medical records	05 Lay coroner report
02 Hospital/medical records other than emergency room (e.g., discharge summary)	06 E.M.S. personnel
03 Emergency room records only (including associated x-rays or other lab reports)	07 Interviewee
04 Private physician	08 Other source (specify)
	09 Police
	99 Unknown if injured
	00 Not injured

Source: Element chosen

Remarks:

Code "01" (Autopsy records with or without hospital/medical records) excludes records from lay, nonmedical personnel; they must be the result of an autopsy by a physician or other similarly qualified life scientist.

Code "02" [Hospital/medical records other than emergency room (e.g., discharge summary)] is used whenever the injury is listed on the official post-emergency room records of a hospital or medical facility. If the injury is also contained in an autopsy record--where the autopsy was performed by a physician or similarly qualified life scientist--then, code "01" (Autopsy records with or without hospital/medical records) takes precedence. If the injury was also listed on a facility's associated emergency room records, then this code takes precedence.

P25  
 P32  
 P39  
 P46  
 P53  
 P60  
 (2)

Variable Name: 1st O.I.C. - Source of Data (cont'd.)  
 2nd O.I.C. - Source of Data (cont'd.)  
 3rd O.I.C. - Source of Data (cont'd.)  
 4th O.I.C. - Source of Data (cont'd.)  
 5th O.I.C. - Source of Data (cont'd.)  
 6th O.I.C. - Source of Data (cont'd.)

Code "03" [Emergency room records only (including associated x-rays or other lab reports)] is used when the injury only appears on a facility's emergency room record or on records that were completed in support of the person's examination in an emergency room. For example, an x-ray report that was completed because the emergency room physician requested it as a part of his/her examination would be included under this code. This code should not be used if the injury is subsequently listed on a post-emergency room record or in a medical autopsy.

If both types of records (emergency room and post-emergency room) refer to the same injury, code "02" [Hospital/medical records other than emergency room (e.g., discharge summary)] is used as the code even if the detail provided on the emergency room records exceeds the detail provided on the post-emergency room records.

Code "04" (Private physician) refers to any physician (in private practice) who saw the injured person and who has records of that treatment (i.e., other than hospital or autopsy records).

Code "05" (Lay coroner report) is used if the injury data is contained in a report where a noninvasive examination of the deceased was performed by a non-physician, or lay coroner.

Code "06" (E.M.S. personnel) refers to a person certified by the state as trained in emergency medical service techniques. Code "06" should not be used for ambulance attendants, police, or other personnel not trained in E.M.S. techniques.

Code "07" (Interviewee) refers to the person who was interviewed to get the information on this form (not necessarily the person described on this form). The interviewee is defined in variable P18.

Code "08" (Other) is used when data are obtained from an unofficial source different from those explicitly listed above (e.g., most death certificates).

Code "09" (Police) can be used, but only when no other source of injury information is available. See last sentence of first paragraph on page 6, Pedestrian & Nonmotorist Form.

Code "00" (Not injured) is to be used when no injury was reported. In other words, this variable reports only the source of the injury information.

Variable Name: Injury Severity (Police Rating)

Format: 1 column - numeric

Beginning  
Column 86

Element Values:

- 0 0 - No injury
- 1 C - Possible injury
- 2 B - Nonincapacitating injury
- 3 A - Incapacitating injury
- 4 K - Killed
- 5 Injured, severity unknown
- 6 Died prior to accident
- 9 Unknown

Source: Police report

Remarks:

Code the police reported injury severity for this pedestrian or nonmotorist. It is possible that the police could have updated the PAR between the time it was stratified (A02, Case Number--Stratification) and when it was picked up. For example, a person might have been listed originally with incapacitating injuries ("3"). Later the person dies ("4"), and the PAR is changed accordingly. Therefore, use the latest information on the PAR at the time it was obtained from the police agency.

If the police report contains a detailed description of the injuries but does not translate the injuries into the KABCO codes, use the police method for doing so. For example, injuries which are considered to be of an incapacitating nature are classified as "A" (code "3"), nonincapacitating-injurious injuries are "B" (code "2"), and possible injuries are "C" (code "1"). Property damage only is classified as "0" (code "0").

Code "5" (Injured, severity unknown) if the police report indicates a "U" or in any other way communicates the idea that the person was injured but their severity is unknown.

Code "6" (Died prior to accident) should only be coded if the police explicitly so indicate.

Variable Nam : Injury Severity (Police Rating)

Not all states use the KABCOU scheme. Listed below, by state, are alternative schemes; a mapping to the NASS scheme is provided.

State	PAR Code/Definition	NASS Scheme/Code
Alabama	K = Killed	K - 4
	A = Visible signs of injury, as bleeding wound or distorted member, or had to be carried from scene	A - 3
	B = Other visible injury, as bruises, abrasions, swelling, limping, etc.	B - 2
	C = No visible injury but complaint of pain or momentary unconsciousness	C - 1
	Blank = No documentation of driver or occupants on back of PAR = No set unknown code	O - 0 - 9
Arizona	1 = No injury	O - 0
	2 = Possible injury	- 1
	3 = Nonincapacitating injury	- 2
	4 = Incapacitating injury	A - 3
	5 = Fatal	K - 4
	6 = Unknown	U - 5
California	1 = Fatal	K - 4
	2 = Severe wound/distorted member	A - 3
	3 = Other visible injury	B - 2
	4 = Complaint of pain	C - 1
	blank = Occupant present blank = Occupant not present	O - 0 - 9
Colorado	A = Fatal	K - 4
	B = Carried from scene	A - 3
	C = Minor visible injury	B - 2
	D = Pain but no visible injury	C - 1
	E = No injury	O - 0
	I = Unknown	U - 5
Florida	0 = No injury	O - 0
	1 = Fatal (in 12 months) injury	K - 4
	2 = Incapacitating injury	A - 3
	3 = Nonincapacitating, evident injury	B - 2
	4 = Possible injury = No set unknown code	C - 1 - 9

Variable Name: Injury Severity (Polic Rating)

State	PAR Code/Definition		NASS Scheme/Code	
Nebraska	4	= Fatal	K - 4	
	3	= Incapacitating injury	A - 3	
	2	= Nonincapacitating injury	B - 2	
	1	= Possible injury	C - 1	
	0	= No injury	O - 0	
	blank	= Occupant present	O - 0	
	blank	= Occupant not present	- 9	
New Jersey	Location of Injury	Type of Injury	Victim's Condition	
	Any entry	Any entry	Killed	K - 4
	Any entry	Any entry	Incapacitated	A - 3
	Any entry	amputation, concussion, internal, fracture/dislocation	Moderate injury Complaint of pain	A - 3
	Eye	burn, bleeding, complaint of pain	Moderate injury Complaint of pain	A - 3
	Any entry	bleeding, contusion, bruise, abrasion	Moderate injury	B - 2
	Any entry (except eye)	complaint of pain	Complaint of pain	C - 1
	-	-	-	O - 0
	U	U	U	- 9
	New York	Location of Injury	Type of Complaint	Victim's Status
Any entry		Any entry	Apparent death	K - 4
Any entry		Any entry	Unconscious, Semi-conscious, Incoherent	A - 3
Any entry		amputation, concussion, internal, severe bleeding, severe burn, moderate burn, fracture - dislocation	Shock, Normal	A - 3
Eye		minor bleeding, minor burn, complaint of pain	Shock, Normal	A - 3
All but eye		minor bleeding, minor burn	Shock, Normal	B - 2
Any entry		contusions-bruise, abrasion	Shock, Normal	B - 2
All but eye		complaint of pain	Shock, Normal	C - 1
-		-	-	O - 0
X		X	X	- 9

Variable Name: Injury Severity (Police Rating)

State	PAR Code/Definition	NASS Scheme/Code
Pennsylvania	0 = No injury	O - 0
	1 = Death	K - 4
	2 = Major injury	A - 3
	3 = Moderate injury	B - 2
	4 = Minor injury [and]	
	Type of Apparent Injury	
	- amputation	
	- bleeding	
	- broken bone(s)	B - 2
	- burns	
- concussion		
- abrasions/bruises		
- other		
4 = Minor injury [and]		
Type of Apparent Injury		
- shock	C - 1	
- dizziness		
- complaint of pain		
Washington	1 = No injury	O - 0
	2 = Dead at scene	K - 4
	3 = Dead on arrival	K - 4
	4 = Died in hospital	K - 4
	5 = Disabling injury	A - 3
	6 = Nondisabling injury	B - 2
	7 = Possible injury	C - 1
	blank = Unknown	- 9

As a general rule, if the PAR is "blank" where the injury severity is accessed and the person was at the scene during the police investigation, code "0" (No injury). If the PAR is "blank" and the person was not present during the police investigation, code "9" (Unknown).

Variable Name: Traffic Violation Charged Against This Pedestrian or  
Nonmotorist

Format: 1 column - numeric

Beginning  
Column 87

Element Values:

- 0 No
- 1 Yes (specify)
- 9 Unknown

Source: Police report

Remarks:

If the police charged this pedestrian or nonmotorist with any violation,  
then code yes ("1"). Specify the violation in the space provided, if known.

Variable Name: Alcohol Involvement

Format: 1 column - numeric

Beginning  
Column 138

Element Values:

- 0 No
- 1 Yes (specify)

Source: Police report

Remarks:

Find the location on the police report that indicates the investigating officer's assessment with respect to whether or not alcohol was involved in this accident.

If the police report explicitly states or implies that alcohol was involved as a contributing circumstance or if a citation for alcohol involvement was issued, then code "1" (Yes).

Code "0" (No) in all other instances. This includes those instances where alcohol involvement was unknown (e.g., hit-and-run vehicle), or alcohol was present but not involved as a contributing circumstance, or the pedestrian or nonmotorist was not charged with any alcohol related violation.

Caution should be exercised by analysts. This variable allows one to subset the data so as to select out pedestrians or nonmotorists who the police said were alcohol involved. It does not allow one the opportunity to report the proportion of alcohol-involved pedestrians or nonmotorists.

The various PSUs should discuss their individual, unique police reports with the Zone Centers to distinguish involvement from presence of alcohol.

Variable Name: Alcohol Test Result

Format: 2 columns - numeric

Beginning  
Column 89

Element Values:

Range: 00 through 30

Code actual reported number representing fraction of alcohol present  
(decimal implied before first digit 0.xx).

95 Test refused

96 None given

97 AC test performed, results unknown

99 Unknown

Source: Police report, medical reports, or other official sources.

Remarks:

A blood alcohol concentration (BAC) test could be a blood, breath, or urine test. No psychomotor (police observation of driver actions) test results are to be coded here. These preliminary tests include instrumented field screening tests which indicate the presence of alcohol but not necessarily the particular content level. These devices are designed to segregate candidates for further testing from those persons where the suspected presence of alcohol is either nonexistent or too low for additional tests.

Code "95" (Test refused) when the person refuses to voluntarily take a BAC test and no subsequent test is given. If the person refuses, but a test is performed, code the reported BAC or "97" (AC test performed, results unknown).

Code "96" (None given) includes those instances when an instrumented field screening test was given and it determined that no BAC test was required.

If an instrumented field screening test was given and it determined that a BAC test was required, code either the reported BAC from the subsequent test or "97" (AC test performed, results unknown) if the precise level was not obtained.

If the results are not available at the time the NASS case is initially submitted, leave blank, circle the variable number, and update this variable when the results are obtained.

If the BAC was given on the police report or subsequently added after the case was initiated, code the reported value. If the BAC was obtained from a medical report or any other official record, code the reported value. In essence, if any BAC is obtained, code the reported value.

12/80

VEHICLE FORM

V06

Variable Name: Investigator I.D. Number

Format: 1 column - blank

Beginning  
Column 10

Element Values:

Range: Blank

Source: Zone center.

Remarks:

This information is not released to analytical users.

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Range: 01 through 30

Source: Investigator determined.

Remarks:

This variable is a mandatory variable and cannot be changed.

Numbers assigned to vehicles must be consecutive starting with 01 with no missing numbers. Each motor vehicle in transport must be assigned a unique number.

Vehicles shall be numbered according to their entry into the impact sequence. If there is only one vehicle in the accident, the vehicle is to be coded as vehicle number one. (NOTE: However, if there is only one vehicle and that vehicle was struck by a pedestrian, then vehicle number one can be a struck vehicle.)

In multiple vehicle collisions, in which one vehicle strikes another vehicle with its front, that vehicle shall be given the lower number in the sequence. However, in a head-on collision, the vehicle on the wrong side of the road shall be given the lower number in the sequence.

For impacts in which no vehicle has frontal damage, the vehicle that has encroached upon the other shall be given the lower number in the sequence.

A vehicle that sets an object in motion which strikes or is struck by another motor vehicle, prior to stabilization of the object, shall be given the lower number in the sequence (even if it sustains no damage or its occupants are not injured).

In the instance where one motor vehicle is towing another, the vehicle number or numbers assigned depends on the accident circumstances and the type of linkage between the vehicles. If the linkage between the vehicles is fixed (e.g., tow bar, cradle, etc.), then the combination is one vehicle. If either component is involved in the accident, the power unit component is assigned a vehicle number. If the linkage is nonfixed (e.g., rope, chain, etc.), then assign a vehicle number to each component involved in the accident. If the linkage is nonfixed, then each vehicle is considered to be in transport. A fixed linkage is defined as one which has the property of keeping the towed unit separated from the power unit by a distance which is essentially constant. Included within this definition are cradle linkages where the towed unit has two or more wheels off the ground.

Variable Name: Vehicle Number (cont'd.)

Do not assign a number to any struck motor vehicle not in transport (e.g., a vehicle parked out of the roadway). A Vehicle Form is not to be completed for these vehicles; nor is a Driver Form to be completed. Any occupants they contain, including a person who was intent on driving the vehicle, are to be handled using the Pedestrian & Nonmotorist Form. However, the vehicle should be shown on the accident diagram and referred to as P-1, etc. Also, data which may be required to exercise the CRASH program is to be collected. The necessary data questions are located at the bottom of the second page of the CRASH Program Summary.

Variable Name: Number of Occupant Forms Submitted

Format: 2 columns - numeric

Beginning  
Column 13

Element Values:

Range: 00 through 50

Source: Investigator determined--inputs include police report, vehicle inspection, driver interviews, and other interviewees.

Remarks:

Code only the number of occupants in this vehicle for which an Occupant Form was submitted.

The value coded here should agree with the value coded on variable D08, Number of Occupants This Motor Vehicle, unless: (1) the actual number of occupants in this vehicle is unknown (D08 equal "99"), or (2) this vehicle qualifies under the "special bus rule" cited in section 4.2, page 42.

This variable is a mandatory variable and cannot be changed.

Variable Name: Vehicle Role

Format: 1 column - numeric

Beginning  
Column 15

Element Values:

- 0 Noncollision
- 1 Striking unit
- 2 Struck unit
- 3 Both striking and struck
- 9 Unknown

Source: Investigator determined from all available information.

Remarks:

Code "0" (Noncollision) only when the noncollision occurred first, even if subsequent impacts occurred. Noncollision includes overturned (which includes overturning motorcycles), fire/explosion, jackknifed, or immersion. A vehicle that sets an object (e.g., cargo, spewed gravel, etc.) in motion which strikes or is struck by another motor vehicle prior to the motion of the object is coded as "0". The other motor vehicle (if in motion) is either a striking unit ("1") or a struck unit ("2") depending on whether or not the unit is in motion or stationary.

A vehicle must be in motion to be a striking vehicle. If the vehicle was not in motion, then it was struck. If a vehicle in motion contacts an object with its leading end and/or side (including an object that was set in motion by another motor vehicle), then the vehicle is striking.

If a vehicle in motion contacts another vehicle, pedestrian, or nonmotorist with its front, then the vehicle is striking. For example, in a head-on collision both vehicles are striking. If a vehicle is moving forward and is not in rotation and contacts another vehicle, pedestrian, or nonmotorist with other than its front (with one exception), then the vehicle is struck. The exception is for sideswiping vehicles. Both sideswiping vehicles are striking. Sideswiping includes front or rear endswipes.

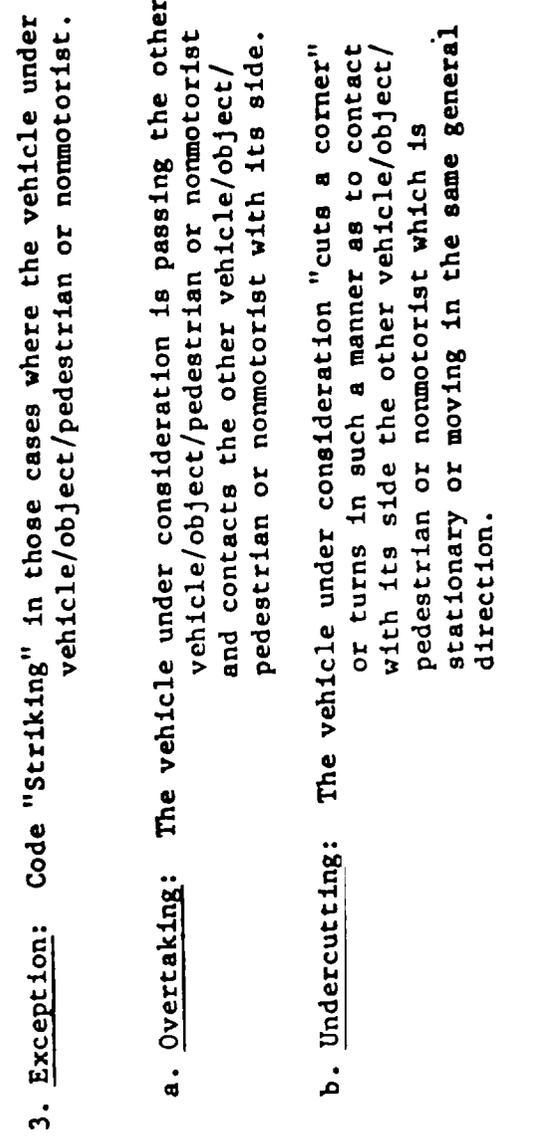
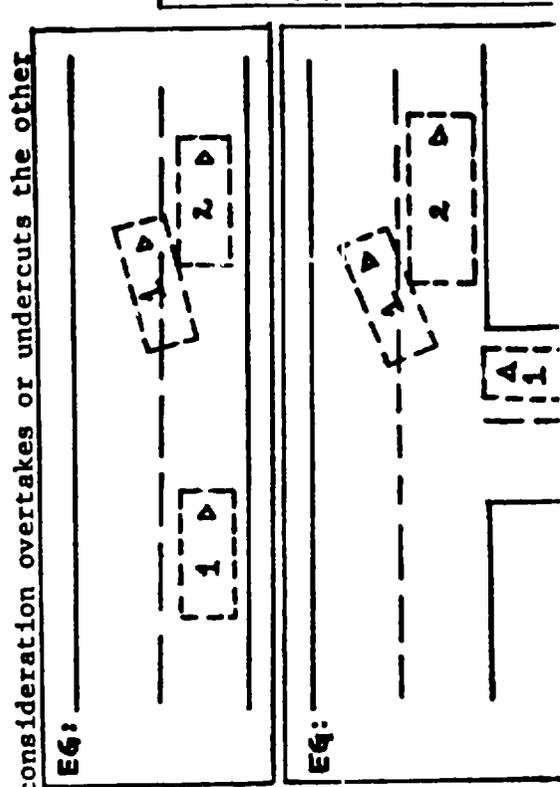
For a vehicle to be both striking and struck it must sustain two impacts such that they did not occur with the same vehicle (e.g., side-slap), object, pedestrian, or nonmotorist. If the impacts occurred at the same location on this vehicle, they must have occurred at different points in time in the accident sequence. The classical example of a vehicle which is both striking and struck is the chain reaction rear-end where the vehicle which is striking and struck is located within the chain.

A vehicle that impacts an object and sends that object into another vehicle, or another vehicle's path, is coded as "1", striking unit.

VEHICLE ROLE (V09)

OTHER VEHICLE/OBJECT/ Pedestrian or Nonmotorist	MOTOR VEHICLE UNDER CONSIDERATION (BEING INSPECTED)			NOT TRACKING (Significant yaw and/or Rotation)	
	STATIONARY	TRACKING (Includes Controlled Turn)	CONTACT IS TO OTHER THAN ITS LEADING END <sup>1</sup>	CONTACTS ITS LEADING END AND/OR SIDE <sup>2</sup>	OTHER THAN ITS LEADING END AND/OR SIDE <sup>2</sup> IS CONTACTED
VEHICLE IN MOTION	STRUCK	STRIKING	STRUCK <sup>3</sup>	STRIKING	STRUCK
OBJECT IN MOTION	STRUCK	STRIKING	STRUCK <sup>3</sup>	STRIKING	STRUCK
STATIONARY VEHICLE OR OBJECT	STRUCK	STRIKING	STRIKING	STRIKING	STRUCK
PEDESTRIAN OR NON-MOTORIST	STRUCK	STRIKING	STRUCK <sup>3</sup>	STRIKING	STRUCK

- Leading End (Tracking): That end (Back or Front) of the vehicle under consideration which passes over a section of terrain before its opposite end.
- Leading End and/or Side (Not Tracking): That end and/or side (Back, Front, Left or Right) of the vehicle under consideration which passes over a section of terrain before its opposite end and/or side.



Variable Name: Manner of Leaving Scene (Determined by Investigator)

Format: 1 column - numeric

Beginning  
Column 16

Element Values:

- 1 Driven
- 2 Towed - due to vehicle damage
- 3 Towed - not due to vehicle damage
- 4 Abandoned
- 9 Unknown

Source: Investigator determined--inputs include vehicle inspection, interviewees, wrecker operators, police report.

Remarks:

This variable measures the disposition of the vehicle or power unit of an articulated combination at the accident scene.

The source of information for selecting an element value is the investigator, based on his/her final information which may be different from the police report. The investigator is reminded to determine if any difference here from the police report will affect the Final Stratification (A08). Strata I, J, M, and N are possibly affected as shown in the examples as follows:

Accident is stratified as "N" in the Case Number-Stratification (A02) and subsequent investigation revealed that a vehicle was in fact towed; therefore, Final Stratification (A08) is coded as "M".

- Accident is stratified as "I" in the Case Number-Stratification (A02) and subsequent investigation revealed that a vehicle was in fact not towed; therefore, Final Stratification (A08) is coded as "J".

In terms of its effect on Final Stratification (A08), it makes no difference why the vehicle was towed (i.e., codes "2" or "3" below).

Code "2" (Towed - due to vehicle damage) refers to any towing which is due to disabling damage caused by this accident which prohibits vehicle movement under its own power.

Code "3" (Towed - not due to vehicle damage) refers to those cases where the towing results from other than damage (e.g., mired vehicles, driver arrested, etc.).

For J and N cases, vehicles which are discovered later to have been towed but which are not so reported on the police report, are to be coded either "2" (Towed - due to vehicle damage) or "3" (Towed - not due to vehicle damage).

Variable Name: Manner of Leaving Scene (Determined by Investigator)  
[cont'd.]

If the investigator determines that the vehicle was left at the scene and that no arrangements were made for its removal by the police when they departed, then code "4" (Abandoned).

Remember, if a case was originally stratified under Case Number--Stratification (A02) as either "J" or "N", then the form entitled "Vehicle Form For Non-Towaway Accident", is required for all vehicles in the case. This form requires no inspection and must be used even if it is subsequently learned that one of the involved vehicles was towed. Conversely, cases originally stratified as other than "J" or "N" (specifically "I" or "M" cases) require that all vehicles be inspected using the Vehicle Form. This is true even if it is subsequently learned that none of the involved vehicles were towed.

Consider the following examples.

If a vehicle is involved in a previous accident (stabilization had occurred) and is then involved in another accident (in transport because on roadway) and finally is towed from the scene but not because of the damage sustained in the second impact, then code "3" (Towed - not due to vehicle damage) is used.

If a motorcycle is walked home [or a car pushed (by hand or by another car)] after the accident, then consider the motorcycle towed. If it was walked home because it was not driveable, then code "2" (Towed - due to vehicle damage).

A vehicle is driven from a scene and subsequently breaks down. It is towed from that location. The towing may have been a result of the damage sustained in the accident. Even if the subsequent towing was due to damage, code "1" (Driven) for this vehicle.

Variable Name: Vehicle Model Year

Format: 2 columns - numeric

Beginning  
Column 17

Element Values:

Range: 50 through 82

Code the last two digits of the model year for which the vehicle was manufactured.

99 Unknown

Source: Primary source is the VIN during vehicle inspection; secondary sources include registration, police report, and interviewees.

Remarks:

A vehicle manufactured as a 1982 model is to be coded as "82".

Variabl Name: Vehicle Make

Format: 2 columns - numeric

Beginning  
Column 13

Element Values:

Automobile

01 American Motors	49 Toyota
02 Jeep (includes AMC-Jeep, Kaiser)	50 Triumph
03 AM General	51 Volvo
06 Chrysler	59 Other import
07 Dodge	<u>V13</u>
08 Imperial	31 Aston Martin
09 Plymouth	32 Bricklin
12 Ford	33 Citroen
13 Lincoln	34 Delorean
14 Mercury	35 Ferrari
18 Buick (includes Opel)	36 Hillman
19 Cadillac	37 Jensen
20 Chevrolet	38 Lamborghini
21 Oldsmobile	39 Lotus
22 Pontiac	40 Maserati
23 GMC	41 Morris
29 Other domestic	42 Rolls Royce/Bentley
<u>V13</u>	43 Rover
01 Studebaker/Avanti	44 Simca
02 Checker	45 Sunbeam
98 Other domestic (e.g., Desoto)	46 TVR
30 Volkswagen (domestic and import)	98 Other import (e.g., Morgan, Singer)
31 Alfa Romeo	
32 Audi	<u>Motored Cycles</u>
33 Austin/Austin Healey	[34] BMW
34 BMW	60 BSA
35 Datsun	61 Ducati
36 Fiat	62 Harley-Davidson
37 Honda	[37] Honda
38 Isuzu	63 Kawasaki
39 Jaguar	64 Moto-Guzzi
40 Lancia	65 Norton
41 Mazda	66 Suzuki
42 Mercedes Benz	[50] Triumph
43 MG	67 Yamaha
[18] Opel	69 Other
44 Peugeot	70 Mo-ped (all mo-peds whose manufacturer is not specifically listed above)
45 Porsche	
46 Renault	[ ] The brackets mean that the make's number has been previously listed.
47 Saab	
48 Subaru	

Variable Name: Vehicle Make (cont'd.)

Trucks and Busses

[03] AM General	[48] Subaru
80 Brockway	[49] Toyota
[20] Chevrolet	[30] Volkswagen
81 Diamond Reo	[51] Volvo
[35] Datsun	88 White (prior to 19__)
[07] Dodge	
[12] Ford	95 Other
82 Freightliner or White Freightliner	<u>V13</u>
83 FWD	01 Autocar
[23] GMC	02 Auto-Union-DKW
84 International Harvester	03 Divco
[38] Isuzu	04 Western Star
[02] Jeep	98 Other truck or bus (e.g., Oshkosh, IVECO)
85 Kenworth	
86 Mack	
[41] Mazda	98 Other make (use codes 29, 59, 69, 70, or 95 if applicable)
[42] Mercedes Benz	
87 Peterbilt	
[09] Plymouth	99 Unknown make

## Alphabetical Listing of Makes

31 Alfa Romeo	83 FWD	21 Oldsmobile
03 AM General	23 GMC	18 Opel
01 American Motors	62 Harley-Davidson	87 Peterbilt
5931 Aston Martin	5936 Hillman	09 Plymouth
32 Audi	37 Honda	44 Peugeot
33 Austin	84 International	22 Pontiac
34 BMW	Harvester	45 Porsche
5932 Bricklin	38 Isuzu	46 Renault
80 Brockway	39 Jaguar	5942 Rolls Royce/Bentley
60 BSA	5937 Jensen	5943 Rover
18 Buick	02 Jeep	47 Saab
19 Cadillac	63 Kawasaki	5944 Simca
2902 Checker	85 Kenworth	2901 Studebaker/Avanti
20 Chevrolet	5938 Lamborghini	48 Subaru
06 Chrysler	40 Lancia	5945 Sunbeam
5933 Citroen	13 Lincoln	66 Suzuki
35 Datsun	5939 Lotus	50 Triumph
5934 Delorean	86 Mack	49 Toyota
81 Diamond Reo	5940 Maserati	5946 TVR
07 Dodge	41 Mazda	30 Volkswagen
61 Ducati	42 Mercedes-Benz	51 Volvo
5935 Ferrari	14 Mercury	88 White (prior to 19__)
36 Fiat	43 MG	67 Yamaha
12 Ford	5941 Morris	
82 Freightliner or White Freightlin r	64 Moto-Guzzi	
	65 Norton	

Variable Name: Vehicle Make (cont'd.)

Source: Primary source is the VIN during vehicle inspection; secondary sources include the police report and interviewees.

Remarks:

Please write the Vehicle Make of the vehicle in the available space for ready visual reference, even though the information is incorporated in the Make code.

If the make of the vehicle is known (i.e., codes "01"- "03", "06"- "09", "12"- "14", "18"- "23", "29"- "51", "59"- "67", "69"- "70", "80"- "88", or "95" r "98") but it is unknown whether or not the vehicle was a passenger car, a truck, or motorcycle, then code Vehicle Model (V13) as "00" (Unknown).

If the make of the vehicle is not one of the explicitly stated attributes (e.g., Caterpillar, Motobecane, etc.), then code "29" [Other domestic (automobile)], "59" [Other import (automobile)], "69" [Other (motored cycle)], "70" (Mo-ped), or "95" [Other (truck or bus)] respectively depending on the vehicle's Body Type (V14).

If the make of the vehicle is not known (e.g., hit-and-run vehicle), then code "99" (Unknown make), and code Vehicle Model (V13) as "00" (Unknown). However, if the make of the vehicle is not known but it is known to be an automobile (V14, Body Type, equals "01" - "09"), then code Vehicle Model (V13) as "99" [Unknown (automobile)].

Variable Name: Vehicle Model

Format: 2 columns - numeric

Beginning  
Column 21

Element Values:

Model Code	Vehicle Line	Includes	Model Years
<u>American Motors (01)</u>			
01	Rambler/American	Rogue, 220, 440, Scrambler	
02	Rebel/Matador	550, 770, 551, Classic, Brougham, Barcelona, X, Marlin	
03	Ambassador	880, 990, SST, DPL, Brougham	
04	Pacer	DL, Limited	
05	AMX	(2-Seater)	68-70
06	Javelin	SST, AMX (1971-1974)	
07	Hornet/Concord	SST, Sportabout, AMX (1975-1978), Limited, DL, SC 360	
08	Spirit/Gremlin	Limited, DL, Custom, AMX (1979 on)	
09	Eagle	DL, Limited	80-81
10	SX4/Kammback	DL, Limited	81
98	Other (automobile)		
99	Unknown (automobile)		
<u>Jeep (02)</u>			
01	CJ-2/CJ-3/CJ-4	Military	
02	CJ-5/CJ-6/CJ-7/CJ-8		
71	Cherokee	Wide Track Chief, Commando, Jeepster	
73	Pick-up	J-10, J-20, Honcho	
76	Wagoneer	Custom	
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Jeep]		
<u>AM General (03)</u>			
01	Dispatcher	Post Office (Jeep)	
75	Dispatcher	DJ-Series, Post Office Delivery (Van)	
87	Bus (rear engine)	Transit	
88	Other (truck)	Military off-road	
89	Unknown (truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [AM General]		

Variable Name: Vehicle Model (cont'd.)

<u>Mod l</u> <u>Code</u>	<u>Vehicle</u> <u>Line</u>	<u>Includes</u>	<u>Model</u> <u>Years</u>
<u>Chrysler (06)</u>			
07	LeBaron	S, Medallion, Salon	'77 on
09	Cordoba	Crown, 300	
10	Newport/New Yorker	Town and Country, Brougham, Custom, Royal, 300 (through 1971)	
98	Other (automobile)		
99	Unknown (automobile)		
<u>Dodge (07)</u>			
01	Dart	170, 270, Custom, GT, Swinger, Sport, Demon, 340, 360, Special, Special Edition	
02	Coronet/Charger/ Magnum	Brougham, Custom, Super Bee, Crestwood, Deluxe, XE, R/T, 440, 500	
03	Polara/Monaco	Custom, Special, Police, Taxi, Crestwood, Brougham	
04	Royal Monaco		
05	Challenger	R/T, T/A, Rallye	70-74
06	Aspen	Custom, Special Edition, Police	
07	Diplomat	Medallion, "S", Salon	
08	Omni	024, De Tomaso	
09	Mirada		
10	St. Regis		
11	Aries		
33	Challenger-Import		78 on
34	Colt	GT, Custom, Carousel	
71	Ramcharger		
72	D50/Colt Pickup		
73	D, W-Series Pickup		
74	Van	Sportsman Van, Royal, Maxiwagon	
81	Medium/Heavy: CBE		
82	Medium/Heavy: COE, low entry		
83	Medium/Heavy: COE, high entry		
84	Medium/Heavy: unk. engine location		
85	Medium: Bus (not van based)		
88	Other (truck)		
89	Unknown (truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Dodge]		

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Imperial (08)</u>			
10	Imperial	Imperial LeBaron	thru 75
98	Other (automobile)		
99	Unknown (automobile)		
<u>Plymouth (09)</u>			
01	Valiant/Duster/Scamp	100, Taxi, Brougham, Signet, Custom, Special 340, Special 360	
02	Satellite/Belvedere	Belvedere I, II, GTX, Road Runner (through 1974), Brougham, Sebring, Sebring Plus, Superbird	
03	Fury	I, II, III, Road Runner (1975), Suburban, Salon, VIP, Sport	
04	Gran Fury	Sedan, Brougham, Custom, Sport, Suburban	
05	Barracuda	Formula "S", 340, Gran Coupe, AAR Cuda	
06	Volare	Custom, Premier, Road Runner (1976 on), Police	
07	Caravelle		
08	Horizon	TC-3, Turismo	
11	Reliant		
31	Cricket		
32	Arrow	GS, GT, Fire Arrow	
33	Sapporo		
34	Champ	Custom	
71	Trailduster		
72	Arrow pickup		
74	Van (Voyager)		
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Plymouth]		
<u>Ford (12)</u>			
01	Falcon	Falcon-Futura (through 1969)	thru 70
02	Fairlane	500, 500 XL, Fairlane-Torino (1968-1970)	thru 70
03	Mustang/Mustang II	Mach I, Boss, Grande, Cobra, Cobra II, Ghia	
04	Thunderbird	All sizes, Town Landau, Heritage	
05	LTD II	Squire, Brougham	77-79
06	LTD/Galaxy/Custom	XL, Landau, Ranch Wagon, Country Squire, S, 500, 500 XL, Brougham, Crown Victoria	
07	Ranchero	500, GT, Squire, Custom	
08	Maverick	Grabber	70-77
09	Pinto	MPG, Pony, ESS	71-80

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>Ford (12) (cont'd.)</u>			
10	Torino/Gran Torino	Elite, GT, Cobra, Sport, Squire, Brougham	71-76
11	Granada	Ghia, L, GL, GLX	75-81
12	Fairmont	Fairmont-Futura (1978-1981)	75-81
13	Escort	L, GL, GLX, SS	81
31	English Ford	(e.g, Cortina)	
32	Piesta		78-80
33	Pantera		
71	Bronco		
72	Courier Pickup		
73	F-Series Pickup	F-100 to F-350	
74	Van	E-Series, Econoline, Club Wagon, Chateau	
75	Van derivative	Cutaway based (e.g., box van, van bus/RV), P-Series, parcel	
78	Other (light truck)		
79	Unknown (light truck)		
81	Medium/Heavy: CBE	F-500 through F-800, L/LN/LNT/LT/LS/LTS-series	
82	Medium/Heavy: COE low entry	C/CT-series	
83	Medium/Heavy: COE high entry	CL/CLT-series	
84	Medium/Heavy: unk. engine location		
85	Medium Bus	B-series (not van based)	
88	Other (truck)		
89	Unknown (truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Ford]		
<u>Lincoln (13)</u>			
01	Continental	Town Car	thru 81
02	Mark	I, II, III, IV, V, VI	thru 81
11	Versailles		77-80
98	Other (automobile)		
99	Unknown (automobile)		
<u>Mercury (14)</u>			
02	Cyclone	GT, CJ, Spoiler	thru 71
03	Capri-Domestic		79-81
04	Cougar	Villager, Brougham	67-81
05	Cougar XR7*	*(Cougar and Cougar XR7 are different models in 1981)	74-81
06	Marquis/Monterey	Marauder, X-100, Parklane, Colony Park, S-55, Custom, Brougham	67-81
08	Comet	Caliente, Capri (1966-1967), GT, Voyager, 202	

V13  
(5)

Variabl Name: V hicl Model (c nt'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Mercury (14) (cont'd.)</u>			
09	Bobcat		75-80
10	Montego	GT, MX, Villager, Brougham	72-76
11	Monarch	Ghia	75-81
12	Zephyr	Z7	78-81
13	Lynx		81
31	Capri-Import	Capri (1970-1978), Capri II	70-78
98	Other (automobile)		
99	Unknown (automobile)		
<u>Buick (18)</u>			
01	Regal/Century/ Special	GS, GS350, GS400, GS455, Luxus, Skylark (thru 1972), Sportswagon, Wagon, Custom, Special, Sport Coupe, Limited	
02	LeSabre/Wildcat/ Centurion	Estate wagon, Custom, Luxus, Sport Coupe, Wagon, Limited	
03	Electra/Electra 225	Custom, Limited, Park Avenue, Wagon	
05	Riviera	"S" Type, "T" Type	
08	Apollo	S/R	73-75
12	Skyhawk	"S" Type, Road Hawk	75-81
15	Skylark	Limited, Sport, S/R, "S", Custom (see code 01)	73 up
31	Opel Kadett		thru 75
32	Opel Manta/1900	Luxus, Rallye, Sports Coupe	thru 75
33	Opel GT		thru 75
34	Opel Isuzu	Deluxe, Sport	76-79
98	Other (automobile)		
99	Unknown (automobile)		
<u>Cadillac (19)</u>			
03	DeVille/Brougham	Calais, 60-Special, Coupe, Sedan, Fleetwood	
04	Limousine	Fleetwood 75, Formal	
05	Eldorado		
06	Commercial Series	(e.g., ambulance/hearse)	thru 81
14	Seville	Elegante	76 up
16	Cimarron		81
98	Other (automobile)		
99	Unknown (automobile)		

Variable Name: Vehicle Mod 1 (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Mod 1 Years</u>
<u>Chevrolet (20)</u>			
01	Malibu/Chevelle	Classic, Concours, Laguna, S-3, Nomad, Greenbriar, Estate, 300, SS-396/454, Deluxe	64 on
02	Caprice/Impala	Classic, Kingswood, Townsman, Estate, Brookwood, Super Sport, Bel Air, Biscayne	
04	Corvette	Stingray	53 on
06	Corvair	Corvair Monza, 500, Corvair Spyder, Corsa	thru 69
07	El Camino	Royal Knight	59 on
08	Nova	Chevy II, Chevy Nova, LN, Concours	thru 79
09	Camaro	SS, LT, Z-28, Berlinetta	67 up
10	Monte Carlo		70 up
11	Vega	GT, Cosworth, Kammback	71 on
12	Monza	2 + 2, Spyder, Sport, Towne Coupe	75-81
13	Chevette	Scooter	76 on
15	Citation	X-11	80 on
16	Cavalier		81
71	Blazer		
72	LUV pickup		
73	C, K-Series Pickup		
74	G-Series Van	Beauville, Chevy Van	
75	Van Derivatives	P-Series, Parcel Van	
76	Suburban		
78	Other (light truck)		
79	Unknown (light truck)		
81	Medium/Heavy: CBE	C50, C60 and C65 series, M60 and M65 series, H70, H80 and H90 series, J70, J80 and J90 series, Bison 90	
82	Medium/Heavy: COE low entry	T60 and T65 series	
83	Medium/Heavy: COE high entry	Titan 90	
84	Medium/Heavy: unk. engine location		
85	Bus	S60 series	
88	Other (truck)		
89	Unknown (truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Chevrolet]		

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Oldsmobile (21)</u>			
01	Cutlass	Supreme, Calais, Cruiser, "S", "LS", Salon, Brougham, Vista Cruiser, 442, F-85 (thru 1972), Rallye 350	
02	Delta 88	Royale, Custom, Custom Cruiser Jetstar 88, Delmont 88, Delta, Starfire (thru 1966)	
03	Ninety-Eight	Regency, Luxury	
05	Toronado	Brougham, XSR, Custom	
06	Commercial Series	Chassis Cowl, CKD Chassis	
12	Starfire	"SX"	75-81
15	Omega	Brougham, Salon, F-87, F-85 (1975 on)	73 on
98	Other (automobile)		
99	Unknown (automobile)		
<u>Pontiac (22)</u>			
01	LeMans/Tempest	Grand Am, Safari, T-37, Grand Sport, Luxury, Custom, GTO (thru 1973), Judge, GT-37, Sprint	
02	Bonneville/Catalina	Brougham, Grand Safari, Safari, GrandVille, Executive, 2 + 2, Starchief	
08	Ventura	SJ, Custom, II, Sprint, GTO (1974 on)	77
09	Firebird/Trans Am	Esprit, Formula, Skybird, Redbird, Yellowbird, Spring	68 up
10	Grand Prix	LJ, SJ, Brougham	
11	Astre	Safari, Wagon, SJ, Custom	75-77
12	Sunbird	Sport, Safari, Wagon	76 up
15	Phoenix	LJ, SJ	78 up
16	J-2000		81
98	Other (automobile)		
99	Unknown (automobile)		
<u>GMC (23)</u>			
07	Caballero/Sprint		
71	Jimmy		
73	C, K-Series Pickup		
74	G Van/Vandura, Rally Van		
75	Van Derivatives	P-Series, Value Van	
76	Suburban		
78	Other (light truck)		
79	Unknown (light truck)		
81	Medium/Heavy: CBE	C-5000, C-6000, and C-7000 series, Brigadier 8000, Brigadier 9500, General 9500	

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>GMC (23) (cont'd.)</u>			
82	Medium/Heavy: COE low entry	W-6000, W-7000	
83	Medium/Heavy: COE high entry	Astro 95	
84	Medium/Heavy: unk. engine location		
85	Bus	B-6000	
88	Other (truck)		
89	Unknown (truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [GMC]		
<u>Other domestic (29)</u>			
01	Studebaker/Avanti		
02	Checker		
98	Other (automobile)	[e.g., Desoto]	
<u>Volkswagen (30)</u>			
01	Karmann Ghia	1300, 1500	
02	Beetle		
03	Super Beetle		
04	411/412	Squareback, Fastback	
05	Squareback/Fastback	Type 3, 1600	
06	Rabbit		
07	Dasher		
08	Scirocco		
09	The Thing		
10	Jetta		
72	Rabbit Pickup		
74	Van/Vanagon/Camper		
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Volkswagen]		
<u>Alfa Romeo (31)</u>			
01	Spider	Veloce, 2000/1750, all roadsters	
02	Sports Sedan	Alfetta, Berlina, 2000/1750, Giulia Super, 4 door sedans	
03	Sprint Veloce	Alfetta GT 2000 GTV, 1750 GTV, Giulia Sprint GT, all 2 door coupes	
98	Other (automobile)		
99	Unknown (automobile)		

Variable Name: Vehicle Model (cont'd.)

<u>Model Cod</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Year</u>
----------------------	-------------------------	-----------------	-----------------------

Audi (32)

01	Super 90		
02	100	LS, GL	
03	Fox		
04	4000		
05	5000		
98	Other (automobile)		
99	Unknown (automobile)		

Austin/Austin Healey (33)

01	Marina	GT	
02	America		
03	Healey Sprite		
04	Healey 3000	Healey 100	
05	Mini		
98	Other (automobile)		
99	Unknown (automobile)		

BMW (34)

01	1600, 2002	Tii	
02	Coupe	3.0CS, 2800 CS	
03	Bavaria Sedan	2500, 2800	
04	630, 633		
05	320i		
06	528i, 530i		
07	733i		
61	0- 50 cc		
62	51-124 cc		
63	125-349 cc		
64	350-449 cc		
65	450-749 cc		
66	750 cc or over		
69	Unknown (cc)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [BMW]		

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Datsun (35)</u>			
01	F-10		
02	200 SX		
03	B210/210/1200	Honeybee	
04	240/260/280	Z, ZX, 2 + 2	
05	310		
06	510	PL	
07	610	PL	
08	710	PL	
09	810		
10	Roadster (SPL 311/ SRL 311)	1600/2000 Convertible	thru 70
11	PL 411/RL 411		
72	Pickup		
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Datsun]		
<u>Fiat (36)</u>			
01	124 (Coupe/Sedan)	Sport	
02	124 (Spider)	Spider 2000	
03	Brava/131		
04	850 (Coupe & Spyder)		
05	128		
06	X-1/9		
07	Strada		
98	Other (automobile)		
99	Unknown (automobile)		
<u>Honda (37)</u>			
01	Civic	1300, 1500, CVCC	
02	Accord	LX, CVCC	
03	Prelude		
04	600	Coupe, Sedan	
61	0- 50 cc		
62	51-124 cc		
63	125-349 cc		
64	350-449 cc		
65	450-749 cc		
66	750 cc or over		
69	Unknown (cc)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Honda]		

Variabl Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Isuzu (38)</u>			
01	Gemini		
72	Rodeo (Pick-up)		
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Isuzu]		
<u>Jaguar (39)</u>			
01	XJ-S Coupe		
02	XJ6/XJ12 Sedan/Coupe	L, XJ, C, 420/340 Sedans	
03	XK-E	2 + 2, V-12 roadster	
98	Other (automobile)		
99	Unknown (automobile)		
<u>Lancia (40)</u>			
01	Beta Sedan/HPE		
02	Beta Coupe/Zagato		
03	Scorpion		
98	Other (automobile)		
99	Unknown (automobile)		
<u>Mazda (41)</u>			
01	RX2		
02	RX3		
03	RX4		
04	RX7		
05	GLC		
06	Cosmo		
07	626		
08	808		
09	Mizer		thru 76
10	R-100		thru 72
11	618/616		
12	1800		
72	Pick-up		
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Mazda]		

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<b><u>Mercedes-Benz (42)</u></b>			
01	200/220/230/240/250/ 280/300 (Sedan and 5 passenger Coupe "C" only)	SE, CD, D, SD, TD, CE, E [excludes 280 S, 280 SE (1975 on), 300 SD Sedan (see Code 07)]	
02	230 SL/280 SL (2 passenger)		
03	350 SL/450 SL/380 SL		
04	350 SLC/450 SLC/380 SLC		
05	300 SEL/280 SEL		
06	450 SEL/380 SEL		
07	450 SE	280 S, 280 SE (1975 on), 300 SD Sedan	
08	600/6.9 Sedan	Pullman	
81	Medium/Heavy: CBE		
82	Medium/Heavy: COE low entry		
83	Medium/Heavy: COE high entry		
84	Medium/Heavy: unk. engine location		
85	Medium: Bus		
88	Other (truck)		
89	Unknown (truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Mercedes-Benz]		

**MG (43)**

01	MG Midget		
02	MGB		
03	MGB GT		
04	MGA		
05	TA/TC/TD/TF		
06	MGC	MGC/GT	
98	Other (automobile)		
99	Unknown (automobile)		

**Opel See Buick--(18)**

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Y ars</u>
<u>Peugeot (44)</u>			
01	304		
02	403		
03	404		
04	505/504		
05	604	SL	
98	Other (automobile)		
99	Unknown (automobile)		
<u>Porsche (45)</u>			
01	911	S, E, T, SC, Carrera	
02	912/912E		
03	914	914/6	
04	924	Turbo	
05	928		
06	930/Turbo		
98	Other (automobile)		
99	Unknown (automobile)		
<u>Renault (46)</u>			
01	LeCar	5	
02	10/Dauphine/ Caravelle/R-8		
03	12	R12	
04	15	R15TL	
05	16		
06	17	R17, Gordini Coupe	
07	R18i		
98	Other (automobile)		
99	Unknown (automobile)		
<u>Saab (47)</u>			
01	99/99E/900	Turbo	
02	Sonnet	Sonnet III, Sonnet 97	
03	95/96/97		
98	Other (automobile)		
99	Unknown (automobile)		

## Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Subaru (48)</u>			
01	FE/GF/DL/STD/GL/G/ GLF	4 wheel drive	
02	Star		
03	360		
72	Brat	DL, GL	
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Subaru]		
<u>Toyota (49)</u>			
01	Corona	Custom, Deluxe, Mark II, 1900, 2000	
02	Corolla	1100, 1200, 1600, Deluxe, Custom, SR 5	
03	Celica	1900, 2000	
04	Celica Supra		
05	Cressida		
06	Crown	2300, 2600	
07	Carina	2000	
08	Tercel		
09	Starlet		
71	Landcruiser		
72	Pick-up		
78	Other (light truck)		
79	Unknown (light truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Toyota]		
<u>Triumph (50)</u>			
01	Spitfire	I, II, III, IV, 1500	
02	GT6		
03	TR4	TR3, TR2, TR4A	
04	TR6	TR 250	
05	TR7/TR8		
06	Herald	Vitesse	
07	Stag		
61	0- 50 cc		
62	51-124 cc		
63	125-349 cc		
64	350-449 cc		
65	450-749 cc		
66	750 cc or more		
69	Unknown (cc)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Triumph]		

Variable Name: Vehicl Model (cont'd.)

Model Code	Vehicle Line	Includes	Mod 1 Y ars
<u>Volvo (51)</u>			
01	122	S	
02	142/144/145	S, Deluxe, GL, GLS, E	
03	164	S, E	
04	242/244/245	Deluxe, DL, GLE, GLT, GL	
05	262/264/265	GL	
06	1800	E, S, ES	
07	P-544		
81	Medium/Heavy: CBE		
82	Medium/Heavy: COE low entry		
83	Medium/Heavy: COE high entry		
84	Medium/Heavy: unk. engine location		
85	Medium: Bus		
88	Other (truck)		
89	Unknown (truck)		
98	Other (automobile)		
99	Unknown (automobile)		
00	Unknown [Volvo]		

Other import (59)

31	Aston Martin		
32	Bricklin		
33	Citroen		
34	Delorean		
35	Ferrari		
36	Hillman		
37	Jensen		
38	Lamborghini		
39	Lotus		
40	Maserati		
41	Morris		
42	Rolls Royce/Bentley		
43	Rover		
44	Simca		
45	Sunbeam		
46	TVR		
98	Other (automobile)	[e.g., Morgan, Singer]	

Variable Name: Vehicle Model (cont'd.)

**MOTORED CYCLE (60-69)**

BSA (60)

Ducati (61)

Harley-Davidson (62)

Kawasaki (63)

Moto-Guzzi (64)

Norton (65)

Suzuki (66)

Yamaha (67)

Other Motored Cycle (69)

61 0- 50 cc  
62 51-124 cc  
63 125-349 cc  
64 350-449 cc  
65 450-749 cc  
66 750 cc or over  
69 Unknown (cc)

Mo-ped (70)

61 0- 50 cc  
62 51-124 cc  
69 Unknown (cc)

**TRUCKS AND BUSES (80-83, 85-88)**

Brockway (80)

Diamond Reo (81)

Freightliner or White Freightliner (82)

FWD (83)

Kenworth (85)

Mack (86)

Peterbilt (87)

White (88) [Prior to 19\_\_]

80 Motor Home  
81 Medium/Heavy: CBE  
82 Medium/Heavy: COE low entry  
83 Medium/Heavy: COE high entry  
84 Medium/Heavy: unknown engine location  
85 Bus\*  
86 Bus: flat front, front engine  
87 Bus: flat front, rear engine  
88 Other (truck)  
89 Unknown (truck)

\*Use code "85" (Bus) if the frontal plane or the engine location is unknown.

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model
<u>International Harvester (84)</u>			
71	Scout	Scout II, Utility Pickup, SS-2, Roadstar, Terra Traveltop, 800 Series, Traveler	
73	Pickup/Panel	R100, 900A-1500C, 1000D-1500D, 1010-1510, 100-500	
75	Multistop	Metro RM 120-160, MS1210, MS1510	
76	Travellall	1010-1210, 100-200	
78	Other (light truck)		
79	Unknown (light truck)		
80	Motor Home	1310 MHC, 1500 MHC	
81	Medium/Heavy: CBE	Loadstar/Fleetstar, Paystar, CBE Transtar (4200), S-Series, Mixer	
82	Medium/Heavy: COE low entry	CO, VCO, DCO (190-1950), Cargostar, LFM 5370 (Garbage)	
83	Medium/Heavy: COE high entry	DCO, DCOT, UCO, VCOT, (405 Series), COE Transtar, Unistar, Conco 707B, 9600 Series	
84	Medium/Heavy: unk. engine location		
85	Bus: Conventional	R153-1853, Loadstar 1603-1853	
86	Bus: flat front, front engine	173 FC, 183 FC	
87	Bus: flat front, rear engine	183RE, 193RE, (transit)	
88	Other (truck)	Fire Truck - R140-R306, CO 8190	
89	Unknown (truck)		
00	Unknown [International Harvester]		

Other (Truck or Bus) (95)

01	Autocar	
02	Auto-Union-DKW	
03	Divco	
04	Western Star	
78	Other (light truck)*	
88	Other (truck)	[e.g., Oshkosh, IVECO]

Other make (98)

00	Unknown
99	Unknown (automobile)**

\*Use code "88" [Other (truck)] if the vehicle's GVWR is unknown.

\*\*Occurs when make is not explicitly listed and it is unknown whether make is domestic or import.

Variable Name: Vehicle Model (cont'd.)

Unknown make (99)

00 Unknown (as to automobile, motored cycle, light truck, or truck)  
 79 Unknown (light truck)\*  
 89 Unknown (truck)\*  
 99 Unknown (automobile)\*

Source: Primary source is vehicle inspection; secondary sources include police report and interviewees.

Remarks:

The model codes are organized into general groups. These groups are:

01-29 domestic passenger car (automobile)  
 31-59 import passenger car (automobile)  
 60-69 motored cycles (including motorcycles, mini-bikes, motor scooters, dirt bikes, and mo-peds)  
 70-76 light trucks (including truck based utility vehicles, light duty pickup trucks, standard pickup trucks, vans, van based station wagons, van based busses, van derivatives, and truck based station wagons)  
 78-79 other, unknown (light truck)  
 80-87 trucks and busses [includes all trucks over 10,000 lbs. GVWR except those pickup type trucks mentioned under Body Type (V14) code "50" (Pickup), and all busses except those that are van based]  
 87,89 other, unknown [truck (or bus over 10,000 lbs. GVWR)]  
 97,99 other, unknown [automobile (domestic or import)]  
 00 unknown (whether automobile, motored cycle, light truck, or truck)

Vehicles with model code "71" (truck based utility vehicles) are coded under Body Type (V14) as "43" (On or off road vehicle) and thus are classified as "other motor vehicles" for sampling purposes (see A02, Case Number--Stratification, or A08, Final Stratification). On the other hand, model codes "76" (truck based station wagon) are coded as "52"s (Truck based station wagon) on Body Type (V14) and treated as "trucks" for sampling purposes.

If Vehicle Make (V12) is coded "99" (Unknown), then model must be coded "00" (Unknown).

\*Use these codes if you know more detail about the model than these codes indicate (e.g., unknown pickup truck, unknown CBE tractor semi-trailer, unknown bus, or unknown car pickup body). V14, Body Type, is available to code the additional information.

Variable Name: Body Type

Format: 2 columns - numeric

Beginning  
Column 23

Element Values:

Automobiles

- 01 Convertible
- 02 2-door sedan, hardtop, coupe
- 03 4-door sedan, hartop
- 04 3 or 5-door hatchback coupe
- 05 Auto with pickup body (e.g., El Camino, Ranchero, etc.)
- 06 Station wagon excluding van-based or truck-based station wagons
- 08 Other automobile
- 09 Unknown type automobile

Motorcycles

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

Busses

- 25 School bus
- 26 Cross country (commercial service)
- 27 Transit bus (public service)
- 28 Other bus
- 29 Unknown type bus

Special Vehicles

- 35 Snowmobile
- 36 Farm equipment other than trucks
- 37 Dune buggy, swamp buggy, etc.
- 38 Construction equipment other than trucks
- 39 Ambulance, hearse type only
- 40 Large limousine - more than four doors
- 41 Self propelled campers and motor homes
- 42 Fire truck
- 43 On or off road vehicle - Jeep CJ-5, Bronco, Blazer, Scout, etc.
- 44 Other special vehicle

Variable Name: Body Type (cont'd.)

Trucks

- 50 Pickup including those with stake and small dump bodies and campers
- 51 Van (VW Bus, small Dodge Van, van-based station wagon, not moving van or horse van)
- 52 Truck based station wagon (Chevrolet Suburban, International Travelall)
- 53 Chassis without body (less than or equal to 10,000 lbs. GVWR)
- 54 Chassis without body (greater than 10,000 lbs. GVWR)
- 55 Straight truck over 10,000 lbs. GVWR
- 56 Truck tractor pulling no trailer
- 57 Truck tractor pulling one or more trailers
- 60 Unknown type truck
- 99 Unknown body type

Source: Primary source is vehicle inspection; secondary sources include police report and interviewees.

Remarks:

Note the selection of any code is based solely on its body type rather than usage or ownership (i.e., code the vehicle as it was born).

Code "01" (Convertible) refers to automobiles with soft or removable hard shells which are considered to be "convertibles". A removable hardtop is one that can be removed without tools. Removable solid roof sections that were bolted on at the factory are considered standard roofs. Cars with sun roofs should be considered as having a standard roof. The position of the top at the time of the collision is not considered when coding the Body Type.

Code "04" (3 or 5-door hatchback coupe) includes those automobiles with hinged rear "doors" which include large glass cargo portals as found on fastbacks or hatchbacks. Station wagons with hinged doors which open vertically are excluded from this category since they are coded "06" (Station wagon excluding van-based or truck-based station wagon).

Code "08" (Other automobile) refers to other automobiles such as the one-door I Setta, street rods without doors, etc.

A motorcycle (motored cycle) is defined as any motor vehicle having a seat or saddle for the use of the rider and designed to travel on not more than 3 wheels in contact with the ground, but excluding a tractor (Source: Uniform Vehicle Code and Model Traffic Ordinance - revised 1968, section 1-135).

Code "15" (Motorcycle) is restricted to "standard" motorcycles [i.e., it excludes minibikes, motorscooters, or any motorcycles with sidecars attached--these are coded under "17" (Other motorcycle)].

## Variable Name: Body Type (cont'd.)

Code "16" [Moped (motorized bicycle)] refers to a motor driven cycle with mechanical linkage to permit muscular propulsion (pedals) and a power source which provides a maximum of 2 brake horsepower. The power source will not be capable of propelling the vehicle unassisted at a speed greater than 30 m.p.h. on a level road.

Codes "25" through "29" refer to vehicles (excluding vans, truck-based station wagons, etc.) which are designed to transport more than ten persons.

Code "25" (School bus) refers to vehicles which are specifically designed for usage by a school corporation for the purpose of transporting children independent of usage and ownership at the time of the accident. Body type alone, independent of color (e.g., yellow), is the determining criterion.

Code "26" (Cross country) refers to busses having adjustable seat backs and only one normal entry-exit door. This bus is of the type most commonly used for commercial cross country service; however, recall that body type alone (independent of usage and ownership) is sufficient by itself to use this code.

Code "27" (Transit bus) refers to busses having fixed seatbacks and two normal entry-exit door systems. This bus is of the type most commonly used for intra-city commuter service; however, recall that body type alone (independent of usage and ownership) is sufficient by itself to use this code.

Code "28" (Other bus) is used for busses which are exclusive of the above bus codes or in cases where the investigator has identified and photographed the vehicle but is uncertain as to which of the above bus codes is to be used.

Code "29" (Unknown type bus) is used when the investigator has no information which would allow more specific classification in one of the bus codes.

Code "37" (Dune buggy, swamp buggy, etc.) also can be used if an amphibious vehicle is encountered.

Code "38" excludes passenger vehicles which are owned/leased and operated by construction related firms. These should be assigned codes "01" through "06" unless the vehicle has been modified, in which case, it should be coded "08". Construction related includes state or municipally owned road cleaning equipment, or utility related equipment where the model is essentially a special vehicle ("38"). However, some of these vehicles are single unit trucks modified with the cleaning or repair equipment attached front or rear. In the latter case, code straight truck over 10,000 lbs. GVWR ("55").

Code "39" (Ambulance, hearse type only) refers to hearse body vehicles which may be used for ambulance, funeral, or other purposes (including private usage). Note that only ambulances with a hearse body style are coded here. Ambulances other than hearse types are coded according to their particular body type. These vehicles will subsequently be identified as ambulances under V46, Vehicle Special Use.

Variable Name: Body Type (cont'd.)

Code "42" (Fire truck) refers only to those vehicles which have a body type which is uniquely designed to fight fires. It excludes ancillary fire department vehicles such as station wagons, etc.

Code "44" (Other special vehicle) is used for special vehicles which are exclusive of the above special vehicle codes (e.g., go-cart).

Code "50" (Pickup) includes all trucks based on a pickup chassis, even if greater than 10,000 lbs. GVWR (e.g., Chevrolet C10, Ford F350, Dodge D300, etc.).

Code "51" (Van) includes VW bus, Econoline, Chevy Van, Dodge Tradesman, and station wagons based on these models; also included are van-based light trucks (> 10,000 lbs. GVWR), and step vans.

Codes "51" and "52" (Van; truck-based station wagon) are to be used in instances where these trucks are used as busses, although not specifically designed for that purpose. It is permissible to consider these trucks as other motor vehicles while stratifying due to limited information on the police report, yet code them under trucks on this variable.

Code "60" (Unknown type truck) can be used when you know that a truck tractor was involved, but it is unknown if a trailer was attached.

Variable Name: Towed Trailing Unit (V14 ≠ 57)

Format: 1 column - numeric

Beginning  
Column 25

Element Values:

0 No (or V14 = 57)  
1 Yes

Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

Remarks:

If V14 (Body Type) is coded "57" (Truck tractor pulling one or more trailers), then code "0" (No) for this variable.

Code "0" (No) if no wheeled unit was being towed by the vehicle.

Code "1" (Yes) includes horse trailers, fifth wheel trailers, travel trailers, camper trailers, boat trailers, truck trailers or any other trailer (except as excluded above).

If it is unknown whether or not a trailer was being towed, code "0" (No).

If one motor vehicle is towing another motor vehicle (as compared to a trailer), then the number of in transport vehicles is determined by the type of linkage between them. If the linkage is fixed, then the combination is one motor vehicle. If the linkage is nonfixed, then each vehicle is considered in transport (see V07, Vehicle Number, for the definition of "fixed linkage"). If the linkage is fixed, code "1" (Yes) for this vehicle. This is true even if the towed vehicle separates before, during, or following the first harmful event (A10, First Harmful Event). If the linkage is nonfixed and the power unit is involved in the accident, then code "1" (Yes). Once again, this is true even if the towed vehicle separates before, during, or following the first harmful event. If the power unit or the towed unit was not involved (no harm--see ANSI D16.1-1976, section 2.3.3, page 8), then no form is completed on that vehicle. If the towed unit was involved, then on its form code "0" (No).

Variable Name: Gross Vehicle Weight Rating (GVWR) (V14 = 54-57)

Format: 1 column - numeric

Beginning  
Column 26

Element Values:

- 0 Not truck over 10,000 lbs. GVWR (V14 ≠ 54-57)
- 1 10,001-14,000 lbs.
- 2 14,001-16,000 lbs.
- 3 16,001-19,500 lbs.
- 4 19,501-26,000 lbs.
- 5 26,001-33,000 lbs.
- 6 33,001 lbs. and above
- 9 Unknown

Source: Primary source is the vehicle inspection; secondary sources include interviewees and reference books.

Remarks:

Some information regarding GVWR is contained in the VIN. Proper deciphering of the VIN, using the National Automobile Theft Bureau (NATB) motor vehicle identification manual, may provide the GVWR of the vehicle. In addition, automobile reference books like: Branham Automobile Reference Book, Gasoline Truck Index, Diesel Truck Index, etc., contain GVWR information. Based on vehicle make, model, and year, proper rating can usually be ascertained from these reference books. (NOTE: This variable only applies to the power unit and is a weight rating, not an actual vehicle weight.)

GVWR (Max. GVW) refers to the maximum gross vehicle weight rating of a specified single vehicle. The loaded weight includes the sum of the unloaded vehicle weight, rated cargo load, and 150 pounds times the vehicle's designated seating capacity.

Variable Name: Cab Configuration (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)

Format: 1 column - numeric

Beginning  
Column 27

Element Values:

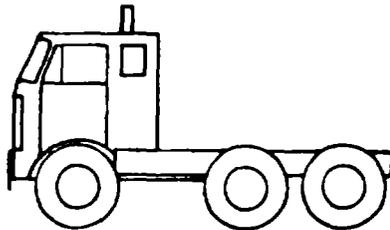
- 0 Not truck over 10,000 lbs. GVWR (V14 ≠ 54-57)
- 1 Cab over engine (COE)
- 2 Conventional (CBE - cab behind engine)
- 3 Cab alongside engine (CAE)
- 8 Other (specify)
- 9 Unknown

Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

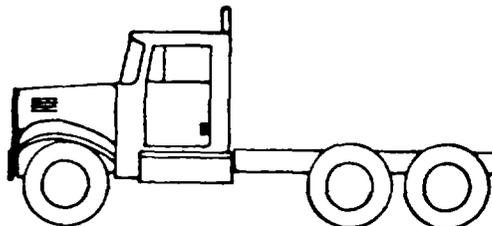
Remarks:

Code            Description

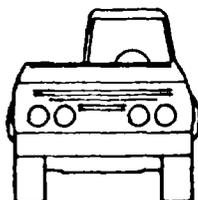
1            Cab over engine (COE)



2            Conventional (CBE - cab behind engine)



3            Cab alongside engine (CAE)



Variable Name: Tractor/Dromedary (Trucks Over 10,000 lbs. GVWR - V14 = 56-57)

Format: 1 column - numeric

Beginning  
Column 28

Element Values:

- 0 No [or (V14 ≠ 56-57)]
- 1 Yes
- 9 Unknown

Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

Remarks:

A dromedary, for NASS purposes, is a tractor that has a separate cargo carrying area on its own frame. If the tractor fits this definition, then use code "1" (Yes). If the tractor does not have a separate cargo carrying area on its own frame, then code "0" (No). Use "9" (Unknown) if it cannot be determined.

Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)

Format: 2 columns - numeric

Beginning Column 29

Element Values:

- |  |   |
|--|---|
| 00 Not truck over 10,000 lbs. GVWR (V14 = 54-57)             | 14 Garbage/refuse   |
| 01 Van (closed top)  | 15 Cement mixer   |
| 02 Van (open top)  | 16 Package delivery (multi-stop or walk-in)   |
| 03 Platform (flatbed)  | 17 Beverage   |
| 04 Platform with added device (e.g., crane or cherry picker) | 18 Wrecker  |
| 05 Stake body  | 19 Chassis/tractor only   |
| 06 Refrigerated (insulated)                                  | 20 Moving van   |
| 07 Drop frame or low bed                                     | 21 Livestock carrier  |
| 08 Tank (liquid or gas)                                      | 22 Utility (body equipped for mobile repair, e.g., electrical utility repair vehicle) |
| 09 Tank (dry bulk)   | 23 Armored truck  |
| 10 Dump  | 24 Other  |
| 11 Pole or logging   | 99 Unknown  |
| 12 Auto or boat carrier                                      |   |
| 13 Mobile home   |   |

Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

Remarks:

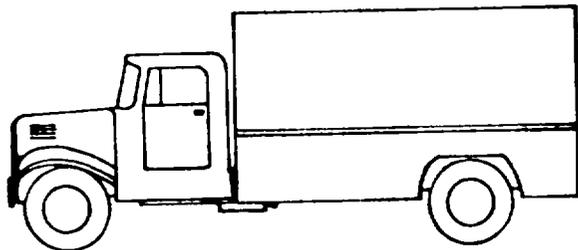
Body Trailer Configurations for Trucks with GVWR >10,000 pounds

Code    Description

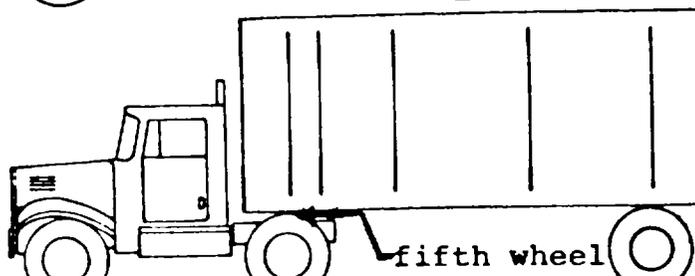
01    Van (closed top) - A fully enclosed body designed primarily for the transportation of package commodities.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 01



V14 = 57  
V15 = 0  
V17 = 2  
V19 = 01



fifth wheel

Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR -  
V14 = 54-57) [cont'd.]

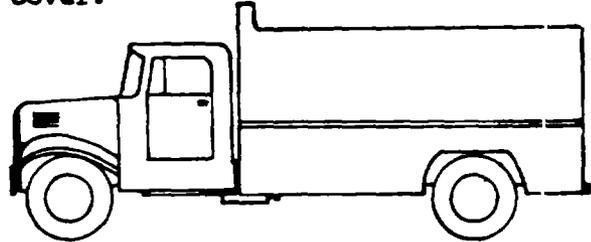
Body Trailer Configurations for Trucks with GVWR > 10,000 pounds

Code    Description

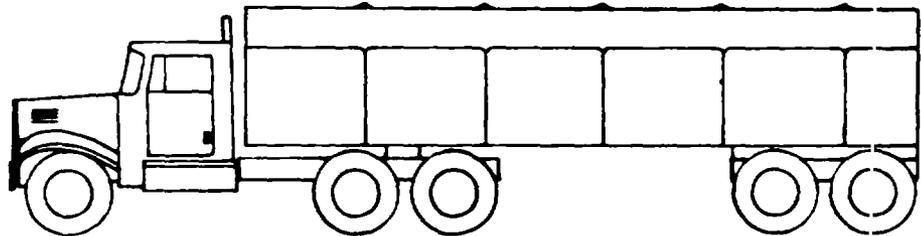
- 02    Van (open top) - A body with high closed sides and ends, and a removable top, which usually is a tarpaulin cover.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 02



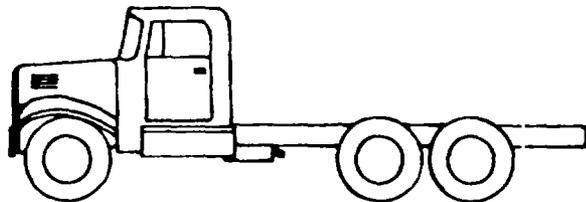
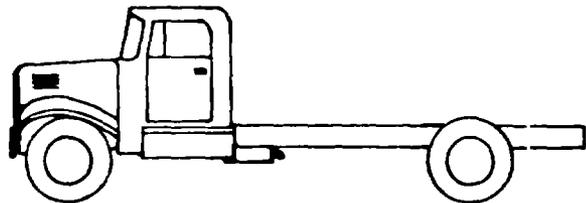
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 02



- 03    Platform (flatbed) - A body having a floor without sides or roof, with or without readily removable stakes which may be tied together with chains, slats or panels.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 03

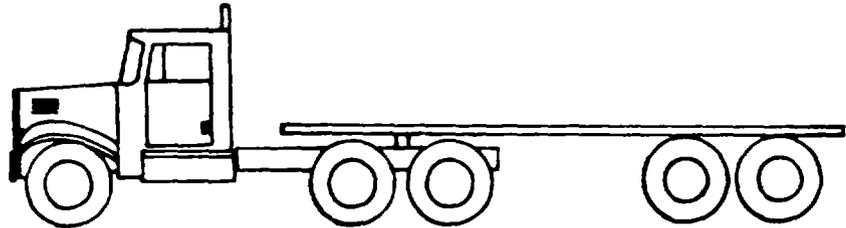


Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVW -  
V14 = 54-57) [cont'd.]

**Body Trailer Configurations for Trucks with GVW > 10,000 pounds**

Code    Description

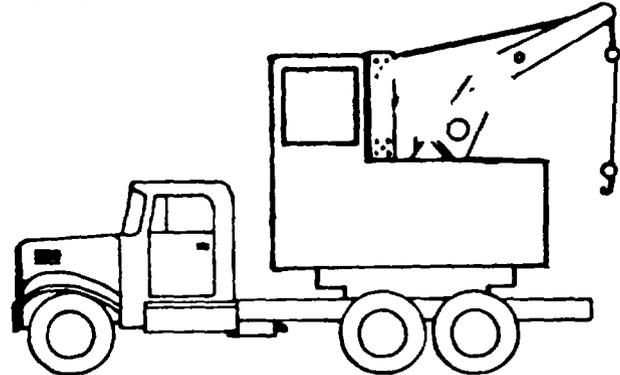
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 03



04 Platform with added device (example: crane or "cherry picker") - A body having a floor without sides or roof on which additional machinery is securely mounted for work or other purposes.

Example:

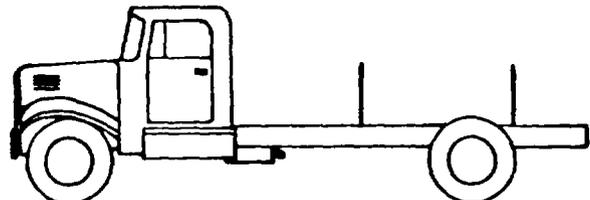
V14 = 55  
V15 = 0  
V17 = 2  
V19 = 04



05 Stake body - A body having a floor without sides or roof with stakes securely mounted around the perimeter to confine the commodity to the cargo area.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 05

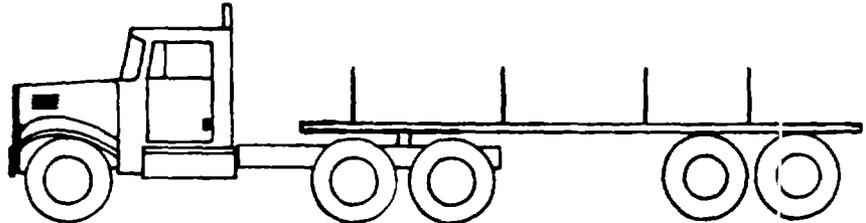


Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR -  
V14 = 54-57) [cont'd.]

Body Trailer Configurations for Trucks with GVWR > 10,000 pounds

Code    Description

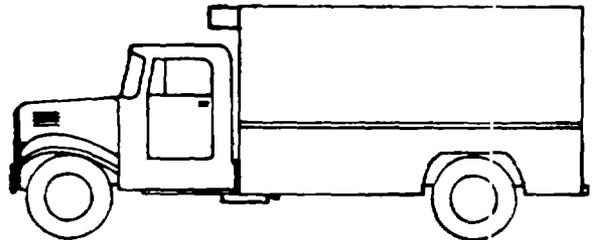
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 05



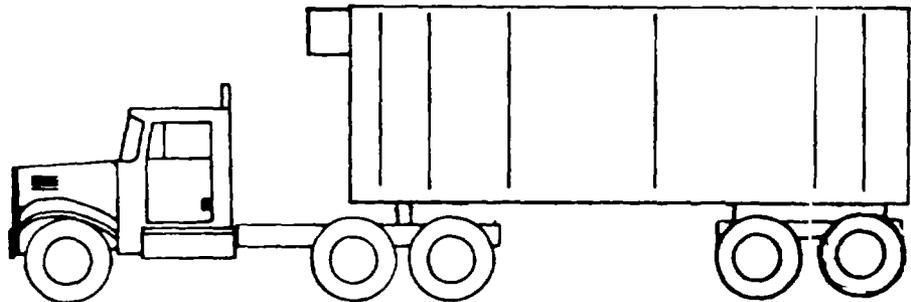
06    Refrigerated (insulated) - A van body designed primarily for the transportation of commodities or the vending of food, beverage, or confectations at controlled temperatures. It may be provided with equipment for refrigeration or heating.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 06



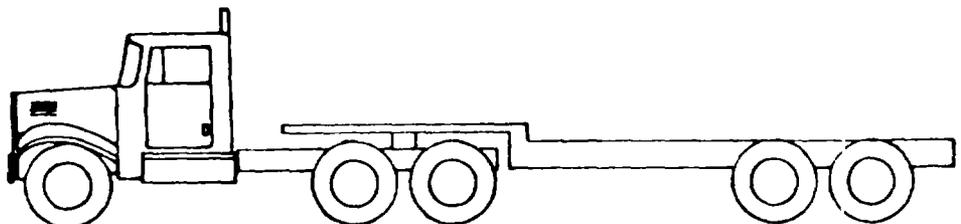
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 06



07    Drop frame or low bed - A trailer with a platform body constructed to provide a low loading height and designed for the transportation of extremely heavy or bulky property.

Example:

V14 = 57  
V15 = 0  
V17 = 2  
V19 = 07



Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR - V14 = 54-57) [Cont'd.]

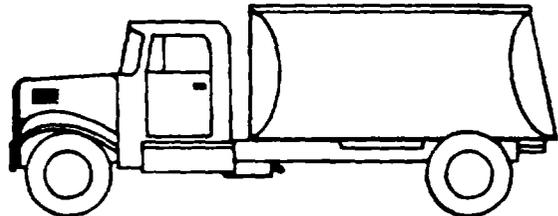
**Body Trailer Configurations for Trucks with GVWR >10,000 pounds**

Code    Description

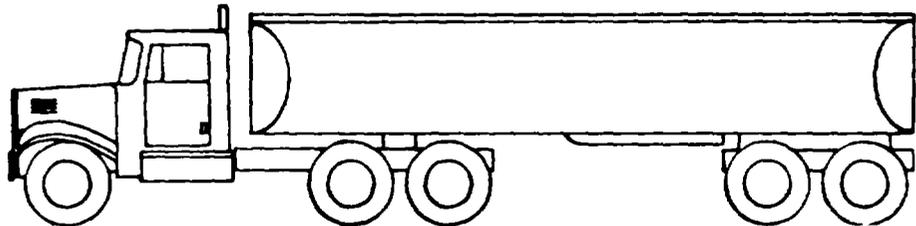
08    Tank (liquid or gas) - A body designed for the transport of bulk liquid commodities (i.e., petroleum, oil, water, etc.).

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 08



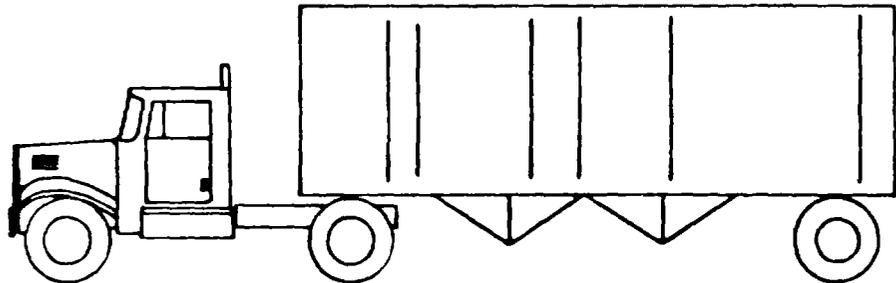
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 08



09    Tank (dry bulk) - A body designed for the transport of bulk dry commodities (i.e., grain or dry chemicals).

Example:

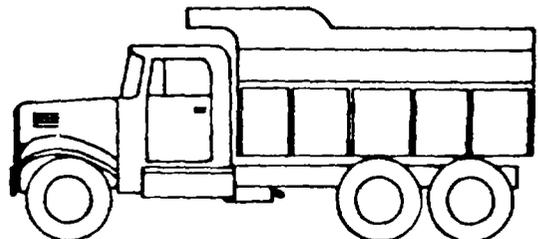
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 09



10    Dump - A low side open box body, designed primarily to transport dry fluid commodities in bulk, which can be tilted or otherwise manipulated to discharge its load by gravity.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 10

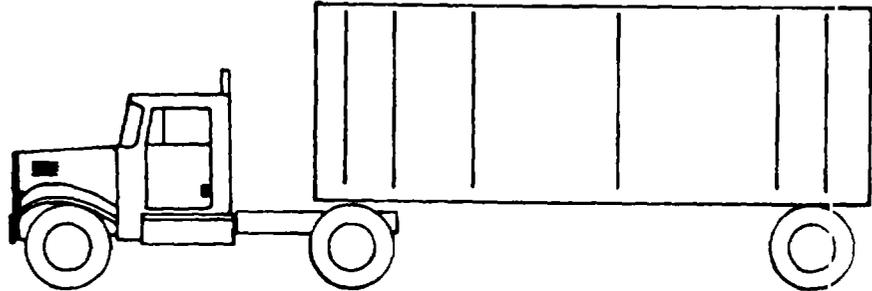


Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR - V14 = 54-57) [cont'd.]

Body Trailer Configurations for Trucks with GVWR > 10,000 pounds

Code    Description

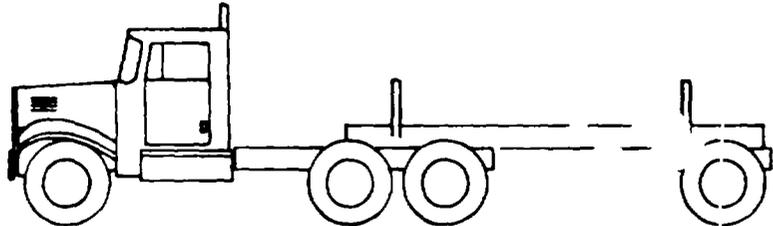
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 10



11    Pole or logging - A body comprised of sill, bolsters, with or without headboard, with provision for uprights, and designed primarily for the transportation of logs, poles, pipes or other loads which may be boomed.

Example:

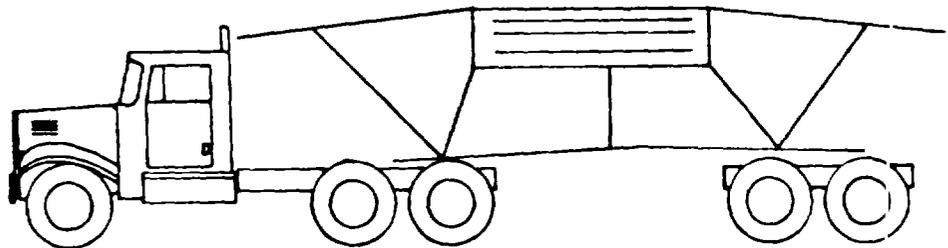
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 11



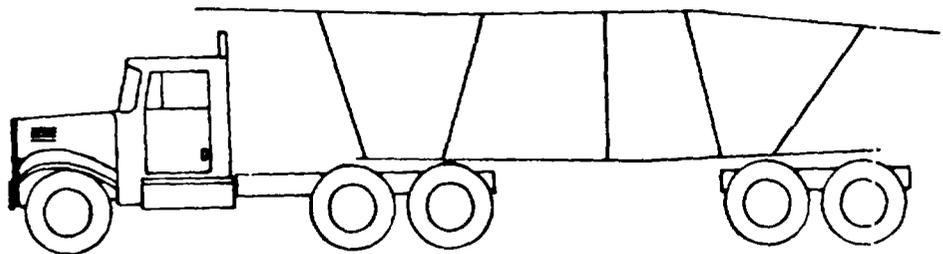
12    Auto or boat carrier - A body designed primarily for the transportation of other transport vehicles.

Example:

V14 = 57  
V15 = 0  
V17 = 2  
V19 = 12



V14 = 57  
V15 = 0  
V17 = 2  
V19 = 12



Variable Name: **Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR - V14 = 54-57) [Cont'd.]**

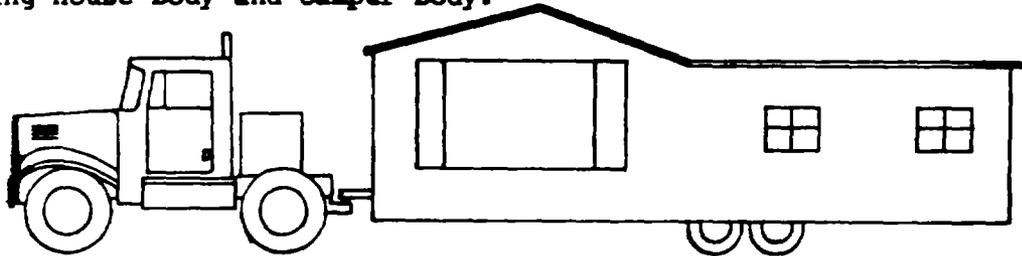
**Body Trailer Configurations for Trucks with GVWR > 10,000 pounds**

**Code    Description**

- 13    Mobile home - A body designed for use as an abode with bunk(s), including house body and camper body.

Example:

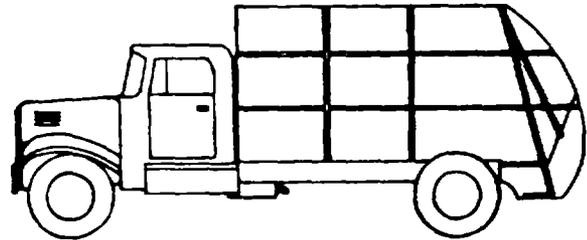
V14 = 57  
V15 = 0  
V17 = 2  
V19 = 13



- 14    Garbage/Refuse - A body designed primarily for the collection of garbage and refuse. It is frequently equipped within the body.

Example:

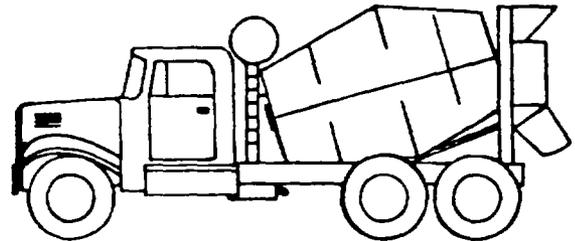
V14 = 55  
V15 = 0  
V17 = 2  
V19 = 14



- 15    Cement mixer - A body designed and equipped to mix or agitate concret .

Example:

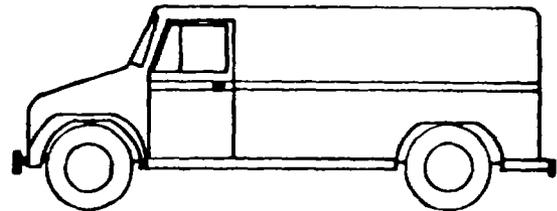
V14 = 55  
V15 = 0  
V17 = 2  
V19 = 15



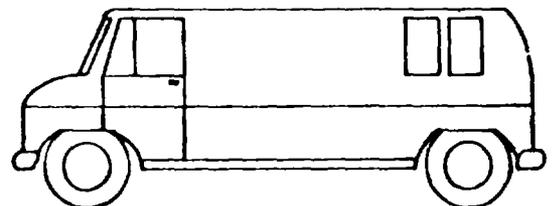
- 16    Package delivery (multi-stop or walk-in) - A fully enclosed body with driver's compartment integral and designed for easy access.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 16



V14 = 55  
V15 = 0  
V17 = 2  
V19 = 16



Variable Name: **Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR - V14 = 54-57) [cont'd.]**

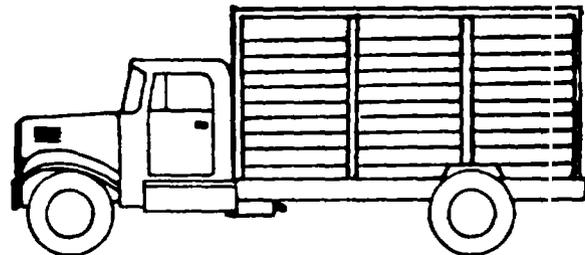
**Body Trailer Configurations for Trucks with GVWR > 10,000 pounds**

**Code    Description**

17    Beverage - A body designed primarily for the transportation of cases, bottled beverages on opened or closed shelves, A-frame, or pallets.

Example:

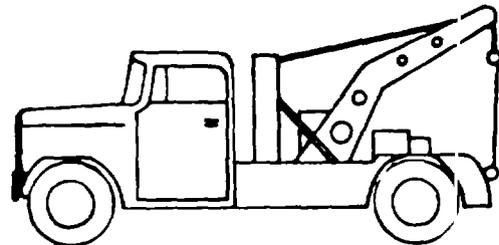
V14 = 55  
V15 = 0  
V17 = 2  
V19 = 17



18    Wrecker - A body designed primarily for the transportation of equipment for salvaging disabled vehicles and equipped with means for hoisting and towing such vehicles.

Example:

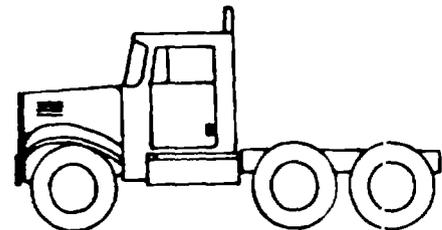
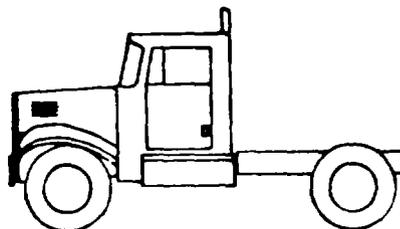
V14 = 55  
V15 = 0  
V17 = 2  
V19 = 18



19    Chassis/tractor only - Any vehicle constructed primarily to pull a semi-trailer, full trailer, pole trailer, house trailer or equipment.

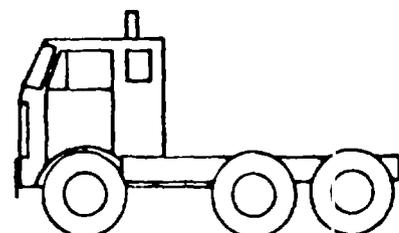
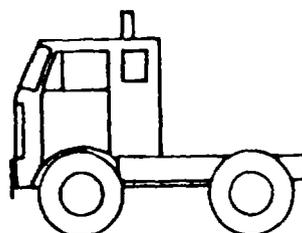
Example:

V14 = 56  
V15 = 0  
V17 = 2  
V19 = 19



**Cab over engine (COE) configuration**

V14 = 56  
V15 = 0  
V17 = 1  
V19 = 19

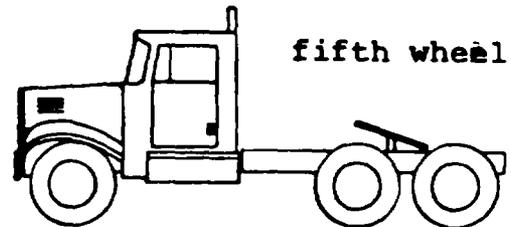


Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR -  
V14 = 54-57) [cont'd.]

Body Trailer Configurations for Trucks with GVWR > 10,000 pounds

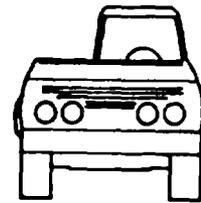
Cab behind engine (CBE) configuration

V14 = 56  
V15 = 0  
V17 = 2  
V19 = 19

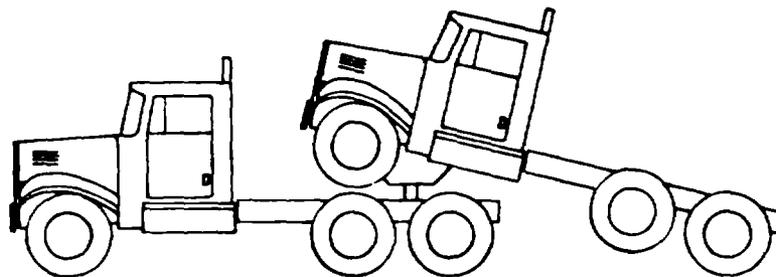


Cab alongside engine (CAE) configuration

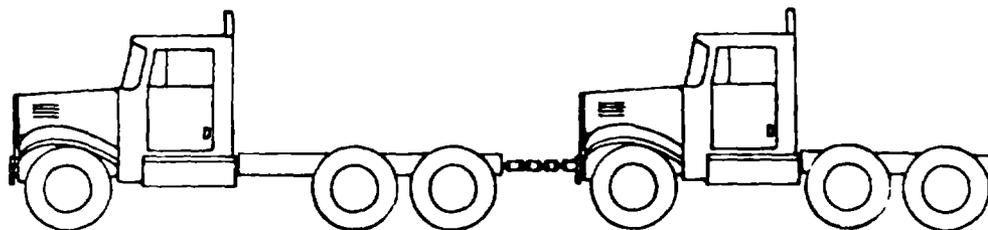
V14 = 56  
V15 = 0  
V17 = 3  
V19 = 19



V14 = 56  
V15 = 1  
V17 = 2  
V19 = 19



V14 = 56  
V15 = 1  
V17 = 2  
V19 = 19



Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR -  
V14 = 54-57) [cont'd.]

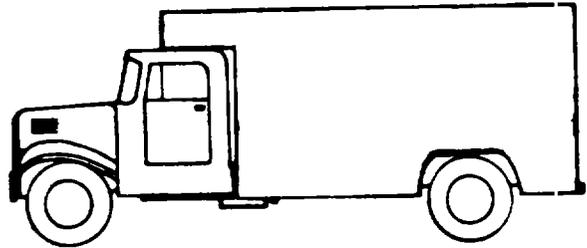
Body Trailer Configurations for Trucks with GVWR > 10,000 pounds

Code    Description

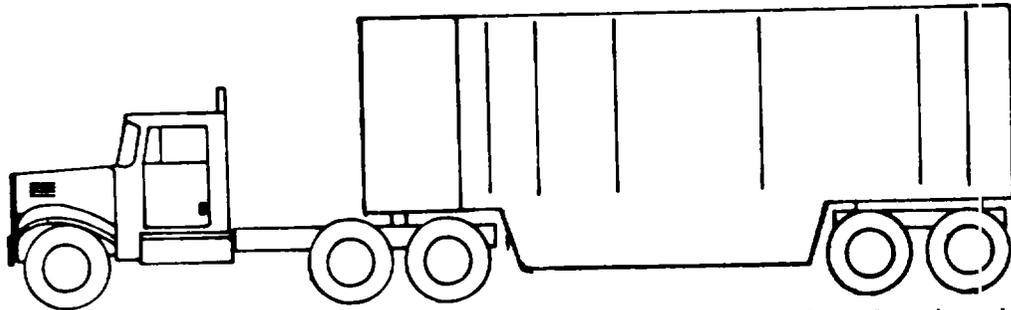
- 20    Moving van - A van body designed primarily for transportation of furniture or household goods. Customarily, when truck-mounted, it includes an integral driver's compartment.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 20



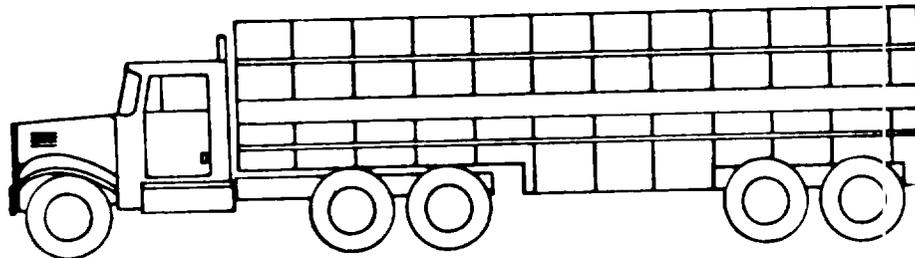
V14 = 57  
V15 = 1  
V17 = 2  
V19 = 20



- 21    Livestock carrier - A rack body with or without roof designed primarily for transportation of livestock.

Example:

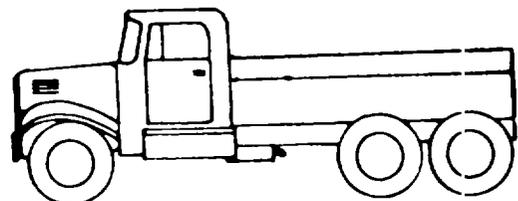
V14 = 55  
V15 = 0  
V17 = 2  
V19 = 21



- 22    Utility (body equipped for mobile repair (example: electrical utility repair vehicle)) - A body designed primarily for the transportation of tools, equipment, and supplies for construction, maintenance, and repair purposes.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 22



Variable Name: Body/Trailer Configuration (Trucks Over 10,000 lbs. GVWR -  
V14 = 54-57) [cont'd.]

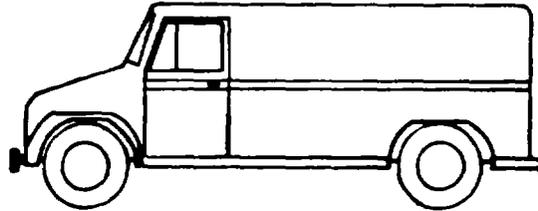
Body Trailer Configurations for Trucks with GVWR > 10,000 pounds

Code    Description

- 23    Armored truck - An enclosed cargo body with integral driver's compartment so constructed as to protect cargo and crew from overt attack.

Example:

V14 = 55  
V15 = 0  
V17 = 2  
V19 = 23



- 24    Other - Includes any body type that cannot be coded as one of the above attributes (01-23). This is determined by the investigator from information on the PAR for vehicles that are not inspected or by inspection of the vehicle.
- 99    Unknown - Includes hit and run vehicles which are not identifiable by body type in the police accident report. This also includes any other vehicle which is not inspected and the information on the PAR is not sufficient to identify the body type.

V20  
V21  
V22  
V23

Variable Name: Number of Axles - Power Unit (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)  
 Number of Axles - 1st Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)  
 Number of Axles - 2nd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)  
 Number of Axles - 3rd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)

Format: 1 column - numeric

Beginning  
Column 31  
32  
33  
34

Element Values:

- |  |                 |
|--|-----------------|
| 0 Not truck over 10,000 lbs. GVWR<br>(V14 ≠ 54-57) | 5 Five          |
| 1 One  | 6 Six           |
| 2 Two  | 7 Seven or more |
| 3 Three  | 8 No trailer    |
| 4 Four   | 9 Unknown       |

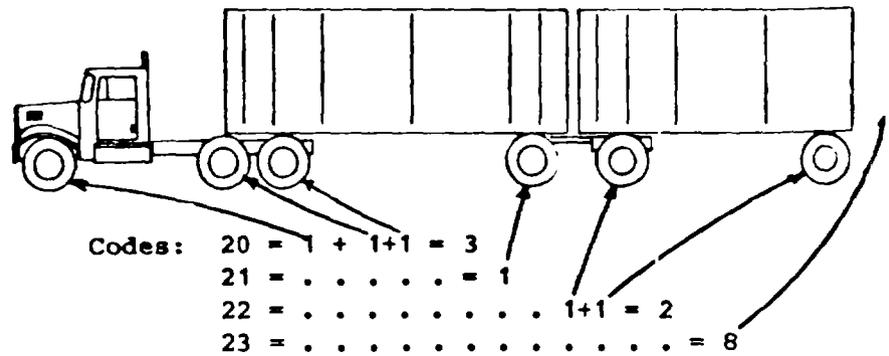
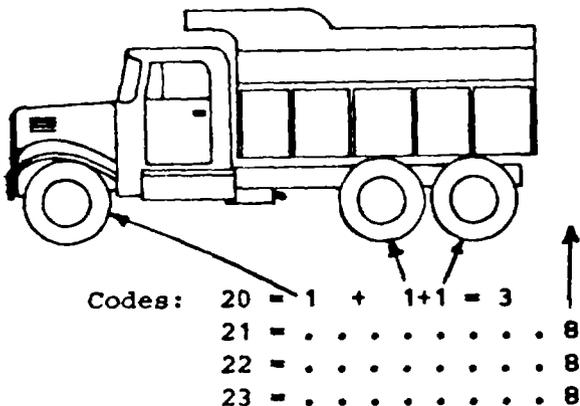
Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs (newspaper, police, etc.), and police report.

Remarks:

Axles are coded for the unit to which they are primarily attached. Axles on a converter dolly are coded for the unit under which they exist.

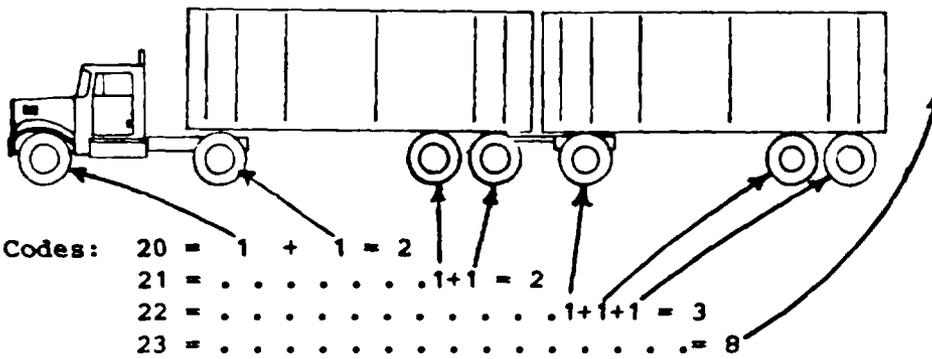
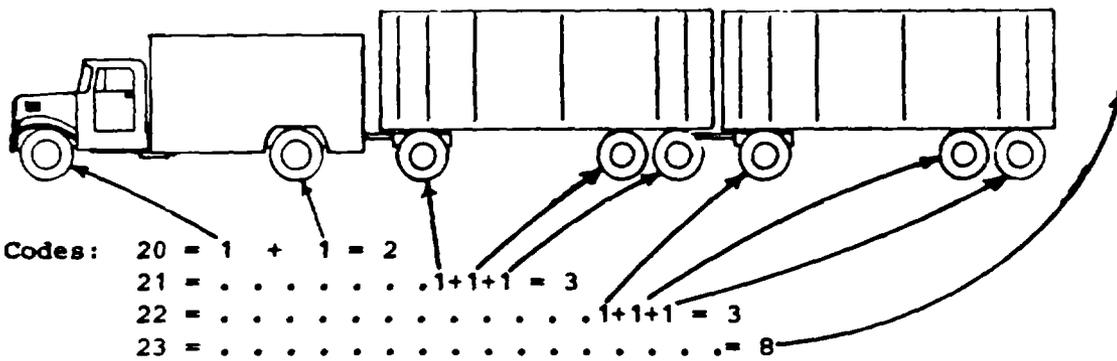
Liftable axles (axles which are intermittently load bearing) are coded independent of their position at the time of the accident; it doesn't matter if they were up or down.

EXAMPLES:



V20  
V21  
V22  
V23  
(2)

Variable Name: Number of Axles - Power Unit (Trucks Over 10,000 lbs. GVWR - V1 = 54-57) [cont'd.]  
 Number of Axles - 1st Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 54-57) [cont'd.]  
 Number of Axles - 2nd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 54-57) [cont'd.]  
 Number of Axles - 3rd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 54-57) [cont'd.]



Variable Name: Type of Brakes (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)

Format: 1 column - numeric

Beginning  
Column 35

Element Values:

- 0 Not truck over 10,000 lbs. GVWR (V14 ≠ 54-57)
- 1 Air
- 2 Hydraulic
- 3 Electric [should not occur]
- 4 Other (specify)
- 9 Unknown

Source: Primary sources are the vehicle inspection and the driver interview.

Remarks:

If the vehicle qualifies as a heavy truck, then the investigator should be sure to write on page 2 of the Driver Form (in the Specific Question block) a question to ask the driver concerning the type of brakes used by the power unit.

For tractor/trailer units, code the brake system of the tractor and annotate the trailer brake system on the vehicle sketch (pages 3H-3K).

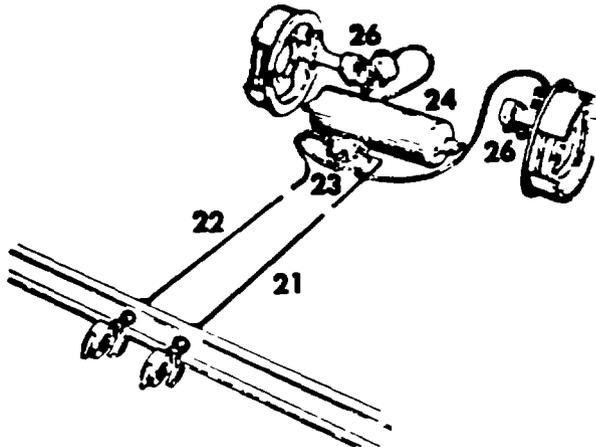
Air (code "1") brakes are normally recognized by a cylinder chamber that is attached to the brake drum.

Hydraulic (code "2") brakes are normally recognized by a fluid line that leads directly into the brake drum.

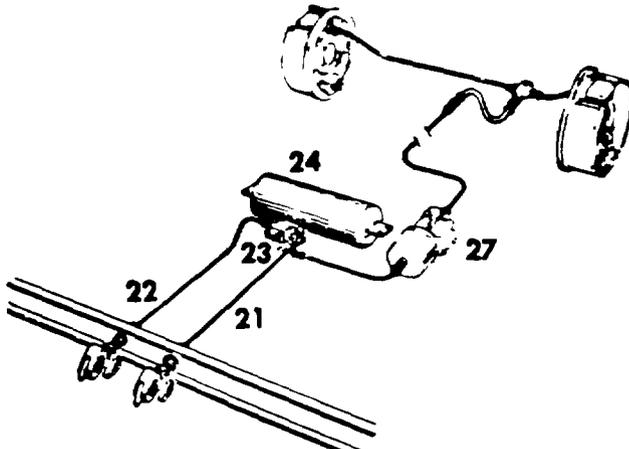
Electric (code "3") brakes are normally found on trailers only (i.e., RV trailers, some derivative of RV trailers, and medium to light duty utility trailers). They are normally recognized by electrical wiring that leads directly to the brake drum.



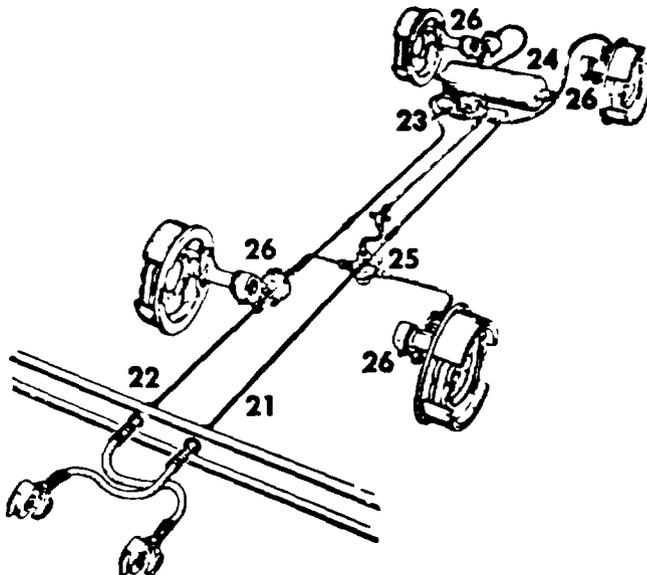
Variable Name: Type of Brakes (Trucks Over 10,000 lbs. GVWR - V14 = 54-57)  
[cont'd.]



STRAIGHT AIR SYSTEM (Semi-Trailer)



AIR-OVER-HYDRAULIC SYSTEM (Semi-Trailer)



STRAIGHT AIR SYSTEM (Full Trailer)

PROTECTED TRACTOR

1. Compressor (includes control value)
2. Alcohol injector--accessory
3. Single check valve
4. Air tank
5. Reservoir safety value
6. Foot application value
7. Hand application value
8. Two-way check valve
9. Quick-release value
10. Relay quick-release value,  
or  
Quick-release value
11. Straight Air:  
Brake chamber or Power cylinder  
Air-Over-Hydraulic:  
Power cluster
12. Switch, normal stop light circuit
13. Switch, low pressure indicator circuit
14. Air gauge
15. Emergency brake value
16. Tractor air line protection value
17. Switch, emergency stop light circuit
18. Moisture ejection value--accessory
19. Emergency air line and hose coupler
20. Service air line and hose coupler

PROTECTED TRAILER

21. Emergency air line
22. Service air line
23. Relay quick-release emergency (breakaway) valve
24. Close-coupled trailer tank
25. Quick-release value
26. Brake chamber and slack adjuster
27. Power cluster

INSTRUCTIONS FOR COMPLETION OF FIELD MEASUREMENTS PAGE

Document all the necessary field measurements on this page following the Crush Measurement Techniques protocol. Complete the top portion (measurements related to shift and bowing) when applicable. Use as many lines as necessary to describe each damage profile. For example, on a side impact with sill override, the crush measurements taken along the plane of maximum crush are averaged with the measurements taken at the sill level. Thus, three lines will be necessary to describe the damage profile and all three lines will have the same impact number but different L, C, and D measurements. Note that the measurements on the third line are average measurements, and thus, should be annotated average under Column 2 (Plane of C-measurements).

For fiberglass bodied vehicles (e.g., Corvettes), "C" measurements should be taken where the depths of penetration or crush can be determined. This usually occurs where structural supporting members for the fiberglass panels have been deformed. For the cases where the fiberglass panels are cracked and resume their original shape or where sections are completely broken away, "C" measurements are not applicable.

INSTRUCTIONS FOR COMPLETION OF VEHICLE SKETCH

The investigator must keep in mind that all relevant data is not clearly recognized and encoded when the vehicle is inspected. Some information, of no apparent value at the time of the inspection, may be of great value in explaining vehicle or occupant phenomena in the subsequent reconstruction. For this reason, all scrapes, scratches, transfers, buckling and indications of engagement or relative motion must be annotated on this form. If there is insufficient room for this purpose, use a numerical coding scheme in which the numerals on the form (page 3) are keyed to the investigator's descriptive statements on the back of page 3.

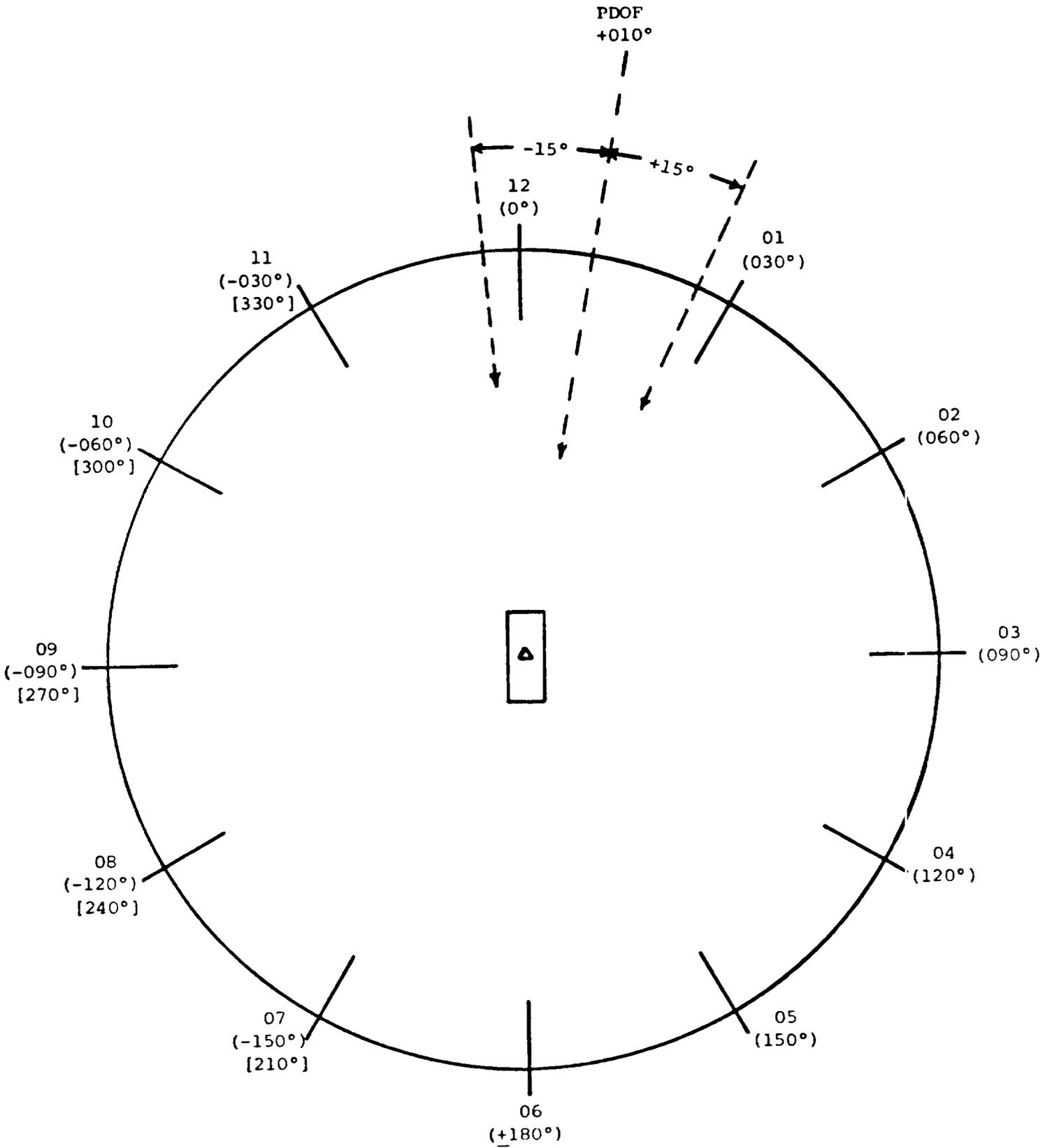
All the observed damage is sketched on page 3 of the Vehicle Form. Any damage known to be pre-crash is so specified. In sketching the damage, boundaries of the damaged area are marked by solid lines, with damage highlighted by cross-hatching (XXXXXXXXXX) to indicate direct damage and single hatching (//////) to indicate induced damage.

The original and post-crash wheelbase, front and rear overhangs, as well as the dimensions required to determine extent-zone (col. 7 of CDC/TDC) are measured and documented on page 3. Also, the damage to the tires, wheel steer angles, type of transmission, average track, maximum width of the vehicle (front track and cab width for tractors and straight trucks), and the location of maximum crush are measured and documented on page 3.

CDC/TDC RELATED REMARKS

An estimated CDC/TDC should be indicated for each impact (top of page 4). In this estimate write the direction of principal force in increments of ten degrees rather than in clock positions. Thus, if the direction appeared to be approximately ten degrees to the right of straight-ahead, indicate "010". If the direction of force appeared to be ten degrees left of straight-ahead, indicate "-010" ("350"). The final coding of the CDC/TDC at the bottom of page 4 reflects the direction of force in clock positions. So in the example where the principal direction of force (PDOF) is closest to ten degrees to the right of straight-ahead "010" ["-005" ("355") to "025"] then the estimate is coded according to the clock direction--either 12 or 01 as determined by examining all available inputs to ensure accuracy for force assignments. If upon examining all the available inputs the investigator feels the PDOF is more likely to be within +015 to +025 and classifies the clock direction as "01", the top of page 4 should still reflect the original value "010".

When occasional differences which seem to be inconsistent (e.g., PDOF = 010° and clock position = 01) are encountered on page 4, they actually reflect the investigative method; therefore, they can be reconciled by reviewing the entire case and any CRASH output to determine if the difference is reasonable. This procedure allows the reviewer to appreciate what the investigator thought the PDOF (top of page 4) was, to the closest 10 degrees, based upon examination of that vehicle alone, while the clock position representing the force at the bottom of page 4 reflects the final determination after examining all sources (vehicles, objects contacted, scene evidence, CRASH program, etc.). In other words, it is not necessary for the force directions at the top and bottom of page 4 to be compatible; however, any force directions on the final CRASH output must be compatible with the force direction at the bottom of page 4.



V25

V34

Variable Name: 1st C.D.C./T.D.C.-Object Contact d  
2nd C.D.C./T.D.C.-Object Contacted

Format: 2 columns - numeric

Beginning  
Column 36  
50

Element Values:

- |  |   |
|--|---|
| 00 Noncollision  |   |
| 01 through 30 If the object contacted by the vehicle under consideration was another motor vehicle in transport, code the Vehicle Number assigned to that vehicle. |   |
| Collision with Stationary Object   | Collision with Nonstationary Object   |
| 31 Motor vehicle not in transport  | 51 Animal   |
| 32 Tree (up to 50 cm circum.)  | 52 Trailer, disconnected in transport   |
| 33 Tree (over 50 cm circum.)   | 53 Train  |
| 34 Pole - fixed  | 59 Other nonstationary objects  |
| 35 Pole - breakaway--did break away  | 71 through 95   |
| 36 Pole - breakaway--did not break away  | If the object contacted by the vehicle under consideration was a pedestrian or nonmotorist, add seventy (70) to the Pedestrian or Nonmotorist number, and code the resultant sum (e.g, 5 + 70 = 75) |
| 37 Movable objects (post, fence, mail box, delineator, etc.)   | 96 Vehicle occupant   |
| 38 Culvert, railroad tracks, curb  | 97 Other object   |
| 39 Abutment, retaining wall, bridge support  | 99 Unknown  |
| 40 Embankment  |   |
| 41 Building, rigid   |   |
| 42 Building, nonrigid  |   |
| 43 Bridge rail   |   |
| 44 Guard rail  |   |
| 45 Impact attenuator   |   |
| 46 Ground  |   |
| 47 Median barrier  |   |
| 48 Train   |   |
| 49 Ditch   |   |
| 50 Other stationary objects  |   |

Source: Primary sources are the scene and vehicle inspections; secondary sources include the police report and interviewees.

Remarks:

Code the appropriate object contacted for each impact even if there is no C.D.C./T.D.C.

This section is not to be completed until after the CRASH program is exercised except for those cases where: (1) the CRASH program is inapplicable, (2) the vehicle has sustained but one impact and there is insufficient data for a trajectory reconstruction to aid in the determination of force directions, or (3) the vehicle is outside the scope of CDC-SAE, J224 (March 1980).

V25

V34

(2)

Variable Name: 1st C.D.C./T.D.C.-Object Contacted (cont'd.)  
2nd C.D.C./T.D.C.-Object Contacted (cont'd.)

Code "00" (Noncollision) refers to those situations where this vehicle's harmful event (see ANSI D16.1-1976, section 2.3.3, page 8) did not in any sequence result from an impact. Examples of such situations are covered under codes "02" through "07" of A10, First Harmful Event. However, it must be kept in mind that even if a vehicle's first harmful event did not involve an impact, the vehicle may subsequently have impacted a vehicle, object, pedestrian, or nonmotorist. Just because A10 (First Harmful Event) equals "02" through "07" does not mean that the vehicle involved was not subsequently involved in an impact for which the object contacted is coded here. For example, when A10 = 05 (Fell from vehicle), there is a good chance, particularly if the person was the driver, that the vehicle was subsequently involved in an impact. Further, in some instances of A10 = 07 [Other non-collision (e.g., jackknife)] code "00" (Noncollision) ought not be used. In the jackknife situation, this occurs when the power unit of the articulated vehicle impacts the trailer unit in which case you should code the vehicle's own number.

Code "00" (Noncollision) may also be used for a vehicle which sets an object in motion that strikes or is struck by a vehicle. Examples include dislodged cargo, spewed gravel, etc. It may also be used in other situations subject to consultation with the Zone Centers.

Code "31" (Motor vehicle not in transport) refers to a motor vehicle which is not on the roadway and not in motion (e.g., vehicle located in parking lane).

For codes "32" and "33", measure the circumference of the tree on the horizontal plane at the point of impact. (Note: a circumference of 50 cm is approximately equivalent to 19 inches).

Code "34" (Pole - fixed) refers to poles which are not designed to "break away" and reduce the decelerative forces experienced by the vehicle.

Codes "35" (Pole - breakaway--did break away) and "36" (Pole - breakaway--did not breakaway) refer to poles which are designed to "break away" and reduce the deceleration force experienced by the vehicle. Common types include: slip base (steel); frangible base (cast aluminum); and progressive shear (galvanized steel or stainless steel).

Code "45" (Impact Attenuator) refers to impact attenuators which are barriers placed in front of fixed objects on the highway to absorb energy, and to thus mitigate the injury effects of collisions at such sites. A number of the common devices are described and illustrated following A10 (First Harmful Event) in this manual. Other impact attenuating devices may be encountered; therefore, the investigator should be sure to photograph them for verification when uncertain.

V25

V34

(3)

Variable Name: 1st C.D.C./T.D.C.-Object Contacted (cont'd.)  
2nd C.D.C./T.D.C.-Object Contacted (cont'd.)

Code "46" (Ground) refers to an impact with the ground. Collisions which may be classified using this code include (but are not limited to) vehicles which overturn/rollover as well as those which sustain undercarriage damage by (1) straddling the pavement and shoulder and impacting a prominent pavement lip, or (2) free falls or vaults from the road surface to the ground. This includes uncontrolled motorcycles which contact the ground first. For motorcycle impacts, ground will be coded as an impact unless evidence indicates that the motorcycle did not strike the ground.

Code "47" (Median Barrier) refers to physical barriers which divide trafficways. Commonly encountered types are illustrated following the impact attenuation illustrations found under A10 (First Harmful Event) in this manual.

An example of an other nonstationary object ("59") is a pedalcycle or a nonmotorist conveyance. A nonmotorist conveyance is defined as any human-powered device by which a nonmotorist may move, or by which a pedestrian or nonmotorist may move another nonmotorist, other than by pedaling. A nonmotorist conveyance includes the following: baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, etc. Excluded are pedalcyclists. Pedalcyclist refers to any occupant of a pedalcycle (see D16.1-1976, section 2.2.16, page 6).

Codes "71" through "95" are used to identify contacted pedestrians or nonmotorists where the code is derived by adding seventy (70) to that person's unique number and coding the resultant sum (e.g., 5 + 70 = 75). Pedestrian refers to any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a nonmotorist conveyance.

Code "96" (Vehicle occupant) is used when the object contacted was any person who was an occupant of a motor vehicle. Two examples of this code are as follows. Code "96" (Vehicle occupant) for any occupant who falls from a vehicle (A10, First Harmful Event, equal 05) and is subsequently run over before stabilization occurred. In addition, use this code for any motorcyclist who separates from his/her motorcycle during impact and subsequently impacts a motor vehicle before stabilization occurred.

V26

V35

Variable Name: 1st C.D.C./T.D.C. - Clock Direction  
2nd C.D.C./T.D.C. - Clock Direction

Format: 2 columns - numeric

Beginning  
Column 38  
52

Element Values:

C.D.C. or T.D.C.

Blank - No C.D.C./T.D.C.

00 Non-horizontal force	08 8 o'clock
01 1 o'clock	09 9 o'clock
02 2 o'clock	10 10 o'clock
03 3 o'clock	11 11 o'clock
04 4 o'clock	12 12 o'clock
05 5 o'clock	13 Intra-unit force (T.D.C. only)
06 6 o'clock	99 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

Code variables 25 and 34 [1st (2nd) C.D.C./T.D.C. - Object Contacted] with the appropriate code(s) when the object contacted is known regardless of how the CDC/TDCs, variables 26-33 and 35-42, are coded.

The CDC/TDC generated for a particular impact is based upon damage which is the result of direct impact only; it does not include induced damage. All CDC/TDCs are based entirely upon the procedures in SAE J224 (March 1980), or the T.D.C.

Any time a vehicle becomes inverted and impacts any object or vehicle while inverted, the clock direction is coded as "00" (plus any incremental value). Also use "00" (Non-horizontal force) with any other circumstance which is consistent with the directions contained in SAE, J224 (March 1980), or the T.D.C.

If there is only one CDC, it should be entered in variables 26-33, whether or not CRASH was exercised. Variables 34-42 should then be left "Blank".

If it is unknown whether the vehicle sustained a second impact, code variables 34-42 unknown ("99" or "9").

$\frac{9}{50}$   $\frac{9}{51}$   $\frac{9}{52}$   $\frac{9}{53}$   $\frac{9}{54}$   $\frac{9}{55}$   $\frac{9}{56}$   $\frac{9}{57}$   $\frac{9}{58}$   $\frac{9}{59}$   $\frac{9}{60}$   $\frac{9}{61}$   $\frac{9}{62}$   $\frac{9}{63}$

Rank order any CDCs on the basis of the CRASH program results, if used.

V26

V35

(2)

Variable Name: 1st C.D.C./T.D.C. - Clock Direction (cont'd.)  
2nd C.D.C./T.D.C. - Clock Direction (cont'd.)

If there are two or more CDCs, and if CRASH is exercised on none or on one of the CDCs, subjectively order the two most severe impacts (in terms of assumed change in velocity, delta "V").

If CRASH can be exercised on only one CDC where two or more exist the CDC used in CRASH should be coded in variables 26-33 if it is felt to represent the highest change in velocity (delta "V"); it should be coded in variables 35-42 if it is felt to represent the second highest delta "V", and it should not be coded if it is felt to represent the third highest or lesser delta "V".

If no CDC/TDC has been recorded for a vehicle which has sustained but one impact, row variables 26-33 are coded as unknown ("99" or "9") and 35-42 are left "Blank". If no CDC/TDCs are recorded for a vehicle which has sustained more than one impact or an unknown number of impacts, row variables 26-33 and 35-42 are coded as unknown ("99" or "9"). If a vehicle has sustained two or more impacts and the only CDC/TDC which can be generated (due to contamination from repair process which was underway at time of inspection, etc.) is for the second most severe impact, row variables 26-33 are coded as unknown ("99" or "9") and the generated CDC/TDC is coded in row variables 35-42.

No CDC/TDCs may be entered in row variables 26-33 or 35-42 unless those CDC/TDCs are known in their entirety [i.e., do not use "9" (unknown) for any missing character when that character is unknown]. Conversely, any time a "9" is coded in any column for row variables 26-33 or 35-41, all other columns in that row must be coded "9" (unknown); however, variables 33 and 42 may be coded "09".

Verbal descriptions by themselves by drivers, occupants, or owners may not form the basis for a CDC/TDC except in pedestrian accidents or very minor accidents where the other vehicle or object associated with the vehicle has been inspected and the investigator feels confident in generating the CDC for the vehicle with very minor damage. (NOTE: Do not formulate "C" measurements for this vehicle.)

In some instances where the vehicle is undergoing repair (parts removed) or has been repaired (parts available) a CDC/TDC may be determined from those parts and a description of the damage from testimony of a repairman judged to be reliable. (NOTE: Do not formulate "C" measurements for these vehicles unless there is only minor alternation which does not detract from the investigator's confidence in those measurements.)

V:26

V:35

(3)

Variable Name: 1st C.D.C./T.D.C. - Clock Direction (cont'd.)  
2nd C.D.C./T.D.C. - Clock Direction (cont'd.)

Leave row variables 26-33 and 35-42 "Blank" for vehicles which are beyond the scope of the CDC/TDC protocols (e.g., motorcycles, busses, snowmobiles, farm equipment other than trucks, dune buggies, construction equipment other than trucks, etc.). Reference should be made to the damage classification protocols to determine if any vehicle not mentioned above is within the scope of those protocols. Recall that the object any of these vehicles contact is still coded in either V25 or V34 [1st (2nd) C.D.C./T.D.C. - Object Contacted] even though row variables 26-33 and 35-42 are left "Blank" because they are not in scope for classification.

V27

V36

Variable Name: 1st C.D.C./T.D.C. - Incremental Value of Shift  
 2nd C.D.C./T.D.C. - Incremental Value of Shift

Format: 2 columns - numeric

Beginning  
 Column 40  
 54

Element Values:

Blank - no C.D.C./T.D.C.  
 00 No shift  
 20 End shift vertical--up; top shift forward  
 40 End shift vertical--down; top shift rearward  
 60 End or top shift lateral--right  
 80 End or top shift lateral--left  
 99 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

The principal direction of force formulated [coded under 1st (2nd` C.D.C./T.D.C. - Clock Direction, V26 and V35] is incremented to indicate vertical or lateral shifting of vehicle basic end structures which occur during horizontal force application. The shifting must be 4 in. (100 mm) or greater to be classified. Note that longitudinal or lateral shifting of the top structure, as a result of non-horizontal force application (i.e., "00" clock direction) to the top, is also coded.

Code "00" (No shift) if there is no shift (i.e., the clock direction need not be incremented).

Always code "00" (No shift) if a T.D.C. is being formulated for variables 26-33 or 35-42. (NOTE: There is no provision for increments in T.D.C. protocol.)

When there is shift, as defined by SAE J224 (March 1980) and J224b Guideline, then code the relevant increment that needs to be added to the horizontal clock direction.

Refer to SAE J224 (March 1980), Guideline, and T.D.C. for details.

V23  
V37

Variable Name: 1st C.D.C./T.D.C. - Direction of Force  
2nd C.D.C./T.D.C. - Direction of Force

Format: 2 columns - numeric

Beginning  
Column 42  
54

Element Values:

Range: Blank, 00-13, 20-32,  
40-52, 60-72; 80-92; 99

C.D.C. or T.D.C.

Blank - no C.D.C./T.D.C.

00 Non-horizontal force	08 8 o'clock
01 1 o'clock	09 9 o'clock
02 2 o'clock	10 10 o'clock
03 3 o'clock	11 11 o'clock
04 4 o'clock	12 12 o'clock
05 5 o'clock	13 Intra-unit force (T.D.C. only)
06 6 o'clock	99 Unknown

Incremental Values for Above Force Directions

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

Source: Restricted to vehicle inspection or photographs.

Remarks:

Code the principal direction of force incremented to indicate vertical or lateral shifting of vehicle basic end structures which occur during horizontal force application or longitudinal or lateral shifting of the top structure as a result of non-horizontal force application to the top. In other words, the combined value of the coded responses to variables 26 and 27 (or 35 and 36) is coded under variable V28 (or V37). The only exception is that if variable 26 or 27 is coded unknown ("99"), code variable 28 also unknown ("99"). Similarly, if variable 35 or 36 is coded unknown ("99"), code variable 37 unknown ("99").

V29

V38

Variable Name: 1st C.D.C./T.D.C. - Deformation Location  
 2nd C.D.C./T.D.C. - Deformation Location

Format: 1 column - alphanumeric

Beginning  
 Column 44  
 58

Element Value:

C.D.C.

Blank - no C.D.C./T.D.C.

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

T.D.C.

Blank - no C.D.C./T.D.C.

F Front  
 R Right side  
 L Left side  
 B Back of unit with cargo area  
 near of trailer or straight  
 truck)  
 D Back (rear of tractor)  
 C Rear of cab  
 V Front of cargo area  
 T Top  
 U Undercarriage  
 9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

See remarks section for variables V26 and V35.

Variable Name: 1st C.D.C./T.D.C. - Specific Longitudinal or Lateral Location  
2nd C.D.C./T.D.C. - Specific Longitudinal or Lateral Location

Format: 1 column - alphanumeric

Beginning Column 45  
59

Element Value:

C.D.C.

Blank - no C.D.C./T.D.C.  
D Distributed--side or end  
L Left--front or rear  
C Center--front or rear  
R Right--front or rear  
F Side front--left or right  
P Side center section--L or R  
B Side rear--left or right  
Y Side (F + P) or end (L + C)  
Z Side (P + B) or end (C + R)  
9 Unknown

T.D.C.

Blank - no C.D.C./T.D.C.  
D Distributed--side or end  
L Left--front or rear  
C Center--front or rear  
R Right--front or rear  
F Side front (forward of windshield)  
P Side cab  
W Side rear of cab to rear of tractor  
K Side (P + W)  
S Side (F + P + W)  
B Side rear of cab to rear trailer or cargo area  
T Side trailer (rear of tractor to rear of trailer)  
Y Side (F + P) or end (L + C)  
Z Side (B + P) or end (R + C)  
9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

See remarks section for variables V26 and V35.

V31

V40

Variabl Name: 1st C.D.C./T.D.C. - Specific Vertical or Lateral Location  
 2nd C.D.C./T.D.C. - Specific Vertical or Lat ral Location

Format: 1 column - alphanumeric

Beginning  
 Column 46  
 60

Element Value:

C.D.C. (Vertical - Front, Rear, or Side Impacts)

Blank - no C.D.C./T.D.C.

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

T.D.C. (Vertical - Front, Rear, or Side Impacts)

Blank - no C.D.C./T.D.C.

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

C.D.C. or T.D.C. (Lateral - Top and Undercarriage Impacts)

Blank - no C,D.C./T.D.C.

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

Source: Restricted to vehicle inspection or photographs.

Remarks:

See remarks section for variables V26 and V35.

V32

V41

Variable Name: 1st C.D.C./T.D.C. - Type of Damage Distribution  
2nd C.D.C./T.D.C. - Type of Damage Distribution

Format: 1 column - alphanumeric

Beginning  
Column 47  
61

Element Values:

C.D.C. or T.D.C.

Blank - no C.D.C./T.D.C.  
W Wide impact area  
N Narrow impact area  
S Sideswipe  
O Rollover (includes side)  
A Overhanging structure  
E Corner  
K Conversion in impact type (C.D.C. only)  
U No residual deformation  
R Override (T.D.C. only)  
9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

See remarks section for variables V26 and V35.

V33

V42

Variable Name: 1st C.D.C./T.D.C. - Deformation Extent Guide  
2nd C.D.C./T.D.C. - Deformation Extent Guide

Format: 2 columns - alphanumeric

Beginning  
Column 48  
62

Element Values:

C.D.C. or T.D.C.

Blank - no C.D.C./T.D.C.	07	Seven
01 One	08	Eight
02 Two	09	Nine
03 Three	0A	(T.D.C. only)
04 Four	0B	(T.D.C. only)
05 Five	0C	(T.D.C. only)
06 Six	0D	(T.D.C. only)
	99	Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

See remarks section for variables V26 and V35.

When a body panel is torn loose from the vehicle frame due to impact, the extent zone should be coded from direct damage only; consider body panels torn loose from the frame as not representative of residual crush.

Variable Name: Documentation of More than Two C.D.C./T.D.C.s

Format: 1 column - numeric

Beginning  
Column 64

Element Values:

- 0 Zero, one or two C.D.C./T.D.C.s
- 1 More than two C.D.C./T.D.C.s

Source: Restricted to vehicle inspection or photographs.

Remarks:

Code "0" (Zero, one or two C.D.C./T.D.C.s) if the C.D.C./T.D.C. is unknown, or when two or less C.D.C./T.D.C.s are coded in row variables 26-33 and 35-42, and no other C.D.C./T.D.C.s are formulated at the top of page 4, Vehicle Form.

Code "1" (More than two C.D.C./T.D.C.s) when two C.D.C./T.D.C.s are coded in row variables 26-33 and 35-42; and additional C.D.C./T.D.C.s are reported at the top of page 4, Vehicle Form. Partial and unknown C.D.C./T.D.C.s are not considered documented and should not be counted.

Variable Name: Vehicle Identification Number

Format: 10 columns - alphanumeric

Beginning  
Column 65

Element Values:

First 10 elements of VIN are provided, left justified.

##### No VIN  
9999999999999999 Unknown

Source: Primary source is vehicle inspection; a secondary source is the police report.

Remarks:

Leave "Blank" any column which does not have a VIN character.

If part of the VIN is missing or not decipherable, leave the column any such character would ordinarily occupy "Blank".

If the entire VIN is unknown or missing, enter "9"s in the entire field.

If the vehicle is a type which has no VIN (e.g., go-cart), enter "Ø"s in the entire field.

Code the entire VIN as found during inspection of the vehicle and left justify, as shown in the following example:

VIN: A3A197H118815\_\_\_\_\_  
CODE: A3A197H118815\_\_\_\_\_

Code the police reported VIN, if available (and indicate police). Do so only when the vehicle is not inspected, and the police reported characters are consistent with reference materials (e.g., NATB) with respect to alphanumeric characters.

If the vehicle is manufactured by the Ford Motor Company and begins with a script "F", the "F" should not be coded. Proceed to the next character as in the example:

VIN: F3U62S1ØØ932F\_\_\_\_\_  
CODE: 3U62S1ØØ932\_\_\_\_\_

NOTE: For this variable only, slash zeros "Ø" so that they are not confused with the alphabet character "O", as in DOT.

In addition, if any hyphens or periods are contained in the string of alphanumeric characters, then they should be ignored as in the example below.

VIN: SM-E 3076421  
CODE: SME3Ø76421\_\_\_\_\_

V44

(2)

Variable Name: Vehicle Identification Number (cont'd.)

If the state will not allow transmittal of the complete VIN, code all characters except the sequential production numbers. Code zeros ("0") in place of the sequential numbers.

The location of the VIN will vary among, and within, vehicles. Reference sources which may prove helpful in locating the VIN include, but are not limited to:

- (1) Motor Vehicle Identification Manual  
National Automobile Theft Bureau  
Palmer Publications Company  
Downers Grove, Illinois 60515
- (2) Passenger Car and Truck-Accident  
Investigators Manual  
MVMA of the U.S., Inc.  
320 New Center Building  
Detroit, Michigan 48202

Variable Name: Registration of Vehicle

Format: 1 column - numeric

Beginning  
Col m 82

Element Values:

- 0 Not registered
- 1 In-state (at least)
- 2 Out-of-state (only)
- 8 Other registration (e.g., federal, foreign, military)
- 9 Unknown

Source: Primary sources are the vehicle inspection and police report.

Remarks:

Code "1" (In-state) means that the vehicle was registered in the state in which the accident occurred. The vehicle may or may not have also been registered in other states. The vehicle, in the instance of tractor-trailer or multi-unit trucks, includes the registration found for both the tractor and its trailer(s).

Code "2" (Out-of-state) means that the vehicle was registered, but not in the state in which the accident occurred. State-owned vehicles are coded "1" if the accident occurred in the same state in which the vehicle is registered.

Vehicles displaying dealer's tags are not registered ("0"). The assumption is that the association between the tag and the vehicle is short-lived.

Expired registrations are not valid and are to be ignored when selecting the proper attribute.

Registration means that the vehicle was registered to drive on a street/highway. Some states require a registration for off-road use. A vehicle registered only for off-road use that was involved in an accident associated with a NASS roadway, is not considered registered--code "0" (Not registered).

Variable Name: Vehicle Special Use (this trip)

Format: 1 column - numeric

Beginning  
Column 33

Element Values:

- 0 No special use
- 1 Taxi
- 2 Vehicle used as school bus
- 3 Vehicle used as other bus
- 4 Military
- 5 Police
- 6 Ambulance
- 9 Unknown

Source: Investigator determined--inputs include vehicle inspection, driver interviews, police report, and other interviewees.

Remarks:

Code "0" (No Special Use).

Code "1" (Taxi) refers to vehicles used during this trip (at the time of the accident) on a "fee-for-hire" basis to transport persons. Most of these vehicles will be marked and formally registered as taxis; however, vehicles which are used as taxis, even though they are not registered (e.g., "Gypsy Cabs"), are included here. Taxis and drivers which are off-duty at the time of the accident are not included. The investigator should ask taxi drivers a special question on the Driver Form to determine if he/she was on duty at the time of the accident.

Code "2" (Vehicle used as school bus) refers to a motor vehicle which satisfies the following criteria:

- externally identifiable to other traffic units as a school/pupil transport vehicle;
- operated or owned by a public or private school-type institution;
- where the institution's students may range from pre-school through high school;
- whose occupants, if any, are associated with the institution; and,
- the vehicle is in operation at the time of the accident to and from the school or on a school-sponsored activity or trip.

Code "3" (Vehicle used as other bus) refers to a motor vehicle which is designed for transporting more than ten persons and does not satisfy the above criteria of a school bus.

Variable Name: Vehicle Special Us (this trip) [cont'd.]

For codes "4" (Military), "5" (Police), and "6" (Ambulance) special use means "in use" and not necessarily emergency use. External identification to the normal driving public is the criterion.

Code "4" (Military) refers to a vehicle which is owned by any of the Armed Forces. These vehicles are presumed to be in special military use at all times.

Code "5" (Police) refers to a readily identifiable (lights or markings) vehicle which is owned by any local, county, state or federal police agency. The vehicles are presumed to be in special police use at all times. Personal vehicles (not owned by the agency) which are used by officers or agents (e.g., undercover) are excluded.

Military police vehicles are coded "4" (Military).

Code "6" (Ambulance) refers to those readily identifiable (lights or markings) vehicles: (1) whose sole purpose is to provide ambulance service and which is always presumed to be in special ambulance use at all times, or (2) vehicles serving dual purposes such as a hearse used for both funeral and emergency purposes, which is only coded, when used for the latter purpose.

Military ambulances are coded "4" (Military).

Variable Name: Odometer Reading

Format: 3 columns - numeric

Beginning  
Column 64

Element Values:

Range: 001 through 500

Code mileage to the nearest 1,000 miles

000 No odometer

001 Less than 1,500 miles

997 Greater than or equal to 996,500 miles\*

999 Unknown

Source: Primary source is the vehicle inspection; however, it may be supplemented with information from the police report and/or driver interview.

Remarks:

Code to the nearest 1,000 miles as in the examples:

Mileage: 7,498

Code: 007

Mileage: 7,502

Code: 008

Mileage: 18,342

Code: 018

Mileage: 147,687

Code: 148

Code "001" if the mileage is less than 1,500.

Code "999" (Unknown) if the odometer was disconnected or broken before the collision, or if the mileage is unknown.

This variable measures the mileage on the vehicle's odometer; however, in cases where it is suspected that the odometer is working but has turned over (i.e., recycled) the coded value represents the total mileage on the vehicle rather than the reading on the odometer.

\*This value is not listed on the present forms but can be written in if needed.

Variable Name: Passenger Compartment Integrity

Format: 1 column - numeric

Beginning  
Column 87

Element Values:

- 0 No passenger compartment
  - 1 No integrity loss
- Yes, integrity was lost through:
- 2 Windshield
  - 3 Door
  - 4 Roof
  - 5 Windshield & door
  - 6 Windshield & roof
  - 7 Door & roof
  - 8 Windshield, door & roof
  - 9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

Consider the passenger compartment as a "package" which is designed to contain the occupant. If an opening occurs of sufficient magnitude through which an occupant could have been ejected totally or partially (although it is not necessary for an occupant to have been so ejected), the integrity of the compartment should be considered to have been lost. While it is difficult to define the magnitude of the opening in a universal manner, the minimum size of the opening would be equivalent to the head of most adults. Components which may lose their integrity are restricted to the windshield, door or roof (individually or in combination).

The question of integrity loss is assessed with respect to impact-related damage. The damage can be either direct or induced. Damage which is not impact-related (e.g., fire) is not considered.

Doors which open prior to an impact do not constitute loss of integrity, but those which open upon impact or from occupant or cargo loading due to the impact constitute loss of integrity.

Passenger cars which are "convertibles", having soft or removable hard tops, should not be coded as having lost the integrity of their roof if it is removed or in the down position.

Code "0" (No passenger compartment) if the vehicle has no passenger compartment (e.g., motorcycle).

NOTE: Side or rear windows, whether fixed or movable, are excluded, even if shattered.

Variable Name: Passenger Compartment Intrusion

Format: 1 column - numeric

Beginning  
Column 38

Element Values:

- 0 No passenger compartment
- 1 No intrusion
- 2 Front (i.e., steering column, dash)
- 3 Right side [i.e., door(s) with or without sill override]
- 4 Left side [i.e., door(s) with or without sill override]
- 5 Rear (i.e., trunk, rear seat intruded upon)
- 6 Bottom (i.e., floor)
- 7 Top [i.e., windshield, "A", "B", "C", or "D" pillar(s), roof]
- 8 Two or more areas
- 9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

Intrusion occurs only when components within the passenger compartment are physically changed as a result of the impact such that they assume a position more within the compartment. For example, a door which bulges outward does not necessarily constitute intrusion. Intrusion cannot occur from damage which is not impact-related (e.g., fire). The damage which caused the intrusion can be either direct or induced.

Since intrusion is restricted only to interior components or surfaces, it excludes cases where the external sheet metal is indented but the interior door panel is not changed.

Code "0" (No passenger compartment) if the vehicle has no passenger compartment (e.g., motorcycles).

Code "6" (Bottom) includes toe pan.

Code "7" (Top) refers to the upper pillars (A, B, C, or D) being intruded upon, or those segments of the pillars above a horizontal plane through the bottom of the windshield.

NOTE: Code the area in terms of the most severe intrusion. Therefore, to have two or more areas (Code "8"), they must have the same amount of intrusion.

Variable Name: Magnitude of Intrusion

Format: 1 column - numeric

Beginning  
Column 89

Element Values:

- 0 No intrusion
- 1 Less than five centimeters
- 2 Between five and fifteen centimeters
- 3 Greater than fifteen centimeters
- 9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

Code "0" (No intrusion) if the vehicle has no passenger compartment (e.g., motorcycles), or if there is no intrusion.

Code "1" (Less than five centimeters) if less than 5 cm (2 in.).

Code "2" (Between five and fifteen centimeters) if between 5 and 15 cm (2-6 in.).

Code "3" (Greater than fifteen centimeters) if greater than 15 cm (6 in.).

Variable Name: Fire Occurrence

Format: 1 column - numeric

Beginning  
Column 90

Element Values:

- 0 No fire
- Yes, fire occurred
- 1 Started in vehicle, minor
- 2 Started in vehicle, major
- 3 Started external to vehicle, minor
- 4 Started external to vehicle, major
- 5 Origin unknown
- 9 Unknown

Source: Primary source is the vehicle inspection; a secondary source is the police report.

Remarks:

Code "0" (No fire) includes those vehicles which are not inspected but for which it is reasonable to presume any fire to those vehicles would have been mentioned, if it occurred, on the police report. It also includes vehicles with smoke damage only, but which sustained no fire.

To code fire occurrence (codes "1" through "5"), the fire must reach the "vehicle" as defined by the variable Body Type (V14).

Code "1" (Started in vehicle, minor) refers to a fire which starts anywhere in the vehicle but consumes less than 50% of the passenger compartment.

Code "2" (Started in vehicle, major) refers to a fire which starts anywhere in the vehicle and consumes 50% or more of the passenger compartment.

Code "3" (Started external to vehicle, minor) refers to a fire which starts external to the vehicle but consumes less than 50% of the passenger compartment.

Code "4" (Started external to vehicle, major) refers to a fire which starts external to the vehicle but consumes 50% or more of the passenger compartment.

Code "5" (Origin unknown) if the origin of the fire is unknown, regardless of the extent of the fire.

Code "9" (Unknown) if there is no vehicle inspection and no interviews of occupants, witnesses or other persons involved in the accident, including the investigating officer, and one cannot reasonably presume the occurrence of any fire would have been reported on the police report.

The occupant area of a motorcycle is equivalent to the passenger compartment of another vehicle.

Instructions for Completion of Restraint System Usage

Restraint usage recorded on page 6 of the Vehicle Form is based only on inspection of the vehicle; in other words, it is the recording of the evidence concerning restraint usage provided only by vehicle inspection.

An indication of restraint usage must be determined for every seating position in the vehicle, regardless of the number of occupants in the vehicle. This "indication of usage" should represent "recent usage" rather than "usage ever" if at all possible. Look for such things as:

- Belt/fittings damaged by occupant loading: deformed anchorages, stretched webbing, latch metal peening (loading impression on metal);
- Placement of belts: on, behind, or under seatbacks or benches; and,
- Condition of belts: dirty, dust covered, mechanically unusable, knotted, size adjustment on fixed length belts, cut for convenience or comfort (out of the way, near housings), or cut for occupant extraction by emergency personnel (usually at an easily accessible position).

Restraint "usage in this accident" is not determined on the Vehicle Form. Vehicle evidence, along with police report information, interviews, relationship of contact points to seat position given the PDOF applied to the vehicle, presence of belt-caused injuries, presence or absence of ejection, etc., are used for the final determination of restraint usage recorded on the Occupant Form.

Where recent usage is indicated, code the type of restraint. Where belts have been used but it cannot be determined whether or not the restraint was used recently (e.g., well worn belts and latches), code the type of restraint and annotate the reason for the code. If usage is not indicated, code none ("0").

Indications of Ejection

If acquired information indicated that an occupant of a vehicle has been ejected but the vehicle cannot be inspected, do not complete the section entitled "Indication of Ejection". The information on this page can only be obtained through a visual inspection of the vehicle.

When a child safety seat exists in other than a normal seating position, such as the floor behind the back seat, use the last column (Other position or unit) to code the presence and any indication of usage for that seat. If the child safety seat is in a normal position, make a diagonal line through each appropriate box and code data for the child safety seat in one half and the normal seat position in the other half. Due to the transient nature of these seats, one should key questions regarding its presence and usage at the time of the accident in the interview before making the final assessments on the Occupant Form.

Variable Name: Type of Most Severe Impact This Vehicle, This Vehicle's Role

Format: 1 column - numeric

Beginning  
Column 91

Element Values:

- 0 Nonimpact
- 1 Front of this vehicle
- 2 Left side of this vehicle
- 3 Right side of this vehicle
- 4 Rear of this vehicle
- 5 Other impact aspect
- 9 Unknown impact type

Source: Primary source is vehicle inspection; secondary sources include photographs, police report, and driver interviews.

Remarks:

This variable measures the general area of deformation of this vehicle's most severe impact; consequently, the value coded represents the same plane of the vehicle that was coded for V29, 1st C.D.C./T.D.C. - Deformation Location, where V29 is other than "9" or "Blank". This association and unknown as well as out of scope damage classifications for V29 are illustrated in the table below, recognizing that the table is interpretable in only one direction. In other words, it may only be used by beginning the logic with a value for V29, 1st C.D.C./T.D.C. - Deformation Location, to determine the value or range of values for V52, Type of Most Severe Impact This Vehicle, This Vehicle's Role.

IF		THEN
V29 equals:		V52 equals:
C.D.C.	T.D.C.	
F	F,V	1
L	L	2
R	R	3
B	B,C,D	4
T,U	T,U	5
9	9	0, 1-5, or 9
Blank	Blank	0, 1-5, or 9

It should be recognized from the above table that vehicles which are beyond the scope of the C.D.C./T.D.C. are coded under this variable as "0" (Nonimpact), "1"- "5" (i.e., one of the various impact aspects) or "9" (Unknown impact type).

V52

(2)

Variable Name: Type of Most Severe Impact This Vehicle, This Vehicle's Role  
(cont'd.)

Code "0" (Nonimpact) is used when the vehicle sustains no impact but is part of the case due to: fire or explosion, immersion, gas inhalation, an occupant's fall from the vehicle, an injured occupant without an external impact, or other nonimpacts except most jackknife situations.

If the impact occurred at a corner, follow the corner protocol spelled out in SAE J224 (March 1980) and the T.D.C. for selection of the proper plane.

Variable Name: Role of Other Contacted Vehicle, Object, or Person (for same impact as above)

Format: 1 column - numeric

Beginning Column 92

Element Values:

- 0 Nonimpact
- 1 Front of other vehicle
- 2 Side of other vehicle
- 3 Rear of other vehicle
- 4 Sideswiped or endswiped by other vehicle
- 5 Other location on other vehicle
- 6 Object (stationary and non-stationary)
- 7 Pedestrian or nonmotorist
- 8 Motorcycle or moped
- 9 Unknown impact type

Source: Primary source is the inspection of the other vehicle; secondary sources include the inspection of this vehicle, photographs, police report, and driver interviews.

Remarks:

Code "0" (Nonimpact) should be used only when V52, Type of Most Severe Impact This Vehicle, This Vehicle's Role, equals "0" (Nonimpact).

Codes "1" (Front of other vehicle), "2" (Side of other vehicle), "3" (Rear of other vehicle), and "5" (Other location on other vehicle) report the geographical location on the other vehicle for the common impact that produced the most severe impact on the vehicle under consideration. Row variables V26 through V33 may or may not be of help in this matter, since the most severe impact for this vehicle may not have produced the most severe impact for the other vehicle.

If a C.D.C./T.D.C. for the other vehicle is coded on its Vehicle Form (i.e., V26-V33 or V35-V42) which corresponds with this vehicle's most severe impact (this is true even if no C.D.C./T.D.C. for this vehicle was coded--variables V26-V33), then use the table below to select the appropriate value. Remember, this table, as its predecessor (V52), is only interpretable in one direction.

IF		THEN
V29 or V38 equals		V53
C.D.C.	T.D.C.	equals
F	F, V	1
L, R	L, R	2
B	B, C, D	3
T, U	T, U	5
9	9	0-9
Blank	Blank	0-9

V53

(2)

Variable Name: Role of Other Contacted Vehicle, Object, or Person (for same impact as above) [cont'd.]

If no C.D.C./T.D.C. on the other vehicle due to this vehicle's most severe impact (for whatever reason), then code the most appropriate response.

Code "4" (Sideswiped or endswiped by other vehicle) is used whenever the vehicle under consideration was sideswiped or endswiped (with one exception--see code "7" below). If a C.D.C./T.D.C. is coded in the first row for this vehicle (i.e., V26-V33) and V32, 1st C.D.C./T.D.C. - Type of Damage Distribution, equals "S" (sideswipe), then "4" must be coded for this variable.

Code "4" (Sideswiped or endswiped by other vehicle) takes precedence over codes "1"- "3" and "5"- "8".

Code "6" [Object (stationary and nonstationary)] whenever the most severe impact for the vehicle under consideration was produced by an object. Object includes motor vehicles not in transport which do not contain any non-motorists.

Code "7" (Pedestrian or nonmotorist) whenever the most severe impact for the vehicle under consideration occurred with a pedestrian, pedalcyclist, animal related nonmotorist, nonmotorist inside a motor vehicle not in transport, or another nonmotorist. This code is used even if the nonmotorist inside the motor vehicle not in transport was not injured. However, if the motor vehicle under consideration received a side/endswipe from a motor vehicle not in transport, then code "4" (Sideswiped or endswiped by other motor vehicle) takes precedence. But, if the side/endswipe received by the vehicle under consideration was produced by a pedestrian or other nonmotorist not connected with a motor vehicle, then code "7" (Pedestrian or nonmotorist) is used.

Code "8" (Motorcycle or moped) whenever the most severe impact for the vehicle under consideration was produced by a motorcycle or moped--unless, of course, the vehicle under consideration was side/endswiped.

Code "9" (Unknown impact type) whenever the most severe impact for the vehicle under consideration resulted from an impact [nonimpacts are coded "0" (Nonimpacts)] of unknown origin.

Variable Name: Rollover (Excludes Motorcycle)

Format: 1 column - numeric

Beginning  
Column 93

Element Values:

- 0 No rollover
- 1 Rollover, less than 4 quarter turns
- 2 Rollover, 4 or more quarter turns
- 3 Rollover, details unknown

Source: Primary source is the vehicle inspection; secondary sources include photographs, police report, driver interviews, and other interviews.

Remarks:

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 collision and is coded independently of other configuration questions. If a trailer, attached to the case vehicle, rolled over but the vehicle itself did not, the variable should be coded "0" (No rollover).

If First Harmful Event (A10) equals "01" (Overturn) and it was based on this vehicle, then Rollover must not equal "0" for this vehicle, unless Body Type (V14) equals "15"-"18" (Motorcycles) for this vehicle.

It should be known whether or not this vehicle rolled over. If uncertainty exists, code "0" (No rollover).

Variable Name: Jackknife

Format: 1 column - numeric

Beginning  
Column 94

Element Values:

- 0 Not an articulated vehicle
- 1 No
- 2 Yes

Source: Primary source is the vehicle inspection; secondary sources include photographs, police report, driver interviews, and other interviews.

Remarks:

Jackknife can occur at any time during the collision. The phenomenon called "jackknife" is not restricted to truck-tractor vehicles; it may occur with any passenger vehicle, van, motorcycle, etc., which is pulling a trailing unit, and the trailing unit and the pulling vehicle are capable of rotating (articulating) with respect to each other.

Vehicles coded in variable V15 (Towed Trailing Unit) as "0" (No) are to be coded "0" (Not an articulated vehicle) here, unless they were previously coded as "57" (Truck tractor pulling one or more trailers), or variable V14 (Body Type). Code "57" (for variable V14, Body Type) as well as any vehicle for which variable V15, Towed Trailing Unit, equals "1" (Yes), must be coded, on this variable, either "1" (No) or "2" (Yes).

Code "2" (Yes) when there is either sufficient rotation (articulation) between the trailing unit (which includes another vehicle) and the pulling vehicle to come in contact with each other and leave any visible damage (irrespective of the magnitude of the damage), or the rotation was ninety (90) degrees or more.

Code "2" (Yes) excludes articulation of  $\geq 90^\circ$  under controlled situations (e.g., backing, parking, etc.).

Variable Name: Submission of Potential Safety Problem Bulletin

Format: 1 column - numeric

Beginning  
Column 95

Element Values:

0 No  
1 Yes

Source: Investigator determined--inputs include vehicle inspection, scene inspection, police report, driver interviews, and other interviewees.

Remarks:

Code "0" (No) when the Body Type (V14) is known and no potential safety problem bulletin was submitted. Use code "0" (No) whenever the Body Type (V14) is unknown ("99").

All teams will be provided with bulletins (forms) to report any potential vehicle safety problems which they encounter. Code "1" (Yes) if a bulletin is submitted.

Submit these bulletins to Mr. Vernon Roberts at NHTSA. It has been requested that each team be placed on the mailing list for reports of active defect investigations. Teams should become familiar with current investigations and be on the lookout for accidents which are relevant to these investigations; although, other defects or vehicle problems encountered are also of interest and should be reported.

Attach a copy of the bulletin submitted to NHTSA to the Vehicle Form before submitting the case to your Zone Center.

A list of potential safety problems of current interest to NHTSA follows.

Variable Name: Submission of Potential Safety Problem Bulletin (cont'd.)

SPECIFIC AREAS OF INTEREST TO NHTSA RULEMAKING

CRASH AVOIDANCE

1. Accident involving vehicles driven by handicapped drivers.
2. Accident involving vehicles equipped with adaptive aids.
3. Accidents in which failure of a multipiece rim (not a tire failure) caused or contributed to the severity of the accident.
4. Accidents involving malfunction of a speed governor or speed control unit.
5. Accidents where the driver reported confusion about the location of display or control elements of the vehicle.
6. Accidents where underinflation of tires caused or contributed to the severity of the accident.
7. Accidents involving pedestrian and/or cyclist injured by impact with outside mirrors.
8. Accidents involving injury to motorcycle drivers due to impact with the motorcycle mirrors.
9. Accidents where driver reported that distortion of image in convex mirror confused him (especially late model GM cars).
10. Accidents where commercial vehicle drivers reported that they could not see car, pedestrian, or cycle in a specific blind spot (such as in the right front area of large truck-tractors).
11. Accidents where driver of a passenger car or light truck reported that they could not see because of an obstruction of view by some part of the vehicle (such as inside mirror or roof support pillar).
12. Accidents where the vehicle's defrost/defog system or wiper system could not provide an adequate view of the traffic scene through the windshield.
13. Accidents where drivers reported they didn't see a heavy duty commercial vehicle before striking the rear or side of that vehicle (i.e., truck conspicuity problems).
14. Accidents involving heavy duty vehicles where a malfunctioning antilock system is alleged to have caused or contributed to the severity of the accident.
15. Accidents involving heavy duty vehicles where brakes out of adjustment caused or contributed to the severity of the accident.
16. Accidents involving heavy duty vehicle hot brake fade (i.e., runaways).

Variable Name: Submission of Potential Safety Problem Bulletin (cont'd.)

17. Accidents involving pickup trucks pulling fifth-wheel type trailers.
18. Accidents involving heavy duty air braked vehicles in which the vehicle's being stalled in traffic due to emergency brake application (loss of air pressure) caused an accident.
19. Accidents involving braking, jackknifing, or loss of control of trailers equipped with electric brakes or no brakes.

#### CRASHWORTHINESS

1. Seat and/or seat back failures in crashes and their contribution to occupant injury.
2. Identify external vehicle components (i.e., hood, grill, windshield wiper, etc.) that penetrate the windshield and the degree of such penetration in crashes involving vans and light trucks.
3. Ejections through the hatchback or station wagon rear doors in rear impacts. Identify whether ejection was through window opening or through door or hatchback opening because of latch failure.
4. Cars involving child restraints that break or involve injury. Identify the restraint by make and model, how and which position use

#### CORROSION

1. Structural rust of uni-body undercarriage, vehicle chassis frames, floor boards in areas of seat belt attachment points or seat or seat track anchorages.
2. Rust which develops in areas where the owner can observe the rust and therefore be forewarned, but which might have safety implications such as cowl area and wipers, around windshield or backlite.
3. Rust or weight bearing or vehicle guidance components, the failure of which could affect vehicle safety and do not normally wear out in service, such as tie rods, control arms, strut rods.
4. Rust of areas where the owners report exhaust intrusion such as wheel wells, wagon tire wells and rear floor pans.

12/80



POTENTIAL SAFETY PROBLEM BULLETIN

Reporting Date: \_\_\_\_\_

SEND TO: Vernon Roberts, NRD-32  
National Highway Traffic Safety Administration  
Nassif Building, Room 6211  
400 Seventh Street, S.W.  
Washington, D.C. 20590

SUBJECT: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

IDENTIFICATION:

TEAM \_\_\_\_\_ CASE NO. \_\_\_\_\_ ACCIDENT DATE: \_\_\_\_\_

ACCIDENT LOCATION \_\_\_\_\_

INVESTIGATING POLICE AGENCY \_\_\_\_\_

VEHICLE MODEL YEAR \_\_\_\_\_ MAKE/MODEL \_\_\_\_\_

VIN \_\_\_\_\_ ODOMETER READING \_\_\_\_\_

ACCIDENT DESCRIPTION (include police report)

\_\_\_\_\_  
(continue on back)

ITEM DESCRIPTION (include hardware and photographs if possible)

Variable Name: Hazardous Cargo

Format: 1 column - numeric

Beginning  
Column 96

Element Values:

- 0 No hazardous cargo
- 1 Load of hazardous materials only
- 2 Load of hazardous and nonhazardous materials
- 9 Unknown

Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

Remarks:

The following definitions have been abstracted from the Code of Federal Regulations, Title 49-Transportation, Parts 100 to 199. Refer to the referenced sections for complete details. NOTE: Rulemaking proposals are outstanding or are contemplated concerning some of these definitions.

HAZARDOUS MATERIAL - Means a substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. (Sec. 171.8)

HAZARD CLASS	DEFINITIONS
	<u>An Explosive</u> - Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion, i.e., with substantially instantaneous release of gas and heat, unless such compound, mixture, or device is otherwise specifically classified in Parts 170-189. (Sec. 173.50)
CLASS A EXPLOSIVE	Detonating or otherwise of maximum hazard. The nine types of Class A explosives are defined in Sec. 173.53.
CLASS B EXPLOSIVE	In general, function by rapid combustion rather than detonation and include some explosive devices such as special fireworks, flash powders, etc. Flammable hazard. (Sec. 173.88)
CLASS C EXPLOSIVE	Certain types of manufactured articles containing Class A or Class B explosives, or both, as components but in restricted quantities, and certain types of fireworks. Minimum hazard. (Sec. 173.100)
BLASTING AGENTS	A material designed for blasting which has been tested in accordance with Sec. 173.114a(b) and found to be so insensitive that there is very little probability of accidental initiation to explosion or of transition from deflagration to detonation. (Sec. 173.114a(a))
COMBUSTIBLE LIQUID	Any liquid having a flash point above 100°F. and below 200°F. as determined by tests listed in Sec. 173.115(d). Exceptions to this are found in Sec. 173.115(b).

Variable Name: Hazardous Cargo (cont'd.)

HAZARD CLASS	DEFINITIONS
CORROSIVE MATERIAL	Any liquid or solid that causes visible destruction of human skin tissue or a liquid that has a severe corrosion rate on steel. (See Sec. 173.240(a) and (b) for details)
FLAMMABLE LIQUID	Any liquid having a flash point below 100°F. as determined by tests listed in Sec. 173.115(d). Exceptions are listed in Sec. 173.115(a).
	<u>Pyroforic Liquid</u> - Any liquid that ignites spontaneously in dry or moist air at or below 130°F. (Sec. 173.115(c))
	<u>Compressed Gas</u> - Any material or mixture having in the container a pressure <u>exceeding</u> 40 psia at 70°F., or a pressure exceeding 104 psia at 130°F.; or any liquid flammable material having a vapor pressure exceeding 40 psia at 100°F. (Sec. 173.300(a))
FLAMMABLE GAS	Any compressed gas meeting the requirements for lower flammability limit, flammability limit range, flame projection, or flame propagation criteria as specified in Sec. 173.300(b).
NONFLAMMABLE GAS	Any compressed gas other than a flammable compressed gas.
FLAMMABLE SOLID	Any solid material, other than an explosive, which is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious transportation hazard. (Sec. 173.150)
ORGANIC PEROXIDE	An organic compound containing the bivalent -O-O structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals must be classed as an organic peroxide unless--(See Sec. 173.151(a) for details)
OXIDIZER	A substance such as chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter. (See Sec. 173.151)
POISON A	<u>Extremely Dangerous Poisons</u> - Poisonous gases or liquids of such nature that a very small amount of the gas, or vapor of the liquid, mixed with air is dangerous to life. (Sec 173.326)
POISON B	<u>Less Dangerous Poisons</u> - Substances, liquids, or solids (including pastes and semi-solids), other than Class A or Irritating materials, which are known to be so toxic to man as to afford a hazard to health during transportation; or which, in the absence of adequate data on human toxicity, are presumed to be toxic to man. (Sec. 173.343)
IRRITATING MATERIAL	A liquid or solid substance which upon contact with fire or when exposed to air gives off dangerous or intensely irritating fumes, but not including any poisonous material, Class A. (Sec. 173.381)
ETIOLOGIC AGENT	An "etiologic agent" means a viable micro-organism, or its toxin which causes or may cause human disease. (Sec. 173.386) (Refer to the Department of Health, Education and Welfare Regulations, Title 42, CFR, Sec. 72.25(c) for details.)
RADIOACTIVE MATERIAL	Any material, or combination of materials, that spontaneously emits ionizing radiation, and having a specific activity greater than 0.002 microcuries per gram. (Sec. 173.389)
	NOTE: See Sec. 173.189(a) through (i) for details.

Variabl Name: Hazardous Cargo (cont'd.)

HAZARD CLASS	DEFINITIONS
	<p><b>ORM-A, B or C (Other Regulated Materials)</b> - Any material that does not meet the definition of a hazardous material, other than a combustible liquid in packagings having a capacity of 110 gallons or less, and is specified in Sec. 172.101 as an ORM material or that possesses one or more of the characteristics described in ORM-A through D below. (Sec. 173.500)</p> <p><b>NOTE:</b> An ORM with a flash point of 100°F. to 200°F., when transported with more than 110 gallons in one container shall be classed as a combustible liquid.</p>
ORM-A	<p>A material which has an anesthetic, irritating, noxious, toxic, or other similar property and which can cause extreme annoyance or discomfort to passengers and crew in the event of leakage during transportation. (Sec. 173.500(a)(1))</p>
ORM-B	<p>A material (including a solid when wet with water) capable of causing significant damage to a transport vehicle or vessel from leakage during transportation. Materials meeting one or both of the following criteria are ORM-B materials: (i) A liquid substance that has a corrosion rate exceeding 0.250 inch per year (IPY) on aluminum (nonclad 7075-T6) at a test temperature of 130°F. An acceptable test is described in NACE Standard TM-01-69, and (ii) specifically designated by name in Sec. 172.101. (Sec. 173.500(a)(2))</p>
ORM-C	<p>A material which has other inherent characteristics not described as an ORM-A or ORM-B but which make it unsuitable for shipment, unless properly identified and prepared for transportation. Each ORM-C material is specifically named in Sec. 172.101. (Sec. 173.500(a)(4))</p>
ORM-D	<p>A material such as a consumer commodity which, though otherwise subject to the regulations of this subchapter, presents a limited hazard during transportation due to its form, quantity and packaging. They must be materials for which exceptions are provided in Sec. 172.101. A shipping description applicable to each ORM-D material or category of ORM-D materials is found in Sec. 172.101. (Sec. 173.500(a)(4))</p>
<p>THE FOLLOWING ARE OFFERED TO EXPLAIN ADDITIONAL TERMS USED IN PREPARATION OF HAZARDOUS MATERIALS FOR SHIPMENT. (Sec. 171.8)</p>	
CONSUMER COMMODITY (See ORM-D)	<p>Means a material that is packaged or distributed in a form intended and suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medicines.</p>
FLASH POINT	<p>Means the minimum temperature at which a substance gives off flammable vapors which in contact with spark or flame will ignite. (Sec. 173.115 and 173.150)</p>
FORBIDDEN	<p>The hazardous material is one that must not be offered or accepted for transportation. (Sec. 172.100(d))</p>
LIMITED QUANTITY	<p>Means the maximum amount of a hazardous material; as specified in those sections applicable to the particular hazard class, for which there are <u>specific exceptions</u> from the requirements of this subchapter. See S c. 173.118, 173.118a, 173.153, 173.244, 173.306, 173.345, and 173.364.</p>

Variable Name: Hazardous Cargo (cont'd.)

HAZARD CLASS	DEFINITIONS
SPONTANEOUSLY COMBUSTIBLE MATERIAL (SOLID)	Means a solid substance (including sludges and pastes) which may undergo spontaneous heating or self-ignition under conditions normally incident to transportation or which may upon contact with the atmosphere undergo an increase in temperature and ignite.
WATER REACTIVE MATERIAL (SOLID)	Means any solid substance (including sludges and pastes) which, by interaction with water, is likely to become spontaneously flammable or to give off flammable or toxic gases in dangerous quantities.

This variable measures the association between the vehicle under consideration and the presence of hazardous cargo. It does not measure the type of hazardous cargo.

Code "0" (No hazardous cargo) if the vehicle was not transporting any cargo which is defined as hazardous above.

Code "1" (Load of hazardous materials only) or "2" (Load of hazardous and nonhazardous materials) if the vehicle was transporting any cargo defined above as hazardous. The existence of a DOT Hazardous Materials Warning Placard or Label is a good indicator of the presence of a hazardous material. However, caution should be exercised to be sure that the vehicle was transporting the hazardous cargo at the time of the accident. Also, be sure to write down on page 2 of the Driver Form (Specific Question block) a note to ask the driver if the cargo was only hazardous material or a mixture.

Code "1" (Load of hazardous materials only) should be used if all of the cargo transported was hazardous. It does not matter whether or not all of the cargo was composed of the same type of hazardous material.

Code "2" (Load of hazardous and nonhazardous materials) is used if any part (but not all) of the cargo transported was nonhazardous.

Transported means that the cargo was moved by the vehicle (V14, Body Type) or any trailing units associated with the vehicle.

# DOT Hazardous Materials Warning Placards

\* Numbers in each square refer to (Illustration numbers), Tables 1 and 2.

1 	2 	3 	4 	5 	6 
7 	8 	9 	10 	11 	12 
13 	14 	15 	16 	17 	18 
<b>Rail Placards</b> 		<b>Highway Shipments</b>  Cargo Tanks and Portable Tanks		<b>Dangerous Placard</b> 1 When a freight container, rail car or motor vehicle contains two or more classes of hazardous materials requiring different placards specified in TABLE 2 the DANGEROUS placard may be used in place of the separate placards specified for each class. However  2 When 5,000 pounds or more of one class of hazardous material is loaded at one loading facility the placard for that class in TABLE 2 must be applied	

## General Guidelines on Use of Placards

Table 1	Table 2	Hazard Classes	* No.
Placard motor vehicles, freight containers, and rail cars containing any quantity of hazardous materials listed in TABLE 1	1 Placard motor vehicles and freight containers containing 1,000 pounds or more gross weight of hazardous materials classes listed in Table 2  2 Placard any quantity of hazardous materials classes listed in Tables 1 and 2 when offered for transportation by air or water  Placard rail cars containing any quantity of hazardous materials classes listed in Table 2, except when less than 1,000 pounds gross weight of hazardous materials is transported in TOFC (Trailer on flat car) or COFC (Container on flat car) service	Class C explosives Blasting agent Nonflammable gas Nonflammable gas (Chlorine) Nonflammable gas (Fluorine) Nonflammable gas (Oxygen, pressurized liquid) Flammable gas Combustible liquid Flammable liquid Flammable solid Oxidizer Organic peroxide Poison B Corrosive material Irritating material	9 3 6 7 15 8 5 10 9 11 13 14 15 17 18
<b>Hazard Classes</b> Class A explosives Class B explosives Poison A Flammable solid (DANGEROUS WHEN WET label only) Radioactive material (YELLOW III label) Radioactive material Uranium hexafluoride, fissile (containing more than 0.7 pct U <sup>235</sup> ) Uranium hexafluoride, low specific activity (containing 0.7 pct or less U <sup>235</sup> )			1 2 4 12 16 16, 17 16, 17

### CARGO AND PORTABLE TANKS

Cargo tanks containing any quantity of hazardous material must be placarded

- Portable tanks having a rated capacity of 1,000 gallons or more must be placarded
- Portable tanks having a rated capacity of less than 1,000 gallons need be placarded on only two opposite sides

### FREIGHT CONTAINERS

• Freight Containers (640 Cubic Feet or More) - Placard each end and each side

- Air or Water - Placard any quantity
- Highway or Rail - Placard any quantity of hazardous material listed in Table 1 and 1,000 pounds or more aggregate gross weight of hazardous material in Table 2

### OTHER PLACARDING REQUIREMENTS

- Chlorine, Combustible, Flammable, and Oxygen Placards - Sec. 172.504, Table 2
- Fuel Oil Placard - Sec. 172.544 (c).
- Gasoline Placard - Sec. 172.542(c)
- Square Background for Rail Shipments - Sec. 172.510(a) and 172.527(a)
- Empty Placard - Sec. 172.525

<b>AIR SHIPMENTS</b>				<b>BUNG</b>		
					<p><b>CAUTION</b> Material Too Strong to Handle Do not unseat directly until all over-pressure has escaped through the pressure release. <b>REMOVE BUNG IN OPEN AIR</b> Keep all open flame lights and fires away if released electric lights are safe.</p>	

Note: For use in addition to other required labels

\* New Radioactive Materials Labels

\*\* See note below

## General Guidelines on Use of Labels

- Each person who offers a hazardous material for shipment must label the package containing the material, if required, with the appropriate label(s) (Sec 172 400 (a))
- Labels may be affixed to packages even though not required by the regulations provided each label represents a hazard of the material in the package (Sec 172 401)
- Exceptions to the labeling requirements for limited quantities of certain hazardous materials are specified in the regulations
- The number appearing at the bottom corner of some labels represent the UN and IMCO hazard class number. These are permitted, but not required, by DOT regulations (Sec 172 407 (g))
- Label(s), when required, must be affixed to or printed on the surface of the package near the marked proper shipping name (Sec 172 406 (a))
- When two or more different warning labels are required they must be displayed next to each other (Sec 172 400 (c))
- When two or more packages containing compatible hazardous materials are packaged within the same overpack, the outside container must be labeled as required for each class of material contained therein (Sec 172 404 (b))

- 8 Packages containing a sample of a hazardous material other than an explosive must be labeled in accordance with the requirements of Sec 172 402 (h) (For Explosives, see Title 49, CFR, Part 173, Subpart C)
- 9 A material classed as an Explosive A, Poison A or Radioactive material, that also meets the definition of another hazard class, must be labeled as required for each class (Sec 172 402 (a))
- 10 Packages containing Radioactive material, that also meets the definition of one or more additional hazards, must be labeled as a Radioactive material and for each additional hazard on opposite sides of the package (Sec 172 403 (e) and (f))
- 11 A material classed as an Oxidizer, Flammable solid, or Flammable liquid, that also meets the definition of a Poison B, must be labeled POISON, in addition to the hazard class label. (Sec 172 402 (a) (3))
- 12 A material classed as a Flammable solid, that also meets the definition of a water reactive material, must have both FLAMMABLE SOLID and DANGEROUS WHEN WET labels affixed (Sec 172 402 (a) (4))

13 For OXYGEN, the word "OXYGEN" may be used in place of the word "OXIDIZER" on the OXIDIZER label (Sec 172 405 (a)) For foreign shipments, the NON-FLAMMABLE GAS label may also be required

14 For CHLORINE, a CHLORINE label may also be used in place of the NON-FLAMMABLE GAS and POISON labels (Sec 172 405 (b)) For foreign shipments, the NON-FLAMMABLE label may also be required.

\* New labels may be used in lieu of old labels. After January 1, 1982, new labels must be used.

These guidelines do not include all of the DOT hazardous materials labeling and placarding requirements. For details, refer Title 49, Code of Federal Regulations, Part 172

NOTE: Printing Errors  
**RADIOACTIVE MATERIALS LABELS**

- Top portion of RADIOACTIVE I label should be white
- And bars on all labels should follow the word RADIOACTIVE



U. S. DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
MATERIALS TRANSPORTATION BUREAU  
WASHINGTON, D. C. 20590

Variable Name: Vehicle Curb Weight

Format: 3 columns - numeric

Beginning  
Column 97

Element Values:

Range: 001 through 500

Code recorded weight to the nearest 100 pounds.

001 Less than 150 Pounds

997 99,650 Pounds or More

999 Unknown

Source: Primary and secondary sources are listed below; occasional tertiary sources [for heavy trucks only (i.e., over 10,000 lbs. GVWR)] are the vehicle inspection and driver interview.

Remarks:

"Vehicle" is defined on this variable to mean one and the same as that which is coded on V14, Body Type.

Code to nearest 100 pounds as in the examples:

Weight: 180 lbs.	Weight: 3,230 lbs.	Weight: 16,500 lbs.
Code: 002	Code: 032	Code: 165

Code "001" if the weight is less than 150 lbs.

Do not confuse the rated Gross Vehicle Weight Rating (GVWR) with the curb weight since it is likely to be significantly greater than the curb weight.

For heavy trucks an inspection is only a source where some document (e.g., bill of lading) is found which reveals the weight. Further, the interview is only a source where the driver knew the weight because of having had the vehicle weighed.

The weight of the trailer (exclusive of cargo) is counted with the vehicle curb weight if variable V14 (Body Type) is coded as "57" (Truck tractor pulling one or more trailers). The weight of the cargo contained within or on the trailer(s) as well as in the tractor is coded under variable V59 (Vehicle Cargo Weight).

If variable V15 (Towed Trailing Unit) is coded "1" (Yes) and variable V14 (Body Type) is not coded as "57" (Truck tractor pulling one or more trailers), the weight of the trailer and its cargo is not coded here. Instead, it is coded under variable V59 (Vehicle Cargo Weight). For example, the weight of a boat trailer and its cargo are coded as Vehicle Cargo Weight (V59), distinct from the weight of the vehicle.

When coding a pickup (V14, Body Type, equal 50) or car [e.g., El Camino (V14 = 05)] with an add-on type camper (i.e., shell or self-contained), do not consider the add-on type camper as part of the curb weight. Add-on type campers should be coded under Variable V59, Vehicle Cargo Weight. However, chassis-mounted campers are to be included in this variable.

Variabl Name: Vehicle Curb W ight (cont'd.)

If the vehicle model (V13) is known, but the engine size is unknown (e.g., 6 or 8 cylinders), code the average between the high and low curb weights f r the model and annotate that the "average" was reported.

The primary source is the first source of reference material listed below; the next three sources are secondary.

Passenger Vehicle Specifications  
Motor Vehicle Manufacturers Association  
of the U.S., Inc.  
300 New Center Building  
Detroit, Michigan 48202

Automotive News  
Crain Automotive Group, Inc.  
965 East Jefferson Avenue  
Detroit, Michigan 48207

Branham Automobile Reference Book  
Branham Publishing Company  
Post Office Box 1948  
Santa Monica, California 90406

Gasoline Truck Index and  
Diesel Truck Index  
Truck Index, Inc.  
Post Office Box 4221  
Anaheim, California 92803

Variable Name: Vehicle Cargo Weight

Format: 3 columns - numeric

Beginning  
Column 100

Element Values:

Range: 000 through 500

Code recorded weight to the nearest 100 pounds.

000 Less than 050 pounds  
997 99,650 pounds or more  
999 Unknown

Source: Investigator determined--inputs include vehicle inspection (e.g., GVW, shipping invoice, bill of lading), driver interview, and other interviewees.

Remarks:

Code to the nearest 100 pounds as in the examples:

Weight: 180 lbs.  
Code: 002

Weight: 3,230 lbs.  
Code: 032

Weight: 16,500 lbs.  
Code: 165

Code "000" if the weight is less than 050 lbs.

Do not include the weight of the occupants in the cargo weight. The weight represented by the occupants will be included as a component (along with cargo and vehicle curb weight) of the single value which represents the vehicles combined weight on the CRASH Program Summary Form, if used.

The weight of the cargo (including animals) contained within or on the trailer(s) as well as in the tractor for vehicles coded "57" (Truck tractor pulling one or more trailers) on variable V14 (Body Type) is coded here. This is exclusive of the weight of the trailer(s) by themselves.

If variable V15 (Towed Trailing Unit) is coded "1" (Yes) and variable V14 (Body Type) is not coded as "57" (Truck tractor pulling one or more trailers) [prohibited combination--see Remarks section for V15, Towed Trailing Unit], the weight of the trailer and its cargo (if known) is coded here.

The weight of add-on type campers (i.e., shell or self-contained) should be coded here. See Remarks section for V58, Vehicle Curb Weight.

Code "997" (99,650 pounds or more) if the cargo weight is 99,650 lbs. or mor .

Code "999" (Unknown) if cargo weight is unknown.

Variable Name: Investigator Reported Source of Cargo Weight

Format: 1 column - numeric

Beginning  
Column 103

Element Values:

- 0 No cargo
- 1 Measured
- 2 Estimated
- 3 Rated capacity
- 9 Unknown: Source or weight

Source: Investigator determined--inputs include vehicle inspection, driver interview, and other interviewees.

Remarks:

Code "0" (No cargo) only if there was no cargo. If the total cargo weight of V59 (Vehicle Cargo Weight) is less than 50 pounds (i.e., if V59 equals "000"), then V60 can equal "1" (Measured) or "2" (Estimated).

If the cargo weight (V59) is known to be greater than or equal to 50 pounds, then code this variable as "1" (Measured), "2" (Estimated), or "3" (Rated capacity) respectively.

### CRASH PROGRAM

Two options or methods for calculating the Delta V are available in the CRASH program.

#### DAMAGE ALGORITHM

In this method the damage profile and direction of principal force for each vehicle are used to estimate the Delta V. In the absence of an exact profile the CDC itself will be utilized by the program. When the vehicles have been inspected it is important to utilize the "nearest 10-degree" estimate of force direction rather than only relying on the o'clock sector definition for CDC.

#### TRAJECTORY ALGORITHM

In this method the evidence from the scene as well as vehicle damage data is utilized to estimate Delta V. The scene evidence of trajectory will, in fact, predict impact speed as well as Delta V. The scene data may be uncertain in many cases. For example, the friction coefficient on a wet road may be uncertain. The precise location of final rest and impact positions may be uncertain. The path between impact and final rest may be uncertain. The uncertainty associated with such evidence grows as the time between the accident and the time of scene inspection increases. The investigator should not be dismayed for even a live scene contains ambiguities concerning impact position and trajectory. Even the final rest position may be confused by action of the police in moving the vehicles to clear traffic congestion. For all these reasons, the trajectory option will be exercised less often than the damage option.

#### RECONCILIATION OF DIFFERENT RESULTS BETWEEN DAMAGE AND TRAJECTORY

When evidence from the scene and the vehicle are present, the execution of CRASH will produce two independent estimates of Delta V. The two results will seldom be precisely equal. What is a significant difference, and what action should the investigator take in the face of a significant difference?

Experience indicates that satisfactory agreement exists between the two estimates when the directions of Delta V are colinear and their total Delta V component magnitude differs by no more than 4 kph or 10 percent, whichever is greater. When the agreement is not satisfactory, the data associated with each option should be reviewed for accuracy.

Possible sources of error include:

Vehicle damage: Review the crush measurements and ensure they are consistent with the damage photos. Review the wheel and tire conditions to ensure they reflect the best estimates of their contribution to steering and drag.

Scene evidence: Review the impact and rest positions and the trajectory path. Review the surface coefficient of friction.

After reviewing these sources, subsequent runs should be made if adjustments to the input are rational. ADJUSTMENTS SHOULD NOT BE MADE WITHOUT BASIS FOR UNCERTAINTY IN THE ADJUSTED VARIABLES. If agreement cannot be reached between the two methods, the case should be flagged for special review by the Zone Center, who will then complete variables V61 through V65.

Investigators will find it convenient when uncertainty exists in some variables, such as friction coefficient and other scene evidence, to identify the range of rational error that may exist before initiating a CRASH run.

If agreement does not occur, the RERUN execution on the CRASH program can then be initiated at a considerable savings in time devoted to changing the input variables.

In any case, when both options--DAMAGE and TRAJECTORY--have been executed and agreement has been obtained, the two results for Delta V should be averaged after making the force direction collinear and this averaged value entered in V62 through V65.

Variable Name: Basis for Total Delta V (highest)

Format: 1 column - numeric

Beginning  
Column 104

Element Values:

- 0 CRASH program not used
- 1 Damage data only
- 2 Damage and trajectory data

Source: Investigator determined--inputs include CRASH output (if applicable), vehicle inspection, scene inspection, police report, and photographs.

Remarks:

The selected response is based on the data and its usage for the highest delta V only. In other words, if, for example, there is damage and trajectory data used for other than what is concluded to be the impact with the highest delta V, then code "2" (Damage and trajectory data) may not be used.

Codes "1" (Damage data only) and "2" (Damage and trajectory data) mean that a CRASH output was produced for the vehicle's highest delta V. In this sense, codes "1" or "2" should only be used if a CDC was entered in row variables V28 through V33.

The table below provides a mapping between this variable's value and the appropriate value for variables V62 through V65.

V61	V62	V63-V64	V65	
0	99	_99	9999	Missing Vehicle Data CRASH Algorithm NA.
0	96	_96	9996	
1, 2	00 - 95	-95 - +95	0000 - 9997	

The character "\_" means leave the first space "blank".

Variable Name: Total Delta V

Format: 2 columns - numeric

Beginning  
Column 105

Element Values:

Range: 00 through 95

Nearest k.p.h.

00 Less than 0.5 k.p.h.

95 95 k.p.h and above

96 Not able to compute (e.g., motorcycle)

99 Unknown

Source: CRASH program.

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as highest, secondary, or neither, for variables V25-V42 of the Vehicle Form. If a CDC is entered in row variables V26-V33 and it was used in exercising the CRASH program, code the Total Delta V as shown in the results.

If the CDC associated with CRASH was only entered in row variables V35-V42 (secondary), enter the Total Delta V as shown in the results on the space available in the secondary column of this variable. In addition, code this variable as "96" (Not able to compute) or "99" (Unknown), depending on the data obtained for the vehicle's highest delta V.

If neither the highest nor the secondary CDC entered in row variables V25-V33 or row variables V34-V42 was used in exercising the CRASH program, code the present variable as either "96" (Not able to compute) or "99" (Unknown).

To convert miles to kilometers, multiply miles times 1.61. For example, 18 m.p.h. x 1.61 = 29.0 k.p.h.

Variable Name: Longitudinal Component of Delta V

Format: 3 columns - numeric

Beginning  
Column 107

Element Values:

Range: -95 k.p.h. through +95 k.p.h.

Nearest k.p.h.

±00 Greater than -0.5 and less than 0.5 k.p.h.

±95 95 k.p.h. and above

\_96 Not able to compute (e.g., motorcycle)

\_99 Unknown

Source: CRASH program.

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as highest, secondary, or neither, for variables V25-V42 of the Vehicle Form. If a CDC is entered in row variables V26-V33 (highest) and it was used in exercising the CRASH program, code the Longitudinal Component of Delta V as shown in the results.

If the CDC associated with CRASH was only entered in row variables V35-V42 (secondary), enter the Longitudinal Component of Delta V as shown in the results on the space available in the secondary column of this variable. In addition, code this variable as "96" (Not able to compute) or "99" (Unknown) depending on the data obtained for the vehicle's highest delta V.

If neither the highest nor the secondary CDC entered in row variables V25-V33 or row variables V34-V42 was used in exercising the CRASH program, code the present variable as either "96" (Not able to compute) or "99" (Unknown).

The character "\_" means leave the first space "blank".

Variable Name: Lateral Component of Delta V

Format: 3 columns - numeric

Beginning  
Column 110

Element Values:

Range: -95 k.p.h. through +95 k.p.h.

Nearest k.p.h.

±00 Greater than -0.5 and less than 0.5 k.p.h.

±95 95 k.p.h. and above

\_96 Not able to compute (e.g., motorcycle)

\_99 Unknown

Source: CRASH program.

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as highest, secondary, or neither for row variables V25-V42 of the Vehicle Form. If a CDC is entered in row variables V26-V33 (highest) and it was used in exercising the CRASH program, code the Lateral Component of Delta V as shown in the results.

If the CDC associated with CRASH was only entered in row variables V35-V42 (secondary), enter the Lateral Component of Delta V as shown in the results on the space available in the secondary column of this variable. In addition, code this variable as "96" (Not able to compute) or "99" (Unknown), depending on the data obtained for the vehicle's highest delta V.

If neither the highest nor the secondary CDC entered in row variables V25-V33 or row variables V34-V42 was used in exercising the CRASH program, code the present variable as either "96" (Not able to compute) or "99" (Unknown).

The character "\_" means leave the first space "blank".

Variable Name: Energy Absorption

Format: 4 columns - numeric

Beginning  
Column 113

Element Values:

Range: 0000 through 9995 newton·meters

Nearest 100 newton·meters (joules)

0000 Less than 50 newton·meters

9995 999,450 newton·meters or more

9996 Not able to compute (e.g., motorcycle)

9999 Unknown

Source: CRASH program.

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as high st, secondary, or neither for variables V25-V42 of the Vehicle Form. If a CDC is entered in row variables V26-V33 (highest) and it was used in exercising the CRASH program, code the Energy Absorbed as shown in the results.

If the CDC associated with CRASH was only entered in row variables V35-V42 (secondary), enter the Energy Absorbed as shown in the results on the space available in the secondary column of this variable. In addition, code this variable as "9996" (Not able to compute) or "9999" (Unknown), depending on the data obtained for the vehicle's highest delta V.

If neither the highest nor the secondary CDC entered in row variables V25-V33 or row variables V34-V42 was used in exercising the CRASH program, code the present variable as either "9996" (Not able to compute) or "9999" (Unknown).

To convert foot-pounds to newton·meters, multiply by 1.356. For example, 14631.3 ft-lbs. x 1.356 = 19840 nt·m.

The value is then reported to the nearest 100 newton·meters. In the above example it would be "0198".

If the CRASH program is exercised in the english version and the amount of energy absorbed exceeds 737,462 ft-lbs., code "9995".

If the CRASH program is exercised in the metric version and the amount of energy absorbed exceeds 999,999 nt·m, the output will appear as "\*\*\*\*", code "9995". In this case, rerun the program using the english version to get the actual amount of energy absorbed since ft-lbs. are 1/1.356 times as great as equal nt nt·m. The english version should indicate that the amount of energy absorbed is greater than 737,462 ft-lbs.

Variable Name: CRASH Damage Data for Highest Delta V - L

Format: 4 columns - numeric

Beginning  
Column 117

Element Values: (metric values)

Range: 0005 through 0600 centimeters

Nearest centimeter

Blank - No CRASH output for most severe impact

9999 Unknown

Source: CRASH program.

Remarks:

The output of the CRASH program contains a "Summary of the Damage Data". The value of "L" coded must be the same as the "L" value given in this CRASH output's Summary. This is the value of L that is used in the CRASH program, and it should not be confused with the "Field L" measurement. Of course, it is possible that in some cases the value of "Field L" is the same as the value of the "CRASH L". (NOTE: The "L" measurement used in the CRASH program considers both direct and induced damage.)

If there is no CRASH run on the most severe impact, leave this variable "blank".

If there is a CRASH run on the most severe impact, but this variable is unknown, code "9999" (Unknown).

V67  
V68  
V69  
V70  
V71  
V72

Variable Name: CRASH Damage Data for Highest Delta V - C1  
CRASH Damage Data for Highest Delta V - C2  
CRASH Damage Data for Highest Delta V - C3  
CRASH Damage Data for Highest Delta V - C4  
CRASH Damage Data for Highest Delta V - C5  
CRASH Damage Data for Highest Delta V - C6

Format: 3 columns - numeric

Beginning  
Column 121  
124  
127  
130  
133  
136

Element Values: (metric values)

Range: 000 through 150 centimeters

Nearest centimeter

Blank - No CRASH output for most severe impact

999 Unknown

Source: CRASH program.

Remarks:

The values of "C" (i.e., C1, C2, C3, C4, C5, and C6) coded must be the same as the "C" values given in the CRASH output Summary. These are the C-values used in the CRASH program, and they may differ from C-measurements made in the field. For example, in a side impact with sill override, the C-measurements are taken along the plane that represents maximum crush and at the sill level. These C-measurements are averaged for the CRASH purposes. In this example, the C-values coded (V67-V72) are these averaged C-measurements. [NOTE: If only 4 C-measurements are taken (i.e.,  $L \leq 16"$ ), then code C5 and C6 zero ("0").]

If there is no CRASH run on the most severe impact, leave these variables "blank".

If there is a CRASH run on the most severe impact, but these variables are unknown, code "999" (Unknown).

Variable Name: CRASH Damage Data for Highest Delta V - Δ D

Format: 4 columns - numeric

Beginning  
Column 139

Element Values:

Range: -300 centimeters through +300 centimeters

Nearest centimeter

Blank - No CRASH output for most severe impact

±000 Greater than -0.5 and less than +0.5 centimeters

\_999 Unknown

Source: CRASH Program Summary Form (input data).

Remarks:

This "D" is the measured value of "D" entered in the CRASH program, and remember that it is the induced plus direct "D" that is used in the CRASH program. If input was in inches, be sure to convert the value to centimeters (i.e., 1 inch = 2.54 centimeters) before recording it here.

This "D" value need not be, and is usually not, the same as the "D" value given in the CRASH output Summary. The reason for this apparent inconsistency is that the "D" value given in the CRASH output Summary is the centroid of the crush envelope; whereas, the "D" value coded for this variable is a linear measurement (i.e., the distance from the center of the direct plus induced damage to the geometric center of the vehicle).

If there is no CRASH run on the most severe impact, leave this variable "blank".

If there is a CRASH run on the most severe impact, but this variable is unknown, code "\_999" (Unknown).

The character "\_" means leave the first space "blank".

**Variable Name:** Investigator I.D. Number

**Format:** Blank

**Beginning**  
**Column** 10

**Element Values:**

**Range:** Blank

**Source:** Zone center.

**Remarks:**

This information is not released to analytical users.

Variabl Name: Vehicle Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Range: 01 through 30

Source: Investigator determined--inputs include police report and driver interview.

Remarks:

*For each and every Vehicle Form, there must be an accompanying Driver Form.*

The value coded here must be the same as that coded for the vehicle in which this driver is associated.

This variable is a mandatory variable and cannot be changed.

Variable Name: Number of Occupants This Motor Vehicle

Format: 2 columns - numeric

Beginning  
Column 13

Element Values:

Range: 00 through 50  
99 Unknown

Source: Primary source is driver interview, secondary sources include the police report and an occupant interviewee, witnesses other than any occupant interviewee.

Remarks:

This variable tells the system how many occupants (including the driver) were present in this driver's vehicle. If the actual number present is unknown, then "99" (Unknown) should be coded.

Variable Name: Driver Presence in Vehicle

Format: 2 columns - numeric

Beginning  
Column 15

Element Values:

- 1 Driver present
- 2 Driver not present

Source: Investigator determined--inputs include the police report and any driver interviews or person interviews.

Remarks:

This variable serves as a flag to identify driverless motor vehicles in transport. If no driver was physically in the vehicle at the time it was struck, then code "2" (Driver not present) should be coded. In addition, variables D10 through D33 should be left "blank". If no driver was present, then no Occupant Form for this driver is required. On the other hand, a code of "1" implies that an Occupant Form will be present for this driver.

If this motor vehicle was a "hit-and-run" vehicle, as defined on : Accident Form (A16), then the driver was present ("1").

This variable is a mandatory variable and cannot be changed.

Variable Name: Months Driving Experience This Class of Vehicle

Format: 2 columns - numeric

Beginning  
Column 16

Element Values:

Range: 01 through 61

Code actual months of previous driving experience up to 60.

Blank - Driver not present (D09)

61 Greater than five years

99 Unknown

Source: Driver interview.

Remarks:

"Blank" indicates that no driver was present.

This variable is used to report the driver's previous driving experience in the class of vehicle the driver was operating at the time of the accident. Class of vehicle refers to general vehicle types (i.e., passenger car, light truck, straight truck, truck-tractor, bus, motorcycle, or special vehicle). These categorizations are not necessarily mutually exclusive. For example, a driver employed to operate a large limousine (special vehicle: V14 = 40, Body Type) is involved in an accident. This driver normally operates a standard size passenger car. In this instance, the investigator must not consider the special vehicle as a class differing from the driver's other driving experience. A professional truck driver, on the other hand, involved in an accident while operating the family's personal passenger car would certainly require the investigator to separate this driver's professional and personal driving experience.

The class "passenger car" includes vehicles ranging from mini-cars through full-size luxury cars.

The class of the vehicle is the sole criterion for this variable; attached trailers, additional cargo, etc., have no affect in the assessment.

The driver driving experience reported is "on-road" driving experience. For example, the driver has 5 years of off-road motorcycle riding experience, but has only been operating an on-road motorcycle for one month. One month (code "01") should be reported. Similarly, the driver has driven a tractor on the farm for 4 years; however, only in the last six months has he/she been allowed to drive on the highway. Code "06" should be used.

Variable Name: Estimated Mileage This Vehicle

Format: 3 columns - numeric

Beginning  
Column 18

Element Values:

Range: 001 through 997  
Miles to the nearest 100  
Blank - Driver not present (D09)  
001 Less than 150 miles  
997 99,650 miles or more  
999 Unknown

Source: Driver interview.

Remarks:

"Blank" indicates that no driver was present.

"This vehicle" refers to the vehicle in the accident. The intent is to measure the driver's cumulative driving experience for the specific vehicle being driven at the time of the accident. For example, if a person drove various standard passenger vehicles over a period of five years so as to accumulate approximately 60,000 total miles, but was involved in an accident while driving another standard passenger vehicle for the first time, the total estimated mileage this vehicle would equal only that mileage accumulated during the trip in which the accident occurred. Specifically excluded is any subsequent mileage accumulated in "this vehicle" post-accident.

Variable Name: Type of Operation or Carrier  
(If in Vehicle Over 10,000 lbs. GVWR)

Format: 1 column - numeric

Beginning  
Column 21

Element Values:

Blank - Driver not present (D09)

- 0 Noncommercial, or not vehicle over 10,000 lbs. GVWR  
[or an operator not meeting one of the following descriptions]
- 1 For hire/common carrier
- 2 For hire/contract carrier
- 3 Private carrier of property
- 4 Carrier of ICC exempt commodities
- 5 Foreign carrier
- 6 Carrier of migrant workers
- 7 U.S. mail carrier
- 8 Other (specify)
- 9 Unknown

Source: Primary source is driver interview; secondary sources include the police report or an employer [Reference: Public Law 95-473, October 17, 1978].

Remarks:

"Blank" indicates that no driver was present.

The type of carrier for which a driver drives inferentially indicates the degree of preemployment screening and training he is likely to have undergone--hence the interest in this question. This is especially true of carriers subject to BMCS regulations.

Code "0" (Noncommercial. . .) for any operation being conducted for private nonbusiness purposes; that is, the driver and vehicle under consideration were not being operated for hire or in furtherance of a business enterprise.

Code "1" (For hire/common carrier) is a carrier presenting himself/herself to the general public as a provider of motor vehicle transportation for compensation over regular or irregular routes, or both.

Code "2" (For hire/contract carrier) is the same as a common carrier except that the carrier provides motor vehicle transportation for compensation under continuing agreements with a person or a limited number of persons. These definitions apply to carriers of property and carriers of passengers.

Code "3" (Private carrier of property) means a person other than a common or contract carrier that is transporting property by motor vehicle and:

- (1) the person is the owner, lessee, or bailee of the property being transported; and,

## Variable Name: Type of Operation or Carrier (cont'd.)

- (2) the property is being transported for sale, lease, rent, or bailment, or to further a commercial enterprise.

Code "4" (Carrier of ICC exempt commodities) is used when the carrier would ordinarily be considered a common or contract carrier if it were not for the commodities being hauled. These commodities are exempted from ICC (Interstate Commerce Commission) economic regulation, hence the term exempt hauler. The list of commodities is exhaustive and is not printed here. They tend to fit into one of the following categories:

- (1) ordinary livestock
- (2) agricultural or horticultural commodities
- (3) cooked or uncooked fish, fresh or frozen (unprocessed) shellfish, and other unprocessed food products
- (4) newspapers

Code "5" (Foreign carrier) is used for any common or contract carrier owned by or registered as a foreign carrier (e.g., Canada, Mexico, etc.) which operates in the United States.

Code "6" (Carrier of migrant workers) is used for any carrier who is transporting migrant workers.

Code "7" (U.S. mail carrier) is used for any contract carriers who work for the United States Postal Service.

Code "8" (Other) includes any other type of operation not included in one of the definitions above.

The following definitions are provided to assist your understanding.

agricultural: pertaining to the production of crops, livestock, or poultry.

bailee: the person to whom a bailment is made.

bailment: a delivery of personal property by one person to another in trust for a specific purpose, with a contract, expressed or implied, that the trust shall be faithfully executed and the property returned or duly accounted for when the special purpose is accomplished, or kept until the bailer reclaims it.

bailor: the maker of a bailment; one who delivers personal property to another to be held in bailment.

horticultural: pertaining to the cultivation of flowers, fruits, vegetables or ornamental plants in relation to a garden, orchard, or nursery.

Variable Name: Federal Safety Regulation

Format: 1 column - numeric

Beginning  
Column 22

Element Values:

Blank - Driver not present (D09)

0 Noncommercial or not vehicle over 10,000 lbs. GVWR

1 Motor carrier not subject to U.S. DOT (BMCS) regulations  
Motor carrier subject to U.S. DOT (BMCS) regulations

2 Intercity operation

3 Local pickup or delivery

9 Unknown

Source: Primary source is driver interview; secondary sources include the police report or an employer.

Remarks:

"Blank" indicates that no driver was present.

The term "federal safety" refers to any agency of the federal government that issues regulations which promote traffic safety. The primary agency of concern, at this time, is the Bureau of Motor Carrier Safety (BMCS). In general, BMCS regulates the operation of carriers who are engaged in interstate or foreign commerce. It should be emphasized that this variable measures whether or not the carrier is regulated, rather than the driver; although, the driver is the primary source of information regarding the carrier.

Interstate commerce is the movement of goods from one state to another. In general, this means that a shipment of goods originates in one state and terminates in another. Any movement of those goods that is a part of a principal shipment is interstate commerce and subject to BMCS regulation. The carrier involved in the accident you are investigating, need not have crossed a state line so long as the carrier is a component part of the principal movement of the goods. For example, if a carrier hauls goods from a railroad facility to a trucking facility, from which they are subsequently shipped, then this carrier is involved in interstate commerce even if the carrier never leaves the city limits. This carrier's trip was a part of a principal movement of goods from one state to another. On the other hand, a carrier who picks up goods from a facility which was the destination for the principal trip of those goods, and delivers them for use or sale is not involved in interstate commerce. Rather, this carrier is involved in local pickup and delivery.

In summary, if a carrier is transporting goods as a part of a continuous move from one state to another, then the carrier is engaged in interstate commerce. Carriers who operate wholly within the commercial zone of a municipality or large city (generally pickup and delivery drivers) are exempt from BMCS regulations.

Variable Name: Federal Safety Regulation (cont'd.)

The investigator should first determine if the driver's vehicle was over 10,000 lbs. GVWR. Second, determine if the driver was engaged in a commercial enterprise (D12, Type of Operation or Carrier, equals "1" through "8"). If the answer to either of these questions is "no", then code "0" (Noncommercial or not vehicle over 10,000 lbs. GVWR).

If the answer to both preceding questions is "yes", next determine if the motor carrier is DOT (BMCS) regulated. Investigators should ask the driver if he/she is DOT (BMCS) regulated. If the driver indicates that he/she knows the answer, then proceed accordingly. If the driver is unsure, ask the driver these questions.

- (1) Do you have to have a DOT (ICC) physical?
- (2) Do you have a DOT card?
- (3) Do you keep driver logs?
- (4) Do you have a bill of lading?

If the answer is "yes" to any of these questions, presume that the carrier is DOT (BMCS) regulated. In addition to the driver, the vehicle may give you some clues. If during your inspection you see the following: ICC #...# or MC #...#, then you have evidence that the carrier is DOT (BMCS) regulated.

If you determine that the carrier is not DOT (BMCS) regulated, code "1" [Motor carrier not subject to U.S. DOT (BMCS) regulations]. If you determine the carrier is regulated, next inquire as to whether this particular trip was part of an intercity operation. That is, ask the driver if he/she was moving goods from city-to-city, or making a local pickup or delivery. Apply the principals given above, and make the best fit. If the goods are being transported between cities or towns, code "2" (Intercity operation). If making local pickups or deliveries best describes this driver's trip, code "3" (Local pickup or delivery).

Use code "9" (Unknown) if: (1) the GVWR of the vehicle is unknown, (2) it is unknown whether or not this driver/vehicle was engaged in a commercial enterprise, or (3) you cannot determine if the carrier is DOT (BMCS) regulated. If you determine the carrier was regulated, make every attempt to choose from codes "2" (Intercity operation) and "3" (Local pickup or delivery).

Variable Name: Driver's Classification  
[If in Vehicle Over 10,000 lbs. GVWR]

Format: 1 column - numeric

Beginning  
Column 23

Element Values:

- Blank - Driver not present (D09)
- 0 Noncommercial or not in vehicle 10,000 lbs. GVW or greater  
[Commercial]
- 1 Full time employee
- 2 Part time employee
- 3 Owner operator
- 4 Leased (from labor contractor)
- 8 Other (specify)
- 9 Unknown

Source: Primary source is driver interview; secondary sources include the police report or an employer.

Remarks:

"Blank" indicates that no driver was present.

Code "0" (Noncommercial or not in vehicle 10,000 lbs. GVW or greater) if the driver is in a motor vehicle not being operated on this trip for hire or in furtherance of a commercial enterprise, or if the vehicle is not equal to or greater than 10,000 lbs. GVWR.

The key distinction between commercial and noncommercial is whether the vehicle (or its most immediate operator) is being operated for gain. Therefore, a county truck would not be commercial, but a telephone company truck would be; or a school bus operated by the public school system would not be commercial, but a bus operated by a contractor to the school system while supplying the same service would be. Also, busses operated by private schools would be considered commercial because the service is included in the educational contract (for gain).

Code "1" (Full time employee) if the driver in any period of seven (7) consecutive days is employed or used as a driver solely by a single employer. If a person works less than a full work week but has no other job and does not work for another employer, the driver is considered full-time. Excluded, however, are seasonal employees.

Code "2" (Part time employee) if the driver drives for a motor carrier on a temporary (short term) or seasonal basis; works for a multiple number of carriers, but is not an employee of a labor contractor (typically this might include drivers working out of a union hiring hall or drivers "off the street"), or if the driver works part of a work week for the carrier but also has another job with another employer.

## Variable Name: Driver's Classification (cont'd.)

Code "3" (Owner operator) if the driver owns the truck and/or trailer that was involved and either is acting as an independent motor carrier himself/herself or has leased himself/herself and the vehicle to a motor carrier.

Code "4" [Leased (from labor contractor)] if the driver is the employee of a labor contractor, who in turn, leases the services of the driver to a motor carrier. Under these arrangements, the carrier usually exercises dispatch control over the driver, but the driver's pay, vacation, sick leave and other fringe benefits are the responsibility of the labor contractor that employs him.

Code "8" (Other) includes any other category of commercial driver not covered above.

Variable Name: Frequency Driving Road

Format: 1 column - numeric

Beginning  
Column 24

Element Values:

Blank - Driver not present (D09)

- 1 Daily
- 2 Weekly
- 3 Monthly
- 4 Less than once a month
- 5 First time on road
- 9 Unknown

Source: Driver interview.

Remarks:

"Blank" indicates that no driver was present.

The following decision rules apply if the driver's response is given in units different than those listed.

Daily =  $\geq$  3 times a week

Weekly =  $<$  3 times a week but  $\geq$  3 times a month

Monthly = 1 or 2 times a month

Less than once a month = less than once a month

First time on road = first time on road

Variable Name: Driver Education

Format: 1 column - numeric

Beginning  
Column 25

Element Values:

- Blank - Driver not present (D09)
- 0 No formal driver training
  - 1 In training at time of accident
  - 2 High school driver training
  - 3 Commercial driver training
  - 4 Truck driver training school
  - 5 Motor carrier program--On-the-Job-Training
  - 6 Two or more types of formal driver training
  - 8 Other formal driver training (e.g., college, military, etc.)  
(specify)
  - 9 Unknown

Source: Driver interview.

Remarks:

"Blank" indicates that no driver was present.

Only basic driver training is considered for this variable--refresher courses (i.e., basic skills) are included. Specifically excluded from consideration are special or advanced training type courses (e.g., special training for elderly, accident avoidance type training, or any other advanced type of training). Advanced means that the training was beyond the basic training provided for the class of driver under consideration. There are two specific classes of drivers considered. These are: passenger vehicle drivers (including motored cycles, light trucks, and vans) and heavy truck drivers (GVWR over 10,000 lbs.).

How this variable is used depends on the type of driver under consideration. Commercial drivers are handled differently than noncommercial drivers. D14, Driver's Classification, identifies commercial drivers. The table below shows which attributes of this variable apply to the different driver types. What type of vehicle the driver was operating in this accident determines how his/her Driver Education (D16) is coded.

Type	D14	D16
Driver Not Present	Blank	Blank
Noncommercial	0,9*	0-3,6,8,9
Commercial	1-4,8,9*	0,1,4-6,8,9
Unknown	9*	0-3,6,8,9

**Variable Name: Driver Education (cont'd.)**

\*D14, Driver's Classification, can be unknown for various reasons. If the driver is known to be: (1) noncommercial, but the vehicle's GVWR is unknown, or (2) commercial, but the employer/employee relationship is not known, then code the appropriate response. On the other hand, if the driver's commercial status is unknown, report his/her Driver Education (D16) as if the driver were noncommercial.

The type of driver training that commercial drivers receive is of particular interest. If the driver is commercial, then this variable measures the type of training the driver has received in vehicles over 10,000 lbs. GVWR. Since high school driver training ("2") and commercial driver training ("3") are assumed to use passenger type vehicles, these codes are not applicable for commercial drivers. Similarly, codes "4" (Truck driver training school) and "5" (Motor carrier program--On-the-Job-Training) apply to vehicles over 10,000 lbs. GVWR and, therefore, are not applicable to noncommercial drivers. Codes "0" (No formal driver training), "1" (In training at time of accident), "6" (Two or more types of formal driver training), and (8) [Other formal driver training (e.g., college, military, etc.)] must be applied within the context of the driver's commercial status.

Code "0" (No formal driver training) should be used if a commercial driver received only high school driver training.

Code "1" (In training at time of accident) means that the driver must have been enrolled in a formal driver training class when the accident occurred.

Code "3" (Commercial driver training) refers to organizations that provide passenger type vehicle driver training for a profit. It excludes nonprofit organizations, employee training programs, and rehabilitative programs which use passenger type vehicles. These should be coded as "8" (Other formal driver training).

Code "4" (Truck driver training school) is used if the commercial driver received training at a "school" (e.g., American Truck Driving School) established for the purpose of training drivers in the use of vehicles over 10,000 lbs. GVWR. The drivers in this school must not all work for the same employer.

Code "5" (Motor carrier program--On-the-Job-Training) is used when the commercial driver is provided with on-the-job type training [whether formal (e.g., classroom) or informal] by the motor carrier that employs him/her.

If a commercial driver attended a driver training school and received on-the-job-training from his/her employer, then use code "6" (Two or more types of formal driver training). Similarly, this code should be used for a noncommercial driver who took both high school and college driver training courses. In addition, if the driver received basic automobile driver training and a basic course in motorcycle driver training, then code "6" (Two or more types of formal driver training) should be used despite the fact that automobiles and motorcycles are different modes of transportation.

Variable Name: Driver Education (cont'd.)

Code "0" (No formal driver training) is used for a noncommercial driver whose only basic driver training was received in the military on vehicles over 10,000 lbs. GVWR. It is also used for a commercial driver whose only basic driver training was received in the military on passenger type vehicles. On the other hand, code "8" [Other formal driver training (e.g., college, military, etc.)] is used for a commercial driver whose only basic driver training was received in the military on vehicles over 10,000 lbs. GVWR.

DRIVER VIEW OF TOTAL ACCIDENT CONTACT SEQUENCE

Record all impacts in the sequence that they occurred. For each impact, record: [a] its number, [b] the object contacted (from above codes), [c] the number of the impacting vehicle, [d] the location of the impact on that vehicle (from above codes), and [e] the vehicle's orientation (from above codes). If the impact involved another vehicle, list [f] its number, [g] location of the impact on the vehicle and [h] the vehicle's orientation. List up to six impacts. Place a check mark in the box for "object contacted" for that impact to indicate it was with another motor vehicle. If a vehicle is stopped at impact, use code 7 for Vehicle Orientation and write in "stopped", "parked", etc.

Have the driver sketch the accident sequence. For telephone interviews the investigator must sketch the accident sequence as described by the driver. It is not necessary that all the drivers involved in a multicar/multi-impact accident know the actual sequence of impacts. It is important to get each driver to describe how the accident occurred; each driver could provide a new insight into the dynamics of the collision. Hence, the sketch drawn in each Driver Form should reflect the perceptions of that particular driver, and not the investigator's overall determination, of the actual accident configuration.

Very few accidents will involve more than six impacts, but for those that do, the investigator must select the six most severe impacts from the total number of impacts and then list them in sequence. (Example: If there are a total of nine (9) impacts out of which the 3rd, 6th, and 7th impacts are minor compared to the rest, the investigator would list impacts 1, 2, 4, 5, 8, and 9 as per the driver's narration of sequence.) In these cases it is recommended that the investigator record the additional impacts on the reverse side of page 3 of the Driver Form and annotate as to his/her basis for selecting the six (6) most severe impacts. Although in the above example there will be nine (9) common impacts, each involved driver may not have knowledge of all nine (9) separate and distinct impacts.

Also, it should always be kept in mind that the common impact number is unique to an accident and not to a driver/vehicle.

Example: An accident involving four vehicles

Sketches and information of the accident sequence as recorded from each driver interview are shown in the next six pages. These sketches and impacts are recorded based on information given by each driver. A final accident sequence diagram is then reconstructed, based on scene inspection, vehicle inspections, police report and interviews. Then using this information the investigator determines the overall accident sequence (common impact numbers) and records the correct impact number on each Driver Form.

Assume you got the following information from each driver's interview.

Driver #1: The driver tells you that he hit two trees before his vehicle was hit by another vehicle (vehicle #2) which made him spin around into the path of vehicle #3 and was hit in the left side by vehicle #3. The other vehicle (vehicle #2) then hit vehicle #4 head-on.

Driver #2: This driver tells you that vehicle #1 skidded into his path and caused his vehicle to hit vehicle #1 in the right side. Then his vehicle (#2) skidded into impact with vehicle #4 head-on. He then tells you that he heard vehicle #1 impacting vehicle #3.

Driver #3: This driver gives you a similar type of description as driver #2 except she feels that vehicle #1 hit her vehicle before vehicle #2 impacted vehicle #4.

Driver #4: This driver tells you that all he knows about the accident is that vehicle #1 hit his vehicle head-on.

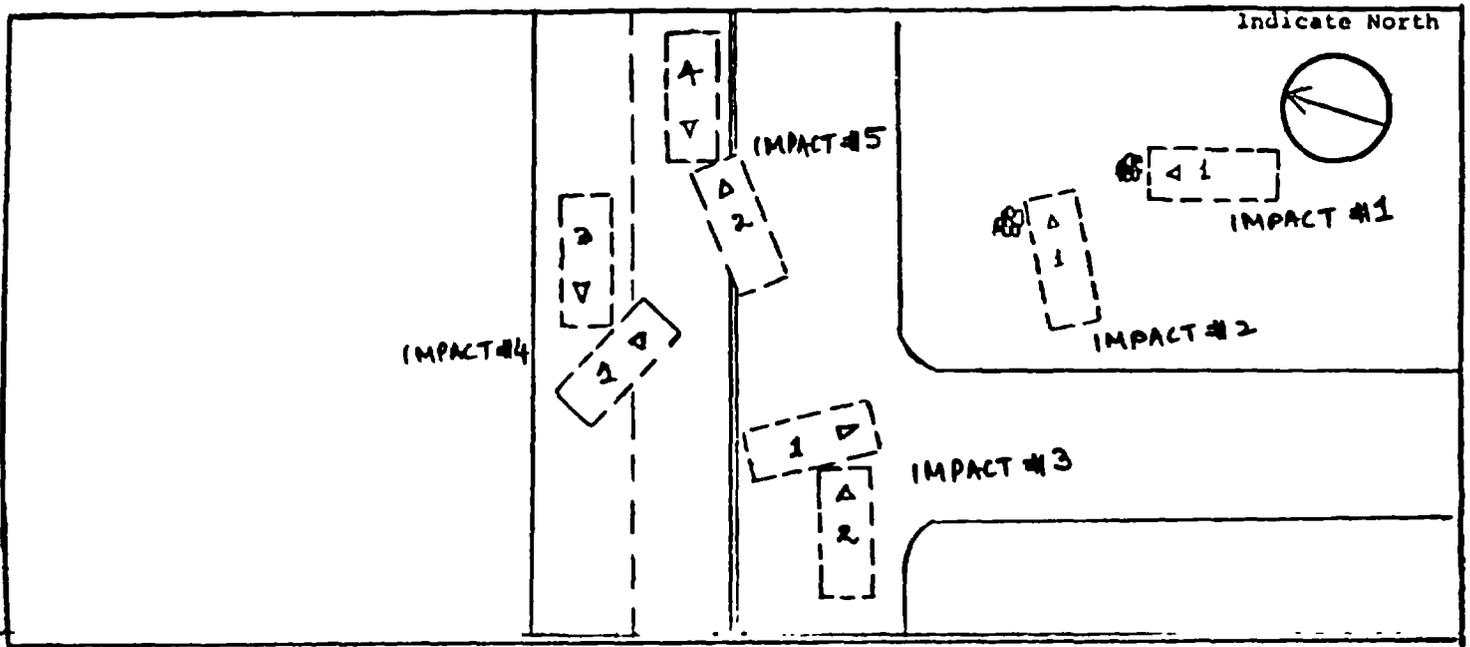








FINAL DIAGRAM BASED ON ALL INTERVIEWS, POLICE  
AND SCENE INSPECTION



Based on final accident dynamics as determined by the investigator drawing on his/her knowledge of scene inspection, vehicle inspection, police report and interviews, the actual impact sequence (common impact number) is determined as shown above and entered in corresponding Driver Forms. (See next page.)



Variable Name: Traffic Violation Charged--Speeding

Format: 1 column - numeric

Beginning  
Col: 26

Element Values:

Blank - Driver not present (D09)

0 No

1 Yes

9 Unknown

Source: Police report.

Remarks:

"Blank" indicates that no driver was present.

If the driver was charged in this accident for speeding, code "1" (Yes). Code this violation independent of variable D26, License Status This Class of Vehicle [e.g., under age driver--D26 = 1 (No license, license required)].

Code "0" (No) if the police report indicates that charges are "pending" or the arrest/summons is blank or crossed out. For example, the police report has "pending" as the only response in the arrest section; the investigator should code "0" (No) for variables D17 through D22. However, if the driver is charged with speeding but additional charges are "pending", the investigator should code D17 as "1" (Yes) and D18 through D22 as "0" (No).

Variable Name: Traffic Violation Charged--Driving While Intoxicated

Format: 1 column - numeric

Beginning  
Column 27

Element Values:

Blank - Driver not present (D09)

0 No

1 Yes

9 Unknown

Source: Police report.

Remarks:

"Blank" indicates that no driver was present.

If this driver was charged in this accident for driving under the influence, or for driving while intoxicated, then code "1" (Yes). The nature (either of the influencing agent which includes nonalcoholic drugs or the level of its presence) of the influence or intoxication may vary within jurisdictions. This variable records only that the offense was cited. Code this violation independent of variable D26, License Status This Class of Vehicle [e.g., under age driver--D26 = 1 (No license, license required)].

Code "0" (No) if the police report indicates that charges are "pending" or the arrest/summons section is blank or crossed out. For example, the police report has "pending" as the only response in the arrest section; the investigator should code "0" (No) for variables D17 through D22. However, if the driver is charged with DWI but additional charges are "pending", the investigator should code D18 as "1" (Yes) and D17 and D19-D22 as "0" (No).

Variable Name: Traffic Violation Charged--Reckless Driving

Format: 1 column - numeric

Beginning  
Column 28

Element Values:

Blank - Driver not present (D09)

0 No

1 Yes

9 Unknown

Source: Police report.

Remarks:

"Blank" indicates that no driver was present.

If this driver was charged in this accident for reckless driving or for driving to endanger, then code "1" (Yes). Code this violation independent of variable D26, License Status This Class of Vehicle [e.g., under age driver--D26 = 1 (No license, license required)].

Code "0" (No) if the police report indicates that charges are "pending" or the arrest/summons section is blank or crossed out. For example, the police report has "pending" as the only response in the arrest section; the investigator should code "0" (No) for variables D17 through D22. However, if the driver is charged with reckless driving but additional charges are "pending", the investigator should code D19 as "1" (Yes) and D17, D18, and D20-D22 as "0" (No).

Variable Name: Traffic Violation Charged--Driving with Suspended or Revoked License

Format: 1 column - numeric

Beginning  
Column 29

Element Values:

Blank - Driver not present (D09)

0 No

1 Yes

9 Unknown

Source: Police report.

Remarks:

"Blank" indicates that no driver was present.

If this driver was charged in this accident for driving with either a suspended or a revoked driver's license, then code "1" (Yes). Code this violation independent of variable D26, License Status This Class . Vehicle [e.g., under age driver--D26 = 1 (No license, license required

Code "0" (No) if the police report indicates that charges are "pending" or the arrest/summons section is blank or crossed out. For example, the police report has "pending" as the only response in the arrest section; the investigator should code "0" (No) for variables D17 through D22. However, if the driver is charged with driving while suspended or revoked but additional charges are "pending", the investigator should code D20 as "1" (Yes) and D17-D19, D21 and D22 as "0" (No).

Variable Name: Traffic Violation Charged--Other Violation Charged

Format: 1 column - numeric

Beginning  
Column 30

Element Values:

Blank - Driver not present (D09)

0 No

1 Yes

9 Unknown

Source: Police report.

Remarks:

"Blank" indicates that no driver was present.

If this driver was charged in this accident with a violation other than speeding, driving under the influence, driving while intoxicated, reckless driving, driving to endanger, or driving with either a suspended or revoked license, then code "1" (Yes). Code this violation independent of variable D26, License Status This Class of Vehicle [e.g., under age driver--D26 = 1 (No license, license required)].

Code "0" (No) if the police report indicates that charges are "pending" or the arrest/summons section is blank or crossed out. For example, the police report has "pending" as the only response in the arrest section; the investigator should code "0" (No) for variables D17 through D22. However, if the driver is charged with an "other" violation (e.g., disregarding a stop sign) but additional charges are "pending", the investigator should code D21 as "1" (Yes) and D17-D20 and D22 as "0" (No).

Variable Name: Traffic Violation Charged--Unknown Violation Charged

Format: 1 column - numeric

Beginning  
Column 31

Element Values:

Blank - Driver not present (D09)

0 No

1 Yes

9 Unknown

Source: Police report.

Remarks:

"Blank" indicates that no driver was present.

If this driver was charged in this accident with a violation but no violation was specified, then code "1" (Yes). A code of yes for this variable may imply that the preceding five variables (D17 through D21) should be coded no ("0"). Code this violation independent of variable D26, License Status This Class of Vehicle [e.g., under age driver--D26 = 1 (No license, license required)].

Code "0" (No) if the police report indicates that charges are "pending" or the arrest/summons section is blank or crossed out. For example, the police report has "pending" as the only response in the arrest section; the investigator should code "0" (No) for variables D17 through D22. However, if the driver is charged with an unspecified violation but additional charges are "pending", the investigator should code D22 as "1" (Yes) and D17-D21 as "0" (No).

Variable Name: Alcohol Involvement

Format: 1 column - numeric

Beginning  
Column 32

Element Values:

Blank - Driver not present (D09)  
0 No  
1 Yes

Source: Police report.

Remarks:

"Blank" indicates that no driver was present.

Find the location on the police report that indicates the investigating officer's assessment with respect to whether or not alcohol was involved in this accident. If the police report explicitly states or implies that alcohol was involved as a contributing circumstance or if a citation for alcohol involvement was issued, then code "1" (Yes).

Code "0" (No) in all other instances. This includes those instances where alcohol involvement was unknown (e.g., hit-and-run vehicle), or alcohol was present but not involved as a contributing circumstance, or the driver was not charged with any alcohol related violation.

Caution should be exercised by analysts. This variable allows one to subset the data so as to select out drivers who the police said were alcohol involved. It does not allow one the opportunity to report the proportion of alcohol-involved drivers.

The various PSUs should discuss their individual, unique police reports with the Zone Centers to distinguish involvement from presence of alcohol.

Variable Name: Alcohol Test Results

Format: 2 columns - numeric

Beginning  
Column 33

Element Values:

Range: 00 through 30

Code actual reported number representing fraction of alcohol present  
(decimal implied before first digit 0.xx).

Blank - Driver not present (D09)

95 Test refused

96 None given

97 AC test performed, results unknown

99 Unknown

Source: Police report, medical reports, other official sources.

Remarks:

"Blank" indicates that no driver was present.

A blood alcohol concentration (BAC) test could be a blood, breath, or urine test. No psychomotor (police observation of driver actions) test results are to be coded here. These preliminary tests include instrumented field screening tests which indicate the presence of alcohol, but not necessarily the particular content level. These devices are designed to segregate candidates for further testing from those persons where the suspected presence of alcohol is either nonexistent or too low for additional tests.

Code "95" (Test refused) when the person refuses to voluntarily take a BAC test and no subsequent test is given. If the person refuses, but a test is performed, code the reported BAC or "97" (AC test performed, results unknown).

Code "96" (None given) includes those instances when an instrumented field screening test was given and it determined that no BAC test was required.

If an instrumented field screening test was given and it determined that a BAC test was required, code either the reported BAC from the subsequent test or "97" (AC test performed, results unknown) if the precise level was not obtained.

If the results are not available at the time the NASS case is initially submitted, leave blank, circle the variable number, and update this variable when the results are obtained.

If the BAC was given on the police report or subsequently added after the case was initiated, code the reported value. If the BAC was obtained from a medical report or any other official record, code the reported value. In essence, if any BAC is obtained, code the reported value.

Variable Name: License Source

Format: 1 column - numeric

Beginning  
Column 35

Element Values:

Blank - Driver not present (D09)  
0 No license  
1 Domestic  
2 Foreign  
9 Unknown

Source: Official driver record and police report. Official driver records take precedence over police reported information.

Remarks:

"Blank" indicates that no driver was present.

Code "0" (No license) means that it is known that this driver is not a registered motor vehicle operator.

Code "1" (Domestic) means that this driver is registered in at least one of the fifty (50) states or by the military.

Code "2" (Foreign) means that this driver is not registered in one of the fifty (50) states or by the military and is registered in a foreign country (e.g., Canada, Mexico, etc.), in a U.S. possession or territory (e.g., Puerto Rico, Guam, etc.), or has an international license.

Unknown ("9") is used if the investigator is uncertain as to whether or not the person possesses a license.

## Acquiring Driver Records for NASS Through the FARS Analyst

The following procedure to acquire driver and vehicle records for the National Accident Sampling System (NASS) will be implemented on January 1, 1981.

The system differs for each of the two following situations, but each involves the FARS Analyst and NASS PSU team leader. The two situations are:

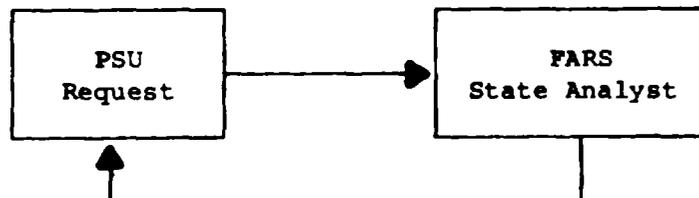
- (a) Driver records for drivers who reside within a NASS PSU State. (Attached is a list of NASS PSU States.)
- (b) Driver records of drivers who reside in a Non-NASS State.

Please note that this procedure does not address drivers who reside in another country.

### DRIVER RECORD ACQUISITION SYSTEM

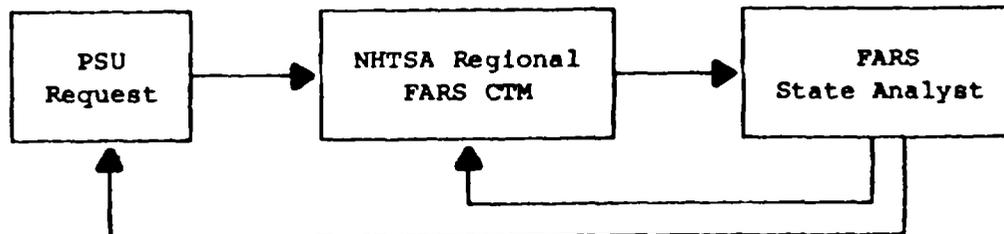
#### A. Driver Records for Drivers Who Reside within the NASS PSU State

The NASS PSU Team Leader will complete the enclosed information request, and send it to the driver's State FARS Analyst. The FARS Analyst will return the completed request directly to the originating PSU team leader.



#### B. Driver Records for Drivers Who Reside in a Non-NASS State

The NASS PSU Team Leader will complete the same information request as in "A" above, but it will be sent to the appropriate NHTSA FARS Regional CTM (list of names and addresses enclosed). The NHTSA FARS Regional CTM will forward the request directly to the State FARS Analyst. The State Analyst will return the completed form directly to the PSU Team Leader with a copy to the FARS Regional CTM.



NATIONAL ACCIDENT SAMPLING SYSTEM DATA

REQUEST FROM THE FATAL ACCIDENT REPORTING SYSTEM ANALYST

TO: \_\_\_\_\_  
Appropriate FARS State Analyst

NASS ACCIDENT CASE NO: \_\_\_\_\_

FROM: \_\_\_\_\_  
PSU Team Leader

REQUEST DATE: \_\_\_\_\_

\_\_\_\_\_  
Address

\_\_\_\_\_  
City State Zip

This is a request for data for a vehicle and/or driver involved in an accident in this State. On the back of this form are some descriptive data for the vehicle and/or driver. Please obtain the required data (covering the three year period prior to the date of the accident: \_\_\_\_\_ 197\_\_ to \_\_\_\_\_ 198\_\_) from your State vehicle and/or driver files and complete the appropriate items. If information is not available, please check the box below.

Thank you.

-----  
 SORRY, NO VEHICLE/DRIVER RECORD IN THIS STATE. (Circle Vehicle, Driver, or both.)

**VEHICLE DESCRIPTION**

OWNER'S NAME:  
OWNER'S ADDRESS:

MAKE: MODEL:

BODY TYPE: YEAR:

LICENSE NO.:

PLATE YEAR:

VIN:

VEHICLE MAKE (See Instruction Manual)	14	15	VEHICLE MODEL (See Instruction Manual)	16	17	BODY TYPE (See Instruction Manual)	18	19	MODEL YEAR Actual Value Except 99-Unknown	20	21									
VEHICLE IDENTIFICATION NO. Actual Value Except Zero Fill if no VIN Nine Fill if Unknown				22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
REGISTRATION STATE			39	40	GSA CODES Excl: 00-No Registration Not Applicable 93-Multiple State Reg. in State 94-Multiple State Reg. Out of State 95-U.S. Government Tag 96-Military Vehicle 97-Foreign Countries 99-Unknown															

**DRIVER DESCRIPTION**

NAME:  
ADDRESS:

DATE OF BIRTH:

LICENSE NO.:

SOCIAL SECURITY NO.:

DECEASED  NOT DECEASED TYPE OF VEHICLE DRIVEN:

LICENSE STATE GSA CODES Except: 94-Military 95-Canada 96-Mexico 97-Other Foreign Countries 99-Unknown	15	16	LICENSE STATUS 0-No License Required 1-No License License Required 2-Licensed but not for this type of vehicle 3-Valid License for this type of vehicle 4-Suspended License 5-Revoked License 6-Expired License 7-Learner's Permit 8-Unknown	17	DRIVER TRAINING 0-None 1-High School 2-Commercial 3-School Bus 4-Traffic School 5-Two or more Types 6-Training Type Unknown 8-Unknown	19							
PREVIOUS RECORDED SUSPENSIONS AND REVOCATIONS Actual Value Except 00-None 99-Unknown	23	24	PREVIOUS DWI CONVICTIONS Actual Value Except 00-None 99-Unknown	25	26	PREVIOUS RECORDED ACCIDENTS Actual Value Except 00-None 99-Unknown	21	22					
PREVIOUS OTHER HARMFUL MV CONVICTIONS Actual Value Except 00-None 99-Unknown	29	30	DATE OF LAST ACCIDENT SUSPENSION OR CONVICTION Mo Yr 00-No Record 99-Unknown	31	32	33	34	DATE OF FIRST ACCIDENT SUSPENSION OR CONVICTION Mo Yr 00-No Record 99-Unknown	35	36	37	38	PREVIOUS SPEEDING CONVICTIONS Actual Value Except 00-None 99-Unknown

List Restrictions:

Variable Name: License Status This Class of Vehicle

Format: 1 column - numeric

Beginning  
Column 36

Element Values:

- Blank - Driver not present (D09)
- 0 No license required
- 1 No license, license required
- 2 Licensed, but not for this type of vehicle
- 3 Valid license for this type of vehicle
- 4 Suspended license
- 5 Revoked license
- 6 Expired license
- 7 Learners permit
- 9 Unknown

Source: Official driver record and police report. Official driver records take precedence over police reported information.

Remarks:

"Blank" indicates that no driver was present.

No license required ("0") means that a license was not required for the vehicle being driven (e.g., mopeds in some states).

Code "1" (No license, license required) should be used only when it has been reasonably established that the driver is not registered (anywhere). Drivers who have a license but fail to have their license with them at the time of the accident should be coded according to the type of license they possess and the class of vehicle they were driving. Code "1" should not be used in this instance. If the police report indicates that the driver has "no license", the investigator should first determine whether this means that the person was not in possession of his/her license at the time of the accident, or that the driver is not a registered motor vehicle operator. A review of the violations cited section of the police report may yield some clues in this matter. If the person is cited for not possessing his/her license or for not having one, then code this information in variable D21, Traffic Violation Charged--Other Violation. If the investigator is uncertain as to whether or not the person possesses a license, then code "9" (Unknown) should be used.

Code "2" (Licensed, but not for this type of vehicle) refers to the class of vehicle being driven. Class is discussed under variable D10 (Months Driving Experience This Class of Vehicle). As an example, the driver has an "operator's license" when a "public passenger" type license is required. For this driver, "2" should be coded. Another common situation occurs when a separate license is required for a motorcycle. If the driver possesses a valid license for a passenger car but not for the motorcycle, then code "2" should be used.

Variable Name: License Status This Class of Vehicle (cont'd.)

Code "3" (Valid license for this type of vehicle) includes those with restrictions (e.g., restricted to certain hours). If the driver is in violation of some aspect of his/her license (e.g., one of the restrictions) do not consider the license as being not valid. Record the restriction on variable D27 (License Restriction) or D28 (Additional License Restriction) if applicable. If the police cite the driver for the violation, then the information would be recorded under variable D21 (Traffic Violation Charged--Other Violation).

Codes "4" (Suspended license), "5" (Revoked license), or "6" (Expired license) are used when a driver has some kind of license, and they take precedence over codes "2", "3", or "7".

Code "7" (Learner's permit) includes any type of preliminary license the driver obtained. It is defined as the state-sanctioned authority to operate a motor vehicle for a specified period with the requirement that the operator be accompanied by a person who holds a valid driver's license for the vehicle type being operated. There may be additional requirements (e.g., driving limited to certain time periods) which are also considered within the definition of a learner's permit.

In distinguishing license requirements from restrictions focus upon whether or not all drivers possessing the type of license are mandated to obey the requirement. If they are, then the requirement is not a restriction, but rather part of the definition of the license. Restrictions, on the other hand, are requirements specific to individual drivers.

Code "9" (Unknown) should be used when the driver has a license but the type or validity are uncertain.

2. The location of the first harmful event is known. The investigator either follows the rules pertaining to: (a) in-a-junction, or (b) not-in-a-junction to determine the roadway segment or segments for which the environmental variables are reported.

- (a) In-a-junction. First, determine the traffic unit level environmental variables for each in transport vehicle. Go independently to the mouth of the roadway that brought each vehicle into the junction. In the case of a vehicle abandoned in a junction, go to the mouth of the roadway that most likely brought the vehicle into the junction. Verify the identity of each involved roadway. The identity is needed so that each roadway's TA-1 classification can be subsequently determined from a map in-office. Collection of each roadway's classification is required so that the accident level comparison (below) can be accomplished. Next, follow the guidelines presented for variable D34 (Number of Travel Lanes) and determine the total number of lanes for each vehicle's roadway (at the mouth). Finally, determine for each of the remaining variables (D35-D45) the values for each vehicle that are most representative of the driver's (vehicle's) environment back along the vehicle's (driver's) path just prior to its involvement in the collision. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

After completing the traffic unit level environmental variables for each roadway involved, proceed to the accident level environmental variables. Where multiple roadways were involved in the accident's first harmful event, select, according to the following rules, one of the roadways on which a vehicle involved in the first harmful event was travelling just prior to its entrance into the junction:

- (1) Choose the roadway with the higher (lower numerically) TA-1 classification. If the values are the same, then proceed to rule (2). In either case, record the value in variable A21, TA-1 class.
- (2) Choose the roadway with the greater number of lanes (variable D34). If the number of lanes are the same, then proceed to rule (3).
- (3) Choose the roadway on which the most at-fault driver was travelling, except for the alleys and driveways where the street used by the other vehicle is always chosen.

If all of the in transport vehicles involved in the accident's first harmful event came from the same roadway, then select that roadway. Once you have chosen the roadway, complete the accident level environmental variables (A25-A28, A30-A37) based on the values recorded for that roadway's traffic unit level environmental variables (D34-D45). The values will be nearly identical.

- (b) Not-in-a-junction. [NOTE: An accident whose Relation to Junction (A23) was listed as "intersection related" (code "05") is an example of an accident not in a junction.] Determine the traffic unit level environmental variables for each in transport vehicle before attempting to determine the accident level environmental variables. Since the location of the first harmful event is not in a junction, the investigator must proceed, in ac-

Variable Name: Additional License Restriction

Format: 1 column - numeric

Beginning  
Column 38

Element Values:

- Blank - Driver not present (D09)
- 0 No additional restriction
  - 2 Daylight driving only
  - 3 Handicap related restriction
  - 4 Activity restriction
  - 5 More than two restrictions
  - 8 Other restriction (specify)
  - 9 Unknown

Source: Official driver record and police report (if applicable). Official driver records take precedence over police reported information.

Remarks:

"Blank" indicates that no driver was present.

Code "0" (No additional restriction) if no restrictions were reported (D27, License Restriction, equals code "0"), or only one restriction was reported. The restriction reported on the preceding variable (D27) must have been of a lower numerical value than the restriction reported here with the exception of the other restriction ("8") code. In this instance, either "5" (More than two restrictions) or "8" (Other restriction) should be coded for this variable. Code "5" if the driver had three or more restrictions.

In addition, code "0" (No additional restriction) must be coded if D26, License Status This Class of Vehicle, equals "0" (No license required) or "1" (No license, license required).

If a driver had a "learner's permit" (variable D26 = 7, License Status This Class of Vehicle) and was caught driving unaccompanied by a person who holds a valid driver's license for the vehicle type being operated, then do not consider this "failure to be accompanied" as a restriction since it is implied in the definition of a learner's permit. This also applies to any other requirements which are associated with a learner's permit in a particular state (e.g., driving limited to certain time periods).

In distinguishing license requirements from restrictions focus upon whether or not all drivers possessing the type of license are mandated to obey the requirement. If they are, then the requirement is not a restriction, but rather part of the definition of the license. Restrictions, on the other hand, are requirements specific to individual drivers.

Variable Name: Previous Speeding Convictions

Format: 1 column - numeric

Beginning  
Column 39

Element Values:

Range: 0 through 8

Blank - Driver not present (D09)

8 Eight or more

9 Unknown

Source: Official driver record.

Remarks:

"Blank" indicates that no driver was present.

Code "9" (Unknown) means that no official records were obtainable, independent of the reason for the record being unobtainable (i.e., record never existed, person never licensed, record not found, or record denied by cognizant state agency).

Record the number of speeding convictions (points assessed, license suspensions, etc.) listed on the driver's record for the "previous three years" inclusive from the date of the accident.

Variable Name: Previous Other Harmful Moving Violation Convictions

Format: 1 column - numeric

Beginning  
Column 40

Element Values:

Range: 0 through 8

Blank - Driver not present (D09)

8 Eight or more

9 Unknown

Source: Official driver record.

Remarks:

"Blank" indicates that no driver was present.

Code "9" (Unknown) means that no official records were obtainable, independent of the reason for the record being unobtainable (i.e., record never existed, person never licensed, record not found, or record denied by cognizant state agency).

Record the number of moving violation convictions (points assessed, license suspensions, etc.) listed on the driver's record for the "previous three years" inclusive from the date of the accident.

Each team should consult with their state driver records personnel so as to distinguish other moving violations from nonmoving violations (e.g., driving without a license).

All moving violations cited are assumed to be harmful. In other words, disregard the term "harmful".

Variable Name: Previous Driving While Intoxicated Convictions

Format: 1 column - numeric

Beginning  
Column 41

Element Values:

Range: 0 through 8

Blank - Driver not present (D09)

8 Eight or more

9 Unknown

Source: Official driver record.

Remarks:

"Blank" indicates that no driver was present.

Code "9" (Unknown) means that no official records were obtainable, independent of the reason for the record being unobtainable (i.e., record never existed, person never licensed, record not found, or record denied by cognizant state agency).

Record the number of driving while intoxicated (or driving under the influence) convictions (points assessed, license suspensions, etc.) listed on the driver's record for the "previous three years" inclusive from the date of the accident.

Variable Name: Previous Recorded Suspensions and Revocations

Format: 1 column - numeric

Beginning  
Column 42

Element Values:

Range: 0 through 8

Blank - Driver not present (D09)

8 Eight or more

9 Unknown

Source: Official driver record.

Remarks:

"Blank" indicates that no driver was present.

Code "9" (Unknown) means that no official records were obtainable, independent of the reason for the record being unobtainable (i.e., record never existed, person never licensed, record not found, or record denied by cognizant state agency).

Record the number of previous suspensions or revocations of the driver's license the state has listed on the record. The suspension or revocation need not be for a traffic violation (e.g., failure to appear at an accident hearing or failure to provide proof of financial responsibility could be grounds for suspension). Record the number listed for the "previous three years" inclusive from the date of the accident.

Previous is to be distinguished from current suspensions and revocations by the fact that for each previous suspension or revocation the driver's license must have been reinstated. Code each listing of suspension or revocation as a unique occurrence unless evidence to the contrary is clearly indicated. If the state record does not date reinstatements, it should provide an indication of current status. If the current status is "suspended" or "revoked" (or words to that effect) then do not include the last listed suspension or revocation unless it is clearly apparent that the current status is a consequence of the accident and was changed following it.

If the state record lists a suspension or revocation which, at the time of the accident, is considered to have been in effect (because evidence to the contrary is not present), and the police report lists the license as suspended or revoked, and the current status is listed as "clear" (or words to that effect), then assume the suspension or revocation was current at the time of the accident and do not count it.

Variable Name: Previous Recorded Accidents

Format: 1 column - numeric

Beginning  
Column 43

Element Values:

Range: 0 through 8

Blank - Driver not present (D09)

8 Eight or more

9 Unknown

Source: Official driver record.

Remarks:

"Blank" indicates that no driver was present.

Code "9" (Unknown) means that no official records were obtainable, independent of the reason for the record being unobtainable (i.e., record never existed, person never licensed, record not found, or record denied by cognizant state agency).

Record the number of previous accidents listed on the driver's record for the "previous three years" inclusive from the date of the accident.

If the state's driver records does not list previous accidents, then code "9" (Unknown).

### Accident Level Versus Traffic Unit Level Environmental Data

There is a conceptual difference between the accident level and the traffic unit level environmental data. The accident level data are intended to represent the environment at the crash scene. In this sense, one can say that the accident level environmental variables represent at-crash data. On the other hand, the traffic unit level environmental variables are intended to provide the most representative description of the roadway environment that the driver (vehicle) had to cross just prior to the first harmful event. In this sense, one can say that the traffic unit level environmental variables represent the environment just prior to crash.

When determining either the accident or traffic unit level environmental data, the point of focus is at the location of the first harmful event. There are two mutually exclusive sets of locations in which the first harmful event can occur. They are: (1) in a junction (within the prolongation of the lines which form the boundary of the intersecting roadways) and (2) not in a junction. Recall that a junction is merely the area formed by the intersection of two roadways. Further, the roadways can be either a highway, road, or street, or one or both of the roadways can be an alley or driveway. In the latter case, there is a special rule for determining the accident level environment in a junction [see 2(a)(3) below]. Alleys and driveways can (in the vast majority of instances) be distinguished from highways, roads, and streets by the fact that the former are not named. Any exceptions to this "named rule" for distinguishing streets or roads from alleys or driveways should be handled on a case-by-case basis.

To determine the environmental variables, the investigator must begin by determining the location of the first harmful event. In the investigator's judgment, based upon review of the police report, scene inspection, participant interviews and, in some instances, vehicle inspection, the location of the first harmful event is either known or it is obscure. Let us deal with the latter situation first.

1. The location of the first harmful event is obscure. The investigator begins with the police report and adjusts the location determination based upon scene data, interviews, etc. However, if these additional sources fail to clarify the location, then the preponderance of the evidence from the police report must be relied upon. The two situations are as follows:

- (a) The police report depicts the accident as occurring in a junction. Upon review of the actual scene you are unsure as to whether or not the first harmful event actually did or did not occur within the prolongation of the lines forming the boundaries of the intersecting roadways; therefore, assume it did occur in a junction and proceed as if it did (i.e., follow the "in-a-junction" rules); or
- (b) The police report depicts the accident as occurring other than in a junction. Upon review of the actual scene you are unsure as to where the first harmful event actually occurred. Follow the "not-in-a-junction" rules. However, if you do determine from the scene and other evidence that the location of the first harmful event was in a junction, then follow the "in-a-junction" rules.

2. The location of the first harmful event is known. The investigator either follows the rules pertaining to: (a) in-a-junction, or (b) not-in-a-junction to determine the roadway segment or segments for which the environmental variables are reported.

- (a) In-a-junction. First, determine the traffic unit level environmental variables for each in transport vehicle. Go independently to the mouth of the roadway that brought each vehicle into the junction. In the case of a vehicle abandoned in a junction, go to the mouth of the roadway that most likely brought the vehicle into the junction. Verify the identity of each involved roadway. The identity is needed so that each roadway's TA-1 classification can be subsequently determined from a map in-office. Collection of each roadway's classification is required so that the accident level comparison (below) can be accomplished. Next, follow the guidelines presented for variable D34 (Number of Travel Lanes) and determine the total number of lanes for each vehicle's roadway (at the mouth). Finally, determine for each of the remaining variables (D35-D45) the values for each vehicle that are most representative of the driver's (vehicle's) environment back along the vehicle's (driver's) path just prior to its involvement in the collision. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

After completing the traffic unit level environmental variables for each roadway involved, proceed to the accident level environmental variables. Where multiple roadways were involved in the accident's first harmful event, select, according to the following rules, one of the roadways on which a vehicle involved in the first harmful event was travelling just prior to its entrance into the junction:

- (1) Choose the roadway with the higher (lower numerically) TA-1 classification. If the values are the same, then proceed to rule (2). In either case, record the value in variable A21, TA-1 class.
- (2) Choose the roadway with the greater number of lanes (variable D34). If the number of lanes are the same, then proceed to rule (3).
- (3) Choose the roadway on which the most at-fault driver was travelling, except for the alleys and driveways where the street used by the other vehicle is always chosen.

If all of the in transport vehicles involved in the accident's first harmful event came from the same roadway, then select that roadway. Once you have chosen the roadway, complete the accident level environmental variables (A25-A28, A30-A37) based on the values recorded for that roadway's traffic unit level environmental variables (D34-D45). The values will be nearly identical.

- (b) Not-in-a-junction. [NOTE: An accident whose Relation to Junction (A23) was listed as "intersection related" (code "05") is an example of an accident not in a junction.] Determine the traffic unit level environmental variables for each in transport vehicle before attempting to determine the accident level environmental variables. Since the location of the first harmful event is not in a junction, the investigator must proceed, in ac-

cordance with the guidance which follows, to determine both the traffic unit and accident level environmental variables.

If the first harmful event did not occur in a junction, then there are two mutually exclusive locations in which it did occur. These are: (1) off the roadway, or (2) on the roadway.

- (1) Off roadway: For each in transport vehicle involved in the first harmful event, return to the location where the vehicle was last on a roadway. For this determination, "on roadway" means that any part of the vehicle was in contact with the roadway. However, if a vehicle leaves one roadway and enters another roadway other than in the manner that the second roadway was designed to be travelled, ignore the second roadway and return to the location at which the first roadway was last departed. For example: (Situation A) Vehicle leaves roadway X, crosses a field and enters roadway Y. Vehicle crosses roadway Y laterally until it impacts (a) an object (e.g., median barrier), (b) another motor vehicle, or (c) an object on the other side of the roadway. In any of these cases, return to roadway X to record the vehicle's traffic unit level environmental variables. (Situation B) Vehicle leaves roadway X to short-cut traffic ahead. Vehicle, while attempting to merge longitudinally on roadway Y, impacts (a) an object--on or off the roadway, but on the trafficway, or (b) another motor vehicle. In either of these cases, consider the vehicle to be associated with roadway Y.

Once you have determined the location where the vehicle last left the roadway (or each vehicle in the case of an accident involving multiple vehicles which leave their roadway prior to their involvement in the accident), the selection process for the proper values for the traffic unit level environmental variables is the same as for vehicles whose first harmful event was on the roadway. See (2) below for remaining instructions.

- (2) On roadway: Go to the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Determine the number of lanes (D34) for each involved vehicle by selecting the value which provides the most representative description of the driver's roadway leading to this location. Make this determination, and all subsequent traffic unit level environmental determinations (D35-D45), by looking back along the vehicle's path just prior to the impact. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables, use a generalized cross-section of the roadway at the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Record TA-1 Class (A21) for the roadway at this location. In addition, determine the appropriate values for each of the remaining accident level environmental variables (A25-A28, A30-A37).

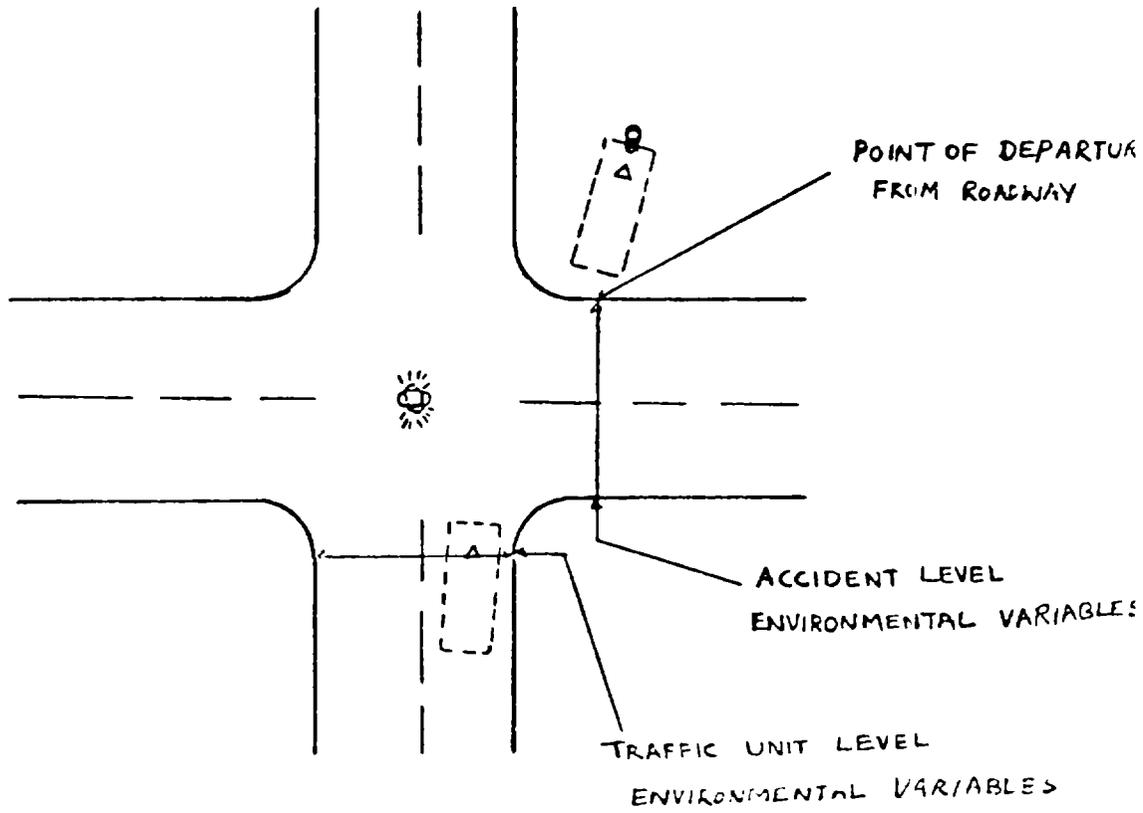
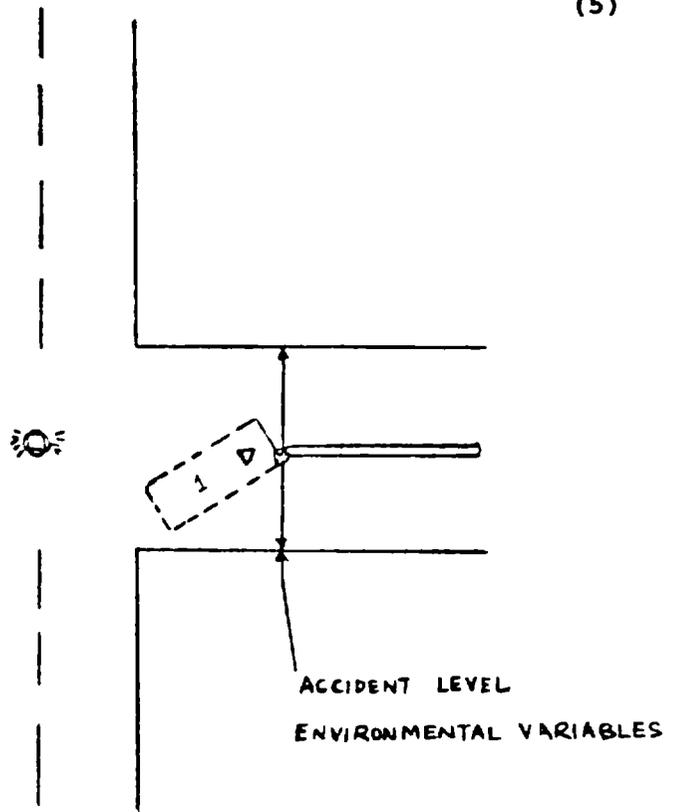
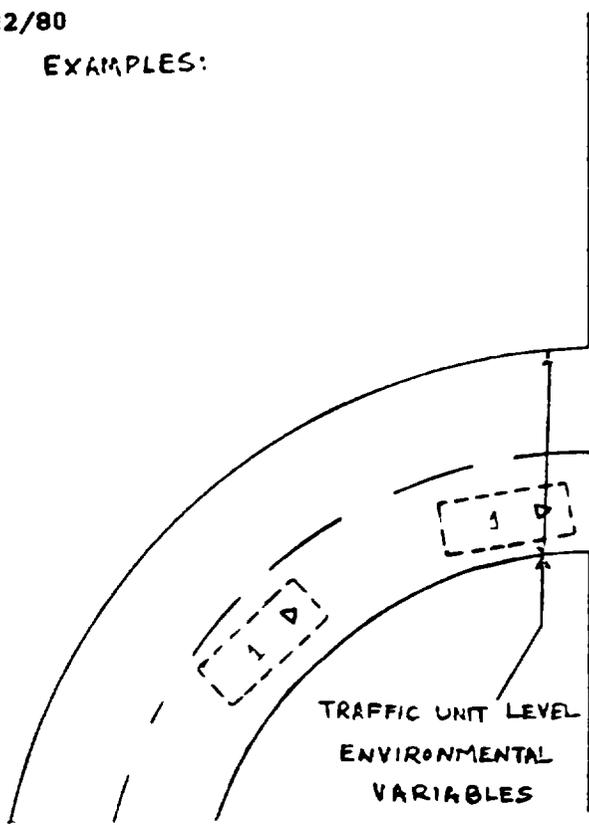
One special rule needs to be considered for the accident level determination. If the location of the first harmful event is on and the same as an area of transition (of any kind: straight-curve, level-grade, wet-dry, concrete-bituminous, etc.) record the transition according to the following rules:

- (01) Choose undivided over divided;
- (02) Choose other divisions over barrier division;
- (03) Choose partial control over full access control;
- (04) Choose no control over partial access controls;
- (05) Choose shoulders over no shoulders;
- (06) Choose two shoulders over one;
- (07) Choose curve over straight;
- (08) Choose grade over level;
- (09) Choose hillcrest or sag over grade;
- (10) Choose other surface types over concrete;
- (11) Choose gravel, dirt, brick or block over bituminous;
- (12) Choose gravel or dirt over brick or block;
- (13) Choose dirt over gravel;
- (14) Choose nondry surface conditions over dry;
- (15) Choose snow or slush over other nondry conditions;
- (16) Choose ice over wet or other conditions; and,
- (17) Choose wet over other conditions.

The location of the first harmful event and the subsequent selection of the accident level environmental variables can occur from a roadway that differs from any roadway on which an in transport vehicle was travelling. In this case the accident and driver level environmental variables may be different. This is true primarily in single vehicle collisions. An example of this occurs when a vehicle is attempting to negotiate a junction, and it impacts an object outside of the junction but on another roadway (different street or different leg of the same street but which has different attributes than the other leg). Further, in the opinion of the investigator, the former roadway is the one most representative of the vehicle's (driver's) environment just prior to the collision. (See next page for examples.) However, there is an exception to this general rule. This exception occurs when the other roadway would not qualify as a NASS roadway if it were not for the "throat" rule (see Variable A23, Relation to Junction, third page, paragraphs 7 and 8). In these instances, the accident level environmental variables should be the same as the traffic unit level environmental variables for the involved in transport vehicle.

For those in transport vehicles not involved in the accident's first harmful event (but involved in the accident), determine the traffic unit level environmental variables for that vehicle from the area preceding the location where that vehicle sustained its initial damage or its occupants were initially injured.

EXAMPLES:



Variabl Name: Number of Travel Lanes

Format: 1 column - numeric

Beginning  
Column 44

Element Values:

- 1 One
- 2 Two
- 3 Three
- 4 Four
- 5 Five
- 6 Six
- 7 Seven or more
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

If the collision occurred other than in a junction, code the value on the basis of the most representative description of this driver's roadway leading to the location of this vehicle's first harmful event.

If the first harmful event occurs off the roadway, code the value on the basis of the most representative description of the roadway leading to the point of departure.

If the first harmful event is located in the junction of two or more roadways, code the number of lanes on the basis of the most representative description of the approach leg to the junction for this vehicle.

A roadway is that part of a trafficway where vehicles travel. A divided trafficway is composed of two or more roadways.

If traffic flows in both directions and is undivided, code the number of lanes in both directions. If the trafficway is divided into two or more roadways, code only the number of lanes for the roadway on which the vehicle under consideration was travelling.

If turn bays, acceleration, deceleration, or two-way left turn lanes exist and are physically located within the cross section of the roadway where the first harmful event occurred, and these lanes are the most representative of the driver's environment just prior to the impact, then they are to be included in the number of lanes. Channelized lanes which are separated by physical barriers or divisions greater than 4 feet in width are excluded. The channelized lane(s) in this instance constitute(s) a divided roadway.

D34  
(2)

Variable Name: Number of Travel Lanes (cont'd.)

The number of lanes counted includes any of which are narrowed or rendered unusable by restriction of the right-of-way cited in variables A38 (Restriction of Roadway at Scene) or A39 (Additional Restriction of Roadway at Scene).

In a number of instances, there will be uncertainty as to the number of lanes due to: (1) nonstandard roadway widths; (2) variability of width in the same roadway due to disrepair and other reasons; or (3) absence of lane, center, and edge lines, etc. The number coded in these cases should represent the number of operational lanes based on customary or observed usage.

On a road that has legal parking such that the legal parking area ends short of the junction of the roadway with another roadway or drive, and the space left between the end of the legal parking area and the beginning of the junction can be utilized for turning by a vehicle on the roadway, do not consider this additional area as another travel lane (regardless of customary or observed usage in this instance). This area should be construed as additional width to the existing travel lane(s). The only time that another lane will be counted at a junction is when that space is expressly designated for turning (e.g., by lane marking, signs, or signals).

If the vehicle was on an entrance or exit ramp (A23, Relation to Junction, code "08"), code the number of lanes for that roadway section (also see D35, Trafficway Division and Median Type, remarks).

If the vehicle was in a crossover or on a driveway (see A23, Relation to Junction, definitions for codes "07" and "10") which is in essence a private way (ANSI D16.1-1976, section 2.2.2, page 5), code the number of lanes for that vehicle.

Variable Name: Trafficway Division and Median Type

Format: 1 column - numeric

Beginning  
Column 45

Element Values:

- 1 Undivided
- Divided (median width greater than or equal to four feet)
- 2 Paved flush--painted or unpainted (i.e., not curbed)
- 3 Curbed
- 4 Unpaved, uncurbed median (e.g., grass, gravel, etc.)
- 5 Median barrier
- 8 Other median type (specify)
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

A trafficway may include several roadways if it is a divided highway. Trafficways are not divided unless the divider is a barrier or median four feet or greater (1.2 meters) in width and curbed, unpaved/uncurbed or paved flush--painted or unpainted. Two-way left turn lanes do not divide a trafficway.

Physical division of roadways (e.g., box beam median) overrides simple lateral division (i.e., greater than four foot separation); therefore, code "5" (Median barrier) takes precedence over codes "2", "3", "4", and "8".

Entrance and exit ramps separated from the primary roadway [i.e., the one used for TA-1 class (A21) purposes] are not considered divided. These are unique roadways; however, two ramps existing together but separated by a barrier, should be coded as divided.

A channel is considered divided at the location of the first harmful event if the island that separates it from the primary roadway satisfies the median criteria.

Variable Name: Access Control

Format: 1 column - numeric

Beginning  
Column 46

Element Values:

- 1 Full
- 2 Partial
- 3 Uncontrolled
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D34, Previous Recorded Accidents.)

Code "1" (Full) refers to those situations where the authority to control access is exercised to give preference to through traffic by providing access connection with selected public roads only, by prohibiting crossings at-grade, or by prohibiting direct driveway connections.

Code "2" (Partial) refers to those situations where the authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at-grade and some private driveway connections.

Code "3" (Uncontrolled) refers to those situations where the authority having jurisdiction over a highway, street, or road, does not limit the number of points of ingress or egress except through the exercise of control over the placement and geometrics of connections as necessary for the safety of the travelling public.

In summary, consider the roadway section which was chosen for the reporting of the Number of Travel Lanes, D34. If there are no at-grade crossings, then code "1". If at-grade crossings exist but there is an indication that a limiting of access is taking place, then code "2". If no indication of access limiting can be found, then code "3". If a decision cannot be made, code "9".

Variable Name: Direction of Travel Flow

Format: 1 column - numeric

Beginning  
Column 47

Element Values:

- 1 One way
- 2 Two way
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

D:18

D:19

Variable Name: Shoulder Type - Left  
Shoulder Type - Right

Format: 1 column - numeric

Beginning  
Column 48  
49

Element Values:

- 0 No shoulder
- 1 Stabilized 2-6 ft.
- 2 Stabilized > 6 ft.
- 3 Unstabilized 2-6 ft.
- 4 Unstabilized > 6 ft.
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

Consider the same lanes which were used to determine the Number of Travel Lanes (D34), and report the presence of shoulders for those same lanes at, and lateral to, the location of this vehicle's first harmful event, unless at a junction. In the case of a first harmful event located within a junction, select the element value based on the leg of the roadway that this vehicle was travelling on prior to its entrance into the junction.

A shoulder is defined as that part of a trafficway (1) contiguous with the roadway for emergency use, (2) for accommodation of stopped road vehicles, and (3) for lateral support of the roadway structure (see ANSI D16.1-1976, section 2.2.18, pages 6-7).

Contiguous surfaces fall into two categories--stabilized and unstabilized. Stabilized means that: (1) the surface was paved with a portland cement concrete or bituminous coarse surface on a granular or improved base, or (2) the earth has been covered with a gravel or other granular material. Unstabilized means that the surface is composed of natural earth, with or without turf.

D38

D39

(2)

Variable Name: Shoulder Type - Left (cont'd.)  
Shoulder Type - Right (cont'd.)

Accommodation means that at least a minimum of two (2) feet of area contiguous to the roadway is provided. In other words, the entire width of the vehicle under consideration does not have to fit on the contiguous area to qualify the area as a shoulder. If edge lines are present when you measure the lateral distance, measure from the center of the edge line.

In order to provide lateral support to the roadway, the shoulder's surface condition does not have to be stabilized. If the shoulder surface has separated (i.e., eroded away) to expose the base of the roadway creating an unsafe departure for vehicles, then the lateral support criterion is not met. However, it must be emphasized that the "base" must be exposed. Pavement lips or cracking along the edge of the roadway surface do not by themselves constitute a lacking of lateral support.

The area is a shoulder if it is contiguous to the roadway, provides lateral support to the roadway, and is two feet or greater in width. [NOTE: A separation of opposing lanes which does not constitute a median cannot constitute a shoulder. If the location of the First Harmful Event (A10) occurs in this separation, then for A12, Relation to Roadway, code "1" (On roadway).]

On these variables, the investigator should identify not only the presence (codes "1", "2", "3", or "4") of a shoulder, but also its type. Using the definitions above, code the attribute which best describes the shoulder type. Stabilized surfaces (codes "1" and "2") take precedence over unstabilized surfaces (codes "3" and "4"). For surfaces of the same type, those greater than 6 feet in width (codes "2" and "4") take precedence over those 2 to 6 feet in width (codes "1" and "3"). For example, an area composed of a 3 foot wide stabilized surface followed by an additional 5 feet of unstabilized area, would be coded as "1" (Stabilized 2-6 ft.). On the other hand, an area composed of 3 feet of bituminous coarse surface followed by an additional 5 feet of gravel would be coded as "2" (Stabilized > 6 ft.). Further, a 1 foot wide granular area adjacent to 7 feet of grass-covered earth is coded "4" (Unstabilized > 6 ft.) since a minimum of two feet of stabilized area was not present. Finally, 1 and 1/2 feet of concrete between the roadway and a guardrail would be coded as "0" (No shoulder) since the accommodation criterion is not satisfied.

Code "0" (No shoulder) if the roadway is curbed and has no shoulders; code the appropriate response if there are both curbs (mountable) and shoulders (probably either code "1" or "2").

Shoulders are still present even if not usable at the time of the accident due to ambient conditions such as plowed snow, parked vehicles, etc.

Variable Name: Roadway Alignment

Format: 1 column - numeric

Beginning  
Column 50

Element Values:

- 1 Straight
- 2 Curve right
- 3 Curve left
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

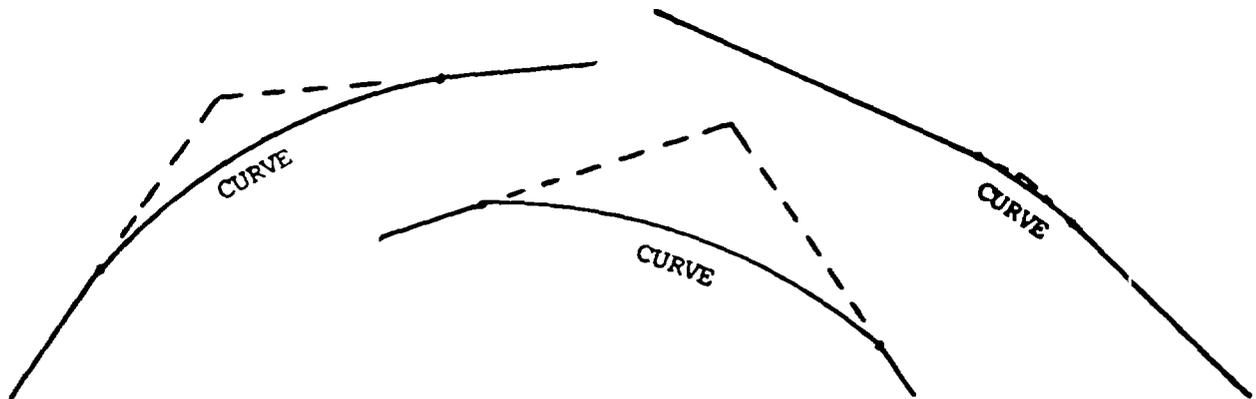
Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

Code "1" (Straight) refers to a horizontal surface which is tangent.

Codes "2" (Curve right) and "3" (Curve left) refer to a horizontal surface in transition between two points of tangency as in the examples below. The vehicle's direction of travel determines whether the curvature is right or left.



Any perceptually-determined curvature between two tangent sections of a roadway constitutes a curve. It is not necessary to quantify the degree of curvature.

Variable Name: Roadway Profil

Format: 1 column - numeric

Beginning  
Column 51

Element Values:

- 1 Level
- 2 Positive grade
- 3 Negative grade
- 4 Hillcrest
- 5 Sag
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

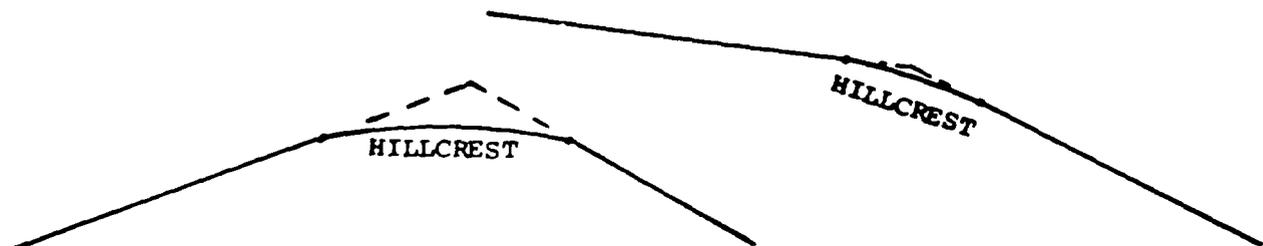
The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

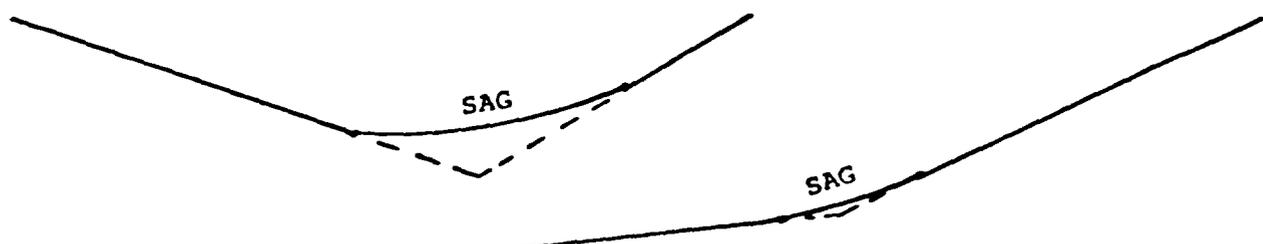
Code "1" (Level) refers to a tangent surface whose gradient is  $< 2\%$ .

Codes "2" (Positive grade) and "3" (Negative grade) refer to a tangent surface whose gradient is  $\geq 2\%$ .

Code "4" (Hillcrest) refers to a surface in vertical transition between two points of tangency as in the following examples:



Code "5" (Sag) refers to a surface in vertical transition between two points of tangency as in the following examples:



Variable Name: Roadway Surface Type

Format: 1 column - numeric

Beginning  
Column 52

Element Values:

- 1 Concrete
- 2 Bituminous (asphalt)
- 3 Brick or block
- 4 Slag, gravel or stone
- 5 Dirt
- 8 Other (specify)
- 9 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

Variable Name: Roadway Surface Condition

Format: 1 column - numeric

Beginning  
Column 53

Element Values:

- 1 Dry
- 2 Wet
- 3 Snow or slush
- 4 Ice
- 5 Sand, dirt or oil
- 8 Other (specify)
- 9 Unknown

Source: Primary sources are the police report and the driver interview; a secondary source is the scene inspection.

Remarks:

The element value selected is based on the location which the investigator determines best represents the driver's pre-crash environment. In determining the surface condition, the investigator should use police reports, interviews and observation of the site; do not report the conditions which are observed several days following the accident unless they are felt to be the same as those at the time of the accident.

Consider the same lanes which were used to determine the Number of Travel Lanes (D34) and report the surface condition for those lanes.

It is possible for different surface conditions to exist on the same roadway (e.g., intermittent wet and dry sections). The investigator should consider, but not necessarily be restricted by, the information on the police report for making this assessment. The Driver Form (for the vehicle which was on the above travel lanes) should also be consulted. Although it may be difficult to ascertain the surface condition for a particular section, the investigator should attempt to obtain a value which is most representative of the condition for those lanes.

If sand, dirt or oil (code "5") occurs in combination with moisture (codes "2", "3", or "4"), code the moisture condition. Code "5" only if the road was otherwise dry.

Asphalt will "bleed". If, in the opinion of the investigator, the bleeding was such as to constitute a road surface detriment, then code "8" (Other). On the other hand, bleeding which is intermittent and insignificant, in terms of area, should be coded as "1" (Dry). If moisture occurs with the bleeding, code "2" (Wet) should be used.

Variable Name: Traffic Controls

Format: 2 columns - numeric

Beginning  
Column 54

Element Values:

- 00 No controls
- 01 Flashing traffic signal
- 02 On colors traffic signal
- 03 Stop sign
- 04 Yield sign
- 05 Physically controlled RR crossing
- 06 Stop sign for RR crossing
- 07 Other RR crossing
- 08 School zone sign
- 09 Traffic control not functioning
- 10 Pedestrian signal
- 98 Other (specify)
- 99 Unknown

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of the first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

This variable measures controls which regulate vehicular traffic. Excluded are any controls which solely regulate pedestrians (e.g., Walk/Wait signals).

Pavement markings do not constitute traffic control devices under the present definition.

Information signs (e.g., "no left turn") do not constitute traffic controls (except for designated railroad crossing signs), whereas Stop or Yield signs do.

Code "09" (Traffic controls not functioning) should be used for any nonfunctioning traffic control, including a stop sign turned the wrong way or broken off.

## Variable Name: Traffic Controls (cont'd.)

A traffic control that has been deactivated (e.g., traffic signal that emits no signals) during certain times of the day and was deactivated at the time of the accident should be coded "00" (No controls). A traffic control that has just been installed and not yet activated should also be coded "00". However, a traffic control that is out (e.g., due to power failure) should be coded "09", unless a temporary control [e.g., stop sign ("03"), police officer ("98"), etc.] has been inserted, in which case the temporary control should be coded.

The investigator should consider the intent of this question. If at the time of the accident there was no intent to control vehicle traffic, then code "00" (No controls); otherwise, code the appropriate value. Statutory controls (e.g., state law requires that when two drivers meet at an uncontrolled intersection, the one on the right has the right-of-way) should be coded as "00" (No controls).

Code "01" (Flashing traffic signal) is used for any constant amber/red flashing signal.

Code "02" (On colors traffic signal) is used for any signal which processes through the green, amber, and red cycles. The source of actuation is of no concern unless the signal is activated only by a pedestrian. In this instance, code "10" (Pedestrian signal); otherwise, actuation is disregarded.

Code "05" (Physically controlled RR crossing) is used if any gates, flashing or light-emitting signals, or watchmen are present to alert motorists to oncoming trains.

Code "07" (Other RR crossing) should be used whenever the only control at a railroad crossing is the state's railroad crossing warning (informational) sign. It can also be used for any other control not cited above.

Codes "05" through "07" should only be used when the first harmful event occurs in the junction of a roadway and a railroad bed [i.e., A23, Relation to Junction, equals "09" (Railroad grade crossing)]. If A23 equals "09", then codes "00", "05", "06", "07", or "09" must be used.

Code "08" (School zone sign) should only be used if the location of the first harmful event is: (1) not in a junction, and (2) during the time the sign was in effect. If the sign was in effect, it does not matter whether or not children were present. (NOTE: Time should be ascertained not only with respect to hour of day, but day of week and the effect of holidays, vacations, etc., as well. Each team should report the particulars regarding their state or local ordinances to their Zone Center.)

Code "10" (Pedestrian signal) should only be used when a signal cycle change can be activated solely by a pedestrian. The signal must control vehicular traffic as well as pedestrian traffic; however, if the signal controls vehicular traffic by any other means than pedestrian activation, code "01" or "02" as applicable.

## Variable Name: Traffic Controls (cont'd.)

If a school guard, police officer, or other officially-designated person controls both pedestrian and vehicular traffic, code "98" [Other (traffic control)].

If the nature of the accident in conjunction with the roadway chosen under variable D34, Number of Traffic Lanes, will result in variable A23, Relation to Junction, being coded "05" (Intersection related), "07" (Driveway, alley access related), or "10" (Crossover related), then code the traffic control that existed for this vehicle's roadway at the junction. The reported relation to the intersection need not have been due to the presence of a control (see A23, code "05").

Remember, there are no attributes on variable A23, Relation to Junction, entitled "entrance or exit ramp related" or "railroad grade crossing related". If non-junction ("01") will be coded for variable A23, Relation to Junction, then no controls ("00") should be coded on this variable unless: (1) the school zone sign (code "08") criteria are met, (2) the pedestrian signal (code "10") is used, or (3) an applicable other (code "98") traffic control is available.

If the lanes which were used to determine the Number of Travel Lanes (D34) have two or more controls, select one of the values as follows:

select "01" or "02" if combined with any value other than " ", "06", or "07";  
select "03" or "04" if combined with "08", "10", or "98"; and,  
select "05", "06" or "07" if combined with any value.

However, if the other traffic control ("98") is an officially-designated person, then "98" takes precedence over values "00" through "10". In the instance where one of the traffic controls was not functioning (code "09"), select the code of the control that was functioning.

If the intersection is channelized and not divided, and controlled differently on the channel than on the through lanes (e.g., signal and yield sign), report the traffic controls depending on whether the roadway (D34, Number of Travel Lanes) was chosen based on its through lanes or its channelized lanes.

Variable Name: Speed Limit

Format: 2 columns - numeric

Beginning  
Column 56

Element Values:

Code actual posted or statutory speed limit in m.p.h.  
99 Unknown

Source: Primary sources are scene inspection or statutory law.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

Disregard advisory or other speed signs which do not indicate the legal speed limit. Furthermore, do not confuse advisory signs on entrance /exit ramps or near intersections with the actual legal maximum speed limit.

Do not use the police report for selecting this variable's value.

If no speed limit sign is posted within a "reasonable" distance from the location of the first harmful event along the approach leg of the vehicle for which D34 (Number of Travel Lanes) was selected, the investigator should reference state statutes to obtain the applicable statutory maximum for the scene (local or state).

If a state has a statute that uniformly reduces the maximum allowable speed within or near a construction zone, then code the indicated reduced limit.

Code "99" (Unknown) should be used on roadways which are neither posted nor which have a statutory limit (e.g., parking lot roadways or entrance/exits, service station entrance/exits, or driveways, etc.).

Variable Name: Accident Occurrence in School Zone

Format: None

Beginning Not  
Column Applicable

Element Values:

No  
Yes

Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D34). It is associated with the location of this vehicle's first harmful event.

The investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1" in the accident level versus traffic unit level environmental data discussion, following D33, Previous Recorded Accidents.)

Yes should only be used if a sign or road marking was present and the accident occurred during the time the sign or marking was in effect (i.e., this applies to the applicable time periods before, during, and following school sessions).

12/80

OCCUPANT FORM

006

Variable Name: Investigator I.D. Number

Format: Blank

Beginning  
Column 10

Element Values:

Range: Blank

Source: Zone Center.

Remarks:

This information is not released to analytical users.

12/80

OCCUPANT FORM

007

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Range: 01 through 30

Source: Investigator assigned.

Remarks:

Code the Vehicle Number for the vehicle in which this occupant was riding (i.e., as a driver or as a passenger--in or on the vehicle).

One and only one occupant is assumed to be in a hit-and-run vehicle (unless reliable evidence to the contrary exists), and that one person is also assumed to be the driver.

This variable is a mandatory variable and cannot be changed.

Variable Name: Occupant Number

Format: 2 columns - numeric

Beginning  
Column 13

Element Values:

Range: 01 through 50

Source: Investigator assigned.

Remarks:

Occupant numbers must be assigned sequentially, beginning in the enclosed area with "01". No numbers may be skipped. Assign numbers left to right and front to back among occupants.

Assign numbers last to persons on the vehicle or in an unenclosed area. Persons appended to vehicle for motion (e.g., bicyclist holding onto vehicle) are either pedestrians or other nonmotorists.

Persons on a motorcycle are assigned numbers sequentially, starting with "01". Assign numbers from front to back among occupants. If there are occupants in a side car, they are to be coded after the motorcycle occupants by assigning numbers left to right and front to back among the remaining occupants.

Drivers do not have to be coded "01" (e.g., right hand drive vehicles containing left front occupant). However, code the assumed driver of a hit-and-run vehicle as "01".

An occupant on or in the lap of another person should be assigned a number one higher than the person whose lap they were on or in.

This variable is a mandatory variable and cannot be changed.

12/80

OCCUPANT FOR14

003

Variable Name: Occupant's Age

Format: 2 columns - numeric

Beginning  
Column 15

Element Values:

00 Less than one year old  
97 97 years and older  
99 Unknown

Source: Primary source is interviewee; secondary sources include police report and official records (e.g., medical, license).

Remarks:

Age is recorded at time of accident with respect to the occupant's last birthday.

For drivers, verify age with data on licensing file. Licensing file data takes precedence over police or interview data.

Variable Name: Occupant's Sex

Format: 1 column - numeric

Beginning  
Column 17

Element Values:

- 1 Male
- 2 Female
- 9 Unknown

Source: Primary source is interviewee; secondary sources include police report and official records (e.g., medical).

Remarks:

Self-explanatory.

12/80

OCCUPANT FORM

011

Variable Name: Occupant's Height

Format: 2 columns - numeric

Beginning  
Column 18

Element Values:

Range: 12 through 85 inches  
99 Unknown

Source: Investigator determined--inputs include interviewee or official records (e.g., medical).

Remarks:

Code actual height to nearest inch.

The PAR may be used as a source if it contains this data, but it is superceded if other data exists.

Variable Name: Occupant's Weight

Format: 3 columns - numeric

Beginning  
Column 20

Element Values:

Range: 005 through 400 pounds  
999 Unknown

Source: Investigator determined--inputs include interviewee or official records (e.g., medical).

Remarks:

Code actual weight to nearest pound.

The PAR may be used as a source if it contains this data, but it is superceded if other data exists.

12/80

OCCUPANT FORM

013

Variable Name: Occupant's Role

Format: 1 column - numeric

Beginning  
Column 23

Element Values:

- 1 Driver
- 2 Passenger
- 9 Unknown

Source: Primary source is interviewee; secondary source is police report.

Remarks:

Hit-and-run vehicles are assumed to have only one occupant (unless reliable evidence to the contrary exists) and that person is assumed to be the driver.

Variable Name: Occupant's Seat Position

Format: 2 columns - numeric

Beginning  
Column 24

Element Values:

01 Front seat - left side	10 Front seat - additional passenger
02 Front seat - middle	11 Second seat or beyond - additional passenger
03 Front seat - right side	12 Truck-tractor sleeping section
04 Second seat - left side	13 Other enclosed area (specify)
05 Second seat - middle	14 In or on unenclosed area (specify)
06 Second seat - right side	15 In or on trailing unit (specify)
07 Third seat - left side	99 Unknown
08 Third seat - middle	
09 Third seat - right side	

Source: Primary source is interviewee; secondary source is police report.

Remarks:

More than one person may have the same seating position (e.g., child on or in mother's lap).

For motorcycles, code driver "01" (Front seat - left side), all sidecar passengers "02" (Front seat - middle), all passengers behind the driver "04" (Second seat - left side), and all passengers on lap of driver (in front of) "01".

In coupes and other cars designed for only 2 passengers in front or in back, use codes "01", "03", "04", "06", "07", or "09" when coding occupants.

Codes "10" and "11" can be used to record the position of someone sitting on the floor or lying across the seat. In addition, when two or more persons are sitting abreast of one another in the same seating location (as opposed to on or in someone's lap), since only one can be assigned the seat's position, the additional passenger codes "10" and "11" must be used. Assign the older person the seat's position (i.e., codes "01"- "09").

If the only real seat in the front seating area is a driver's seat and the occupant was in the area but not in the seat, code "10" (Front seat - additional passenger) should be used. This situation could occur because of design (e.g., an RV) or if a seat was removed. If a second or additional seating area can be identified and a person is in the area, but not in a designated seat, then code "11" (Second seat or beyond - additional passenger) should be used.

Code "01" should be assigned to the assumed driver of a hit-and-run vehicle unless evidence indicates a different position for the person or persons.

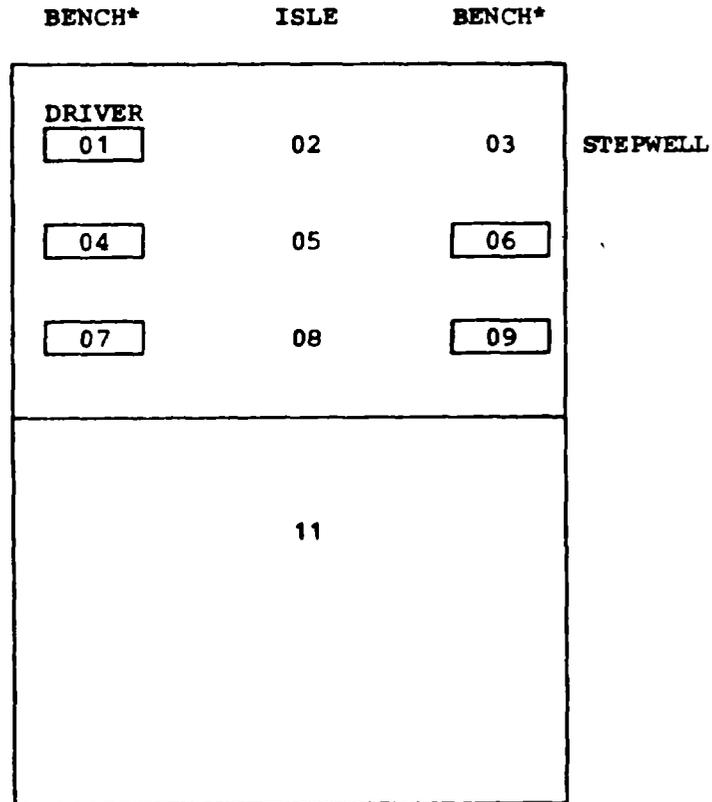
Variable Name: Occupant's Seat Position (cont'd.)

Code "13" (Other enclosed area) for any occupants beyond the 3rd seat in other than a bus.

Code "13" for a fold-down type seat.

Code "14" (In or on unenclosed area) includes those occupants riding on a fender, the boot of a convertible, the open cargo box on a truck, etc. Persons appended to the vehicle for motion are either pedestrians or other non-motorists.

For buses use the following scheme:



\*Regardless of whether seat is lateral or longitudinal.

Variable Name: Entrapment

Format: 1 column - numeric

Beginning  
Column 26

Element Values:

- 0 Not entrapped
- 1 Entrapped
- 9 Unknown

Source: Investigator determined--inputs include the vehicle inspection, interviewee, and the police report.

Remarks:

Code "0" (Not entrapped) for the driver or occupants of a motorcycle. However, this does not include the sidecars.

Code "1" (Entrapped) means that part of the occupant was in the vehicle and mechanically restrained by a damaged vehicle component; jammed doors and immobilizing injuries, by themselves, are not sufficient to constitute entrapment. Entrapment by cargo shift is also not sufficient.

Persons who are completely or partially ejected and subsequently become pinned by their own vehicle and any surface other than their own vehicle are not considered entrapped.

If the vehicle is not inspected and/or the occupant is not interviewed but the police report states that the person was "trapped", the investigator must verify through the officer, emergency personnel or other witnesses that the person was, in fact, in the vehicle and mechanically restrained. This is because the above definition is more restrictive than common usage of the term. Code "9" (Unknown) if unable to obtain verification in the above situation.

The margin indicator, which references the Vehicle Form, should be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the Vehicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Ejection

Format: 1 column - numeric

Beginning  
Column 27

Element Values:

- 0 None
- 1 Complete ejection
- 2 Partial ejection
- 3 Ejection, unknown degree
- 9 Unknown

Source: Investigator determined--inputs include the vehicle inspection, interviewee, and the police report.

Remarks:

Code "0" (None) for the driver or occupants of a motorcycle (not including sidecar) or any persons riding on the exterior of a vehicle, such as the fenders (this does not include pickup beds, flat beds, boot of a convertible, and persons riding on open tailgates).

Ejection refers to persons being completely or partially thrown from the vehicle during the course of the crash.

Code "1" (Complete ejection) refers to a situation where the occupant's body is entirely outside the vehicle but may be in contact with the vehicle.

Code "2" (Partial ejection) refers to a situation where part of the occupant's body remains in the vehicle. This does not apply to occupants who are not initially in the seating compartment of the vehicle [e.g., pickup beds, motorcycle sidecars, flat beds, boot of a convertible, and persons riding on open tailgates, since any ejection for them is coded as "1" (Complete ejection)].

Persons in or on a Special Vehicle (V14, "35" through "44") will have to be handled depending upon the occupant protection provided. If the occupant can be contained (at least from the waist down) inside of the occupant compartment, then ejection is relevant; otherwise, code "0" (None) for those occupants.

Police reported ejections may be coded if there is no vehicle inspection or occupant interview, provided that the ejectee was in the seating compartment of the vehicle and there is no evidence which contradicts the reported ejection.

The margin indicator, which references the Vehicle Form, should be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the Vehicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Ejection Area

Format: 1 column - numeric

Beginning  
Column 28

Element Values:

- 0 No ejection
- 1 Windshield
- 2 Left front
- 3 Right front
- 4 Left rear
- 5 Right rear
- 6 Rear
- 7 Roof (convertible or sun roof)
- 8 Other area (e.g., sidecar, back of pickup, etc.)
- 9 Unknown

Source: Investigator determined--inputs include the vehicle inspection, interviewee, and the police report.

Remarks:

Code "0" (No ejection) applies to persons who are not ejected, to motorcycle occupants in other than a sidecar, or to persons riding on fenders.

Code "6" (Rear) is restricted to persons riding in a passenger compartment, who are ejected through the rear window, open tailgate (e.g., station wagon), hatchback, etc.

Codes "1" through "7" are designated for use with areas designed for passenger protection (e.g., passenger cars, vans, truck cabs, self-contained RVs and motor homes). Trailers, add-on campers, haywagons, etc., are to be assigned code "8" (Other area).

Code "8" (Other area) also applies to persons riding on open tailgates, or ejected through standard roofs which are torn open. Persons ejected from special vehicles with waist down protection but not encapsulated should also be coded here.

Code "9" (Unknown) if the sole source for the ejection is the police report.

The margin indicator, which references the Vehicle Form, should be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the Vehicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Ejection Medium

Format: 1 column - numeric

Beginning  
Column 29

Element Values:

- 0 No ejection
- 1 Door
- 2 Open roof structure
- 3 Fixed windows
- Operable Windows
- 4 Roll down type
- 5 Hinged type
- 6 Sliding type
- 7 Other type (specify)
  
- 8 Other medium (specify)
- 9 Unknown

Source: Investigator determined--inputs include the vehicle inspection, interviewee, and the police report.

Remarks:

Code "0" (No ejection) applies to persons who are not ejected, to motorcycle occupants in other than a sidecar, or to persons riding on fenders.

Code "8" (Other medium) applies to persons riding in pickup beds, on flat beds, in sidecars, on open tailgates, and for other situations which cannot be classified in codes "1"- "7", such as standard roofs which are torn open.

In addition, use "8" when someone is ejected from a trailer or from an add-on camper, haywagon, special vehicle with only waist down protection, etc.

Codes "4"- "7" all refer to windows.

Code "2" (Open roof structure) applies to convertible or sun roofs only.

Code "9" (Unknown) if the sole source for the ejection is the police report.

The margin indicator, which references the Vehicle Form, should be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the Vehicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Medium Status

Format: 1 column - numeric

Beginning  
Column 30

Element Values:

- 0 No ejection
- 1 Open
- 2 Separation
- 3 Closed, closed when damaged
- 9 Unknown

Source: Investigator determined--inputs include the vehicle inspection, interviewee, and the police report.

Remarks:

Code "0" (No ejection) applies to persons who are not ejected, to motorcycle occupants in other than a sidecar, or to persons riding on fenders.

Code "1" (Open) applies to convertible roofs, sun roofs, windows, doors or tailgates that are open immediately prior to impact, or to other open areas of vehicles such as pickup beds, motorcycle sidecars, special vehicles with only waist down protection and flat bed trucks.

Codes "1" (Open) and "3" (Closed, closed when damaged) refer to the status of the medium immediately prior to the impact.

Code "2" (Separation) is restricted to use only with bonded windows, and it reflects a separation which may be attributable to either the forces of the collision or to internal contact.

Code "3" (Closed, closed when damaged) refers to a window that is closed or partially closed when damaged.

Code "3" (Closed, closed when damaged) also refers to a door that is closed, but when damaged experiences latch and/or hinge failure causing the door to open.

Code "3" (Closed, closed when damaged) may also be used when any vehicle structure (e.g., standard roof) is damaged such as to permit ejection.

Code "9" (Unknown) if the sole source for the ejection is the police report.

The margin indicator, which references the Vehicle Form, should be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the Vehicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Treatment - Mortality

Format: 1 column - numeric

Beginning  
Column 31

Element Values:

- 1 Fatal  
Nonfatal
- 2 Hospitalization
- 3 Transported and released
- 4 Treatment - other (specify)
- 5 No treatment
- 9 Unknown

Source: Investigator determined--inputs include interviewee, police report, and medical records.

Remarks:

Official sources (if they exist) take precedence over interview data.

Code "1" (Fatal) when death occurs within 30 days of accident. Death must have occurred as a consequence of injuries sustained in the traffic accident.

Code "2" (Hospitalization) when hospitalization occurs as a result of injury (need not be taken directly to a hospital). See Hospital Stay (021) for hospitalization criteria.

Code "3" (Transported and released) when the person went directly from the accident scene to a treatment facility (hospital, clinic, doctor's office, etc.), and the person is examined for injuries at the facility. The person need not have been injured. The means of transportation is not a consideration.

Code "4" (Treatment - other) includes doctor treatment, treatment at scene, first aid, self-treatment, hospital (if other than directly from scene but treated and released), etc.

Code "5" (No treatment) includes persons transported to a hospital but who refuse treatment.

If a person survives the injuries and receives treatment at a hospital, but is not admitted for hospitalization, that person's treatment is to be coded as either "3" or "4", depending upon whether the person went directly or indirectly to the hospital. It does not matter if the person is treated for one hour or twelve, only that the person is released following treatment. Nor does it matter if the treatment begins prior to midnight and spans into the following day.

Variable Name: Hospital Stay

Format: 2 columns - numeric

Beginning  
Column 32

Element Values:

00 Not hospitalized  
Code number of days hospitalized up to 30.  
31 31 days or more  
99 Unknown

Source: Investigator determined--inputs include interviewee and medical reports.

Remarks:

Official sources (if they exist) take precedence over<sup>^</sup> interview data.

Code "00" (Not hospitalized) if not injured or injured but not admitted.

Code "00" (Not hospitalized) if fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room.

The basis for the number of days coded is an overnight criterion. Every time a person remains past midnight subsequent to admission, it is one day. The only exception is when a person dies on the same day as the admission.

In the event that the person survives the emergency room but dies subsequent to admission, then code at least "01", even if the person expires the same day as admitted.

If a person is admitted, lived four days in the hospital, then expired, code "04".

Variable Name: Working Days Lost

Format: 2 columns - numeric

Beginning  
Column 34

Element Values:

00 No working days lost  
Code number of days for which work was lost up to 30.  
31 31 days or more  
32 Fatally injured  
99 Unknown

Source: Primary source is the interviewee; a secondary source is the person's employer.

Remarks:

Report the actual number of "work" days lost due to the accident by an employed person or a full-time college student. Children, adolescents, retirees, or unemployed persons are not included.

Employed is defined to mean that the person was scheduled to work at least four hours on each of the days lost. Each such day is counted as a full day so long as the person was scheduled to work at least four hours on the day lost. Do not accumulate the hours and convert to equivalent full-time days; however, indicate on the form if the person works less than full-time but greater than four hours per day by annotating "part-time" or "PT".

If during the interview a reasonable projection of future days lost can be made, then add those days to those already known to have been lost. If a reasonable projection cannot be made, then code "99" (Unknown).

The days lost need not be due to injury.

Days lost include Saturdays, Sundays, afternoon and evening shifts if so scheduled. Do not count double shifts or days at time and one-half pay, etc., as more than one day.

If a person is not employed, not a full-time college student, or works less than four hours per day, then code "00" (No working days lost). This code includes all persons who do not qualify to lose working days. Therefore, if such a person is fatally injured, code "00" (No working days lost) should still be used.

If a person who qualifies to lose working days is fatal at the scene, pronounced dead on arrival, or survival does not extend beyond the emergency room, then code "32" (Fatally injured) is used.

If a person who qualifies to lose working days expires twenty days following the accident, code "32" regardless of whether or not the person missed any working days.

022

(2)

Variable Name: Working Days Lost (cont'd.)

If the reported work days lost includes a fraction, round one-half (1/2) day or greater up to a whole day. Less than one-half day should be excluded (rounded down).

If someone gets fired and loses their job as a result of the accident, count only the work days lost between the accident and the date of termination, inclusive.

Do not include days lost by persons who were not directly involved in the accident but who lost days because of it (e.g., husband who was not in accident but stayed home to take care of wife who was injured and required assistance).

If no interview is obtained, there is a rebuttable presumption that persons over 65 or under 17 are not employed full-time; for these persons code "00" (No working days lost) should be used.

Variable Name: Manual (Active) Restraint System Availability

Format: 1 column - numeric

Beginning  
Column 36

Element Values:

- 0 None available - vehicle occupant
- 1 Shoulder belt
- 2 Lap belt
- 3 Lap belt and shoulder belt
- 4 Child safety seat
- 5 Motorcycle helmet
- 8 Restraint available - type unknown or other (specify)
- 9 Unknown

Source: Investigator determined--inputs include vehicle inspection, interviewee, and police report.

Remarks:

Select the system which was available for use, if so desired, by the occupant. Restraints which were installed but subsequently removed or cut should not be considered to be available. In other words, availability is determined by presence and functional status; use is not to be considered in making this determination.

Belts which are knotted, buckled at the rear of the seat bench, stored below the bench, etc., should be considered as available if they were otherwise operative.

Persons such as children who are held by another person are not considered to be restrained, nor to have restraints available.

Code "4" (Child safety seat) is considered available if located so as to be retrievable by a person while in the passenger compartment (i.e., the safety seat is not in the trunk, trailer, etc.). It should be coded as available for all applicable children (i.e., less than 50 pounds and less than 40 inches) if it exists, even if there are more children than safety seats. However, if it is in use by a child, then it is available only to that person.

A motorcycle helmet (code "5") is to be considered available to all riders of the motorcycle, even if there are more riders than helmets. However, if it is in use by a person, then it is available only to that person.

Identify any "other" restraint if the variable is coded "8" (Restraint available - type unknown or other). If there is no vehicle inspection or interview but the PAR indicates that: (1) belts were used, or (2) belts were not used, then code "8" (Restraint available - type unknown or other) should be used.

The margin indicator, which references the Vehicle Form, should be filled in with the response from the Vehicle Form to aid the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Manual (Active) Restraint System Us

Format: 1 column - numeric

Beginning  
Column 37

Element Values:

- 0 None used - vehicle occupant
- 1 Shoulder belt
- 2 Lap belt
- 3 Lap belt and shoulder belt
- 4 Child safety seat (properly installed and used)
- 5 Motorcycle helmet
- 8 Restraint used - type unknown or other (specify)
- 9 Unknown

Source: Investigator determined--inputs include vehicle inspection, interviewee, and police report.

Remarks:

Code "3" (Lap belt and shoulder belt) is used when the occupant is "encompassed" both in the lap and upper torso region by a lap and shoulder belt combination. Defeated interlock or buzzer warning systems, as well as maladjustment of the belts do not detract from the usage; however, if the inertia reel, retracting mechanism, or latch mechanism malfunctioned, the lap and/or shoulder belt which failed should not be considered as used. If a person has an integral lap and shoulder belt but is only "encompassed" by the lap portion (having the shoulder belt behind his or her back), code "2" (Lap belt).

Codes "1" (Shoulder belt) and "2" (Lap belt) must be similarly considered.

Code "4" (Child safety seat) is to be indicated only when the safety seat is installed so as to comply with the manufacturer's directions (i.e., seat must be integrated with the vehicle via the seat belts, through the use of a tether, etc.), and is occupied by the child.

Code "5" (Motorcycle helmet) is to be used if the helmet is worn; it is not necessary for the chin strap to be used.

Code "8" (Restraint used - type unknown or other) if there is no vehicle inspection or interview and the PAR indicates "belts were used". However, code "0" (None used - vehicle occupant) if the PAR indicates "belts were not used".

The margin indicator, which references the Vehicle Form, should be filled in with the response from the Vehicle Form to aid in the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Automatic (Passive) Restraint System Availability

Format: 1 column - numeric

Beginning  
Column 33

Element Values:

- 0 Not equipped
- 1 Airbag
- 2 Airbag - disconnected
- 3 Airbag - not reinstalled
- 4 2 point automatic belts
- 5 3 point automatic belts
- 6 Automatic belts destroyed
- 9 Unknown

Source: Investigator determined--inputs include vehicle inspection, interviewee, and police report (if listed).

Remarks:

Code "0" (Not equipped) if the vehicle did not have any automatic restraints.

Code "1" (Airbag) if the vehicle was equipped with an airbag. [Note: Deployment of the airbag is considered in variable 026, Automatic (Passive) Restraint Function.]

Code "2" (Airbag disconnected) refers to a situation where components of the system are rendered inoperative prior to the collision (e.g., fuse removed, blown airbags removed, etc.).

Code "3" (Airbag not reinstalled) refers to a situation where the bag is not repositioned, the gas cannister is not charged, etc., following a deployment previous to the present accident.

Code "4" (2 point automatic belts) or "5" (3 point automatic belts) depending on how the vehicle was equipped. (Note: The 3 point system became available with certain 1980 model vehicles.)

Add-on passive restraints are available for pre-1972 model year vehicles. However, if a vehicle is not inspected and no interview is obtained, code "9" (Unknown) for occupants of post-1971 passenger cars, and code "0" (Not equipped) for occupants of all other vehicles.

The margin indicator, which references the Vehicle Form, should be filled in with the response from the Vehicle Form to aid in the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Automatic (Passive) Restraint Function

Format: 1 column - numeric

Beginning  
Column 39

Element Values:

- 0 Not equipped
- 1 Automatic belt in use
- 2 Automatic belt not in use
- 3 Deployed airbag
- 4 Non-deployed airbag
- 9 Unknown

Source: Investigator determined--inputs include vehicle inspection, interviewee, and police report (if listed).

Remarks:

Code "2" (Automatic belt not in use) if the shoulder belt is disconnected or placed behind the person's back.

Code "3" (Deployed airbag) or "4" (Non-deployed airbag) solely on whether or not the airbag deployed. No consideration is to be made regarding whether or not it should have deployed. This determination will be made by your Zone Center or NCSA. (Note: An airbag is not designed to deploy in every collision.)

If the vehicle was not inspected and no interview was obtained, code "9" (Unknown) for occupants of post-1971 passenger cars, and code "0" (Not equipped) for occupants of all other vehicles.

The margin indicator, which references the Vehicle Form, should be filled in with the response from the Vehicle Form to aid in the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Relation of Interviewee to Occupant

Format: 1 column - numeric

Beginning  
Column 40

Element Values:

- 0 No interview
- 1 Same person
- 2 Other accident involved person (specify)  
Uninvolved Person
- 3 Relative or friend
- 4 Other uninvolved person (specify)  
Combination of Persons
- 5 One of which was accident involved
- 6 None of which were accident involved
- 9 Unknown

Source: Element chosen

Remarks:

There is a presumption that the interviewee(s), other than the occupant under consideration (i.e., surrogate codes "2"- "6"), will have sufficient familiarity with the occupant to answer most questions relative to this person's demographic characteristics, treatment-mortality, hospitalization, working days lost, and extent of injuries. Conversely, individuals whose association with this person is limited to and a result of the accident, are presumed to have an insufficient basis for answering the preceding questions.

## NASS Injury Coding Conventions for the Occupant Injury Classification

The NASS has established certain rules and guidelines to meet its needs and to avoid ambiguities in relation to the AIS-80. These are discussed below.

1. The first four rules below are given in the NASS field forms on how to select injuries for coding and are included here for the convenience of the coder.
  - a. If there are six or less injuries listed in the O.I.C. reduction section, code all of the injuries ordered by Source of Data (1st--autopsy, 2nd--hospital/medical, 3rd--emergency room, 4th--private physician, or 5th--unofficial sources) and by AIS severity within source. Order by source
  - b. If there are more than six injuries, order the injuries by source and by AIS severity within source. Code this ordering, Injury-by-injury. If a group of ordered injuries has the same source, the same AIS, and the group includes at least the sixth and seventh injuries in the ordering, then a choice must be made as to which injury or injuries to code. Then by severity within source
  - c. Choose the injury or injuries that will enable the maximum number of different ISS body regions to be represented in the coded data. If no new ISS body region can be added then simply code in accordance with the original ordering. Maximize ISS within that source
  - d. If the occupant has less than six injuries, then the number of rows required to be completed is equal to the number of injuries plus one [i.e., no injuries requires one row (e.g., columns 41 to 49, Occupant Form)]. In the additional row "not injured" will be coded for all variables including AIS severity. If < 6 rows, close out next row with zeros
  - e. Other points to consider if you must make a choice: try to associate contact points with individual injuries. List individual injured areas if possible, instead of lumping them together into a code of X, Y, or O. For instance, if there are lacerations to both thigh and shin, code both TLLI-1 and LLLI-1 instead of YLLI-1. Individualize injuries
2. If an AIS is determined to be one of two consecutive numbers, but a clear indication cannot be made after reviewing all the information provided, assign the lower AIS. Uncertainty Rule #1--code lower
3. The coder should take care not to code the same injury twice simply because information concerning it is available from two different sources. For example, if the interview is used in gathering data, only the injuries not already coded based upon medical records should be coded. Don't double count
4. Cervical spine strain may, in some cases, still be referred to as "whiplash". "Whiplash" is not a medical term and is not used in AIS-80. If an injury is described as "whiplash", it should be coded as cervical spine acute strain, no fracture or dislocation, NPTM-1. "Whiplash" NPTM-1
5. Neck injuries may sometimes be described as "sprains" and sometimes as "sprains". For NASS purposes, neck injuries should be coded as "sprains" (see Rule #16 below). No sprains to neck
6. All internal structures of the mouth, with the exception of the teeth, are coded as part of the digestive system (D). Teeth are coded as skeletal (S). Mouth - teeth = D

7. Body region code 0 (whole body) should be used only if 50% or more of the whole body surface (0) is affected. An exception is made for burns affecting more than one body region (see Rule #13 below). Aspect code W (whole region) is used only if 50% or more of the body region is affected. 50% rules
8. When there is uncertainty about the location of minor multiple abrasions, contusions and lacerations to the body surface, they should be aggregated, regardless of their location(s), and the code OW\_\_-1 should be used. Uncertainty Rule #2—whole body
9. An AIS-6 should be used only for injuries specifically coded AIS-6 in the Abbreviated Injury Scale and not because the victim died. Watch your "6"s
10. Burn, flying glass, and inertial force injuries are assigned a noncontact (90) code for injury source (see Rule #18 for further explanation of non-contact injuries). Code 90 Injuries
11. The AIS codes individual injuries only. Injuries to bilateral body parts are now coded as two separate injuries (e.g., fractured left tibia and fractured right femur). When the term, bilateral is used to describe hemothorax or pneumothorax with certain chest injuries, it should be emphasized that the results, which are not coded, are present bilaterally, but that the injury per se is still a single injury. Bilateral limited
12. If the medical or interview information indicates a contused knee, elbow, wrist, ankle, etc., and does not specifically state whether the contusion is to the bone or joint, code the injury as integumentary, \_\_C1-1. If the contusion is known to be to the bone, use \_\_CS-; if to the joint, use \_\_CJ-. Example: contused knee, K,C1-1. Uncertainty Rule #3—most superficial system if lesion unknown
13. Burn injuries should be coded using the following guidelines:
- If only one body region is burned, use that body region code (e.g., ARB1-1, burned right upper arm 1°).
  - If more than one body region is burned, but a single injury code will adequately describe the regions affected, use the single injury code (e.g., XRB1-2, burned right whole arm 2°).
  - If more than one body region is burned and one injury code cannot be used to specify the body regions involved, the injury is coded OWB1-\_. This will be the most likely case in coding burns.
  - The Rule of Nines is used in the AIS severity level for (a), (b), and (c) above. See the Rule of Nines diagram on page III-4 of your NASS Injury Coding Manual.
14. The lesion codes P (pain), X (asphyxia), and H (hemorrhage) are NO LONGER VALID. They represent results of injuries and not injuries, per se, and therefore, are not coded. The AIS-80 revision is designed to code the injury itself (e.g., MIUW-3, retroperitoneum injury involving hemorrhage). Pain, asphyxia and hemorrhage not valid
15. In NASS, "not injured" is defined as AIS=0. Code "0" for all OIC variables, including AIS severity, for cases in which there are no injuries, or as the last injury listing for occupants sustaining less than six injuries. Closeout or no injury = 0
16. The following definitions have been used traditionally to differentiate "sprain" and "strain" injuries: Strain versus sprain
- sprain - a joint injury which causes pain and disability depending on the degree of injury to ligaments and muscle tendons near the joint.

strain - an injury to a muscle or musculotendinous unit that results from overstretching and may be associated with a sprain or fracture.

In common medical practice, however, physicians often do not adhere strictly to these definitions, and may use the terms interchangeably. AIS-80 distinguishes sprains from strains. Care should be exercised in selection of the proper code.

17. Lesions to the forehead (except fractures) are coded "face superior", or FS\_\_ - \_\_ in the NASS Injury Coding Manual. Fractures of the frontal bone are coded HAFS-\_\_.

Coding the forehead

18. Definitions and procedures for the NASS for coding injury source for direct, induced, and noncontact injuries:

direct injury - an injury to a particular body region caused by the traumatic contact of that body region with a vehicle component or other object. The vehicle component or other object is coded as the injury source for that injury.

Indirect or induced injury - an injury to a particular body region caused by a blow or a traumatic contact in some other body region (e.g., knee/acetabulum). The injury source for an induced injury would be the vehicle component contacted by the other body region (i.e., the occupant contact that initiate the injury mechanism).

Injury source is, therefore, defined as the vehicle component or object that initiated the injury mechanism (induced injury) or directly caused the injury (direct injury).

The noncontact injury source (90) code is to be used only for the following specific types of injuries:

- (1) twisting or stretching of muscles in the arm, leg, back, etc. with no associated contact identifiable (most often these injuries will be minor muscle strain injuries);
- (2) head or neck injuries in which the torso is supported (e.g., by seat back or belt) and head or neck experiences traumatic forces due to inertial motion;
- (3) burns and flying glass injuries.

Injury sources

The following examples should be helpful in illustrating the above definitions.

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
Example 1		
Neck dislocation NPDV-3	a. head strikes windshield	a. (01) windshield
	b. forehead hits roof or convertible top	b. (34) roof or convertible top
	c. head strikes steering assembly	c. (03) steering assembly
	d. back hits seatback, no head restraint, head rolls back over seat	d. (90) noncontact injury source

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
	e. neck forced into lateral flexion by impact forces	e. (90) noncontact injury source
	f. torso restrained by belt, head and neck inertia causes neck injury	f. (90) noncontact injury source
	g. back hits seat back, head hits head restraint, neck is injured	g. (23) head restraint

## Example 2

Hip dislocation P <sub>0</sub> DJ-3	Knee strikes dash, forces transmitted along femur forcing femoral head out of the acetabulum	(05) instrument panel
--	--	-----------------------

## Example 3

Shoulder elbow-wrist fracture/dislocation _ZJ-2	Occupant braced hands on instrument panel, transmitting forces to wrist, elbow, and shoulder	(05) instrument panel
--	--	-----------------------

## Example 4

Acute lumbar strain BITM-1	Jackknife over seat belt, rotation about seat belt stretches back muscles	(22) belt restraint
-------------------------------	---	---------------------

## Example 5

Muscle strain In arms, back, chest, neck	Strain of muscles from twisting due to impact forces	(90) noncontact injury source
---	--	-------------------------------

19. If only one substantiated anatomic lesion to the brain and the length of unconsciousness are known, the OIC will consist of the four letters describing the anatomic lesion and an AIS of the higher of the anatomic lesion severity or the level of consciousness severity (e.g., cerebral contusion, L.O.C. >24 hr. - H<sub>CB</sub>-5).

Single substantiated brain lesion

20. When no other injury information is available, data from the PAR is to be coded. If specific injuries are detailed, code accordingly. If only a PAR injury severity rating is assigned, code: "injured, severity unknown". This implies the existence of an unspecified injury of unknown severity. Do not code: "unknown if injured". This denotes lack of knowledge concerning the existence of injury, which is contrary to information documented in the PAR. Consider the five example situations below and code according to the instructions given, for example, in variable 028 et al. (1st O.I.C. - Body Region).

Coding PAR injury data

- a. No interview; no medical; PAR injury severity rating: "K", "A", "B", or "C"; code: "injured, severity unknown".



028  
035  
042  
049  
056  
063

Variable Name: 1st O.I.C. - Body Region  
2nd O.I.C. - Body Region  
3rd O.I.C. - Body Region  
4th O.I.C. - Body Region  
5th O.I.C. - Body Region  
6th O.I.C. - Body Region

Format: 1 column - alphanumeric

Beginning  
Column 41  
50  
59  
68  
77  
86

Element Values:

A Arm (upper)	Q Ankle - foot
B Back - thoracolumbar spine	R Forearm
C Chest	S Shoulder
E Elbow	T Thigh
F Face	W Wrist - hand
H Head - skull	X Upper limb(s) (whole or unknown part)
K Knee	Y Lower limb(s) (whole or unknown part)
L Leg (lower)	O Whole body
M Abdomen	U Injured, unknown region
N Neck - cervical spine	0 Not injured
P Pelvic - hip	9 Unknown if injured

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, both its O.I.C. and I.S.S. body region and record them on the form. Ordering instructions are on page 7 of the Occupant Form.

028  
035  
042  
049  
056  
063  
(2)

Variable Name: 1st O.I.C. - Body Region (cont'd.)  
 2nd O.I.C. - Body Region (cont'd.)  
 3rd O.I.C. - Body Region (cont'd.)  
 4th O.I.C. - Body Region (cont'd.)  
 5th O.I.C. - Body Region (cont'd.)  
 6th O.I.C. - Body Region (cont'd.)

For coding the following situations, the correct procedure is:

	R	A	L	S	A	I	S	S	O	
	E	S	E	Y	.	N	O	O	F	
	G	P	S	S	I	J	U	U	D	
	I	E	I	T	.	U	R	R	A	
	O	C	O	E	S	R	C	C	T	
	N	T	N	M	.	Y	E	E	A	
Not injured:	<u>0</u>	<u>0</u>								
	32	33	34	35	36	37	38	39	40	
Injured, severity unknown:	<u>U</u>	<u>U</u>	<u>U</u>	<u>U</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>0 or 9</u>	<u>1,2,3,4,5,6,7,8 or 9</u>	
	32	33	34	35	36	37	38	39	40	
	<u>0</u>	<u>0</u>								
	41	42	43	44	45	46	47	48	49	
Unknown if injured:	<u>9</u>	<u>9</u>								
	32	33	34	35	36	37	38	39	40	
	<u>0</u>	<u>0</u>								
	41	42	43	44	45	46	47	48	49	

Note: Be sure to complete one additional row with zeros ("0") when the person is injured but has less than six injuries. This is true even when the person is injured but the severity is unknown, or if it is unknown whether or not the person is injured. Refer to the last O.I.C. note on page 7 of the Occupant Form.

When the person has several injuries from the same Source of Data, one of which is "injured, severity unknown," code this injury last.

029  
035  
043  
050  
057  
064

Variable Name: 1st O.I.C. - Aspect of Injury  
2nd O.I.C. - Aspect of Injury  
3rd O.I.C. - Aspect of Injury  
4th O.I.C. - Aspect of Injury  
5th O.I.C. - Aspect of Injury  
6th O.I.C. - Aspect of Injury

Format: 1 column - alphanumeric

Beginning  
Column 42  
51  
60  
69  
78  
87

Element Values:

R Right	S Superior - upper
L Left	I Inferior - lower
B Bilateral	W Whole region
C Central	U Injured, unknown aspect
A Anterior - front	0 Not injured
P Posterior - back	9 Unknown if injured

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, the aspect of the injury and record it on the form.

030  
037  
044  
051  
058  
065

Variable Name: 1st O.I.C. - Lesion  
2nd O.I.C. - Lesion  
3rd O.I.C. - Lesion  
4th O.I.C. - Lesion  
5th O.I.C. - Lesion  
6th O.I.C. - Lesion

Format: 1 column - alphanumeric

Beginning  
Column 43  
52  
61  
70  
79  
88

Element Values:

A Abrasion	P Perforation, puncture
B Burn	R Rupture
C Contusion	S Sprain
D Dislocation	T Strain
E Total severence	V Avulsion
F Fracture	Z Fracture and dislocation
G Detachment, separation	O Other
K Concussion	U Injured, unknown lesion
L Laceration	0 Not injured
M Amputation	9 Unknown if injured
N Crushing	

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, its lesion and record it on the form.

031  
03E  
04E  
052  
059  
066

Variable Name: 1st O.I.C. - System/Organ  
2nd O.I.C. - System/Organ  
3rd O.I.C. - System/Organ  
4th O.I.C. - System/Organ  
5th O.I.C. - System/Organ  
6th O.I.C. - System/Organ

Format: 1 column - alphanumeric

Beginning  
Column 44  
53  
62  
71  
80  
89

Element Values:

A Arteries - veins	N Nervous system
B Brain	O Eye
C Spinal cord	P Pulmonary - lungs
D Digestive	Q Spleen
E Ears	R Respiratory
G Urogenital	S Skeletal
H Heart	T Thyroid, other endocrine gland
I Integumentary	V Vertebrae
J Joints	W All systems in region
K Kidneys	U Injured, unknown system
L Liver	0 Not injured
M Muscles	9 Unknown if injured

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, its system/organ and record it on the form.

032  
039  
046  
053  
060  
067

Variable Name: 1st O.I.C. - Abbreviated Injury Scale  
2nd O.I.C. - Abbreviated Injury Scale  
3rd O.I.C. - Abbreviated Injury Scale  
4th O.I.C. - Abbreviated Injury Scale  
5th O.I.C. - Abbreviated Injury Scale  
6th O.I.C. - Abbreviated Injury Scale

Format: 1 column - alphanumeric

Beginning  
Column 45  
54  
63  
72  
81  
90

Element Values:

0 Not injured  
1 Minor injury  
2 Moderate injury  
3 Severe injury  
4 Serious injury  
5 Critical injury  
6 Maximum (untreatable)  
7 Injured, unknown severity  
9 Unknown if injured

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

The NASS Injury Coding Manual contains a listing of most injuries. Determine from the manual, for each injury, its A.I.S. value and record it on the form.

033  
040  
047  
054  
061  
068

Variable Name: 1st O.I.C. - Injury Source  
2nd O.I.C. - Injury Source  
3rd O.I.C. - Injury Source  
4th O.I.C. - Injury Source  
5th O.I.C. - Injury Source  
6th O.I.C. - Injury Source

Format: 2 columns- numeric

Beginning  
Column .46  
55  
54  
73  
32  
91

Element Values:

00 Not injured

Front

01 Windshield

02 Mirror

03 Steering assembly, including transmission selector lever with column mounted

04 Add-on equipment (e.g., CB, tape deck, air conditioner)

05 Instrument panel and below, excluding foot controls and parking brake

09 Other front object

Side

11 Side interior surface, excluding hardware or armrests

12 Side hardware or armrests

13 A pillar

14 B pillar

15 Other pillar

16 Window glass or frame

19 Other side object

Interior

21 Seat, back support

22 Belt restraint system

23 Head restraint

24 Air cushion

25 Other occupants

26 Interior loose objects

29 Other interior objects

Roof

31 Front header

32 Rear header

33 Roof side rails

34 Roof or convertible top

033  
040  
047  
054  
061  
068  
(2)

Variable Name: 1st O.I.C. - Injury Source (cont'd.)  
2nd O.I.C. - Injury Source (cont'd.)  
3rd O.I.C. - Injury Source (cont'd.)  
4th O.I.C. - Injury Source (cont'd.)  
5th O.I.C. - Injury Source (cont'd.)  
6th O.I.C. - Injury Source (cont'd.)

#### Floor

41 Floor  
42 Floor or console mounted transmission lever, including console  
43 Parking brake handle  
44 Foot controls including parking brake

#### Rear

51 Backlight (rear window)  
52 Backlight storage rack, door, etc.  
59 Other rear objects

#### Exterior of Occupant's Vehicle

61 Hood  
62 Outside hardware (e.g., outside mirror, antenna)  
63 Other exterior surface or tires  
69 Unknown exterior objects

#### Exterior of Other Motor Vehicle

71 Bumper  
72 Hood edge  
73 Other front of vehicle  
74 Hood  
75 Hood ornament  
76 Windshield, roof rail, A-pillar  
77 Side surface  
78 Side mirrors  
79 Other side protrusions  
80 Rear surface  
81 Undercarriage  
82 Unknown exterior of other motor vehicle

#### Other Vehicle or Object in the Environment

86 Ground  
87 Other vehicle or object  
89 Unknown vehicle or object

#### Noncontact Injury

90 Noncontact injury source (e.g., impact force, heat or flame from fire, battery acid, etc.)  
97 Injured, unknown source  
99 Unknown if injured

033  
043  
047  
054  
061  
068  
(3)

Variable Name: 1st O.I.C. - Injury Source (cont'd.)  
2nd O.I.C. - Injury Source (cont'd.)  
3rd O.I.C. - Injury Source (cont'd.)  
4th O.I.C. - Injury Source (cont'd.)  
5th O.I.C. - Injury Source (cont'd.)  
6th O.I.C. - Injury Source (cont'd.)

Source: Investigator determined--inputs include vehicle inspection and interviewee.

Remarks:

Interior flying glass refers to the person being struck by glass which has already fractured and is airborne. This is coded as "90" (Noncontact injury source). This does not refer to a person causing glass to shatter upon impacting it.

Investigator should record only those contact mechanisms which can be documented by some physical evidence (e.g., scuffs, hair, smudges, dents, cracks, etc.). Use page 3 of the Occupant Form and page 7 of the Vehicle Form to record the injury source evidence.

034  
041  
048  
055  
062  
069

Variable Name: 1st O.I.C. - Source of Data  
2nd O.I.C. - Source of Data  
3rd O.I.C. - Source of Data  
4th O.I.C. - Source of Data  
5th O.I.C. - Source of Data  
6th O.I.C. - Source of Data

Format: 2 columns - numeric

Beginning  
Column 48  
57  
66  
75  
84  
93

Element Values:

Official	Unofficial
01 Autopsy records with or without hospital/medical records	05 Lay coroner report
02 Hospital/medical records other than emergency room (e.g., discharge summary)	06 E.M.S. personnel
03 Emergency room records only (including associated x-rays or other lab reports)	07 Interviewee
04 Private physician	08 Other source (specify)
	09 Police
	99 Unknown if injured
	00 Not injured

Source: Element chosen

Remarks:

Code "01" (Autopsy records with or without hospital/medical records) excludes records from lay, nonmedical personnel; they must be the result of an autopsy by a physician or other similarly qualified life scientist.

Code "02" [Hospital/medical records other than emergency room (e.g., discharge summary)] is used whenever the injury is listed on the official post-emergency room records of a hospital or medical facility. If the injury is also contained in an autopsy record--where the autopsy was performed by a physician or similarly qualified life scientist--then, code "01" (Autopsy records with or without hospital/medical records) takes precedence. If the injury was also listed on a facility's associated emergency room records, then this code takes precedence.

034  
041  
048  
055  
062  
069  
(2)

Variable Name: 1st O.I.C. - Source of Data (cont'd.)  
2nd O.I.C. - Source of Data (cont'd.)  
3rd O.I.C. - Source of Data (cont'd.)  
4th O.I.C. - Source of Data (cont'd.)  
5th O.I.C. - Source of Data (cont'd.)  
6th O.I.C. - Source of Data (cont'd.)

Code "03" [Emergency room records only (including associated x-rays or other lab reports)] is used when the injury only appears on a facility's emergency room record or on records that were completed in support of the person's examination in an emergency room. For example, an x-ray report that was completed because the emergency room physician requested it as a part of his/her examination would be included under this code. This code should not be used if the injury is subsequently listed on a post-emergency room record or in a medical autopsy.

If both types of records (emergency room and post-emergency room) refer to the same injury, code "02" [Hospital/medical records other than emergency room (e.g., discharge summary)] is used as the code even if the detail provided on the emergency room records exceeds the detail provided on the post-emergency room records.

Code "04" (Private physician) refers to any physician (in private practice) who saw the injured person and who has records of that treatment (i.e., other than hospital or autopsy records).

Code "05" (Lay coroner report) is used if the injury data is contained in a report where a noninvasive examination of the deceased was performed by a non-physician, or lay coroner.

Code "06" (E.M.S. personnel) refers to a person certified by the state as trained in emergency medical service techniques. Code "5" should not be used for ambulance attendants, police, or other personnel not trained in E.M.S. techniques.

Code "07" (Interviewee) refers to the person who was interviewed to get the information on this form (not necessarily the person described on this form). The interviewee is defined in variable O27.

Code "08" (Other) is used when data are obtained from an unofficial source different from those explicitly listed above (e.g., most death certificates).

Code "09" (Police) can be used, but only when no other source of injury information is available. See last sentence of first paragraph on page 6, Occupant Form.

Code "00" (Not injured) is to be used when no injury was reported. In other words, this variable reports only the source of the injury information.

Variable Name: Injury Severity (Police Rating)

Format: 1 column - numeric

Beginning  
Column 95

Element Values:

- 0 O - No injury
- 1 C - Possible injury
- 2 B - Nonincapacitating injury
- 3 A - Incapacitating injury
- 4 K - Killed
- 5 Injured, severity unknown
- 6 Died prior to accident
- 9 Unknown

Source: Police report

Remarks:

Code the police reported injury severity for this occupant. It is possible that the police could have updated the PAR between the time it was stratified (A02, Case Number--Stratification) and when it was picked up. For example, a person might have been listed originally with incapacitating injuries ("3"). Later the person dies ("4"), and the PAR is changed accordingly. Therefore, use the latest information on the PAR at the time it was obtained from the police agency.

If the police report contains a detailed description of the injuries but does not translate the injuries into the KABCO codes, use the police method for doing so. For example, injuries which are considered to be of an incapacitating nature are classified as "A" (code "3"), nonincapacitating-evident injuries are "B" (code "2"), and possible injuries are "C" (code "1"). Property damage only is classified as "O" (code "0").

Code "5" (Injured, severity unknown) if the police report indicates a "U" or in any other way communicates the idea that the person was injured but their severity is unknown.

Code "6" (Died prior to accident) should only be coded if the police explicitly so indicate.

07)

(2)

Variable Name: Injury Severity (Police Rating) (cont'd.)

Not all states use the KABCOU scheme. Listed below, by state, are alternative schemes; a mapping to the NASS scheme is provided.

State	PAR Code/Definition	NASS Scheme/Code
Alabama	K = Killed	K - 4
	A = Visible signs of injury, as bleeding wound or distorted member, or had to be carried from scene	A - 3
	B = Other visible injury, as bruises, abrasions, swelling, limping, etc.	B - 2
	C = No visible injury but complaint of pain or momentary unconsciousness	C - 1
	Blank = No documentation of driver or occupants on back of PAR	O - 0
	= No set unknown code	- 9
Arizona	1 = No injury	O - 0
	2 = Possible injury	C - 1
	3 = Nonincapacitating injury	B - 2
	4 = Incapacitating injury	A - 3
	5 = Fatal	K - 4
	6 = Unknown	U - 5
California	1 = Fatal	K - 4
	2 = Severe wound/distorted member	A - 3
	3 = Other visible injury	B - 2
	4 = Complaint of pain	C - 1
	blank = Occupant present blank = Occupant not present	O - 0 - 9
Colorado	A = Fatal	K - 4
	B = Carried from scene	A - 3
	C = Minor visible injury	B - 2
	D = Pain but no visible injury	C - 1
	E = No injury	O - 0
	I = Unknown	U - 5
Florida	0 = No injury	O - 0
	1 = Fatal (in 12 months) injury	K - 4
	2 = Incapacitating injury	A - 3
	3 = Nonincapacitating, evident injury	B - 2
	4 = Possible injury = No set unknown code	C - 1 - 9

Variable Name: Injury Severity (Police Rating) (cont'd.)

State	PAR Code/Definition		NASS Scheme/Code		
Nebraska	4	Fatal	K - 4		
	3	Incapacitating injury	A - 3		
	2	Nonincapacitating injury	B - 2		
	1	Possible injury	C - 1		
	0	No injury	O - 0		
	blank	Occupant present	O - 0		
	blank	Occupant not present	- 9		
New Jersey	Location of Injury	Type of Injury	Victim's Condition		
	Any entry	Any entry	Killed	K - 4	
	Any entry	Any entry	Incapacitated	A - 3	
	Any entry	amputation, concussion, internal, fracture/dislocation	Moderate injury Complaint of pain	A - 3	
	Eye	burn, bleeding, complaint of pain	Moderate injury Complaint of pain	A - 3	
	Any entry	bleeding, contusion, bruise, abrasion	Moderate injury	B - 2	
	Any entry (except eye)	complaint of pain	Complaint of pain	C - 1	
	-	-	-	O - 0	
	U	U	U	- 9	
	New York	Location of Injury	Type of Complaint	Victim's Status	
		Any entry	Any entry	Apparent death	K - 4
Any entry		Any entry	Unconscious, Semi-conscious, Incoherent	A - 3	
Any entry		amputation, concussion, internal, severe bleeding, severe burn, moderate burn, fracture - dislocation	Shock, Normal	A - 3	
Eye		minor bleeding, minor burn, complaint of pain	Shock, Normal	A - 3	
All but eye		minor bleeding, minor burn	Shock, Normal	B - 2	
Any entry		contusions-bruise, abrasion	Shock, Normal	B - 2	
All but eye		complaint of pain	Shock, Normal	C - 1	
-		-	-	O - 0	
X		X	X	- 9	

Variable Name: Injury Severity (Police Rating) (cont'd.)

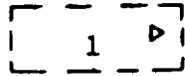
<u>State</u>	<u>PAR Code/Definition</u>	<u>NASS Scheme/Code</u>
Pennsylvania	0 = No injury	O - 0
	1 = Death	K - 4
	2 = Major injury	A - 3
	3 = Moderate injury	B - 2
	4 = Minor injury [and]	
	Type of Apparent Injury	
	- amputation	
	- bleeding	
	- broken bone(s)	B - 2
	- burns	
- concussion		
- abrasions/bruises		
- other		
4 = Minor injury [and]		
Type of Apparent Injury		
- shock	C - 1	
- dizziness		
- complaint of pain		
Washington	1 = No injury	O - 0
	2 = Dead at scene	K - 4
	3 = Dead on arrival	K - 4
	4 = Died in hospital	K - 4
	5 = Disabling injury	A - 3
	6 = Nondisabling injury	B - 2
	7 = Possible injury	C - 1
	blank = Unknown	- 9

As a general rule, if the PAR is "blank" where the injury severity is accessed and the person was at the scene during the police investigation, code "0" (No injury). If the PAR is "blank" and the person was not present during the police investigation, code "9" (Unknown).

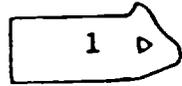


# UNIFORM SYMBOLS FOR ACCIDENT DIAGRAMMING

## Vehicle and Pedestrian Symbols



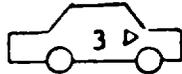
Automobile (pre-impact or at-impact position) Exception: draw solid outline if stopped at-impact.



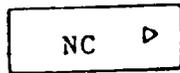
Automobile (final rest position-showing damaged area)



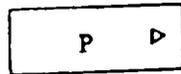
Automobile (final position on its top)



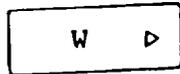
Automobile (final position on its right side) (reverse for left side)



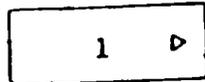
Automobile involved in the accident as a temporary environmental factor, but not physically involved in the collision. (Non-Contact Unit)



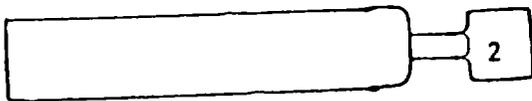
Parked automobile not struck (give it a number if it was struck)



Vehicle in which a witness was an occupant



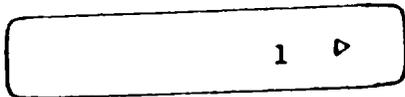
Truck (Panel, Van, Dump, etc.)



Truck tractor and semi-trailer



Utility trailer



Bus or streetcar



Motorcyclist; bicyclist (handlebars are curved opposite the direction of travel)



Pedestrian ( pointer oriented to show direction of movement and dot spacing to show rate of movement; i.e., 3' apart walking and 6' apart running



Final position of body



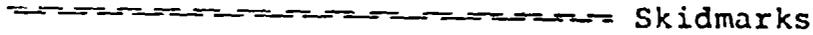
Pedestrian who witnessed accident

All symbols referring to colliding vehicles (plus Non-Contact, Witness and Parked vehicles) are to have a broken outline if they are moving at the point in which they are depicted; the outline should be solid if the vehicle is stopped where depicted, or at final rest. Be careful to insure proper placement (location) and orientation on the diagram.

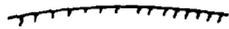
SCENE ROAD MARKINGS



Point of impact



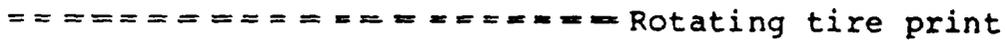
Skidmarks



Centripetal curve scuffs



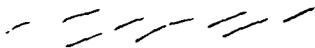
Tire scuff marks



Rotating tire print



Gouges



Scratches



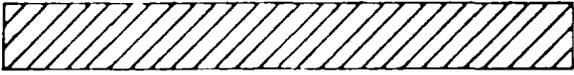
Liquids (puddle and runoff)

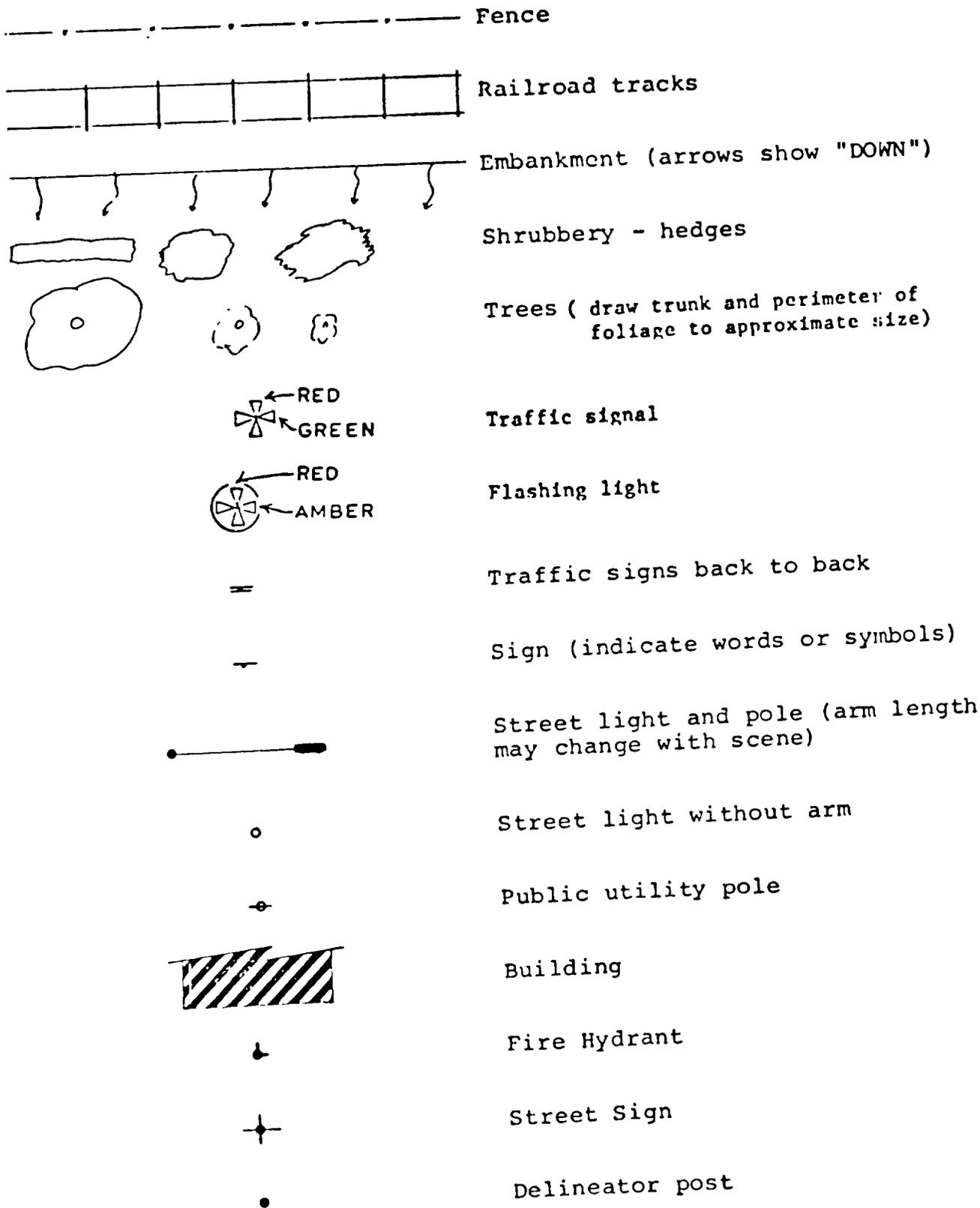


Debris (funnel out away from point of impact to show direction of force)

Any other accident-induced markings, components from vehicles, etc should be shown in their approximate location and a reasonable likeness sketched on the diagram. However, do not clutter diagram; make an additional diagram, if necessary.

# Topographical Highway & Environment Symbols

- 
Pavement edge
- 
Shoulder edge line (non-formal)
- 
Shoulder edge line (formal)
- 
Broken center or lane lines (15' long - 25' apart)
- 
Broken center line with No-Passing line
- 
Double yellow center lines
- 
Raised island and Grass median
- 
Painted median
- 
Curb
- 
Paved shoulders with diagonal lines
- 
Turn arrows
- 
Wall
- 
Bridge abutment and railing
- 
Guard rail



All crosswalks, road surface symbols and other relevant markings should be depicted and drawn to approximate scale on the diagram as much as possible.

## PHOTOGRAPHY

Case photographs are an important part of each NCSS report for several reasons: 1) they document details which are often difficult to describe, 2) they permit subsequent interpretation of factors which are not otherwise recorded and 3) they are essential in the quality control program to ensure that all teams interpret and record information uniformly.

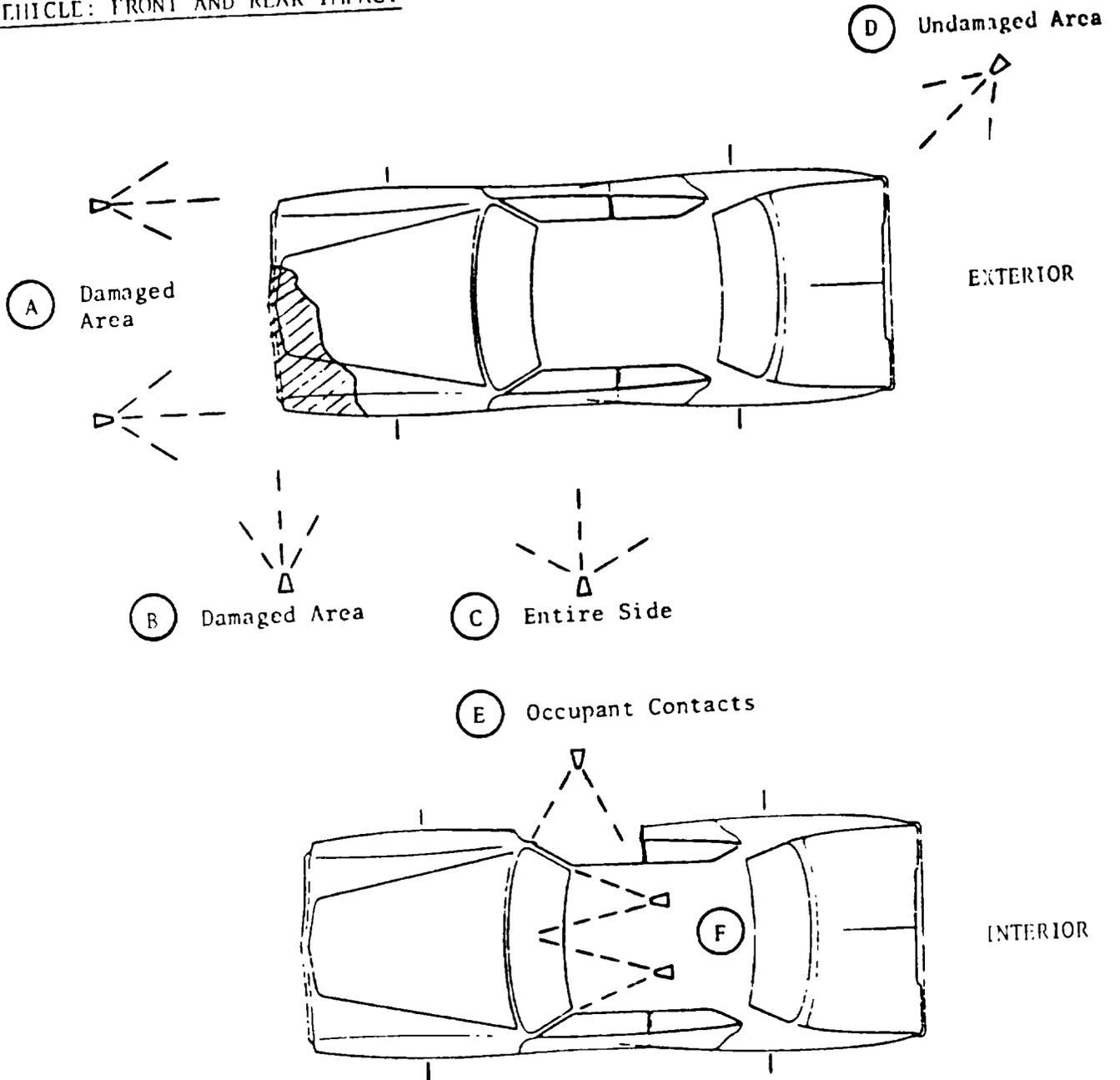
### Equipment

Preferred equipment for this type of program is a 35 mm camera with an electronic flash unit. The use of a film such as Kodak Ektachrome-X, ASA 64 is recommended. Processing is simple and the ASA 64 film works well for the type of photography typically performed by accident investigators. In discussing investigation photography, it should be noted that a common error involves the failure to use the flash unit. Even in daylight, under overcast conditions or where background lighting is a problem, the flash should be used for vehicle exterior photography. The flash should be used for all interior photographs.

### Photographic Coverage

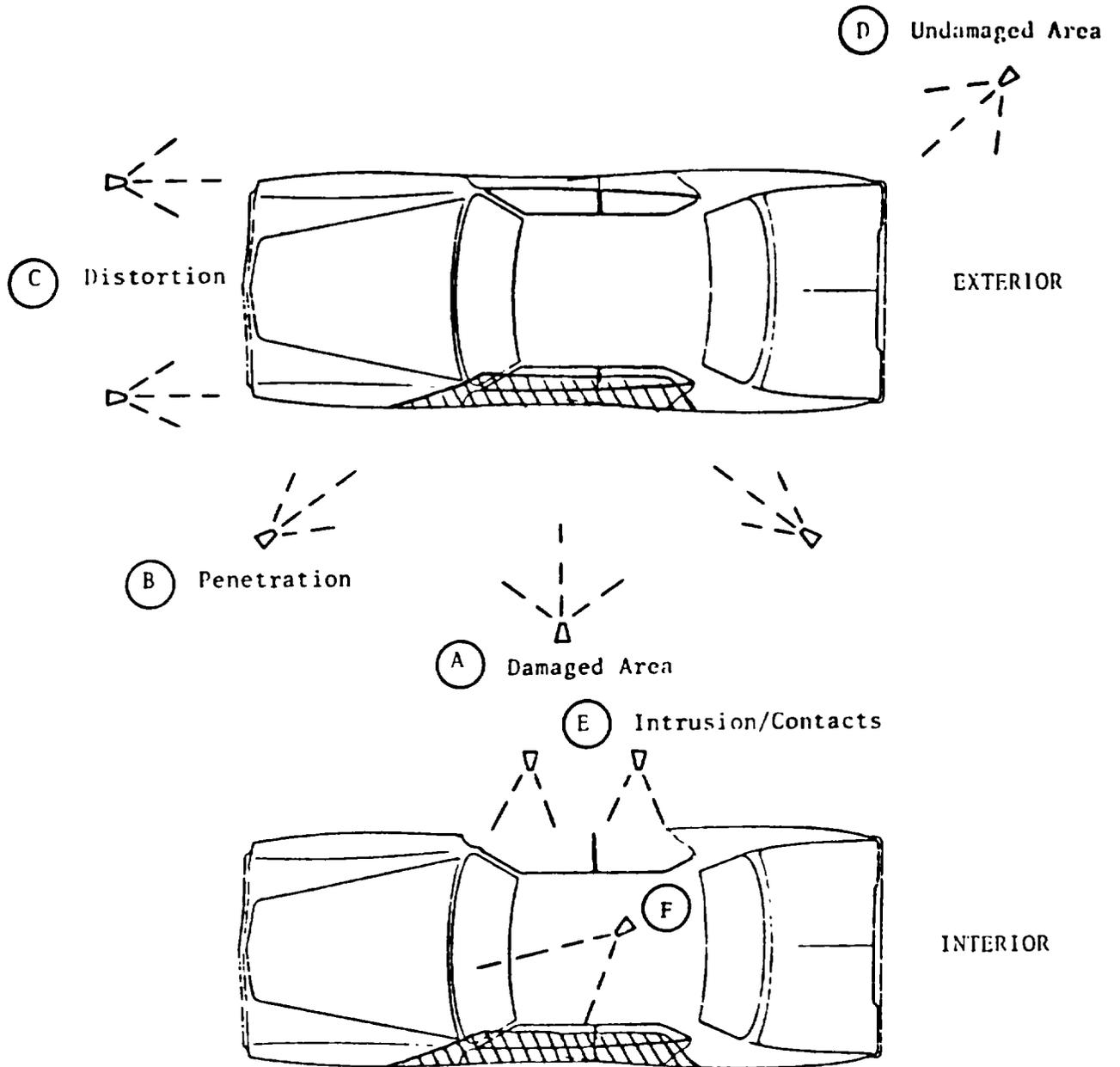
Photographs in this study are taken for the specific purpose of documenting the condition of the vehicle interior and exterior (with emphasis on vehicle damage and occupant contact points) and the accident scene and scene evidence. The coverage indicated in the sketches in this section represents the minimum number of photographs required. At least 5 exterior and 3 interior photographs should be taken for each vehicle. Four scene photographs also are required as a minimum. It should be possible to complete most cases with one roll of 135-20 film. However, if it is clear that additional photographs are needed to include all necessary damage or evidence, they should be taken. The cost of a roll of film is far less than that of the data lost if a sufficient number of photographs are not taken.

VEHICLE: FRONT AND REAR IMPACT



NOTE: If an impact involves underride or override, photograph damage at the appropriate height to properly document the extent. If additional photographs are needed to provide adequate coverage in certain cases, they should be taken.

VEHICLE: SIDE IMPACT



NOTE: If an impact involves underride or override, photograph damage at the appropriate height to properly document the extent. If additional photographs are needed to provide adequate coverage in certain cases, they should be taken.

## Vehicle

Photographs should be taken from a crouched position at a level slightly above the vehicle belt line. General camera placement for typical accident types is illustrated on the following page. In front impacts, a photograph should be taken from the front and directly along each side of the vehicle (A) to illustrate any body distortion. The photographs of the damaged area should include all damage. The photograph of the undamaged side should include the entire front of the vehicle.

A third photograph (B) should be taken at a right angle to the frontal damage photograph, from the side with the greatest vehicle crush. This photograph should provide a right angle view along the foremost part of the car. Photograph (C) is a centered side view of the entire car, and (D) is a three-quarter view of the two undamaged sides of the vehicle.

Interior photographs should include one from the right front door (E) (or left front, if necessary or appropriate) and two from the rear seat (F) to show occupant contacts. The latter should be taken of the left and right front half of the interior as illustrated. These views should overlap somewhat and include the area from the header to the lower instrument panel. If an additional photograph is needed to include a damaged floor pan, it should be taken. A close-up of contact areas or damage also would be useful.

In side impacts, a side photograph of the damaged area (A) and two angled photographs to show depth of penetration (B) --one taken from forward and the other taken from the rear of the damaged area. Two photographs should be taken from either front or rear (as best illustrates any distortion or bowing of the vehicle) along the body line (C). A final three-quarter view should be taken of the undamaged side of the vehicle (D) (from the rear if the (C) photographs are from the front, and from the front if (C) photographs are taken from the rear).

Two photographs should be taken of the front and rear interior from the side of the vehicle which was not impacted (E). These photographs are to show intrusion (or lack thereof) as well as occupant contacts. A final photograph from the rear seat into the left A-pillar and door area (F) to show occupant contacts. If rear occupants are present, a closeup of contacts would also be helpful.

### Scene

In general, a photograph should be taken along the path of each vehicle from perhaps ten feet behind the first tire markings (if present). If vehicle path evidence extends considerably over fifty feet, another intermediate photograph, or two, would be helpful. The point of impact and vehicle rest positions should also be shown. Uniform symbols for scene marking, made with yellow lumber crayons or paint, should highlight the available physical evidence. The uniform symbols simplify the communication between the investigator and reviewer regarding interpretation of photographically depicted scene evidence.