



NATIONAL ACCIDENT SAMPLING SYSTEM

DATA COLLECTION, CODING AND EDITING MANUAL  
1983 CONTINUOUS SAMPLING SYSTEM  
Version Number 6



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## ACKNOWLEDGEMENT

### NASS DATA COLLECTION, CODING AND EDITING MANUAL

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The production of this and previous editions of the NASS Data Collection, Coding and Editing Manual could not have been made possible without contributions from many unidentified sources within the U.S. Department of Transportation, the NASS Zone Centers and PSU teams, and the transportation community.









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Occupant Form

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# NASS DATA COLLECTION, CODING AND EDITING MANUAL

## 1.0 INTRODUCTION

### 1.1 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, the National Accident Sampling System is being developed. Part of the final system will consist of 75 small teams of accident investigators situated throughout the 48 contiguous states and Hawaii. 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 four independent variables by which one stratifies the accidents which qualify for study are explained. The two samples of NASS accidents, CSS and Nontowaway Study, are discussed.

Section 3.0 Overview of Sampling Activities describes the procedures for compiling the sampling frame list and selecting the accidents to be investigated. The twenty-two (22) strata into which the accidents are classified are defined in terms of the values of the four independent variables. Discussed are both the NASS Automated Case Selection System and the manual backup method, as well as the circumstances under which the manual procedures are to be used.

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 Nontowaway Study accidents (strata "Y" & "Z") 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 CRASH3 User's Manual; (3) SAE J224 MAR80; (4) Truck Deformation Classification (TDC) - SAE J1301; (5) the 1980 NASS Injury Coding Manual; (6) NATB books (see section 6.3, variable V61); (7) Passenger Car and Truck Investigators Manual (see section 6.3, variable V61); (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 V75); (12) Remote Data Entry System User's Manual; (13) NASS Automated Case Selection System User's Manual; (14) the NASS Accident Investigation Procedures Manual; (15) the Luminaire and Sign Support Special Study Coding and Field Procedures Manual; (16) the Longitudinal Barrier Special Study Coding and Field Procedures Manual; and, (17) the Crash Cushion Special Study Coding and Field 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.

Must Be Reported to the State--For an incident to qualify for the study, the police jurisdiction must send a copy of the Police Accident Report (PAR) to the State for inclusion in the State accident statistics. If a report will not be included in the state file, then the incident is not to be included in the list. If the investigator cannot determine whether or not an incident will be reported to the State, then he/she should include it in the list.

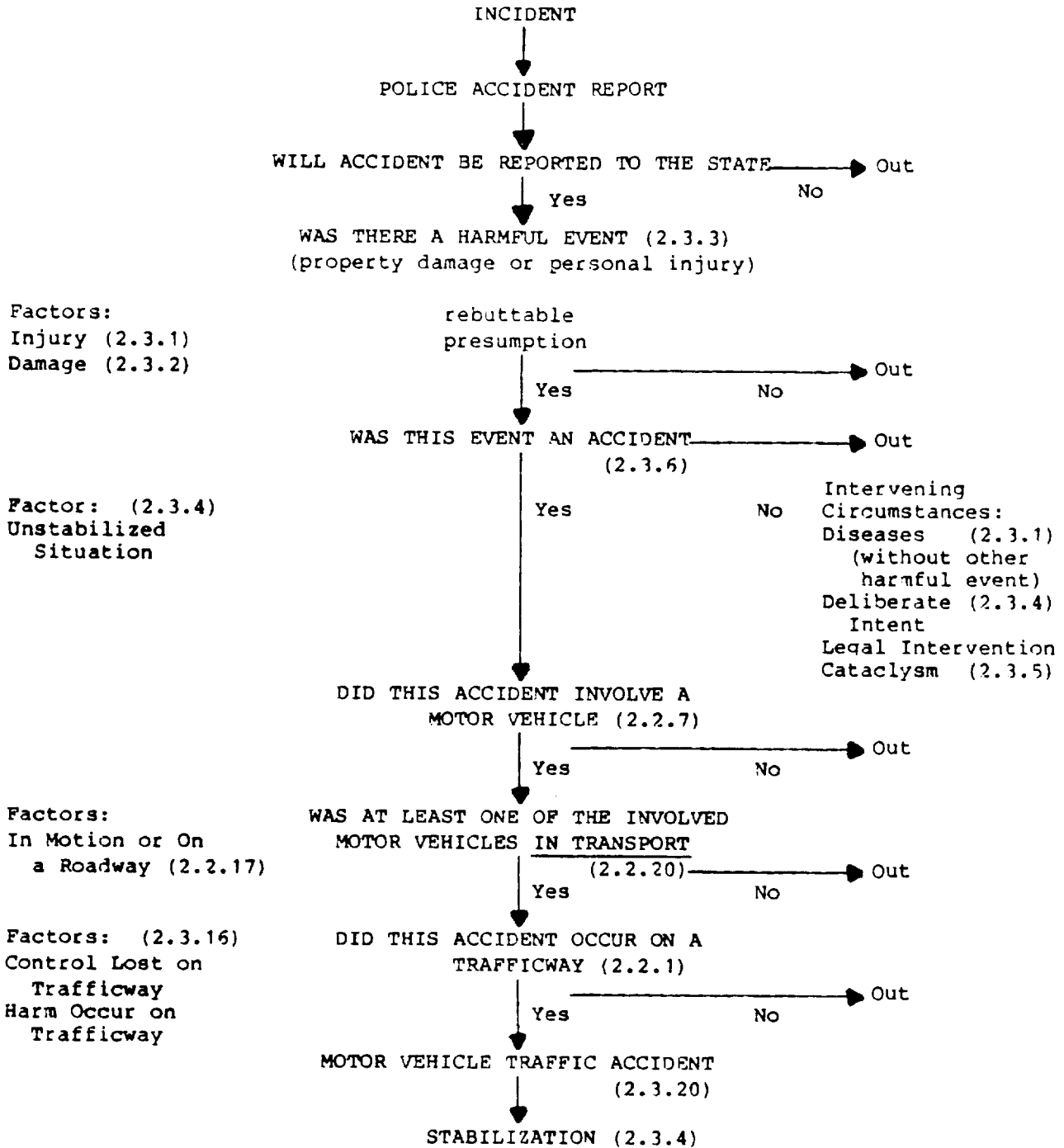
Must Involve a Harmful Event--If the incident does not involve property damage and/or personal injury, do not include it in the list. The presence of a Police Accident Report (PAR) creates a rebuttable presumption that a harmful event has occurred. It is the duty of the investigator to scrutinize any 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: Even 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, any subsequent harmful event which occurs is considered an accident. This includes any nonvehicular damage that this vehicle causes. The disease itself is not a harmful event for our classification as a traffic 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.

FIGURE 2-1



A motor vehicle traffic accident (MVTA) originates on a police accident report (PAR) filed with the state. 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.

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.

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. One 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 not 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.

Another key phrase is "produced the unstabilized situation". The situation in which a vehicle hydroplanes in a torrential rain and exits the roadway, striking another motor vehicle or object, would fit the criteria for a NASS accident, but the situation in which a cloudburst/torrential rain washes a roadway out from under a vehicle travelling on a roadway would be excluded from the NASS sample. Remember, the cataclysm must be on-going at the time of the accident.

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 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, The following procedure should be followed:

- (1) Call Zone Center to discuss dropping of case.
- (2) Submit all forms/slides, etc. initiated or completed for the case to the Zone Center. As a minimum, the PAR and an Accident form containing an explanation of the drop decision should be submitted.

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.



FIGURE 2-2

Example of a Rural Trafficway

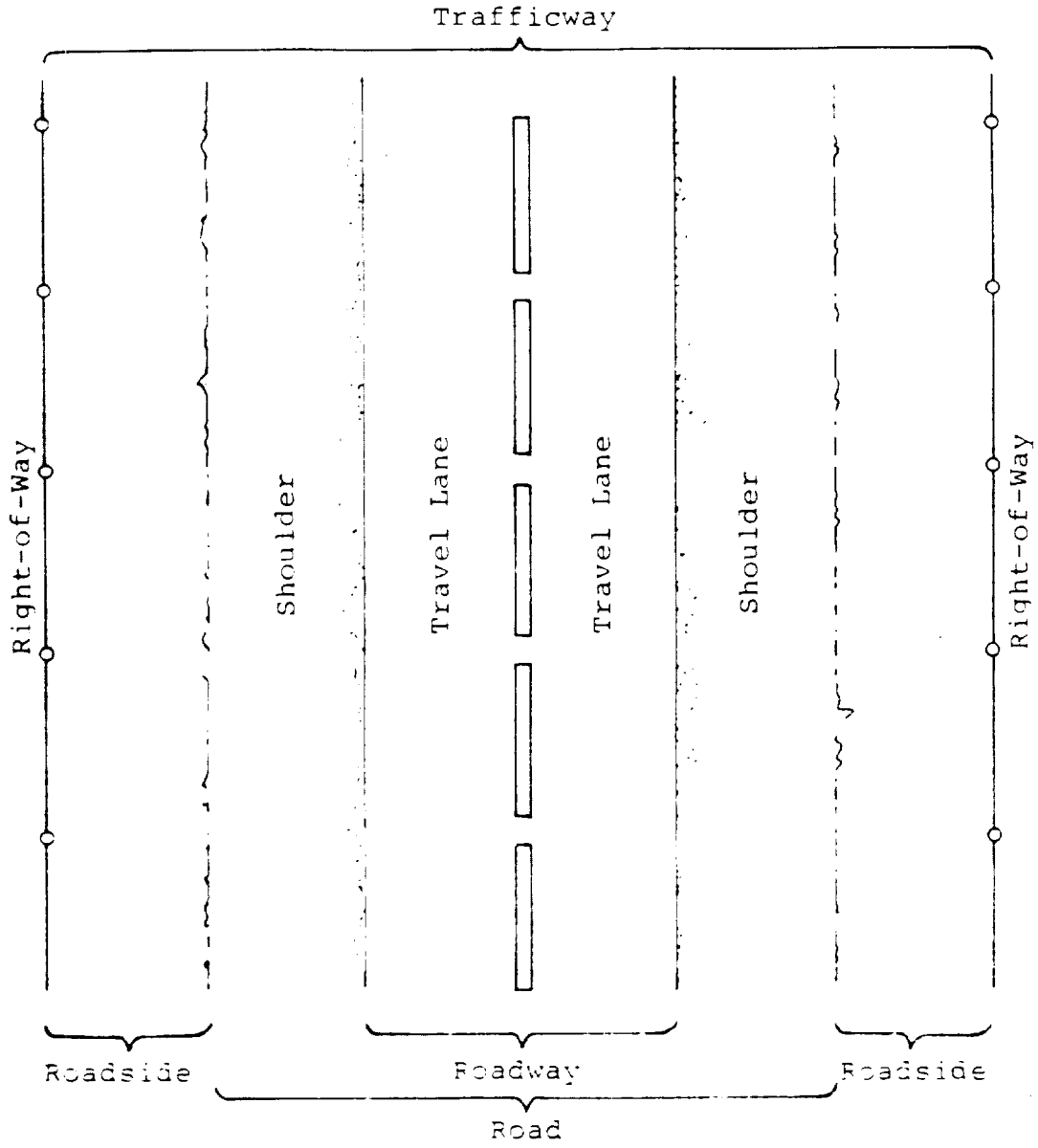




FIGURE 2-4

Example of a Divided Trafficway

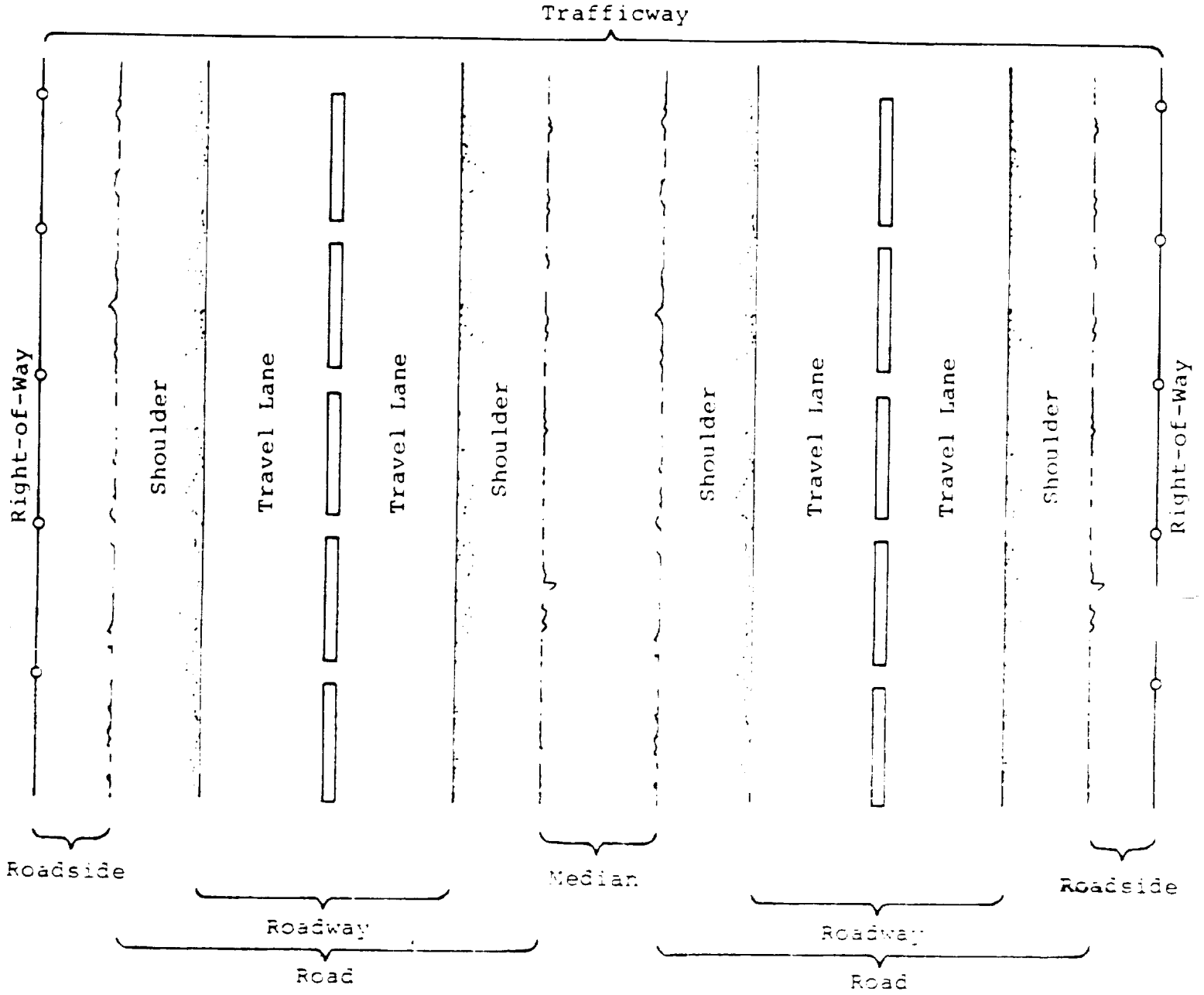


FIGURE 2-5

	<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
Motor vehicle	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
Roadway	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
Motor vehicle accident	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 airway 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 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. If more than one accident is recorded on a police report, based on the ANSI definition of stabilized, then use the following protocol to determine which of the accidents is to be stratified and listed:

- (1) If injury is involved and you can determine the relative degree of injury between events and one event is of higher severity, then choose that event.
- (2) If injury is involved and you determine that the relative injury between events is approximately equal, then choose the first of the highest equal injury events.
- (3) If injury is involved but you cannot determine the relative injury between events, then choose the first event.
- (4) If no injuries, then choose the first event.

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.

Caution must be exercised when separating accidents on a PAR, however. At times, it will appear that two distinct events of an accident sequence should be considered separately. According to ANSI (D16.1, section 2.3.4, page 8), an unstabilization terminates "... when all persons and property are at rest ...". "Property" can refer to the damaged vehicles, separated components of the vehicles, or cargo. Often the interviews will be the only source for determining whether or not stabilization occurred before the second event.

Example: Two vehicles collide in the eastbound lanes of a divided trafficway. Cargo from one vehicle spills into the westbound lanes and another vehicle is damaged. If it can be determined that stabilization never occurred, that the cargo struck the vehicle, or the vehicle struck the moving cargo, the two harmful events would be considered one accident and all three vehicles considered applicable to the NASS case. If it should be discovered during the investigation that the cargo came to rest for a period of time prior to being struck by the third vehicle, then the events would be considered as two separate accidents.

#### 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 or Nontowaway Study sampling frames.

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 irate 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 ve-

hicle 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, Tow Status, and Disposition of the Injured

Before an accident is selected for study, it must be classified by type, injury severity, tow status, and disposition of the injured. 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 five categories: pedestrian and nonmotorist, motorcycle, medium or heavy truck, light truck or van, 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 and nonmotorists. To classify the accident by type, first classify each unit in the accident as a pedestrian and nonmotorist, motorcycle, medium or heavy truck, light truck or van, or other motor vehicle. These classifications are defined as follows:

Pedestrian or Nonmotorist - pedestrian; bicyclist; other cyclist; occupant of an animal related nonmotor vehicle transport device; occupant of vehicle not in transport; other nonmotorist. For full definitions of terms, see Vehicle Form variable V14.

Motorcycle - motorcycle; moped (motorized bicycle); other motorcycle (e.g., minibikes, motor scooters, sidecar cycle). For full definitions of terms, see Vehicle Form variable V14.

Medium or Heavy Truck - step van; straight truck over 10,000 lbs. GVWR; medium/heavy truck-based motor home; truck tractor pulling no trailer; truck tractor pulling one or more trailers. For full definitions of terms, see Vehicle Form variable V14.

Light Truck or Van - pickup; van (passenger, cargo, van-based station wagon); van - commercial cutaway (includes multi-stop, parcel, truck based panel,

etc.); truck based station wagon (e.g., Travelall, etc.); van and pickup-based motor home; truck-based utility (e.g., Blazer, Bronco - 78 on, Scout, etc.); cab chassis-based (includes rescue vehicles, light stake, dump, and tow trucks). For full definitions of terms, see Vehicle Form variable V14.

In addition, when the vehicle is known to be a truck (or van), but it is not known whether the vehicle is a light, medium, or heavy truck, then the default classification is "Medium or Heavy Truck".

Other Motor Vehicle - (OTHER VEHICLES) snowmobile; farm vehicle, except trucks; dune or swamp buggy; construction equipment other than trucks; (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 based pickup (e.g., El Camino, Ranchero, Brat, etc.); stationwagon (excluding van based or truck based stationwagon); short utility - not truck based (e.g., Jeep CJ-5, Pre-78 Bronco, etc.); large limousine, more than four doors; other automobile. For full definitions of terms, see Vehicle Form variable V14.

In addition, the accident type classification "Other Motor Vehicle" is used as the default classification when (1) no pedestrians or nonmotorists are present and (2) insufficient information exists regarding a vehicle to clearly identify its type (e.g., Chevrolet could mean passenger car, van, light truck, medium truck, or heavy truck).

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

1. If a motorcycle strikes a pedestrian, classify the accident as a pedestrian and 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 heavy truck, classify the accident as a motorcycle accident.
3. If a medium or heavy truck strikes a light truck or van, classify the accident as a medium or heavy truck accident.
4. If a light truck or van strikes an automobile, classify the accident as a light truck or van accident.
5. If two automobiles collide, classify the accident an other motor vehicle accident.
6. If a medium or heavy truck strikes a motor vehicle not in transport (i.e., legally parked), with occupants (i.e., nonmotorists), classify the accident as a pedestrian and nonmotorist accident.
7. If a truck (of unknown size) 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 and nonmotorist accident. If the same stationary vehicle above does not have occupants and is struck, the

accident would be classified, using the default rule, as a medium or heavy 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].

Transported vs. Nontransported Accidents--Minor injury accidents of all types (pedestrian and nonmotorist, motorcycle, heavy or medium truck, light truck or van, and other motor vehicle) will be subdivided into two categories: transported and nontransported. If a police accident report, with injuries no more severe than non-incapacitating ("B" injury), indicates that any of the pedestrian/nonmotorists or occupants of any vehicle went directly from the accident scene to a treatment facility (hospital, clinic, doctor's office, etc.), then the accident belongs in the "transported" category--strata C, G, L, Q, or V. [It must be noted that for nontowaway light truck or van (stratum Y) or other motor vehicle accidents (stratum Z), no distinction between "transported" and "nontransported" is necessary; the strata are the same.] The means of transportation is not a consideration, nor is the length of stay at the facility. If the PAR does not indicate the disposition of the injured parties, stratify the accident "nontransported," but determine the final classification (A08, Final Stratification) through investigation. Also, if the PAR should erroneously report the disposition of the injured, correct on Final Stratification (A08).

Towaway vs. Nontowaway Accidents (also see Section 4.6.5 below)--For light truck or van and other motor vehicle accidents, classify B, C, O, or U severity accidents as towaway or nontowaway. If the police report indicates any in transport vehicle was towed, classify the accident as towaway. The distance towed and the reason for towing (e.g., vehicle towed from a ditch) are not considerations. If a police officer should neglect to indicate vehicle disposition (i.e., towaway or nontowaway), the final classification (A08, Final Stratification) is determined through investigation. In some areas where the PAR does not identify vehicle disposition, the stratum can be determined from other sources or from other information on the report (e.g., disabling damage to a vehicle). If an individual PSU must resort to the last method of selecting vehicle dispositions from a PAR, it should discuss the matter with its Zone Center prior to making a policy. Accidents classified as nontowaway become part of the Nontowaway Study (NTS) sample and are selected independently of the accidents in the Continuous Sampling System (CSS) sample. The procedures are explained in Section 3.0.

#### 2.2.1 Continuous Sampling System (CSS) and Nontowaway Study (NTS) Samples

The NASS sampling frame is divided into two categories of accidents: (1) those that qualify for the Continuous Sampling System (CSS), and (2) those that qualify for the Nontowaway Study (NTS) sample.

The Nontowaway Study includes all NASS accidents of B, C, O, or U severity involving only light trucks or vans (i.e., excluding medium and heavy trucks) or other motor vehicles in which no in transport vehicle was towed from the scene. These accidents generally result in relatively minor property damage

and no injuries. Thus, we do not need to collect as much information about this type of accident as we do about more serious types of accidents.

To limit the amount of resources expended on investigating nontowaway accidents, two procedures are to be followed:

1. The teams are to sample Nontowaway Study accidents separately from CSS accidents and at a lower rate.
2. The teams are to collect less vehicle information for the Nontowaway Study accidents that are collected. The teams will use a shortened version of the Vehicle Form. This subject is discussed in Sections 4.6.1 and 4.6.5.

If the Nontowaway Study accidents and CSS accidents were sampled together from one list, the number of nontowaway accidents would be several times greater than needed. To reduce the number of nontowaway accidents selected, the teams are to sample them separately from the CSS accidents and at a much lower rate. On the average, each team will investigate about one to two nontowaway accidents per month.

#### 2.2.2 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 unstabilized 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 the 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 pedestrian accident. The first harmful event is not part of the sampling criteria. Remember that accident type, towing, injury severity, and disposition of the injured are the four 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 and 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 have information on the police report that indicates the hit-and-run vehicle was either a truck (light or heavy or medium) 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 stratification, stratify according to model type. Some of these vehicles are essentially straight trucks with the cleaning equipment on the rear bed--stratify these as heavy or medium 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 indicated 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 non-motorist? 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 the Case Load and Sampling Worksheets, 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.

The methods to be used by a team to accomplish each of these tasks depends on the PSU.

Most teams will perform these tasks on Monday and Thursday of each week. Other teams will perform these tasks on Tuesday and Friday of each week. Still other teams will sample more than twice a week. Section 3.2 discusses the Monday-Thursday example. However, the procedure to be followed is the same, regardless of the schedule.

The NASS sampling frame consists of two categories of accidents: (1) those that qualify for the Continuous Sampling System (CSS) sample and (2) those that qualify for the Nontowaway Study (NTS) sample. Accidents to be investigated are selected independently within each category. Section 3.2 describes the procedures to be used to sample from the two categories.

#### 3.1 Listing and Sampling Forms

The Case Load Assignment Sheet (CLAS), the Case Load Worksheet (CLW), the Stratification Record, the Accident Sampling Worksheet (SW), and the Sample Selection within Stratum/Jurisdiction (SSSJ) form to be used in PSU 78 (Douglas County, Nebraska) are attached as examples. Note that the 1983 Sampling is not different from 1982.

##### 3.1.1 Case Load Assignment Sheet (CLAS)

The Case Load Assignment Sheet provided is unique for the PSU (Table 3-1). It covers team activities for the periods specified on the right-front side of the form. Updated versions of the CLAS will be sent to you quarterly.

The CLAS lists the jurisdictions the team is to contact and specifies the days of the week on which the contacts are to be made. It also indicates the number of CSS and Nontowaway Study (NTS) sample accidents to be selected and the ran-



TABLE 3-1

## CASE LOAD ASSIGNMENT SHEET

PSU: 78 Douglas County, NEPeriod: January 4 - 22, 1982

	Contact Days*					
	Monday 4	Thursday 7	Monday 11	Thursday 14	Monday 18	Thursday 21
Number of CSS accidents to be selected	4	2	3	3	3	3
Number of NTS accidents to be selected	0	1	0	0	0	0
Random Number	.148	.880	.677	.702	.996	.070

Period: Jan. 25 - Feb. 12, 1982

	Contact Days*					
	Monday 25	Thursday 28	Monday 1	Thursday 4	Monday 8	Thursday 11
Number of CSS accidents to be selected	3	3	3	3	3	3
Number of NTS accidents to be selected	0	0	1	0	0	0
Random Number	.838	.036	.417	.962	.458	.778

Period: Feb. 11 - March 5, 1982

	Contact Days*					
	Monday 15	Thursday 18	Monday 22	Thursday 25	Monday 1	Thursday 4
Number of CSS accidents to be selected	4	2	3	3	3	3
Number of NTS accidents to be selected	0	0	0	1	0	0
Random Number	.541	.869	.379	.973	.553	.325

Period: March 8 - 26, 1982

	Contact Days*					
	Monday 8	Thursday 11	Monday 15	Thursday 18	Monday 22	Thursday 25
Number of CSS accidents to be selected	3	3	3	3	3	3
Number of NTS accidents to be selected	0	0	0	0	1	0
Random Number	.674	.907	.710	.709	.499	.493

CASE LOAD ASSIGNMENT SHEET

PSU: 78 Douglas County, NE

Period: March 29 - April 2, 1982

	Contact Days*					
	Monday 29	Thursday 1	Monday	Thursday	Monday	Thursday
Number of CSS accidents to be selected	3	3				
Number of NTS accidents to be selected	0	0				
Random Number	.384	.346				

\*Contact to list all accidents added to jurisdiction files since the previous contact:

Monday  
Omaha  
Douglas County Sheriff  
Ralston  
Valley

Thursday  
Omaha  
Douglas County Sheriff

dom number to be used on each contact date. This information is used to complete the Case Load Worksheet.

### 3.1.2 Case Load Worksheet (CLW)

All teams will use the same Case Load Worksheet (Table 3-2). Make photocopies of the form provided for the use of the team. Instructions for completing the form are given in Section 3.2.4.

### 3.1.3 Stratification Record

All teams will use the same Stratification Record form (Table 3-3). Make photocopies of the form provided for the use of the team. Instructions for completing the form are given in Section 3.2.2.

### 3.1.4 Accident Sampling Worksheet (SW)

The forms provided are unique to the PSU: photocopy them for the use of the team. There are two sampling worksheets: one for the CSS accidents (Table 3-4a) and one for the Nontowaway Study (NTS) accidents (Table 3-4b). Instructions for completing the worksheets are given in Section 3.2.4.

Each worksheet lists the jurisdictions the team is to contact and specifies the days of the week on which the contacts are to be made. This information is also shown on the Case Load Assignment Sheet (CLAS).

### 3.1.5 Sample Selection Within Stratum/Jurisdiction Form (SSSJ)

All teams will use the same Sample Selection Within Stratum/Jurisdiction form (Table 3-5). Each team should keep at least one clean copy of the form in reserve and make photocopies as needed. Instructions for completing the form are given in Section 3.2.4.

## 3.2 Listing and Sampling Instructions

### 3.2.1 Contacting Police Jurisdictions

Contact each of the jurisdictions indicated on the Case Load Assignment Sheet (and also on the Sampling Worksheets) on the day(s) of the week specified. For most teams, the jurisdictions are given in two different visitation patterns. For example, 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 the team wishes to change the day of contact for any jurisdiction, notify your respective Zone Center and CTM for approval to implement the change.

The team should write the contact date in its indicated space on every sampling form (CLW, Stratification Record, SW, SSSJ) and must enter it in the Automated Case Selection System.

**NOTE 1:** If the contact date shown on the CLAS falls on a holiday on which the police jurisdictions are closed and/or on which the team does not work, then the team will have to visit the jurisdictions on another date (usually the day

TABLE 3-2

CASE LOAD WORKSHEET

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

Year: 1983

Computations to designate sample strata and jurisdictions	Contact Days and Dates					
	CSS	NTS	CSS	NTS	CSS	NTS
1. Number of sample accidents to be selected						
2. Random Number						
3. Total weighted accident count: (Col. 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; 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)						

CASE LOAD WORKSHEET (CONTINUED)

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

Year: 1983

Computations to designate sample strata and jurisdictions	Contact Days and Dates					
	CSS	NTS	CSS	NTS	CSS	NTS
<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)						

TABLE 3-5  
 MASS Stratification Record

PSU	Contact Date		Pedestrian or Nonmotorist			Motorcycle			Heavy or Medium Truck			Light Truck or Van			Other Motor Vehicle										
	Jurisdiction	Date	Time	Number	B, C, O, U		B, C, O, U		B, C, O, U		B, C, O, U		B, C, O, U		B, C, O, U										
					K	A	Tran	Non-	K	A	Tran	Non-	K	A	Tran	Non-	K	A	Tran	Non-					
	(1)	(2)	(3)	(4)	A	B	C	D	E	F	G	H	J	K	L	M	N	P	O	R	S	T	V	W	Z
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									

Total MASS accidents stratified on this page:

TABLE 3-4a

NASS  
Continuous Sampling System (CSS)  
Accident Sampling Worksheet

PSU: 78 - Douglas County, Nebraska  
Accident Type: Pedestrian & Nonmotorist

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

Accident Severity (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum (4)	$W_i$ (5)	$N_i$ (6)	$N_i W_i$ (7)	$\Sigma N_i W_i$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Case Number (12)
K	M & Th	Omaha	A	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
A	M & Th	Omaha	B	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
B, C, O, U Transported	M & Th	Omaha	C	3							
	M & Th	Douglas County Sheriff		3							
	M	Ralston		6							
	M	Valley		9							
B, C, O, U Nontransported	M & Th	Omaha	D	5							
	M & Th	Douglas County Sheriff		5							
	M	Ralston		10							
	M	Valley		15							

Accident Type: Motorcycle

K	M & Th	Omaha	E	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
A	M & Th	Omaha	F	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
B, C, O, U Transported	M & Th	Omaha	G	6							
	M & Th	Douglas County Sheriff		6							
	M	Ralston		12							
	M	Valley		18							
B, C, O, U Nontransported	M & Th	Omaha	H	5							
	M & Th	Douglas County Sheriff		5							
	M	Ralston		10							
	M	Valley		15							
SUBTOTAL											

NASS  
Continuous Sampling System (CSS)  
Accident Sampling Worksheet

PSU: 78 - Douglas County, Nebraska  
Accident Type: Heavy or Medium Truck

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

Accident Severity (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum (4)	$W_j$ (5)	$N_j$ (6)	$N_j W_j$ (7)	$\sum N_j W_j$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Case Number (12)
K	M & Th	Omaha	J	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
A	M & Th	Omaha	K	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
B, C, O, U Transported	M & Th	Omaha	L	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
B, C, O, U Nontransported	M & Th	Omaha	M	7							
	M & Th	Douglas County Sheriff		7							
	M	Ralston		14							
	M	Valley		21							

Accident Type: Light Truck or Van

K	M & Th	Omaha	N	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
A	M & Th	Omaha	P	8							
	M & Th	Douglas County Sheriff		8							
	M	Ralston		16							
	M	Valley		24							
B, C, O, U Towaway Transported	M & Th	Omaha	Q	4							
	M & Th	Douglas County Sheriff		4							
	M	Ralston		8							
	M	Valley		12							
B, C, O, U Towaway Nontransported	M & Th	Omaha	R	2							
	M & Th	Douglas County Sheriff		2							
	M	Ralston		4							
	M	Valley		6							
SUBTOTAL											



NASS  
Continuous Sampling System (CSS)  
Accident Sampling Worksheet

PSU: 78 - Douglas County, Nebraska  
Accident Type: Other Motor Vehicle

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

Accident Severity (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum (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	Omaha	S	7							
	M & Th	Douglas County Sheriff		7							
	M	Relston		14							
	M	Valley		21							
A	M & Th	Omaha	T	7							
	M & Th	Douglas County Sheriff		7							
	M	Relston		14							
	M	Valley		21							
B, C, D, U Towaway Transported	M & Th	Omaha	V	4							
	M & Th	Douglas County Sheriff		4							
	M	Relston		8							
	M	Valley		12							
B, C, D, U Towaway Nontransported	M & Th	Omaha	W	2							
	M & Th	Douglas County Sheriff		2							
	M	Relston		4							
	M	Valley		6							
SUBTOTAL											
TOTAL											

TABLE 3-4b  
 NASS  
 Nontowaway Study (NTS)  
 Accident Sampling Worksheet

PSU: 78 - Douglas County, Nebraska  
 Accident Type: Light Truck or Van

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

Accident Severity (1)	Contact Day(s) (2)	Jurisdiction (3)	Stratum (4)	$W_i$ (5)	$N_i$ (6)	$N_i W_i$ (7)	$\Sigma N_i W_i$ (8)	Random Cumulants (9)	Number of Accidents Sampled (10)	Selected Cases (11)	Case Number (12)
B, C, O, U Nontowaway	M & Th	Omaha	Y	1							
	M & Th	Douglas County Sheriff		1							
	M	Reiston		2							
	M	Valley		3							

Accident Type: Other Motor Vehicle

B, C, O, U Nontowaway	M & Th	Omaha	Z	1							
	M & Th	Douglas County Sheriff		1							
	M	Reiston		2							
	M	Valley		3							
TOTAL											

TABLE 3-5

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) Interval (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 Worksheet. The same random number is to be used as many times as necessary.

before or the day after the holiday). In this instance, the team should enter the actual date of the sampling visit as the contact date rather than the date shown on the CLAS. The contact date is always the date on which the jurisdiction was actually visited. The team should also contact the NHTSA to get the correct random number for that day.

NOTE 2: In certain designated PSU's (e.g., PSU 01 - Chicago), the contact date will always be the date shown on the CLAS.

On each visit to a jurisdiction, 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.)

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 NASS Automated Case Selection System (see 3.2.3 below) or the manually executed backup system--the Sampling Worksheets--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.

### 3.2.2 Completing the Stratification Record

At each agency, designated on the last page 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 and time. [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 3.2.4 below).]

After the PARs have been sorted, the Stratification Record is to be completed. At the top of the form, enter the PSU number and name, the contact date, and the name or initials of the team member making the visit.

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-D strata.
  - (2) If not,
- b. Determine if a motorcycle (in transport) was involved,
  - (1) If so, it belongs in one of the E-H strata.
  - (2) If not,
- c. Determine if a heavy or medium truck (in transport) was involved,
  - (1) If so, it belongs in one of the J-M strata.
  - (2) If not,
- d. Determine if a light truck or van (in transport) was involved,
  - (1) If so, it belongs in one of the N, P-R, or Y strata.
  - (2) If not, it belongs in one of the S, T, V, W, or Z strata.

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

- e. If a fatality occurred, a "1" should be placed in the column ("K") indicating the appropriate accident type fatality stratum: A, E, J, N, or S.
- f. If no fatality occurred but an "A" (column) injury occurred, place a "1" in the appropriate row: B, F, K, P, or T.
- g. If neither a fatality ("K") nor an "A" injury occurred, determine if any victim was transported directly from the accident scene to a treatment facility to be examined for injuries.
  - (1) If so, a "1" should be placed in the "B, C, O, or U transported" column in the appropriate row: C, G, L, Q, Y, V, or Z.
  - (2) If not, a "1" should be placed in the "B, C, O, or U nontransported" column in the appropriate row: D, H, M, R, Y, W, or Z.(NOTE: Placement in strata Y or Z is not dependent on the transported issue.)
- h. If a light truck or van 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 strata Q or R.
  - (2) If not, place a "1" in strata Y.
- i. If an 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 strata V or W.
  - (2) If not, place a "1" in strata Z.

(NOTE: Accidents in strata Y and Z qualify for the Nontowaway Study sample.)

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.

All PARs that qualify for NASS should be listed on each contact date shown on the CLAS regardless of the number of accidents (to be investigated) to be selected on that date. If the number of CSS and/or Nontowaway Study accidents to be selected on that date is zero, the team must still list all the NASS PARs on the Stratification Record.

### 3.2.3 The NASS Automated Case Selection System

The Automated Case Selection System is the primary method for NASS sampling; it must be executed for each contact date listed on the Case Load Assignment Sheet. Most teams are to execute the Automated Case 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 (SW). 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. The manual execution of the SW is a backup procedure to the NASS Automated Case Selection System. This procedure is discussed below in section 3.2.4.

The Automated Case Selection System must be executed on each contact date shown on the CLAS regardless of the number of accidents (to be investigated) to be selected on that date. If the number of CSS and/or Nontowaway Study accidents to be selected on that date is zero, the team must still enter all the accidents listed on the Stratification Record in the automated system.

#### 3.2.4 Completing the Worksheets

The procedure to select accidents to be investigated consists of two parts. First, the CSS accidents are selected; then, the Nontowaway Study accidents are selected. The same algorithm is used for both samples of accidents. However, it must be executed separately for each sample.

The first task in the selection process is to complete the top portion of the Case Load Worksheet (CLW).

1. Print the PSU number and name in the space provided at the top of the form.
2. Enter the contact day and date (e.g., Monday, January 4) in the first unused box below the words "Contact Days and Dates". Note that the CLW consists of three columns, each divided in half. Each contact date requires one double column, the left-hand side for selecting CSS accidents and the right-hand side for selecting Nontowaway Study accidents.
3. From the Case Load Assignment Sheet (CLAS) transcribe the number of each type of accident to be selected on this contact date to row 1 of the CLW. Enter the number of CSS accidents to be selected in the left-hand column (under the notation "CSS") and the number of Nontowaway Study accidents to be selected in the right-hand column (under the notation "NTS").
4. Transcribe the random number for this contact date from the CLAS to row 2 of the CLW. The same random number will be used for both the left-hand and right-hand columns.

The algorithm to select the accidents to be investigated is described below in steps 5-22. On each contact day, the algorithm is to be executed twice, once to select the CSS accidents and then to select the Nontowaway Study accidents.

To select the sample of CSS accidents for this contact date, use the CSS Accident Sampling Worksheet (see Table 3-4a). In steps 5 through 22, "SW" refers to this worksheet while "CLW" refers to the left-hand column (for this contact date) on the Case Load Worksheet.

Then, to select the sample of Nontowaway Study accidents for this contact date, repeat steps 5 through 22 using the Nontowaway Study Accident Sampling Worksheet (SW) and the right-hand column (for this contact date) on the Case Load Worksheet.

5. Fill in the contact day and date at the top of the Sampling Worksheet (SW) and gather together all Stratification Records completed for the day.
6. Column (6)  $N_i$ : Transcribe the counts from the rows labeled "Total" on the Stratification Record into Column (6) of the Sampling Worksheet. Ensure that counts are placed in the proper stratum for the correct jurisdiction.
7. 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 subtotal for each page of the worksheet at the foot of column (7) in the row labeled "Subtotal." Add the Subtotal entries and record the same for the worksheet on the last page at the foot of column (7) in the row labeled "Total."

At this point, a portion of the CLW is completed as follows:

8. Enter on row 3 of the CLW the total of column (7) of the SW.
9. Enter on row 4 of the CLW 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".

If the entry on row 1 is zero (i.e., no accidents of this type are to be selected), then enter a dash (--) on row 4 and leave the rest of the column blank. If you are in the left-hand (CSS) column, then go to step 5 above to select the NTS sample. If you are in the right-hand (Nontowaway Study) column, then you have completed the sampling activities for this day.

10. Enter on row 5 of the CLW the product of row 4 times the constant 0.75; show the product to two decimals. This entry is called the "Trial Interval";
11. 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 CLW. Enter this count on row 6 of the CLW.
  - 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 CLW and go to row 11 of the CLW for the next operation.
  - b. If the entry on row 6 of the CLW 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 CLW.
12. Enter on row 7 of the CLW the total weighted accident count for the certainty cases identified in step 6 of the CLW; 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).

13. Enter on row 8 of the CLW the remaining number of accidents to be selected. This is the difference between the row 1 and row 6 entries on the CLW.
14. Enter on row 9 the remaining weighted accident count. This is the difference between the row 3 and the row 7 entries on the CLW. 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.
15. Enter on row 10 of the CLW the second sampling interval; this is the quotient of the entry on row 9 to row 8 of the CLW. Show the quotient to two decimals.

The following step involves the Sampling Worksheet (SW).

16. Complete column (8)  $\sum N_i W_i$ : 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 CLW form:

17. 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,
18. 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 CLW. Stop when the random cumulant exceeds the total of the column (7)--SW--entries.

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

19. Column (9) Random Cumulants: Beginning with the first cumulant from the CLW 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. Repeat this process--2nd, 3rd, etc., cumulant--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--where certainty cases exist, row 1 without certainty cases--of the CLW. If not, recheck your work.
20. Column (10) Number of Accidents Sampled: Record the number of cumulants (1 or more) appearing in column (9) for the row.
21. 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 selected).



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. Transcribe the entry in column (6) to column (11).

(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 first available column heading of the SSSJ. Transcribe the random number from row 2 of the CLW 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 (SJ) 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, in their ordinal form (e.g., 1st, 2nd, etc.), onto the Sampling Worksheet, column (11). To identify the selected accidents, examine the stratum entries for the jurisdiction given on the Stratification Record. 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 Stratification Record) matches the rounded random cumulant (SSSJ - row 5) or cumulants (rows 5, 6, etc.). Indicate the number of the accident (e.g., by date and time) in column (11).

22. Column (12) Case Number: Starting at the top of the Sampling Worksheet, assign a case number to each selected accident [i.e., whenever there is an entry in column (11)]. Enter the case number in column (12).

The case number is composed of two parts: a three-digit consecutive number followed by the stratum letter of the accident. Assign the next unused consecutive number to the first selected accident and continue. Assign case numbers in stratum/jurisdiction order (i.e., as listed on the Sampling Worksheet). If the entry in column (10) is greater than one (i.e., more than one accident was selected from the same stratum/jurisdiction combination), then assign the case numbers in the order of their sequential numbers on the Stratification Record--column (11).

### 3.3 Sampling Problems: How To Handle Them

The following section describes problems that sometimes arise in sampling and outlines ways to address them. A critical element in each case is time, that is, the longer the period between the occurrence of the problem and the implementation of some corrective action, the less likely are our chances of resolving it. If a problem occurs which is not listed below, the investigator should inform his/her CTM or Sandra Smith at once.

#### Problem 1

A team member performs the sampling procedures correctly but picks up the wrong PAR at the police jurisdiction and investigates the wrong accident. Zone Center discovers the error when it receives hard copy.

##### Action:

Case 1 - If the incorrect PAR comes from the same stratum and jurisdiction as the correct PAR then the Zone Center should accept the data for the case. However, the team should be notified that it made an error.

Case 2 - If the incorrect PAR comes from a different stratum or jurisdiction than the correct PAR, then the data for that case should be deleted from the file. The Zone Center should tell the team to 1) obtain a copy of the correct PAR and 2) code the data forms using information from the PAR and all other available data sources (i.e., medical record, scene inspection, interview, etc.) Information that can not be obtained will be coded as unknown. The team will enter the data on RDE and send the hard copy to the Zone Center.

#### Problem 2

A team member lists and stratifies accidents correctly, but the PAR for the selected case is missing when the investigator returns to the police jurisdiction after sampling.

##### Action:

Case 1 - After all attempts to locate the PAR have been exhausted unsuccessfully, call the Zone Center to have the case deleted. If the determination is made on the same contact day the cases were listed, call Kappa to have the cases rolled back. Delete the missing-PAR case and reselect that day's sample.

Case 2 - If the determination is made after the contact day, add an extra case to the next contact day's sampling load and notify NHTSA immediately. In any event, the next consecutive contact day is not to pass without notifying NHTSA and the Zone Center.

### Problem 3

Team member does not find any CSS accidents to list.

#### Action:

This is not really a problem. The automated case selection system will not select any CSS cases for investigation since any fraction of zero is zero. The team should (1) call the Zone Center and tell what happened, and (2) write "No CSS Cases Listed" on the sampling printout.

### Problem 4

Team member lists some CSS accidents, but fewer than or equal to the number of CSS cases to be selected on that day.

#### Action:

If the number of accidents listed is less than the number to be selected, the automated system will result in at least one 'multiple hit' (i.e., an accident selected more than once). Therefore, when the number of accidents to-be selected is less than the number of accidents listed, the number of accidents requested must equal the number listed. When this circumstance occurs, the Zone Center and Sandra Smith should be notified.

NOTE: Multiple hits may occur in other situations. If one does occur, (e.g., if the automated case selection system selects fewer cases than were requested), the Zone Center and Sandra Smith should be notified.

### Problem 5

Team member does not find any nontowaway cases to list on a day on which it is supposed to select one.

#### Action:

The team should (1) write "No N-T SS Cases Listed" on the sampling printout and (2) call the Zone Center. The Zone Center should call Sandra Smith for instructions. The Zone Center instructions will include having the team select a nontowaway case on its next contact date.

### Problem 6

Team member can't list and select case(s) on the designated contact date due to extreme weather conditions, (in particular snow hazards).

#### Action:

Visit the assigned police jurisdictions on the next possible day, but inform Sandra Smith at NHTSA so that you may be given the correct random number to use.

NOTE: Whenever you select the sample on a day other than the contact date listed on the Caseload Assignment Sheet you should call NHTSA for the correct random number.

Problem 7

Team member lists and selects accidents properly according to the information on the PARs. However, upon visiting the scene it is determined that the location falls outside of the sample jurisdiction.

Action:

Follow the same procedure as in Problem 2 (i.e., if the determination is made on the same contact date, then call Kappa to have the cases rolled back). If the determination is made after the contact date, the case number must be deleted from the file.

#### 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 subsystem data collection forms with field logs, medical injury records, driver records, CRASH and RDE output.

#### 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 eight 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 eight 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.

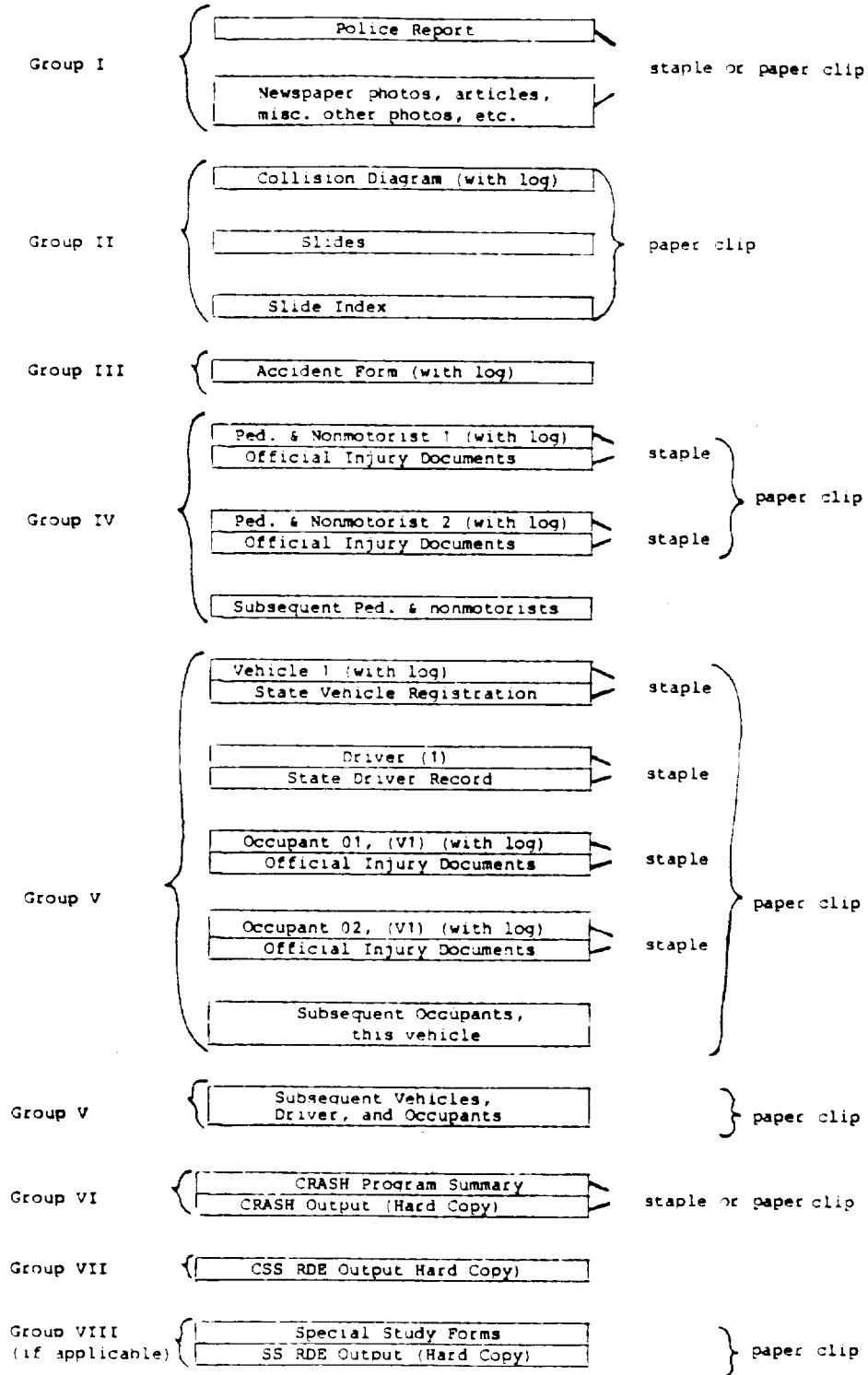
Third, the Accident Form with the Accident Log on the back of the last page forms a group which will appear in every case.

Fourth, all Pedestrian and Nonmotorist Forms (with logs) should be grouped together, beginning with pedestrian and nonmotorist number 1. Official injury information obtained for any pedestrian or nonmotorist should be identified by a pedestrian or non-motorist number then stapled to the back of the respective form. This will collate the injury data to the pedestrian or nonmotorist and save time which might be lost searching through the various forms to make the correct association. Pedestrian and 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 a Vehicle Form, the state vehicle registration record, the Driver Form, the state driver record for that driver, forms for 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 (with log), for this vehicle which has any official injury documents stapled to the back of it. The Driver Form appears next and will have any state driver record stapled to the back of it. This will be followed by the first Occupant Form (with log) for this vehicle which has any state vehicle registration record stapled to the back of it. All additional Occupant Forms (with logs) will follow in numeric order [Occupant 02 (V1), Occupant 03 (V1), etc.]. At least one group of this type will appear in

FIGURE 4-1

SEQUENCE OF CASE MATERIALS



every MASS case. All the forms associated with this group should be bound together with a paper clip. Additional vehicles, registration records, 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.

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

Finally, the eighth group is composed of any Special Study forms completed for the accident and the hard copy of the Special Study Remote Data Entry Output. These should be bound together with a paper clip.

#### 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 and Nonmotorist Form--If a Pedestrian and Nonmotorist Form is submitted, the only additional mandatory data item is the Pedestrian or Nonmotorist's 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 Pedestrian and Nonmotorist, Vehicle, Driver, and 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 partially upon initial case submission then completed when the update information arrives. On the original case form 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. In the case of injury updates, the "Update Candidate" circle should be marked in the affirmative. This procedure applies only to those data elements on the Pedestrian and Nonmotorist, Vehicle, Driver, or Occupant Forms, which are designated below as candidates for updating.

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/pedestrian or nonmotorist/occupant number. The newly acquired information should be entered on the front of the Update Forms and any supporting documents attached to the back.

Pedestrian and Nonmotorist Update Record--This form is to be used when the investigator expects to receive data regarding alcohol tests, working days lost, injuries or treatment received by any pedestrian/nonmotorist, and the data were not obtained from the hospital, private physician, pedestrian, etc., before the initial submission. The additional information required on this form allows the investigator to update variables A08, P09, P10, P20, P21, P22, P28 through P69, P73, and P74, based on subsequent receipt of official or interviewee data where necessary. These data would be difficult to update without recorded knowledge regarding the initial coding of Final Stratification (A08), Treatment - Mortality (P20), Hospital Stay (P21), Working Days Lost (P22), injury data (P28-P69), Alcohol Test Results (P73), and Time of Death (P74). The data on the specific injuries coded on the initial submission (P28-P69) may be combined with the new injury data using the NASS injury coding rules to revise the injury coding on the updated version. Also, it is suggested that a copy of the sketch of the involved motor vehicle (page 3A, 3B,



etc., of the Vehicle Form) be made prior to the initial submission, so that the investigator will be able to check for specific components contacted by the pedestrian when coding the injury sources on the update form.

Vehicle Update Record--This form is to be used to update both the Vehicle for Non-Towaway Accident Form as well as the Vehicle Form. It is to be used if Vehicle Model Year (V11), Vehicle Make (V12), Vehicle Model (V13), Body Type (V14), Vehicle Identification Number (V61), Registration of Vehicle (V62), or Vehicle Curb Weight (V75) have not been determined prior to submission of the case. It should be noted that this update form was initiated to allow investigators to obtain data from running vehicle registrations through cooperating agencies.

Driver Update Record--This form is to be used if Alcohol Test Results (D33), Driver License Status (D36), Driver License Type Compliance (D37), Driver License Restriction (D38, D39), or convictions/suspensions/revocations/accidents (D40-D44) are not known at the time of initial submission.

Occupant Update Record--This form is similar to the Pedestrian and Nonmotorist Update Record with the exception that there exists the need to identify both the vehicle and occupant number. It should be used when the investigator expects to receive data after the initial submission. Additional information required on this form prior to initial case submission allows the investigator to update variables A08, O09, O10, O20, O21, O22, O28-O69, and O71, based on subsequent receipt of official or interviewee data. These data would be difficult to update without recorded knowledge regarding the initial coding of Final Stratification (A08), Treatment - Mortality (O20), Hospital Stay (O21), Working Days Lost (O22), injury data (O29-O69), and Time of Death (O71). 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. Also, it is suggested that a copy of the interior sketch (page 7 of the Vehicle Form) be made prior to the initial submission, so that the investigator will be able to check for specific components contacted by the occupant when coding the injury sources on the update form.

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 three sections: (1) Vehicle Update Record Forms, (2) Driver Update Record Forms, and (3) Pedestrian and Nonmotorist and Occupant Update Record Forms. Each new addition of an update record may then be indexed by case number, vehicle number, pedestrian or nonmotorist number, and occupant number. They may also be partially 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 the Pedestrian or Nonmotorist Update Record, Driver Update Record, and/or the Occupant 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 Zone Center approved size 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. If the updates are not obtainable by the due date, the reasons the updates could not be obtained are to be indicated on the update record and sent to the Zone Center. All updates or reasons the updates were not obtainable must be submitted to the Zone Center within 120 days of 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 and Nonmotorist, Vehicle, Driver, and Occupant) 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 as well as the quality of data collected. 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.

##### 4.4.1 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 the appropriate investigator as the different activities described are completed. Each of Questions 1 through 14 (discussed below) must be completed before the case is submitted. Questions 1 through 6, commonly called the "header data" is coded the same as Variables A01 through A06 on 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), unless the contact date was a holiday, in which case the date the case was actually listed would be coded. Question 9, Date Scene Field Work Completed, is the date the investigator locates and inspects the accident scene. Question 10, Completing Person, is to be filled in with the number of the investigator who located and inspected the scene, and who will assume responsibility for the completeness and overall quality of the case. The status of the scene location, mapping of the scene and the quality of the scene drawing is documented under Question 11. Question 12, 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 status of the case upon submission to the Zone Center is recorded under Question 13. 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 14, Are Special Studies Applicable, is used to record the status of special studies. For each special study included with the case, a "1" is placed in the column for the number of that special study. The remaining special study columns are coded with "0". If the special study is not applicable to the PSU, leave the appropriate columns "blank." The remainder of the Accident Log is completed by the Zone Center quality review staff and is identified under the heading "Completed By Zone Center". This section is completed by the case reviewer as the case report flows through the quality review process. Each of Questions 15-29 must be completed for the case to complete the quality review process.

Question 15, Date Hardcopy Received at Zone Center, is filled in with the date the hardcopy arrives at the Zone Center. Question 16, Type of Review, is coded "1" if the case involves an all variable review. If only select (or key) variables from the case are reviewed, Question 16 is coded "2". Alternatively, if the review process involves reviewing a given percentage of the investigators cases (i.e., key case review) a "1" is coded for those cases reviewed and a "2" is coded for those cases not reviewed. Question 17, Date Review Completed, is filled in with the date that all quality review associated with the case is completed. Question 18, Reviewed By, is to be filled in with the number of the person who is primarily responsible for the review of the case and made the assessment that the review is complete. Question 19, Case Status, is coded "1" if the review is completed and all updates are received and incorporated. If the review is not completed or all updates not received, Question 19 is coded "2". Question 20, Date Case Released to Master File, is filled in with the date the RDE "approval" transaction was completed. The remaining Accident Log Questions 21-29 are completed by the Zone Center using the criteria indicated for each data code for that question. If the review process involves reviewing a given percentage of the investigator's cases, Questions 21-29 are not completed for cases coded "2" under Questions 16, Type of Review.

#### 4.4.2 Pedestrian and Nonmotorist Log

Each attempt to contact the involved pedestrian or nonmotorist is recorded on the interview contact record portion of the log, which is non coded and is provided on the back of page 7 of the field form as an aid to the investigator. 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 below the contract record. The final attempt (whether successful or not) should be coded in Questions 8 through 12 of the log. If multiple interviews are obtained, the investigator may use the interviewee contact record to document them, yet only the contact of the principle interviewee should be documented in Questions 8 through 12. Questions 1 through 7 are coded the same as Variables P01 through P07 on the Pedestrian and Nonmotorist Form. Question 8, Manner of Last Contact Attempt, is coded with the methodology used in the last attempt to obtain an interview. Question 9, Result of Last Contact Attempt, records the degree of success in obtaining an interview. Responses "01" through "05" and "10" reflect no personal contact. Responses "06" through "08" reflect unsatisfactory contact attempts. Response 09 reflects unsuccessful attempts to obtain an interview for reasons other than that which is documented in the other codes, and Responses "11" and "12" reflect a completed interview. Question 10, Date Interview Completed, is coded with the month and the date a successful interview was conducted. If no interview is obtained (i.e. Question 9 = 01 - 10) then this question and Question 11 are left "blank." Question 11, Completing Person, is the investigator's I.D. number who completed the interview. Question 13, Reasons Medical Data Not Obtainable, describes not only the disposition of medical data, but also if the investigator was not able to obtain the data. Codes "02" through "07" provide reasons why, while code "09" reflects a large lag time (greater than 120 days from date sampled) in obtaining the record. If the official medical injury data are requested but not received at the time of case submission and Question 13 is coded as "08" (To be updated), then the investigator should complete a Pedestrian and Nonmotorist Update Record Form. This completes the information required from the team. The remaining questions are filled out by the Zone Center.

Question 14, Date Medical Record Update Received, is filled in with the date the medical update record arrives at the Zone Center. Question 15, Reviewed By, is filled in with the number of the person who completes the medical update review. The remaining questions, 16-17, are completed by the Zone Center using the criteria indicated for each data code for that question. If the review process involves reviewing a given percentage of the investigator's case, Questions 15-16 are not completed for cases coded "2" under Accident Log Question 16, Type of Review.

#### 4.4.3 Non-Towaway Vehicle Log

The Non-Towaway Vehicle Log must be completed for all vehicles which are sampled in the nontowaway strata "Y" or "Z". The original stratification (i.e., the character in the case number) is used in making this determination. The only questions filled out on the Non-Towaway Vehicle Log by the team are

Questions 1 through 8. Questions 1 through 7 are coded the same as Variables V01 through V07 on the Vehicle for Non-Towaway Accident Form. Question 8 determines if vehicle registration information has been obtained at the time the case is submitted to the Zone Center. If Question 8 is coded as "8", (To be updated), then the investigator must complete a Vehicle Update Record Form. If the vehicle is inspected and/or all the updatable information is completed, then Question 8 is coded "0". Question 8 is coded "1" if the vehicle registration is requested and received before case submission to the Zone Center. Code "2" is used if the PAR reports the vehicle as hit and run with no identification. Codes "3-6" are used if a registration record is requested and returned without information on the vehicle. Code "7" is used for non-NASS states and foreign governments for which there is not currently an established relationship for obtaining vehicle registration records. Code "9" is used if an update record is received after the quarterly close out of a file. This completes the information required from the team. The remaining questions may be completed by the Zone Center.

Question 21, Date Official Record Received, is filled in with the date the update record arrives at the Zone Center. Question 22, Reviewed By, is filled in with the I.D. Number of the person who completes the update review.

#### 4.4.4 Vehicle Log

The Vehicle Log must be completed for all vehicles which fall in a sampling stratum other than "Y" or "Z". All questions (1-15) on the log should be completed by the investigator for each vehicle. Questions 1 through 7 should be coded the same as Variables V01 through V07 on the Vehicle Form. Question 8 determines if vehicle registration information has been obtained at the time of case submission to the Zone Center. If it is coded as "8", (To be updated) then the investigator must complete a Vehicle Update Record Form. If the vehicle is inspected and/or all the updatable information is completed, then Question 8 is coded "0". Question 8 is coded "1" if the vehicle registration is requested and received before case submission to the Zone Center. Code "2" is used if the PAR reports the vehicle as hit and run with no identification. Codes "3"-6" are used if a registration record is requested and returned without information on the vehicle. Code "7" is used for non-NASS states and foreign governments for which there is not currently an established relationship for obtaining vehicle registration records. Code "9" is used if an update record is received after the quarterly close out of a file. Questions 9 and 10 determine the lag time between the date the accident was sampled (Accident Form Log) and the date the vehicle was inspected as well as the number of the investigator who completes the vehicle inspection. Question 11 identifies the reasons why a vehicle inspection could not be completed. Question 12, Reason Highest Total Delta V Unknown, identifies the reasons why the CRASH or other reconstruction programs could not be utilized (the negative codes "3" through "9" are prioritized for coding). Question 13, Confidence in CRASH Results (for Highest Delta V), allows the investigator to judge the quality of the CRASH output as well as the data input. Question 14 identifies cases where a secondary impact has been CRASHed and recorded in its appropriate non-coded location. Question 15, Data Obtained for This Vehicle's Most Severe Impact: Regardless of Usage, allows the investigator to encode the overall

quality of the data related to this vehicle (i.e., CDC or TDC, CRUSH, Profile or Damage sketch, and Trajectory data). This completes the information required from the team. The remaining vehicle log questions, 16-22, are completed by the Zone Center.

Questions 16-20 are completed using the criteria indicated for each data code for that question. If the review process involves reviewing a given percentage of the investigator's cases, Questions 16-20 are not completed for cases coded "2" under Accident Log Question 16, Type of Review. Question 21, Date Official Record Update Received, is filled in with the date the update record arrives at the Zone Center. Question 22, Reviewed By, is filled in with the I.D. number of the person who completes the update review.

#### 4.4.5 Driver Log

The investigator should be sure that each question (1-14) has been addressed for each driver before completing the log. Questions 1 through 7 are coded the same as Variables D01 through D07 of the Driver Form. Question 8 records the occupant number assigned to the driver. If no driver was present, code "00". Question 9, Type of Driver Interview Data Obtained, enables us to know what type of interview information was obtained. Response "0" (Driver not present) means that there was no driver in the vehicle when it was impacted. Response "1" (No data obtained) means no driver or surrogate interview was obtained. Response "2" (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 D15 (page 1) and D16 and D17 (page 4) on the Driver Form]. Response "3" (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 D17). Response "4" (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 10, 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 "2" (Driver). In certain instances (e.g., driver is fatally injured or incapacitated) another person or persons may provide the information. This question (10) allows us to identify the person. Response "0" (Driver not present) means that there was no driver in the vehicle when it was impacted. Response "1" (No data obtained) means that no driver or legitimate surrogate interview was obtained. Response "3" (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 prece-

dence over whatever personal relationship existed. Response "4" (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 "5" (Eyewitness) when the interviewee witnessed the accident. If the person was also a relative or friend, then response "5" (Eyewitness) takes precedence. Response "6" (Combination of 3, 4, or 5) 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 "4" (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 10, indicate in Question 9 the type of driver data obtained from the actual driver. When codes "3" through "6" are used for Question 10, indicate the total data obtained ("2", "3", or "4") for Question 9 from all persons participating.

The valid combinations for Questions 9 and 10 are shown in the table below.

Q u e s t i o n			
9	10	9	10
0,1	0,1	3	2,3,5,6
2	2-6	4	2,3,6

Question 11, Result, encodes the success or failure in obtaining an interview, as well as documenting the reasons why no interview was obtained. Responses "00" and "11"- "12" mean that no interview was required or required interview obtained, respectfully, while Responses "01" through "05" and "10" reflect no personal contact. Responses "06" through "08" reflect unsatisfactory contact, while response "09" reflects unsuccessful attempts to obtain an interview for reasons other than that documented in the previous codes. For Questions 12 and 13, the investigator records the date the interview was conducted and the I.D. number of the investigator completing the interview. Question 14 documents with responses "2" through "7" and "9" the reasons why official driver records were not obtained. Response "0" (Driver not present) means there was no driver in the vehicle at the time of the impact. Response "1" (Records obtained) is coded if the driver record was obtained and coded in the appropriate variables. Code "8" (To be updated) means that the official records were not received prior to the initial submission of the case. In this case the investigator must also complete a Driver Update Record Form. This completes the information required of the team. The remaining Driver Log questions, 15-16, are completed by the Zone Center. Question 15, Date Official Driver Record Update Received, is filled in with the date the update record arrives at the Zone Center. Question 16, Reviewed By, is filled in with the I.D. Number of the person who completes the update review.

#### 4.4.6 Occupant Log

Each attempt to contact the involved occupant is recorded on the interview contact record portion of the log which is non-coded and is provided on the back of page 7 of the field form as an aid to the investigator. 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 below the contact record. The final attempt (whether successful or not) should be coded in Questions 10 through 12 of the log. If multiple interviews are obtained, the investigator may use the interviewee contact record to document them, yet only the contact of the principle interviewee should be documented in Questions 8 through 12. Questions 1 through 8 are the same as Variable 001 through 008 on the same Occupant Form. Question 9 records if the occupant was also the driver of the vehicle. Question 10, Manner of Last Contact Attempt, is coded with the methodology used in the last attempt to obtain an interview. Question 11, Result of Last Contact Attempt, records the degree of success in obtaining an interview. Responses "01" through "05" and "10" reflect no personal contact. Responses "06" through "08" reflect unsatisfactory contact code. Response "09" reflects unsuccessful attempts to obtain an interview for reasons other than that which is documented in the other codes, and responses "11" and "12" reflect a completed interview. Question 12, Date Interview Completed, is coded with the month and date a successful interview was conducted. If no interview is obtained (i.e., Question 11 = 01 - 10) then this question and Question 13 are left "blank". Question 13, Completing Person, is the investigator's I.D. number who completed the interview. This completes the information required from the team. The remaining Occupant Log questions, 16-19, are completed by the Zone Center. Question 16, Date Medical Record Update Received, is filled in with the date the update record arrives at the Zone Center. Question 17, Reviewed By, is filled in with the I.D. number of the person who completes the update review. Questions 18-19 are completed by using the criteria indicated for each data code for that question. If the review process involves reviewing a given percentage of the investigators cases, Questions 18-19 are not completed for cases coded "2" under Accident Log Question 16, Type of Review.

#### 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 nonmotorist type accidents), slides of the vehicle and a completed Vehicle Form will suffice. Inspections are not required for "Y" or "Z" 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 and, therefore, are not considered as an interview.

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 "Y" and "Z" Accidents

##### 4.6.1 Procedure for Vehicle(s) in Case Strata "Y" or "Z"

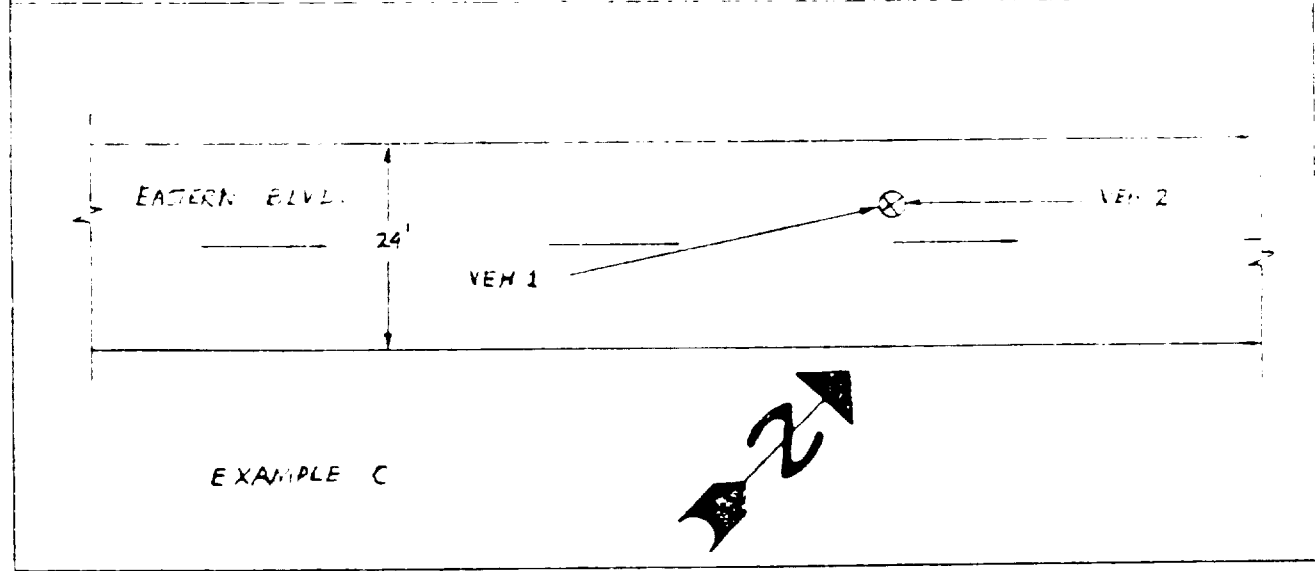
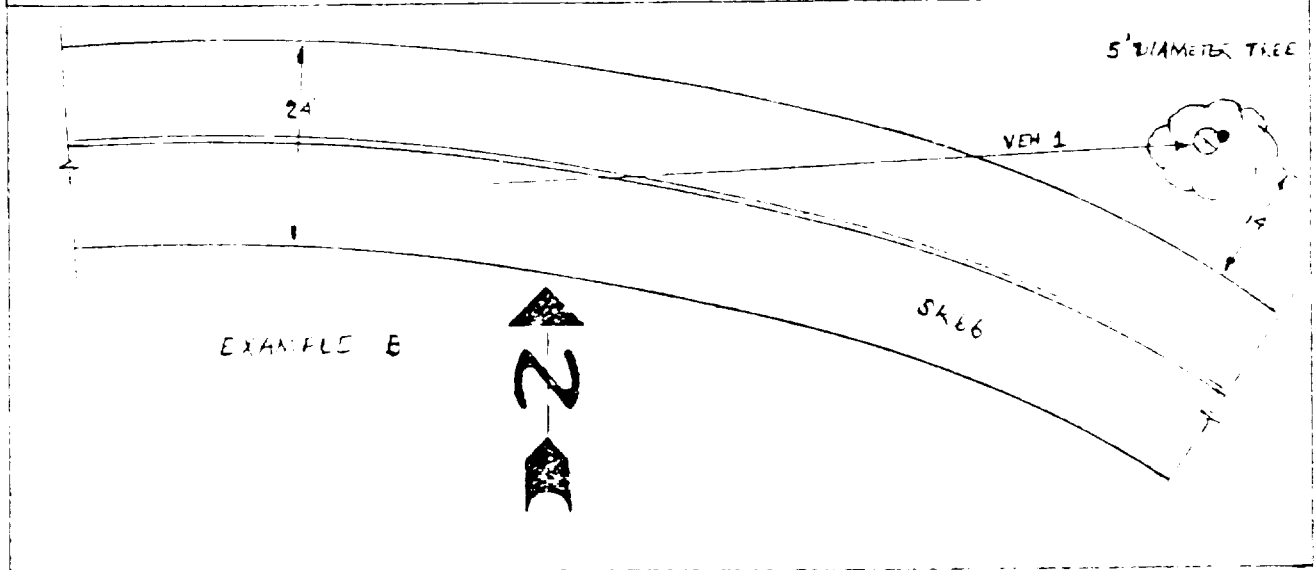
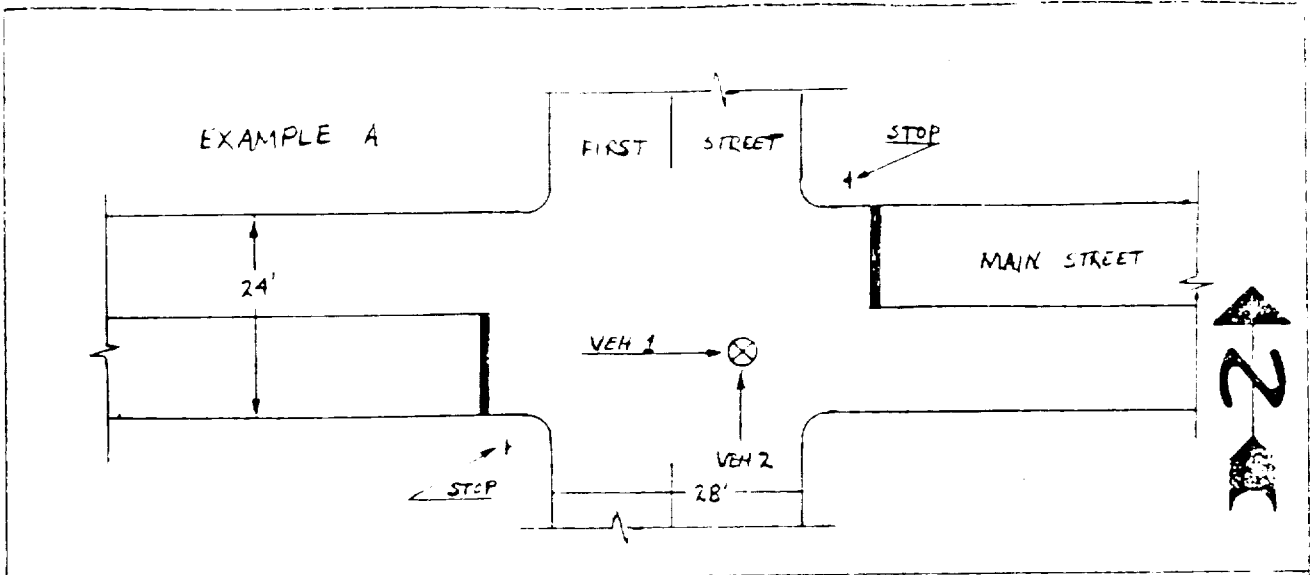
Do not photograph or inspect any vehicle from an accident sampled in these strata. Instead, the data obtained for these vehicles will be entered on an abbreviated vehicle form, essentially requiring no field effort. This Vehicle For Non-Towaway Accident ("Y" or "Z") Form is only one page in length and has 14 variables. The PAR and vehicle registration data will be primary sources of information for this form. Vehicle registration records must be requested for each vehicle in every "Y" or "Z" case. The Vehicle Identification Number on the registration record will supply make/model and body type information. If the registration record is unobtainable (e.g., unregistered vehicle), or if the registration or VIN does not supply sufficient information, the investigator may rely on the PAR information to code these variables. If the registration record is insufficient and the police report is not clear on year, make, model, or body type, the investigator may obtain this information from the driver 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 "Y" or "Z" 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 "Y" or "Z"

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 Nontowaway strata "Y" or "Z" 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 "Y" and "Z" accidents. The field work at the scene will also provide the data for the general diagram (e.g., lane widths, etc.). Physical evidence (e.g., skid marks, etc.) should be noted on the diagram, but not measured. 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 "Y" or "Z"

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", "J", "K", "L", "M", "N", "P", "Q", "R", "S", "T", "V", or "W". In other words, the abbreviated single page Vehicle For Nontowaway Accident Form and the instructions to neither inspect, photograph, nor locate vehicles at their pre-, at-, or post-crash positions applies only to vehicles in Nontowaway (Police - B, C, O, U) strata "Y" or "Z". 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 Nontowaway Strata "Y" or "Z"

All other forms--Accident, Pedestrian and 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 Towaway Status on Police Report Is Not Indicated or In Error

The full Vehicle Form must be filled out and vehicles inspected for all Medium and Heavy Truck cases, strata "J", "K", "L", or "M" regardless of towing status. Light Truck or Van or Other Motor Vehicle type accidents which have police rating of B, C, O, or U, on the most severely injured occupant are to be stratified as "Q", "R", "V", "W", "Y", or "Z", 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 Nontowaway and stratify the accident in either the "Y" or "Z" stratum, depending on the accident type (Light Truck or Van versus 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 "Q", "R", "V" or "W" stratum, depending on the accident type (Light Truck or Van versus Other Motor Vehicle). Once it has been stratified in a stratum other than "Y" or "Z", 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 Interface with Special Studies

Special studies SS6 through SS9 will be applicable to all strata. SS10 will only apply to "A", "B", "C" and "D" strata cases.

## 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:

- o Are all official records and slides present?
- o 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).
- o Have portions of update record forms been filled out where needed?
- o Do the control charts properly reflect how much of the case report has been completed?
- o Make sure medical reports are properly sanitized.
- o Are all data collection forms present?
- o Include forms for all persons and vehicles, even if they have not been interviewed or inspected.
- o Are the logs properly completed on the forms?
- o Make sure case materials are sequenced properly and the case report envelope is stamped and properly identified.
- o Check non-coded data for correctness and its interface with coded data.
- o Check to make sure that the coded data are properly and legibly entered on the data collection forms.
- o Have "+"s or "-"s been circled for V80 and V81 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, Tables A-1 through A-9, and Section 4 of the Remote Data Entry (RDE) 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--unless the Zone Center is notified and suggests shipment of an incompletely entered case.

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

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

#### 5.1.4 Check Sampling Procedures

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

#### 5.1.5 Check Data Collection Procedures

- o 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 Message System to your Zone Center. Keep a file of problems encountered and go over them with a Zone Center representative during the next Zone Center site visit.

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

- o Are the vehicle record, driver record, and medical update records filed by case number?
- o 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

- o 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 1982 cases (exclusive of updates) is 4 February 1983. All remaining updates for 1982 cases are to be submitted by 15 April. This will allow the Zone Centers approximately three weeks to review and enter this new information (updates) on the 1982 version of RDE before it becomes inaccessible to them, as well as the PSUs, on 6 May 1983.

Cases acquired in 1983 shall be submitted to the Zone Centers on an approximate bi-weekly basis, beginning 14 January 1983. The materials for each case are to be ordered in the recommended format discussed in section 4.1; 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 14 January 1983, 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--PSUs should consult with their Zone Centers as to the correct envelope size. The case envelope belongs inside the shipping envelope. The information below belongs on the case envelope, not on the covering shipping material. 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) . . . . .	_____	_____

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.

TABLE 5-1: NASS 1983 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
14 JAN 83	Any completed (i.e., no updates needed) from December or January Any updates from September-December 1982
4 FEB 83	<b>All remaining* from December</b> Any completed from January Any updates from October-December 1982
18 FEB 83	Any completed from January or February Any updates from October-December 1982
4 MAR 83	<b>All remaining* from January</b> Any completed from February Any updates from November-December 1982
18 MAR 83	Any completed from February or March Any updates from November-December 1982 or January
1 APR 83	<b>All remaining* from February</b> Any completed from March Any updates from December 1982 or January
15 APR 83	Any completed from March or April <u>Final date for updates for 1982</u> Any updates from January-February
6 MAY 83	<b>All remaining* from March</b> Any completed from April Any updates from January-February
20 MAY 83	Any completed from April or May Any updates from January-March
3 JUN 83	<b>All remaining* from April</b> Any completed from May Any updates from February-March
17 JUN 83	Any completed from May or June Any updates from February-April
1 JUL 83	<b>All remaining* from May</b> Any completed from June Any updates from March-April
15 JUL 83	Any completed from June or July Any updates from March-May
5 AUG 83	<b>All remaining* from June</b> Any completed from July Any updates from April-May
19 AUG 83	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
2 SEP 83	<b>All remaining* from July</b> Any completed from August Any updates from May-June
16 SEP 83	Any completed from August or September Any updates from May-July
7 OCT 83	<b>All remaining* from August</b> Any completed from September Any updates from June-July
21 OCT 83	Any completed from September or October Any updates from June-August
4 NOV 83	<b>All remaining* from September</b> Any completed from October Any updates from July-August
18 NOV 83	Any completed from October or November Any updates from July-September
2 DEC 83	<b>All remaining* from October</b> Any completed from November Any updates from August-September
16 DEC 83	Any completed from November or December Any updates from August-October
6 JAN 84	<b>All remaining* from November</b> Any completed from December Any updates from September-October
3 FEB 84	<b>All remaining* from December</b> Any updates from October-December 1983

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

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.

The mailing addresses for the Zone Centers are as follows:

Z0A, Central            Institute for Research in Public Safety  
                          Attention: NASS Receiving  
                          SPEA Building/Indiana University  
                          Bloomington, Indiana 47405

Z0B, Northern         Mr. John W. Garrett  
                          Manager, Accident Research Division  
                          Calspan Field Services, Inc.  
                          P.O. Box 400  
                          Buffalo, New York 14225

Z0C, Southern         Southwest Research Institute  
                          NASS Southern Zone Center  
                          Attention: Kim Bixler  
                          P.O. Drawer 28510  
                          San Antonio, Texas 78284

Z0D, Western         Dynamic Science, Inc.  
                          8531 East Florence Avenue  
                          Downey, California 90240

## 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.

Variable Name: Primary Sampling Unit Number

Format: 2 columns numeric

Beginning  
Column 01

Element Values:

<u>Values</u>	<u>Strata</u>	<u>Description</u>
01, 02, 31, 34, 35	1	Central city, one of the 10 largest 1970 SMSAs
36, 51, 78, 85, 86	2	Central city, one of the 11th-60th largest 1970 SMSAs
08, 09, 28, 32, 79	3	Suburban, one of the 17 largest 1970 SMSAs; low gas sales
06, 29, 37, 38, 77	4	Suburban, one of the 17 largest 1970 SMSAs; high gas sales
10, 33, 39, 52, 56, 80	5	Suburban, one of the 18th-60th largest 1970 SMSAs, or PSU within 61st-119th largest SMSAs not containing a central city
04, 27, 57, 82, 87	6	PSU within 61st-119th largest SMSAs containing a central city
02, 30, 55, 58	7	PSU containing towns with 1977 population over 19,718; low gas sales
07, 11, 26, 59, 81	8	PSU containing towns with 1977 population over 19,718; high gas sales
12, 53, 54, 60, 84,	9	PSU with no town with 1977 population over 19,718; low gas sales
05, 13, 14, 76, 83	10	PSU with no town with 1977 population over 19,718; high gas sales

Source: Defined by NCSA.

Remarks:

Each of the ten strata comprises approximately one tenth of the 1977 U.S. population. They are not exactly the same size. Consequently when the ten strata are subdivided into fifty substrata, greater equality among the fifty is possible without requiring each of the ten strata to be divided into the same number of substrata. In the fifty PSU design one PSU has been selected from each of these approximately equal substrata.

Variable Name: Case Number--Stratification

Format: 4 columns - alphanumeric

Beginning  
Column 3

Element Values:

Level 1 Range: Case Number--001 through 999  
Stratification--A-Z EXCEPT I, O, U, X

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-Z, except I, O, U, X).

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 (including nontowaway) 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	
			Transported	Nontransported
Pedestrian & Nonmotorist	A	B	C	D
Motorcycle	E	F	G	H
Heavy or Medium Truck	J	K	L	M
Light Truck or Van	towaway	N	P	R
	nontowaway	N	P	Y
Other Motor Vehicle	towaway	S	T	W
	nontowaway	S	T	Z

Variable Name: Transaction Code

Format: 1 column - numeric

Beginning  
Column 8

Element Values:

- 1 Original case
- 2 Change to existing case
- 3 Delete existing case

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 - numeric

Beginning  
Column 10

Element Values:

Level 1 Range: 1 through 9

Source: Zone center.

Remarks:

The person to whom the case has been assigned is to enter his/her unique number. Subsequent forms will reflect the unique number for the person completing the specific forms.

It is preferred that the person to whom the case has been assigned should also complete this information on the Accident Form and assume responsibility for the quality of the entire case.

Each investigator's unique number is assigned by the PSU's Zone Center.

This variable is a mandatory variable and cannot be changed.

Variable Name: Date (Month, Day, Year)

Format: 6 columns - 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

Level 1 Range: 01 through 31

Year

83 1983 (precoded value)

Source: Police report.

Remarks:

This variable is a mandatory variable and cannot be changed.

If the PAR indicates (usually a hit-and-run) that the accident occurred between some p.m. and a.m. time (e.g., 8:00 p.m. and 6:00 a.m.) on either a preceding or following day, code the accident as occurring on the following day. If a range of days is indicated (e.g., between Sunday and Friday) code the last date of the range (e.g., Friday).



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 and Transported
D Ped & Nonmotorist	Police B, C, O, or Unknown and Nontransported
E Motorcycle	Police K
F Motorcycle	Police A
G Motorcycle	Police B, C, O, or Unknown and Transported
H Motorcycle	Police B, C, O, or Unknown and Nontransported
J Heavy or Medium Truck	Police K
K Heavy or Medium Truck	Police A
L Heavy or Medium Truck	Police, B, C, O, or Unknown and Transported
M Heavy or Medium Truck	Police, B, C, O, or Unknown and Nontransported
N Light Truck or Van towaway or nontowaway	Police K
P Light Truck or Van towaway or nontowaway	Police A
Q Light Truck or Van towaway	Police B, C, O, or Unknown and Transported
R Light Truck or Van towaway	Police B, C, O, or Unknown and Nontransported
S Other Motor Vehicle towaway or nontowaway	Police K
T Other Motor Vehicle towaway or nontowaway	Police A
V Other Motor Vehicle towaway	Police B, C, O, or Unknown and Transported
W Other Motor Vehicle towaway	Police B, C, O, or Unknown and Nontransported
Y Light Truck or Van nontowaway	Police B, C, O, or Unknown and Transported or Nontransported
Z Other Motor Vehicle nontowaway	Police B, C, O, or Unknown and Transported or Nontransported

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

Variable Name: Final Stratification (cont'd.)

Remarks:

The Final Stratification represents how the case should be stratified, given the final information regarding accident type, towing, and transportation available to the investigator. Medical records information can be used to determine transportation but not to adjust police reported injury severity. 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: (a) for Q or R versus Y, or V or W versus Z cases, where the actual "towed" status was different than reported by the police; or (b) for C, G, L, Q, or V versus D, H, M, R, or W cases respectively, where the actual "transported" status was different than reported by the police. Examples of the four 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 "T" instead of stratum "F".
2. The PAR indicated only that a Honda struck a Chevrolet, producing an "A" injury to the Honda driver. The investigator correctly followed the NASS instructions (see Section 2.2, page 19) and stratified the accident in stratum "T". 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. The motorcyclist was transported from the scene to a treatment facility. In this instance, stratum "B" should be chosen for this variable.
- 3.(a)(1) The PAR indicated a car-light truck collision resulting in only minor (nonincapacitating) injuries, with neither driver requiring transportation, and 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 "Y" instead of "R" should be coded for this variable.
- (2) 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 "W" instead of "Z" 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.)

Variable Name: Final Stratification (cont'd.)

- (b)(1) The PAR indicated a motorcycle collision resulting in possible ("C") injury. No indication regarding the issue of transport was provided on the PAR. Using the default rule the accident was stratified as a nontransport--stratum "H". It was subsequently learned that the motorcyclist was examined at an emergency room directly following the accident. In this instance, stratum "G" should be coded for this variable.
- (2) The PAR indicated a car-truck collision resulting in minor (possible) injuries to the occupants with one passenger transported to the hospital. Neither vehicle was indicated as towed. The accident was initially stratified as as "L" since the default rule requires that unknown truck types be considered as "heavy or medium". Subsequent investigation revealed that the truck was a pickup, the car which was mired was towed back onto the roadway before being driven away, and that all occupants were treated at the scene and not transported. Stratum "R" is the correct code.

Subsequent medical injury information (with one exception) is never used to alter the case's Final Stratification (A08). Stratification is based on the accident's most severe police reported injury. However, it is possible that the police could update 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 the purposes of this variable both towing and transportation status can be determined from other NASS variables. For towing to be indicated (strata Q,R,V, or W) there should exist at least one Vehicle Form where V10, Manner of Leaving Scene, has been coded as either "2" (Towed - due to vehicle damage) or "3" (Towed - not due to vehicle damage). In the case of transportation (strata C,G,L,Q, or V), there should exist at least one Pedestrian and Nonmotorist Form or Occupant Form where Treatment - Mortality (P20 or O20) has been coded "1" (Fatal), "3" (Hospitalization), or "4" (Transported and released). This relation holds except in those cases where (a) code "3" (P20 or O20 equals Hospitalization) is appropriate but the person was not "transported" directly from the scene to a medical treatment facility, and (b) code "4" (P20 or O20 equals Transported and released) is not appropriate because the person refused treatment at the facility [see Remarks for P20 or O20, Treatment - Mortality, code "6" (No treatment)]. It must be understood that the reason for using "transportation" as a stratifying criterion is that it serves to further discriminate accidents along the "severity" continuum; thus, codes "3" and "4" serve the intended purpose. Obviously, the presence of a code "1" (Fatal) or "2" (Fatal - ruled disease) for P20 or O20 should indicate a Police Reported Accident Severity Code (A15) greater than B,C,O, or U; however, it cannot be predicted with certainty what type of codes (see Remarks section for A15 regarding the prioritization) will be assigned to persons who are ruled dead as a result of disease. Therefore, any persons with a Treatment - Mortality (P20 or O20) code of "2" (Fatal - ruled disease) will be ignored for the purposes of Final Stratification (A08). Also, since some NASS fatals [code "1" (Fatal)] may not have been coded K or A, this code must also be considered on the "transportation" issue.

Variable Name: Final Stratification (cont'd.)

For four of the five categories, a direct mapable 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 "20"- "29", and there must be no pedestrian or nonmotorist involved.

Heavy or Medium Truck--at least one accident-involved motor vehicle in transport must have a Body Type (V14) coded as "70"- "79", no motor vehicles in transport may have a Body Type coded as "20"- "29", and there must be no pedestrian or nonmotorist involved.

Light Truck or Van--at least one accident-involved motor vehicle in transport must have a Body Type (V14) coded as "40"- "69", no motor vehicles in transport may have a Body Type coded as a "20"- "29" or as "70"- "79", 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 "01-13", "30-39", "80-89", or "99" [see Hit & Run (A16) remarks section], and there must be no pedestrian or nonmotorist involved.

Variable Name: Sampling Interval

Format: 5 columns - numeric  
last two columns are to the  
right of the decimal point

Beginning  
Column 18

Element Values:

Level 1 Range: 001.00 through 999.99

Source: Computer sampling program or manual sampling procedures.

Remarks:

Use the NASS Automated Case Selection System following the procedures contained in its user's manual. For manual sampling the coded response is determined in the following manner:

Case selected "with certainty":

Code the column 5 ( $W_1$ ) entry from the NASS Sampling Worksheet which corresponds to the Stratum--Jurisdiction from which the accident was listed.

Case selected "without certainty":

Single hit: Code the line ten (10) entry from the NASS Case Load Worksheet.

Multiple hit: If the number of random cumulants which fall on a particular Stratum--Jurisdiction is less than or equal to the number of accidents which can be selected from that Stratum--Jurisdiction, then code the line ten (10) entry from the NASS Case Load Worksheet.

If the number of random cumulants which fall on a particular Stratum--Jurisdiction is greater than the number of accidents which can be selected and only one (1) accident can be selected from that Stratum--Jurisdiction, then code the product of line ten (10) from the Case Load Worksheet and the number of random cumulants which fell on the particular Stratum--Jurisdiction.

If the number of random cumulants which fall on a particular Stratum--Jurisdiction is greater than the number of accidents which can be selected and the number of accidents which can be selected is greater than one (1), then contact your Zone Center or refer to the automated sampling system to determine the sampling interval. (Note: This situation should not occur.)

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 Railway 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 Thrown or falling object
- 17 Boulder
- 18 Other object (not fixed)

Collision with Fixed Object

- 19 Building
- 20 Impact attenuator/Crash cushion
- 21 Bridge pier or abutment
- 22 Bridge parapet end
- 23 Bridge rail
- 24 Guardrail
- 25 Concrete traffic barrier
- 26 Other longitudinal barrier
- 27 Highway/Traffic sign post
- 28 Overhead sign support
- 29 Luminaire/Light support
- 30 Utility pole
- 31 Other post, pole, or support
- 32 Culvert
- 33 Curb
- 34 Ditch
- 35 Embankment - earth
- 36 Embankment - rock, stone or concrete
- 37\*
- 38 Fence (wooden, wire, chain link, etc.)
- 39 Wall (stone, rock, metal, etc.)
- 40 Fire hydrant
- 41 Shrubbery
- 42 Tree
- 43 Other fixed object
- 44 Pavement surface irregularity (pothole, grooved, grates)
- 99 Unknown

\* Code 37 is omitted to maintain consistency with the Fatal Accident Reporting System (FARS)

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

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

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" (Overturn) 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 "43". 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), V71, 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.

Variable 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 type 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" (Thrown or falling object) refers to any object which (1) is thrown [intentionally (subject to the malicious mischief exception to the deliberate intent exclusion--page 7) or unintentionally] and impacts an in transport vehicle, or (2) falls onto, into, or in the path of an in transport motor vehicle. However, objects set in motion by an in transport vehicle are to be coded under code "07" (Other non-collision). If a tree limb falls from a tree and is contacted by a car, use this code. If a tree limb falls from a tree trimming truck and is struck before it stabilizes, use code "07". If a boy maliciously throws a tree limb off of an overpass into traffic below, use this code.

Code "17" (Boulder) is used when an in transport motor vehicle contacts any large (not defined but at least larger than gravel) stationary rock.

Code "18" [Other object (not fixed)] refers to an initial impact between a motor vehicle in transport and any other object that is moving or not anchored prior to the accident. 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 "20" (Impact attenuator/Crash cushion) should be used when the first harmful event is with any of the devices included on continuation pages (7) through (12).

Code "21" (Bridge pier or abutment) is used when the initial contact was with any part of a structural member of the bridge that supports the overpass structure (this includes side walls used to retain earth). See Figure 8.

Code "22" (Bridge parapet end) is used when the initial contact was with the end structure of the bridge rail (including the end structure of concrete type railings). See Figure 8.



A10

(4)

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

Code "23" (Bridge rail) is used when the initial contact was with any portion of the bridge rail except for the parapet end. See Figure 8.

If the initial impact was with an impact attenuator protecting a bridge support, then "20" (Impact attenuator) should be used. Contact with the underside of the bridge deck is coded "43" (Other fixed object).

Included within the meaning of bridge structure are supports for railway underpasses, including those for mass transit type trains.

Code "24" (Guardrail) is used whenever the initial impact is with a guardrail which is located on the roadside. Guardrails include, but are not limited to, "W" beams, thrie beams, cable guardrails and box beams. Guardrails which are located in gore areas (ANSI D16.1-1976, section 2.5.20, page 15), are coded "24" (guardrail), although they are used to redirect traffic at a ramp area. If the trafficway is undivided, the guardrail can be located on either side of the road. Guardrails which are located in a median should be coded "26" (other longitudinal barrier).

Code "25" (Concrete traffic barrier) is used whenever an impact occurs with a longitudinal barrier which is composed entirely of concrete. Use this code regardless of whether the barrier is a permanent fixture or a temporary installation, such as at a construction site. Concrete traffic barriers located on a bridge with a "closed" median is not considered a bridge rail. Concrete traffic barriers located on the outer road edges of a bridge are considered bridge rails. Examples of concrete traffic barriers are shown in figure 9, #6 and #7.

Code "26" (Other longitudinal barrier) is used whenever an impact occurs with a longitudinal barrier that does not meet the criteria for codes "23", (bridge rail), "24", (guardrail), or "25" (concrete traffic barriers), except when a guardrail functioning as a guard for a fixed object is located in the median (e.g., guardrail protecting a bridge pier located in the median is coded "24"). Examples of median barriers (other longitudinal barriers) are illustrated in Figure 9, #1 - #5.

Codes "27" (Highway/Traffic sign post), "28" (Overhead sign support), "29" Luminaire/(light support), and "30" (Utility pole) are distinguished by the nature of the object supported. Use code "27" if the impact occurs to a support for a highway or traffic sign. Use code "28" if the impact occurs with anything that supports a sign under which vehicles travel. Use code "29" if the pole's primary function is to support a street light. Use code "30" if the pole's primary function is to support utility lines.

Code "31" (Other post, pole, or support) if the impact occurs with (1) a traffic signal pole, (2) any nonhighway or nontraffic sign (e.g., a private sign), (3) a mail box post, (4) a delineator post, or (5) any other type post, pole, or support. Code "31" should not be used when the initial impact was with any supporting structure of a bridge (see codes "21" through "23" above).

Code "32" (Culvert) is a man made structure that allows passage over a drainage area. A ditch (code "34") ends where a culvert begins and resumes on the opposite side of the culvert.

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

Code "34" (Ditch) is a man made structure for drainage purposes. When the sides of the ditch are approximately of equal height it makes no difference which side of the ditch was struck; however, if the struck side is substantially higher than the other side, code the impact with the struck side as an embankment (codes "35" and "36"). Substantial means that an embankment existed had the ditch not been present.

Codes "35" (Embankment - earth) and "36" (Embankment - rock, stone or concrete) should be used only when damage or injury results from impacting the embankment. For example, the first harmful event for a motorcyclist who travels up an embankment, loses control, and falls over should be coded ground (code "43", Other fixed object). These codes are used if, for example, the motorcyclist, car, etc., sustains direct damage from impacting the embankment.

Code "43" (Other fixed object) refers to any fixed object which is anchored and not moving and not specifically mentioned above. This includes ground and pavement; however, ground or pavement are not to be coded when the first event is an overturning ("01"). All motor vehicles (including motorcycles) may overturn. For Object Contact (V26, V35, V44, V53), ground (pavement) (V26, V35, V44, V53 = 60) could 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 or pavement without excessive roll action prior to impact.

Medians are handled as follows. If the median contains a physical barrier, then code "25" (Concrete traffic barrier) or "26" (Other longitudinal barrier). However, to use these codes the barrier type fixed object must have been the cause of the initial harm. Commonly encountered types are illustrated in Figure 9 [A10 page (15)] Other median barriers may be encountered; therefore, the investigator should be sure to photograph them for verification when uncertain.

Where the median is curbed, paved, gravel, or grass only, then do not use these codes. If the median is depressed and the impact occurs with the ground, then code "35" (Embankment - earth), "36" (Embankment - rock, stone or concrete) or "43" (Other fixed object), whichever is most appropriate. If the initial harmful event is with a raised, paved area (concrete or bituminous), the code "33" (Curb), should be used. This is true even if a barrier is anchored in the raised, paved area.

Tunnels are handled according to the following rules. If the impact is external (i.e., the impact is to the hill or mountainside), code embankment (codes "35" or "36"). If the impact is to the tunnel entrance (i.e., not protected by guardrails or bridge rails that lead into a tunnel or impact attenuators), then code "43" (Other fixed object). Code "39" (Wall) should be used if the plane of the tunnel is broad or wide enough that the tunnel entrance functions as a wall, and contact is made with this wall. External impacts to impact attenuators should be coded "20".

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

Internal or external impacts to: (a) median barriers should be coded either "25" (Concrete traffic barrier) or "26" (Other longitudinal barrier); (b) guardrails should be coded "24" (Guardrail); (c) curbs (raised, paved medians) or walks should be coded "33" (Curb); or (d) the tunnel wall should be coded "39" [Wall (stone, rock, metal, etc.)]. If contact is made with a bridge that leads into a tunnel, code "22" (Bridge parapet end) or "23" (Bridge rail).

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.

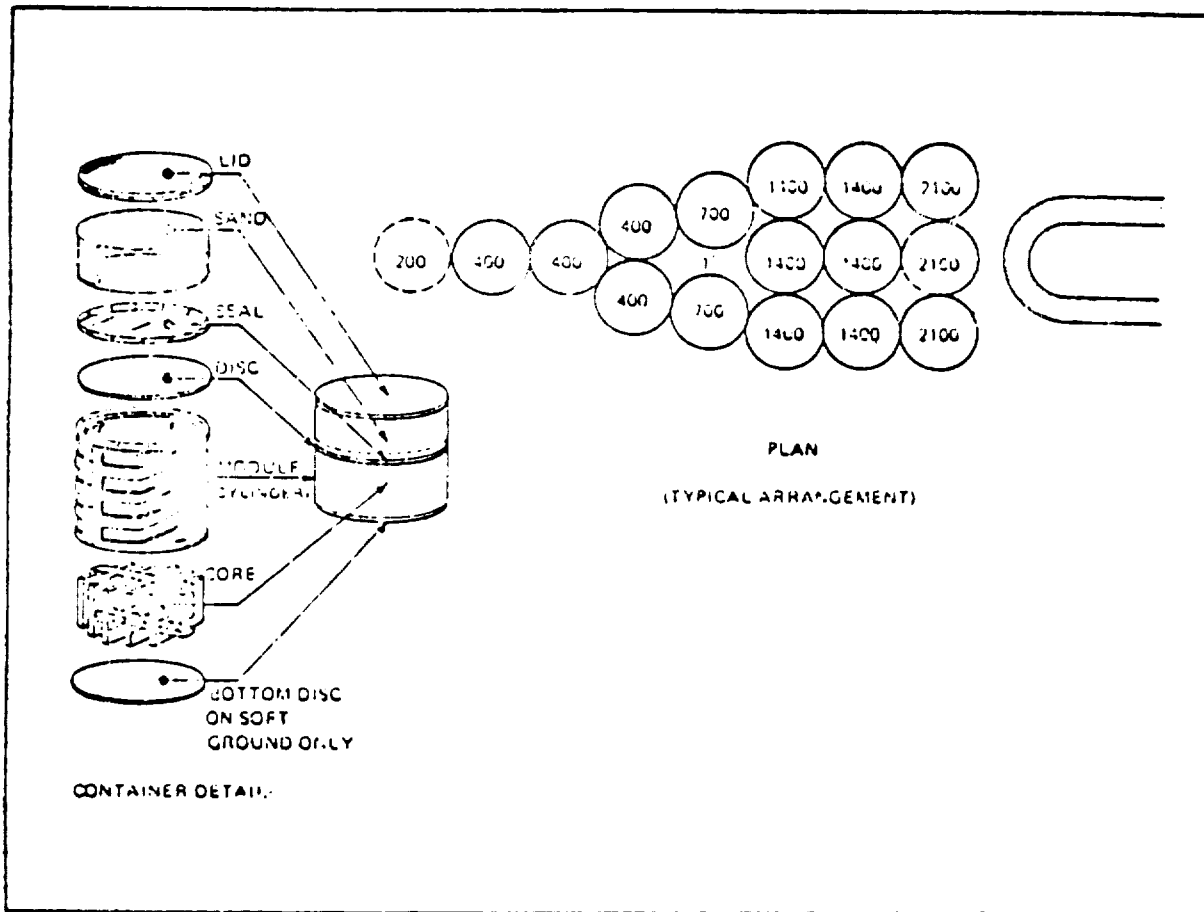


FIGURE 1

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).

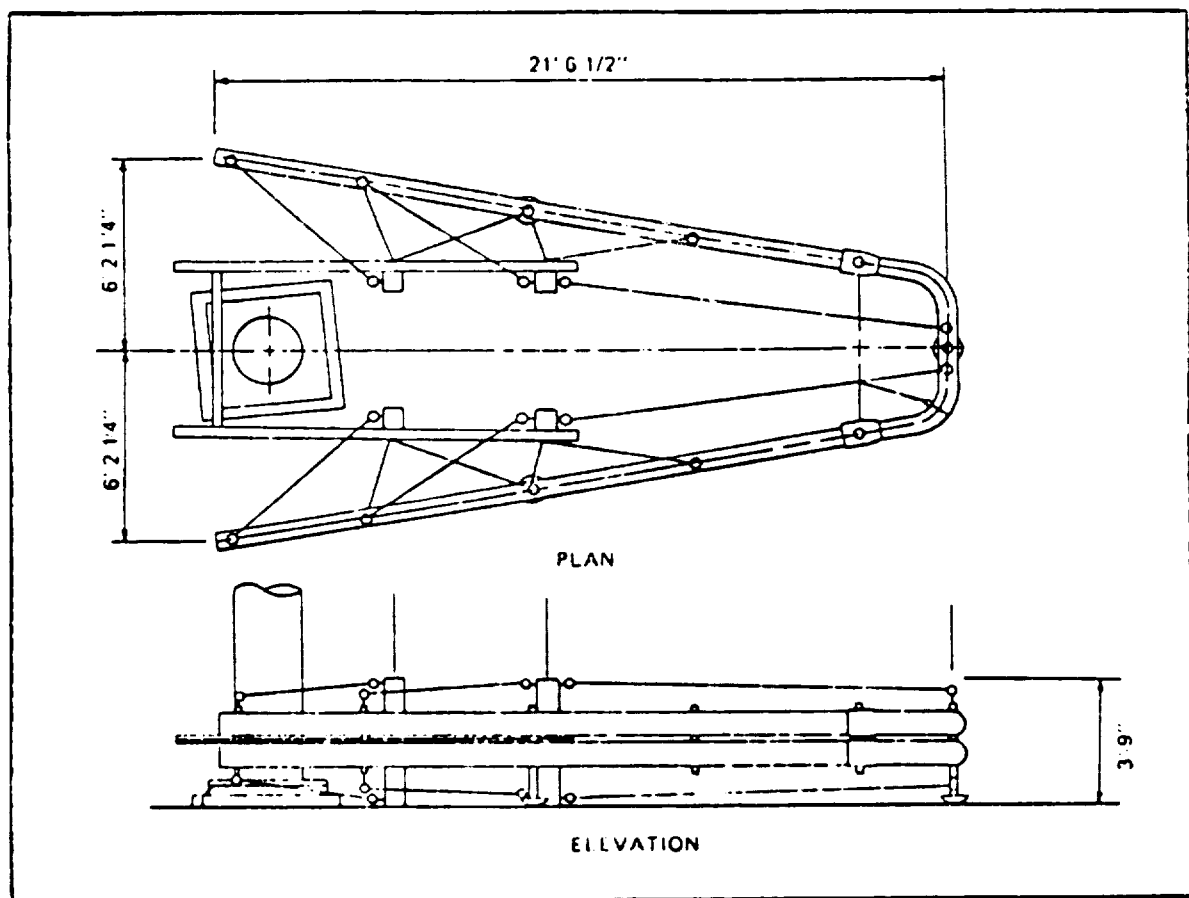


FIGURE 2

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.

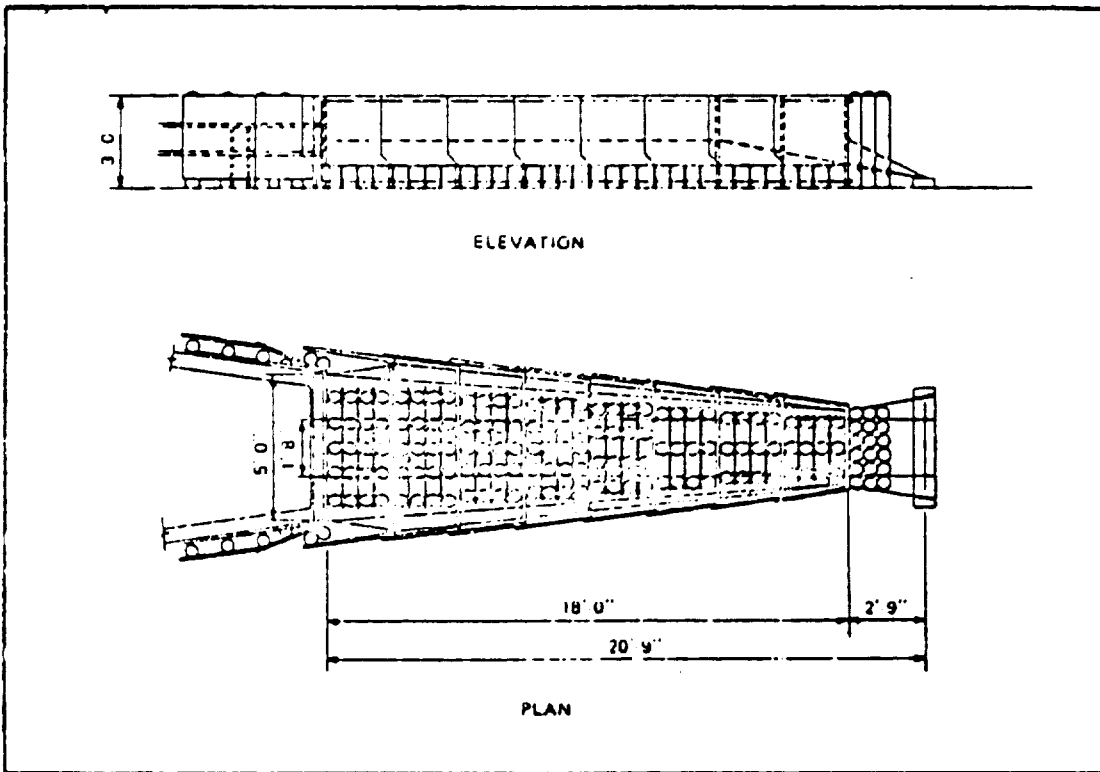


FIGURE 3

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).

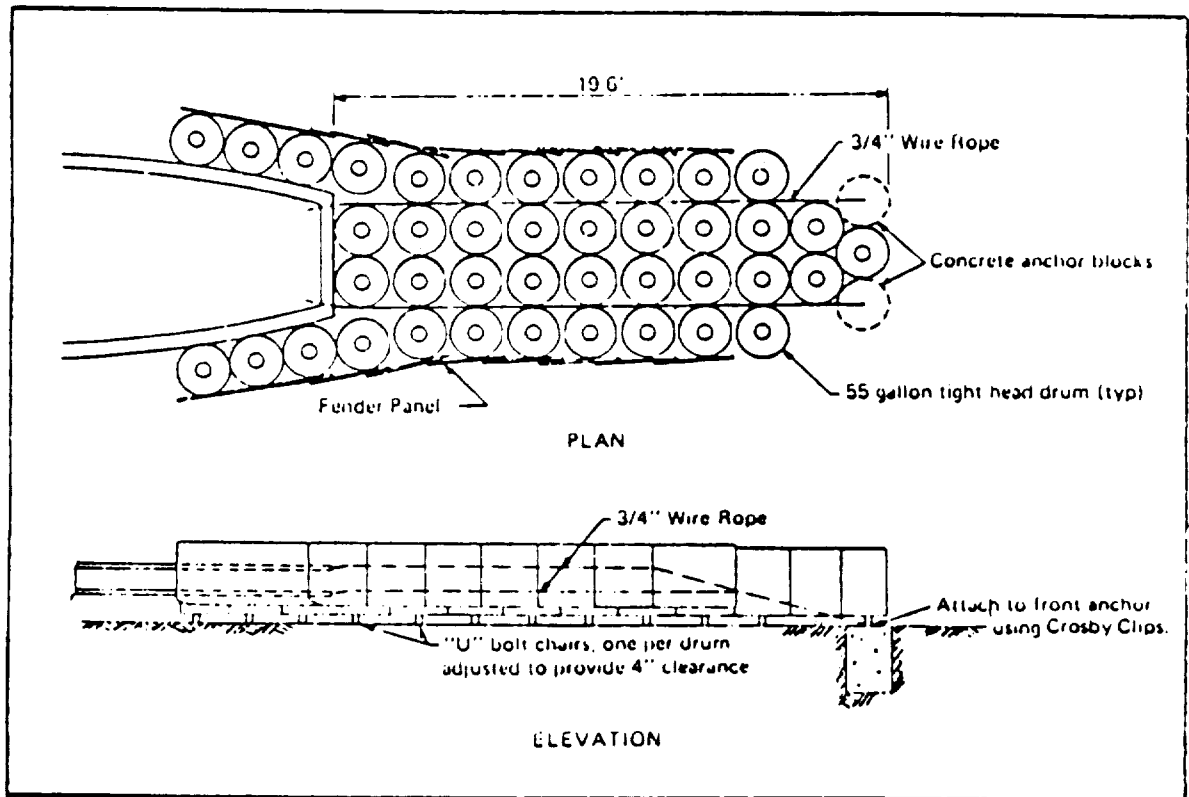


FIGURE 4

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).

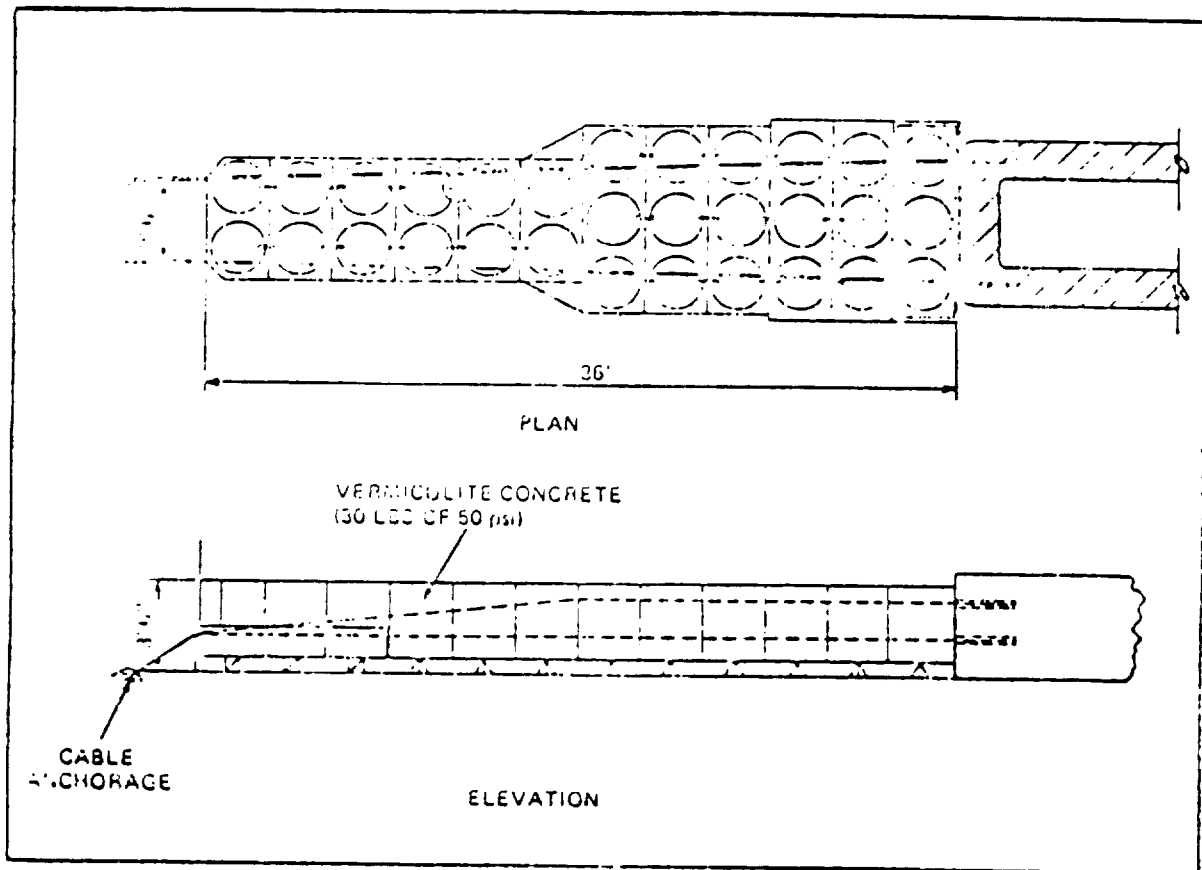


FIGURE 5



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).

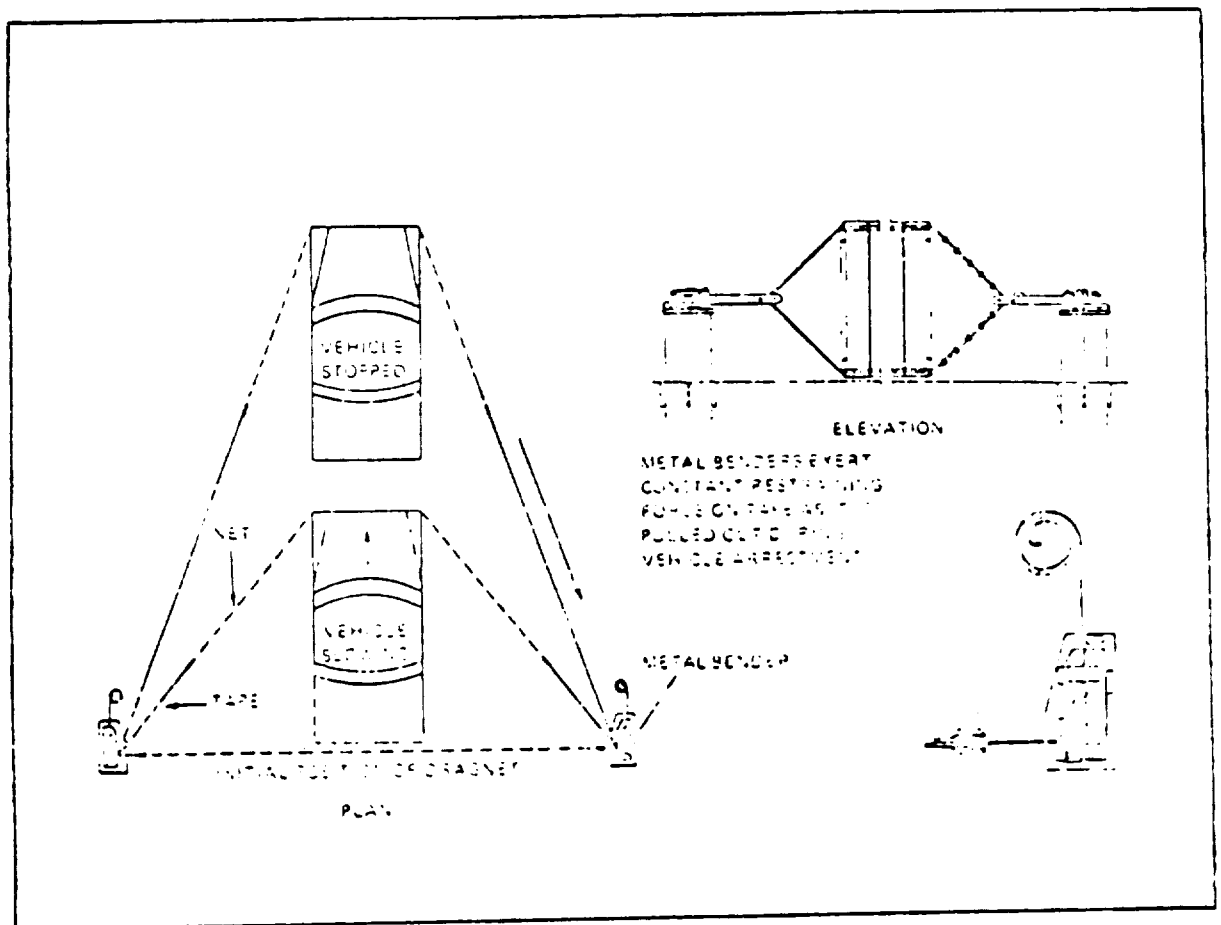


FIGURE 6

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).

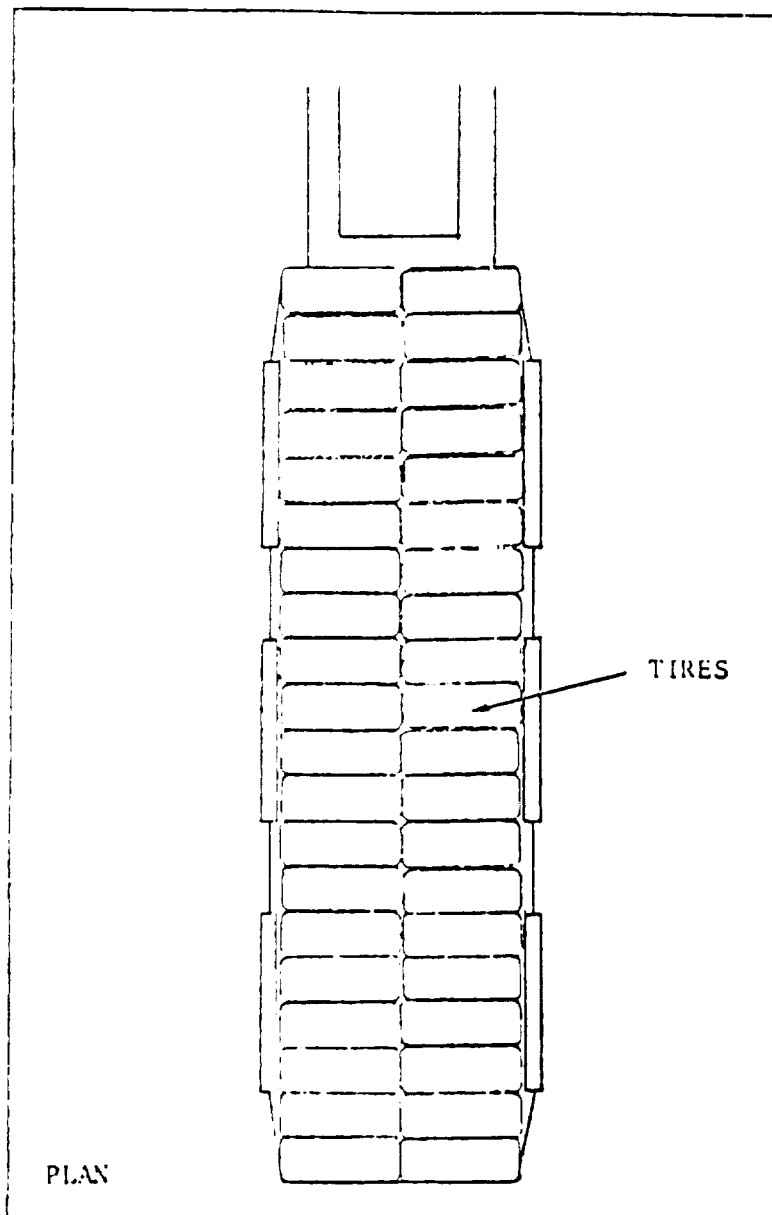
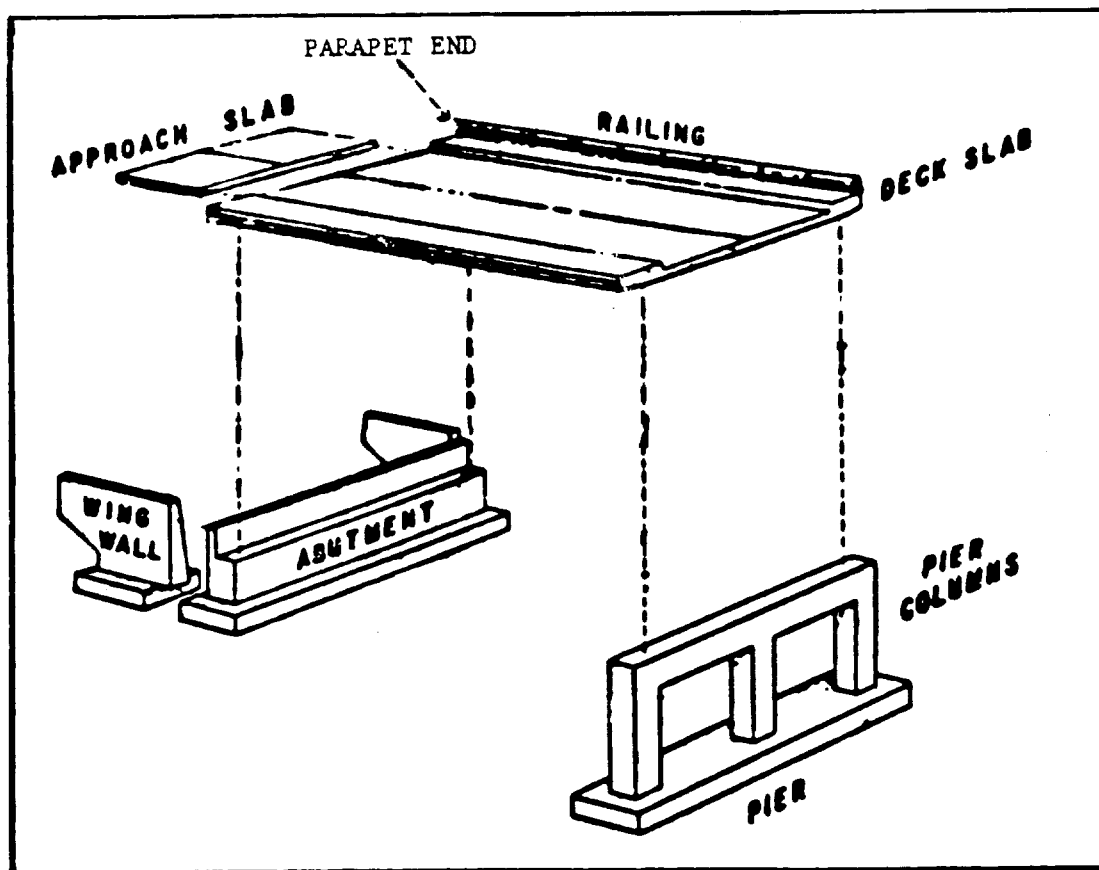


FIGURE 7

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

### Bridge Components



● **INDIVIDUAL** components of a bridge collectively become the bridge.

FIGURE 8

COMMON TYPES OF MEDIAN BARRIERS

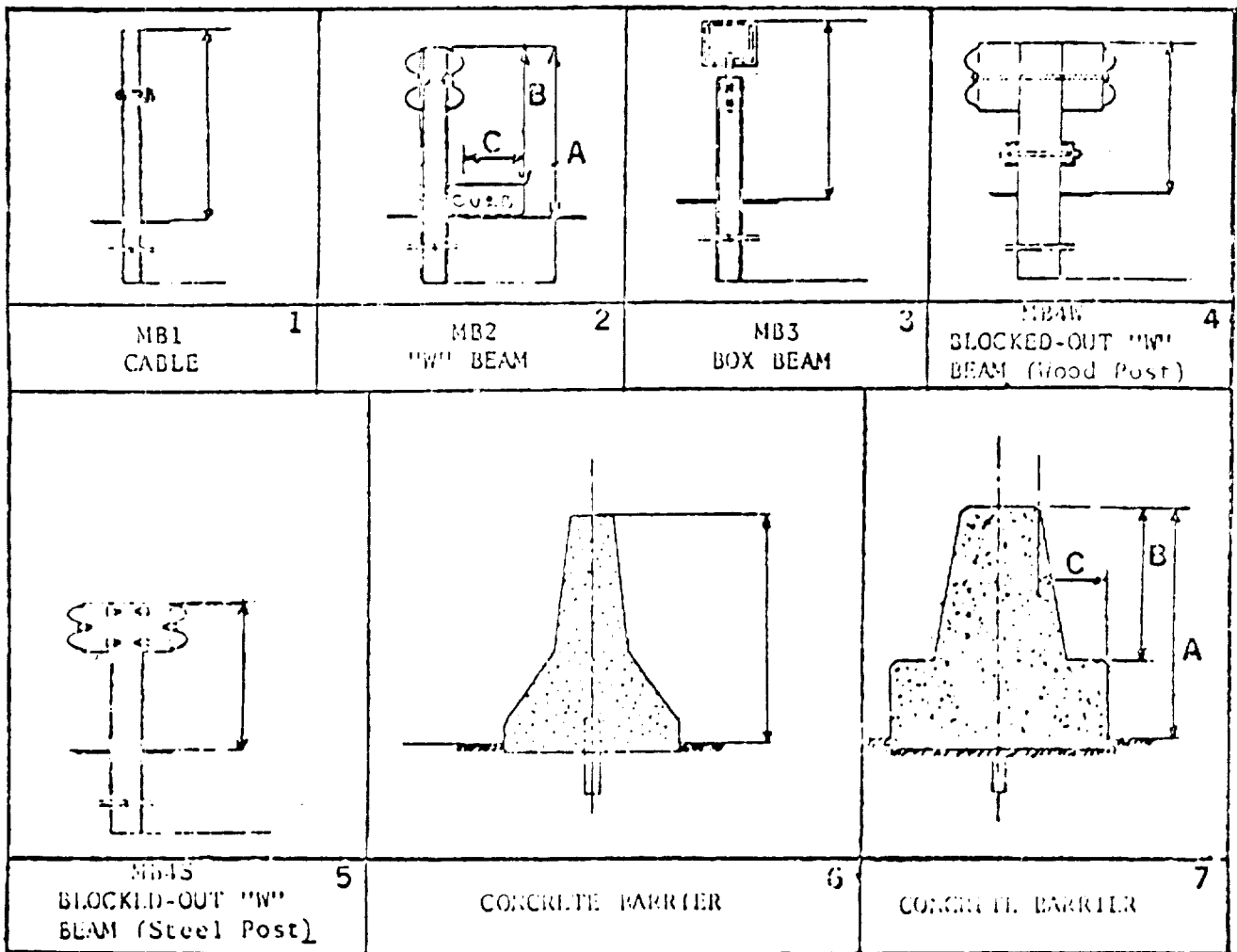


FIGURE 9

Variable 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). At least one vehicle must be contacted in the side (L or R in column 3 of the CDC) and column 6 of the same CDC must equal S.

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). At least one vehicle must be contacted in the side (L or R in column 3 of the CDC) and column 6 of the same CDC must equal S.

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
- 8 Gore
- 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 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). In addition, code on roadway ("1") if the impact occurs with a bridge structure (see remarks section for A10, First Harmful Event, codes "21"- "23") that is on a roadway and was designed to allow motor vehicles to move in (change lanes) between the supporting piers. Note: This code may not 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 "3" (In median) refers to the area of separation between two adjacent roadways on the same trafficway and is not a "gore" (see below). More than one "median" may exist on the same trafficway. Code "3" (In median) if the First Harmful Event (A10) occurs in the separation between two roadways. Also, use this code if the first harmful event occurs with a curb which is part of a curbed median (see also the discussion of medians in the remarks section for A10, First Harmful Event). In addition, code in median ("3") if the impact occurs with a bridge structure (see note above) that was designed to separate (or has the same secondary effect) opposing lanes of travel or prevent motor vehicles from changing lanes.

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

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., could be coded "4" (On roadside) since the shoulder is assumed to end where the object begins. Code "4" (On roadside) is used when a vehicle strikes a curb which is contiguous with either the roadway or a parking lane at the location of the impact.

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

Code "7" (In parking lane) 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.

Code "8" (Gore) refers to the area of land that is found between two roads which split, one from the other or join, one to the other (Definition: ANSI D16.1-1976, section 2.5.20, page 15). Normally one of the roads will be a ramp (see A24, Relation to Junction, code "08")--entrance or exit, at-grade or not at-grade. Code "8" (Gore) is used if the First Harmful Event (A10) occurs in the triangulated type area formed by the boundaries of the "roads", measuring along them a distance of 200 feet from the beginning of their physical separation, and a line between these two points. See ANSI D16.1-1976, Figure 1, page 16 for an example gore (shaded) area where it is assumed that the distance measured along each of the roads is 200 feet.

Code "8" (Gore) takes precedence over on roadside, outside right-of-way, or off roadway - location unknown (codes "4" through "6"). But, if a vehicle departs the road into the gore area but does not have its first harmful event until after it passes through the gore area, but before it enters any other road, then one of codes "4" (On roadside), "5" (Outside right-of-way), or "6" (Off roadway-location unknown) should be used.

Variable Name: Number of Vehicle Forms Submitted

Format: 2 columns - numeric

Beginning  
Column 27

Element Values:

Level 1 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 nonfixed 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 23).



Variable Name: Number of Pedestrian & Nonmotorist Forms Submitted

Format: 2 columns - numeric

Beginning  
Column 29

Element Values:

Level 1 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 No injury (O)
- 1 Possible injury (C)
- 2 Nonincapacitating injury (B)
- 3 Incapacitating injury (A)
- 4 Killed (K)
- 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", "9", and "0".

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\*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 latest 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*	5 = Fatal	K - 4
	4 = Evident - incapacitating	A - 3
	3 = Evident - nonincapacitating	B - 2
	2 = Possible injury	C - 1
	1 = No injury	O - 0
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

\*There is a box at the top of the PAR indicating number of persons injured. If this box is marked 0 and the injury code is left "blank", assume "No injury". If the box is marked 1 (or more) pertaining to the vehicle occupants in question and the injury code is "blank", assume "Injured, severity unknown". If "blanks" are present in both the persons injured box and the injury code box, assume "Unknown".

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

State	PAR Code/Definition			NASS Scheme/Code	
Indiana	Nature of Most Severe Injury	Location of Most Severe Injury	Victim's Injury Status		
	1-11 Any Entry	1-12 Any Entry	6 Dead	K - 4	
	1-11 Any Entry	1-12 Any Entry	2 Semiconscious 3 Incoherent 4 Unconscious	A - 3	
	1 Severed 2 Internal 4 Severe Burn 7 Severe Bleed (Arterial) 8 Fracture/dislocation	1-12 Any Entry	1 Conscious 5 Shock 7 Refused Med	A - 3	
	3 Minor Burn 6 Minor Bleed 10 Complaint of Pain 11 None Visible	3 Eye	1 Conscious 5 Shock 7 Refused Med	A - 3	
	3 Minor Burn 6 Minor Bleed	1-2, 4-12 (Any EXCEPT Eye)	1 Conscious 5 Shock 7 Refused Med	B - 2	
	5 Abrasion 9 Contusion/Bruise	1-12 Any Entry	1 Conscious 5 Shock 7 Refused Med	B - 2	
	10 Complaint of Pain 11 None Visible	1-2, 4-12 (Any EXCEPT Eye)	1 Conscious 5 Shock 7 Refused Med	C - 1	
	11 None Visible	Blank or Slashed	1 Conscious	O - 0	
	Blank or Slashed	Blank or Slashed	Blank or Slashed	O - 0	
	Unknown	Unknown	Unknown	U - 9	
	Iowa	1 = Fatal			K - 4
		2 = Major (incapacitating)			A - 3
		3 = Minor (bruises and abrasions)			B - 2
		4 = Possible (complaint of pain)			C - 1
Ø = Unknown				U - 9	
Blank = No documentation of driver or occupants on back of PAR				O - 0	
Louisiana	1 = Fatal			K - 4	
	2 = Severe			A - 3	
	3 = Noticeable			B - 2	
	4 = Complaint of pain or momentary unconsciousness			C - 1	
	5 = None			O = 0	

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

State	PAR Code/Definition	NASS Scheme/Code		
Maryland	5 = Fatal	K - 4		
	4 = Incapacitating	A - 3		
	3 = Nonincapacitating	B - 2		
	2 = Possible injury	C - 1		
	1 = No injury/Damage only	O = 0		
	Blank = No documentation of driver or occupants on front of PAR			
Massachusetts	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 front of PAR	O - 0		
	= No set unknown code	- 9		
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	A - 3
	Eye	burn, bleeding, complaint of pain	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

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

State	PAR Code/Definition			NASS Scheme/Code
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
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				
Rhode Island	1 = Fatal injury at scene			K - 4
	2 = Visible signs of injury - bleeding or broken bones			A - 3
	3 = Other visible injury - bruises or abrasions			B - 2
	4 = No visible injury, but complaints of pain			C - 1
	Blank = No injury			O - 0

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

<u>State</u>	<u>PAR Code/Definition</u>	<u>NASS Scheme/Code</u>
Tennessee	4 = Dead at time of report	K - 4
	3 = Bleeding wound, distorted member	A - 3
	2 = Bruises, abrasions, swelling, limping, etc.	B - 2
	1 = Complaint of pain, no visible injury	C - 1
	Blank = No documentation of driver or occupants on front of PAR or on supplement	O - 0
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 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 (see exceptions below). If 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, then "hit-and-run" should be indicated.

Exceptions to this "departed prior to investigation by the police" rule exist. One exception 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, assume hit-and-run. A second exception involves a driver who leaves the scene but furnishes name, address, vehicle make, model, and model year such that it is recorded on the PAR, and the PAR does not indicate hit-and-run. No hit-and-run (code "0") is to be coded in this instance independent of the truthfulness of the information provided. A third exception involves vehicles which set an object in motion such that (1) the object is contacted by another motor vehicle in transport before it stabilizes, and (2) the vehicle which set the object in motion leaves the scene without providing the pertinent information (compare with exception two above), and (3) the PAR does not indicate hit-and-run. In this instance code "0" (No hit-and-run) is to be used; however, if the PAR had indicated hit-and-run, then code "3" (Hit parked vehicle or object) should be used.

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 light truck, medium or heavy truck, or motorcycle, then treat it accordingly for sampling.



Variable Name: Hit & Run (cont'd.)

Code "1" [Hit motor vehicle (in transport)] when a vehicle contacts another motor vehicle in transport and subsequently departs the scene. It makes no difference if the departing vehicle was at-fault. For this code to apply, at least two "in transport" motor vehicles must have been involved in the accident. Consider the following example situations; in each situation code "1" [Hit motor vehicle (in transport)] should be used.

Situation A: The last contacted vehicle in a rear-end collision sustains minor damage and departs.

Situation B: Vehicle 1 strikes vehicle 2, causing vehicle 2 to cross the center line and be struck by vehicle 3. Vehicle 3 departs.

Situation C: Vehicle 2 crosses the path of vehicle 1 and is struck. Vehicle 2 departs.

Situation D: Same as Situation B except that vehicle 1 departs.

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.

Code "3" (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", or "3"), record the category of lower numerical value.

When the presence of a hit-and-run vehicle is indicated (A16 equals codes "1"- "3"), 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 and 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 "3") 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.

If the PAR indicates the accident occurred during some time interval (e.g., 8:00 p.m. to 6:00 a.m., or 8:00 a.m. to 5:00 p.m.), code "9999" (Unknown). However, if the interval was one hour or less, code the midpoint of the interval, e.g., 8:00 p.m. to 9:00 p.m., code "2030".

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, other interviewees, and scene inspection.

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 luminaires 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 No adverse atmospheric related driving conditions
- 2 Rain
- 3 Sleet
- 4 Snow
- 5 Fog
- 6 Rain and fog
- 7 Sleet and fog
- 8 Other (e.g., smog, smoke, blowing sand or dust, 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, or particle dispersion 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 Federal Aid Classification and Functional Classification maps, 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, Federal Aid System, 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 follows, for information purposes only.

Investigators should write or call the respective State contact to obtain copies of their Federal Aid Classification and Functional Classification maps or information in this regard.

**WHERE:** To determine the roadway type, the contractor must obtain copies of the Federal Aid Classification and Functional Classification 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 the Federal Aid Classification and Functional Classification 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 Federal Aid Classification and Functional Classification maps.

Contacts for Determining Roadway Type  
Using Federal Aid/Roadway Functional Classifications

U.S. DOT  
Federal Highway Administration  
Planning & Research Engineer

State	Federal Highway Administration Planning & Research Engineer	State Contact
Alabama	Mr. Martin F. Kelly Planning & Research Engineer Federal Highway Administration 441 High Street Montgomery, Alabama 36104 FTS No. 534-7377	Mr. John Skinner Asst. Chief Engineer, Planning Alabama Highway Department State Highway Building Montgomery, Alabama 36130 Tel. 205-832-6112
Arizona	Mr. Nathan M. Banks Planning & Research Engineer Federal Highway Administration 3500 N. Central Ave., Suite 201 Phoenix, Arizona 85012 FTS No. 261-2481	Mr. Charles D. Anders Asst. Director, Transportation Planning Division Arizona Dept. of Transportation 206 South 17th Avenue Phoenix, Arizona 85007 Tel. 602-261-7431
Arkansas	Mr. William K. Perry Planning & Research Program Manager Federal Highway Administration Room 3128, Federal Office Building 700 West Capitol Avenue Little Rock, Arkansas 72201 FTS No. 740-5625	Mr. A. E. Johnson, Jr. Assistant Chief Engineer for Planning and Development Arkansas State Highway & Transportation Department P.O. Box 2261 9500 New Benton Highway Little Rock, Arkansas 72203 Tel. 501-569-2248
California	Mr. Michael A. Cook Planning & Research Chief Federal Highway Administration Federal Building P.O. Box 1915 Sacramento, California 95809 FTS No. 448-3246 or 448-3247	Ms. Ann Barkley Chief, Division of Transportation Planning Department of Transportation 1120 "N" Street Sacramento, California 95814 Tel. 916-332-7374
Colorado	Mr. Dallace W. Unger Transportation Planner Federal Highway Administration Bldg. 25, Denver Federal Center P.O. Box 25406 Denver, Colorado 80225 FTS No. 234-4633	Mr. Harvey R. Atchison Director, Division of Transporta- tion Planning State Department of Highways 4201 East Arkansas Avenue Denver, Colorado 80222 Tel. 303-757-9525
Florida	Mr. David P. Van Leuven Planning & Research Engineer Federal Highway Administration 223 W. College Avenue P.O. Box 1079 Tallahassee, Florida 32302 Tel. 904-224-8111	Mr. E. W. Elliott Director, Division of Transporta- tion Planning Florida Dept. of Transportation Haydon Burns Building 605 Suwannee Street Tallahassee, Florida 32301 Tel. 904-488-3329

U.S. DOT  
Federal Highway Administration  
Planning & Research Engineer

State	Planning & Research Engineer	State Contact
Illinois	Mr. H. Richards McLane Planning & Research Engineer Federal Highway Administration 320 West Washington Street Springfield, Illinois 62701 FTS No. 955-4636 or 955-4637	Mr. James P. Pitz Director, Office of Planning and Programing Illinois Dept. of Transportation Administration Building 2300 S. Dirksen Parkway Springfield, Illinois 62764 Tel. 217-782-2632
Indiana	Mr. Charles E. Basner Planning & Research Engineer Federal Highway Administration Federal Office Building 575 N. Pennsylvania Street Indianapolis, Indiana 46204 FTS No. 331-7487	Mr. E. Wayne Walters Deputy Director, Highway Development Indiana Department of Highways State Office Building 100 North Senate Avenue Indianapolis, Indiana 46204 Tel. 317-232-5535
Iowa	Mr. Edward J. Finn Planning & Research Engineer Federal Highway Administration 105 6th Street P.O. Box 627 Ames, Iowa 50010 FTS No. 862-8535	Mr. Ian MacGillivray Director, Planning and Research Division Iowa Department of Transportation 826 Lincoln Way Ames, Iowa 50010 Tel. 515-296-1660
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Wisconsin	<p>Mr. Thomas Frank Planning &amp; Research Engineer Federal Highway Administration 4502 Vernon Boulevard P.O. Box 5428 Madison, Wisconsin 53705 FTS No. 364-5973</p>	<p>Mr. Roger L. Schrantz Administrator, Division of Planning and Budget Department of Transportation Hill Farm 4802 Sheboygan Avenue Madison, Wisconsin 53402 Tel. 608-266-6479</p>

## 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 federal aid and functional 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 D45 (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 (D46-D49, D51-D59) 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) Federal Aid System (A21) classification. If the values are the same, then proceed to rule (2). In either case, record the value in variable A21, Federal Aid System.
- (2) Choose the roadway with the greater number of lanes (variable D45). 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 alleys and driveways where the street used by the other vehicle is always chosen. (NOTE: This exception applies only to in-a-junction accidents. If the first harmful event occurred outside the junction and on the driveway or alley, then the not-in-a-junction rules are followed and the driveway or alley is selected at the accident level.)

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 (A27-A31, A33-A41) based on the values recorded for that roadway's traffic unit level environmental variables (D45-D49, D51-D59). The values will be nearly identical.

- (b) Not-in-a-junction. [NOTE: An accident whose Relation to Junction (A24) was listed as "intersection related" (code "06") 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 accordance 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.

If a vehicle is in transport on a trafficway but not on a roadway (e.g., motorcyclist riding along on the shoulders or roadside), assign the vehicle to the roadway which best fits the vehicle's direction of travel. Use the point on the chosen roadway nearest the first harmful event.

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.

If a vehicle departed the roadway from a junction prior to the first harmful event, go to the mouth of the roadway that brought the vehicle into the junction to determine the traffic unit level environmental variables.

- (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 (D45) 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 (D46-D49, D51-D59), 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 or the location where the vehicle last left the roadway if it occurred "off roadway". Record Federal Aid System (A21) for the roadway at this location. In addition, determine the appropriate values for each of the remaining accident level environmental variables (A27-A31, A33-A41).

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

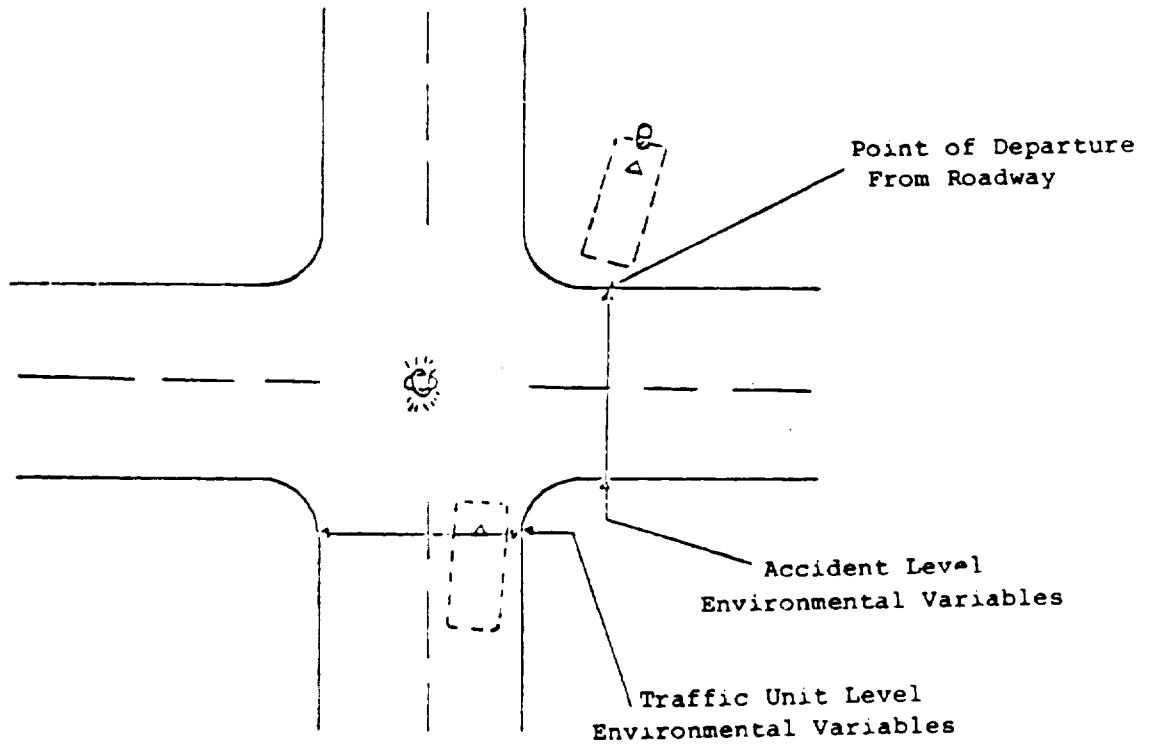
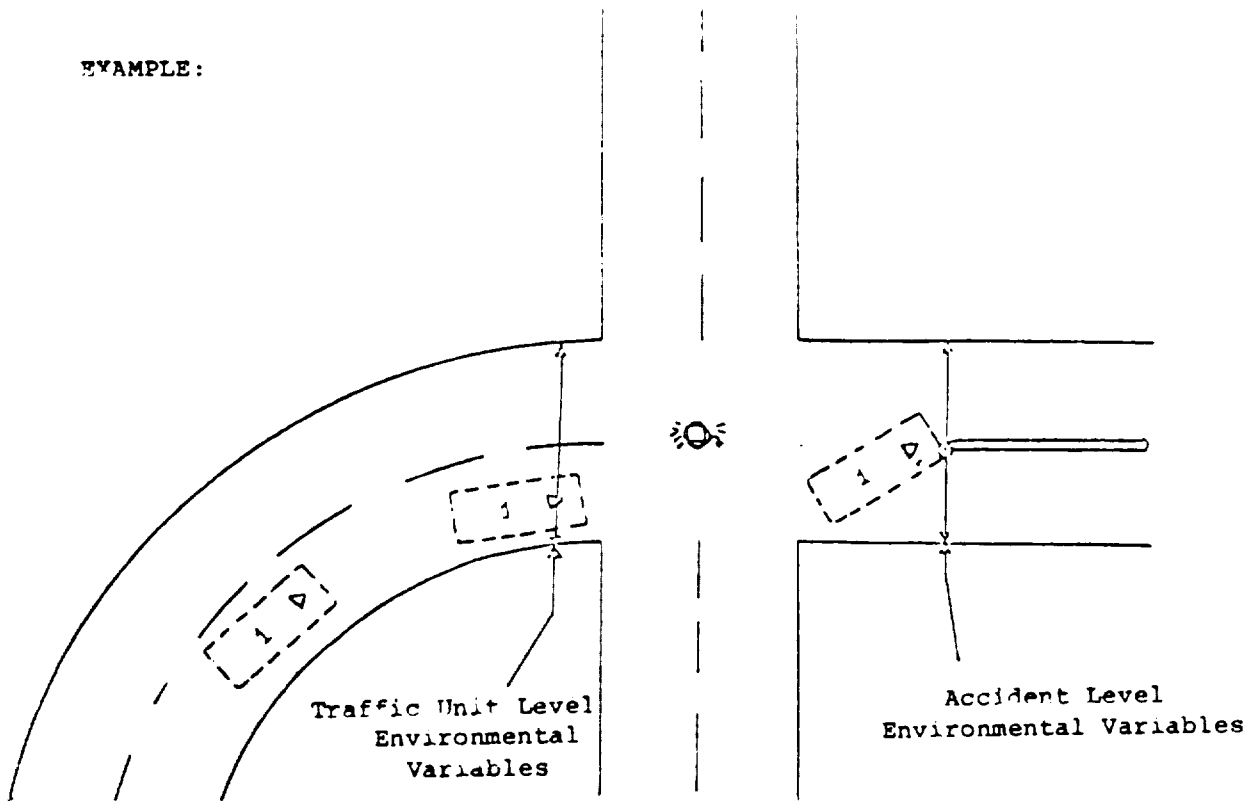
as a NASS roadway if it were not for the "throat" rule (see Variable A24, Relation to Junction, fifth page, paragraphs 5 and 6). In these instances, the accident level environmental variables should be the same as the traffic unit level environmental variables for the involved in transport vehicle.

The accident and traffic unit level variables may also differ where a vehicle was not attempting to negotiate a junction. Recall on sub-page (3) Situation A where a vehicle departed roadway X, prior to its junction with roadway Y, but enters roadway Y laterally before a harmful event occurs. If the vehicle impacts an object or a pedestrian or nonmotorist (see P08, Pedestrian or Nonmotorist's Type) on the road, then use roadway Y for the accident level and roadway X for the traffic unit level. However, if the object or pedestrian or nonmotorist was not impacted until after the vehicle crossed the road for roadway Y, then roadway X would be used at both the accident and traffic unit levels.

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.



EXAMPLE:



Variable Name: Federal Aid System

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 Federal Aid Classification and Functional Classification maps, 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 A24, 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. Frontage roads not classified on the maps should be coded "8" (Nonfederal aid local).

Code "8" (Nonfederal aid local) includes driveways or alleys when the roadway chosen to be associated with the first harmful event is a driveway or alley.

Variable Name: Class Trafficway

Format: 1 column - numeric

Beginning  
Column 41

Element Values:

- 1 Interstate
- 2 Other U.S. route
- 3 Other state route
- 4 County road
- 5 Local street
- 8 Other (specify)
- 9 Unknown

Source: Investigator determined--based on definitions and scene inspection. Road signage is one of the primary inputs in the assignment of the correct attribute.

Remarks:

For a roadway to qualify as a NASS roadway in addition to meeting the definitions spelled out in Figure 2-5, page 14 (transport way, land way, trafficway, roadway--ANSI D16.1-1976, sections 2.1.5, 2.1.11, 2.2.1, and 2.2.17 respectively), the Agency (city, county, or state) responsible for maintaining the roadway must designate it at least as "open to local or through traffic". This means that accidents which occur in association with a roadway (or one of its lanes) that is unopen are not NASS accidents unless they occur in the junction of a roadway that is open and upon which an involved vehicle was travelling. If the roadway is being built or under construction (repair or maintenance) then the first harmful event must have been associated with that portion of the roadway designated as open. If the maintenance agency has designated the roadway as open then the condition (paved, gravel, etc.) of the road surface is not considered. If the roadway is being built, code the roadway according to its eventual classification.

If the road is serving as a DETOUR, then disregard temporary signage and code the roadway according to its permanent classification. In a few areas, even interstate roads most closely resemble local streets. If the roadway is permanently signed (at the time of the accident) as an interstate, other U.S. or other state route, then code it accordingly. Where a roadway is part of more than one class (e.g., section contains both state and U.S. signage), code its higher (lower numerically) class. Regarding interstates, white-on-green interstate business loop signs are informational signs and are to be ignored for classification purposes.

Variable Name: Class Trafficway (cont'd.)

Definitions:

Interstate system ("1") is any trafficway within the national system for interstate and defense trafficways.

Other U.S. route ("2"), numbered highway, is any trafficway within the U.S. trafficway system, excluding interstate trafficways.

Other state route ("3"), numbered highway, is any trafficway within the state trafficway system.

County road ("4") is any trafficway within a county trafficway system that does not fall within the interstate, U.S. route, or state route systems.

Local street ("5") is any trafficway within a city trafficway system that does not fall within the interstate, U.S. route, or state route systems.

Other road ("8") includes any alley or driveway.

Variable Name: Roadway Function Class

Format: 1 column - numeric

Beginning  
Column 42

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

Remarks:

The Federal Highway Administration has established a roadway functional system classification scheme. The Functional Classification maps are obtainable only from the State Highway Department. Use the same contact that was used in obtaining your Federal Aid Classification maps.

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.

Variable 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 A24, 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. Frontage roads not classified on the maps should be coded "8" (Local road or street).

Code "8" (Local road or street) includes driveways or alleys when the roadway chosen to be associated with the first harmful event is a driveway or alley.

Variable Name: Relation to Junction

Format: 2 columns - numeric

Beginning  
Column 43

Element Values:

- 01 Non-junction
- 02 Three leg intersection
- 03 Four leg intersection
- 04 More than four leg intersection
- 05 Rotary or traffic circle
- 06 Intersection related
- 07 Channel
- 08 Area of mergence/divergence related
- 09 Entrance or exit ramp
- 10 Interchange area
- 11 Driveway, alley access related
- 12 Railroad grade crossing
- 13 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 "06" (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.

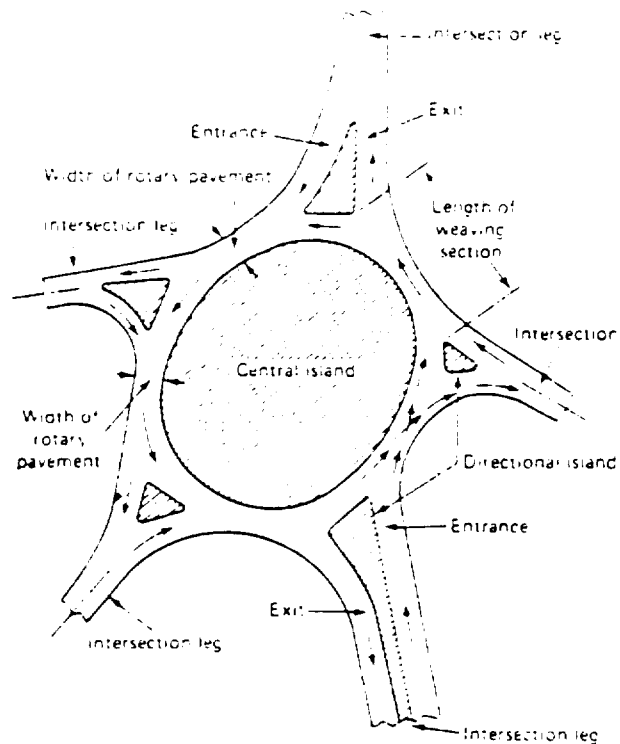
Intersection (codes "02" through "04") is a type of junction which: (1) contains a crossing or connection of two or more roadways not classified as a driveway access or alley access, and (2) is embraced within the prolongation of the lateral curb lines or, if none, the lateral boundary lines of the roadways. 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. If the lines are not parallel, then the distance between them is measured along the shortest side of the roadway [see examples pages 3-7].

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

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.

Code "02" (Three leg intersection) includes any two leg intersections. To qualify for inclusion at least one of the two legs must be controlled by a regulatory sign (see A38, Traffic Control Device) or traffic signal; otherwise, treat the area as a sharp curve.

A rotary or traffic circle (code "05") 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.



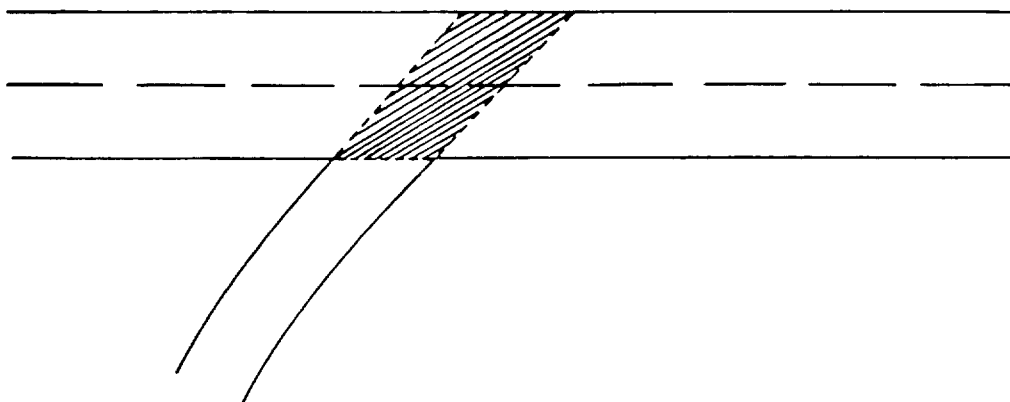
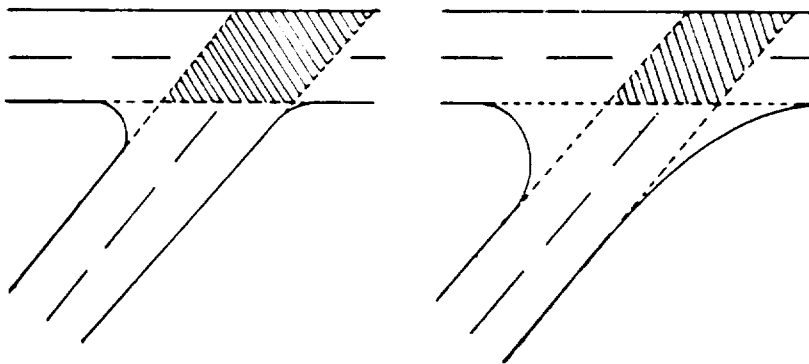
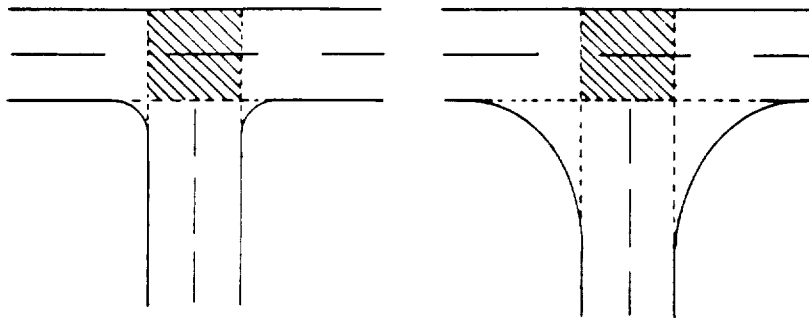
Code "05" (Rotary or traffic circle) if the first harmful event occurs in the rotary roadway, in the central island, or on any directional islands which serve the rotary intersection.



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

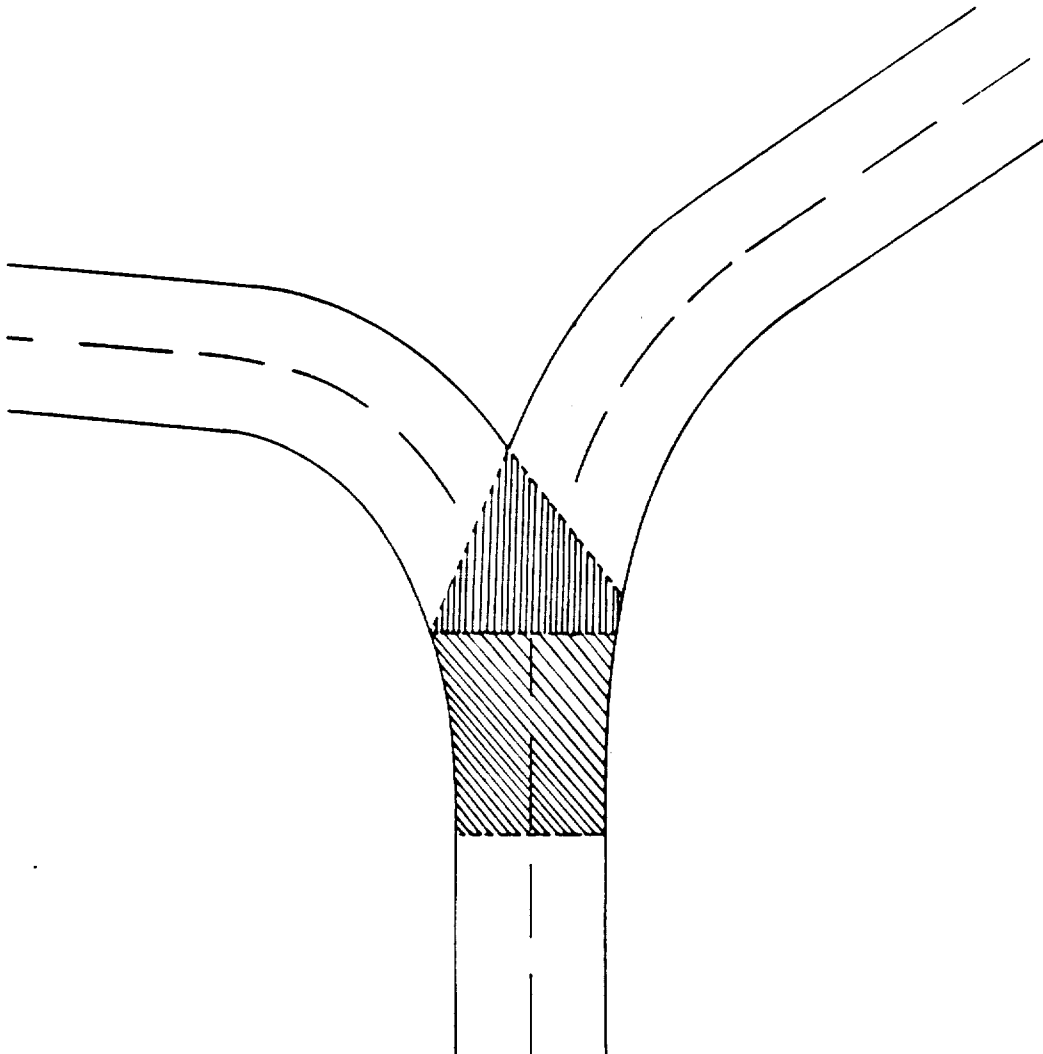
3-Leg Intersections

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.



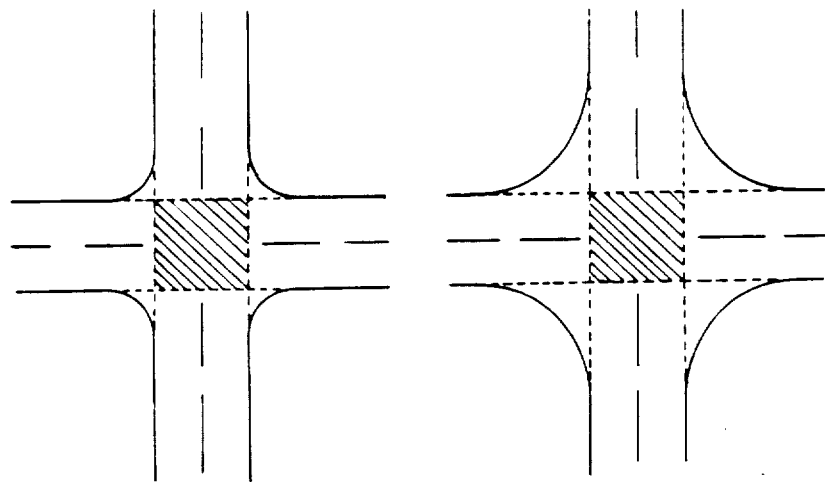
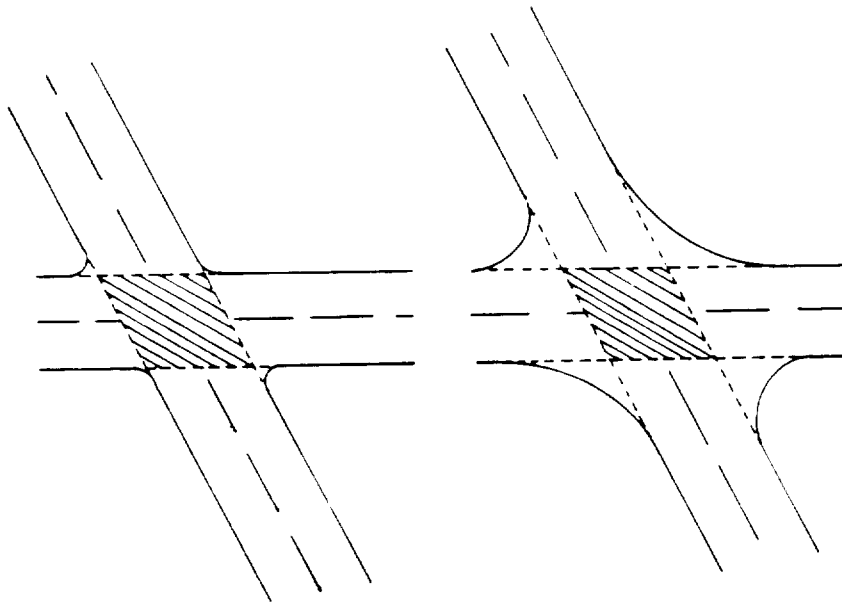
Variable Name: Relation to Junction (cont'd.)

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.

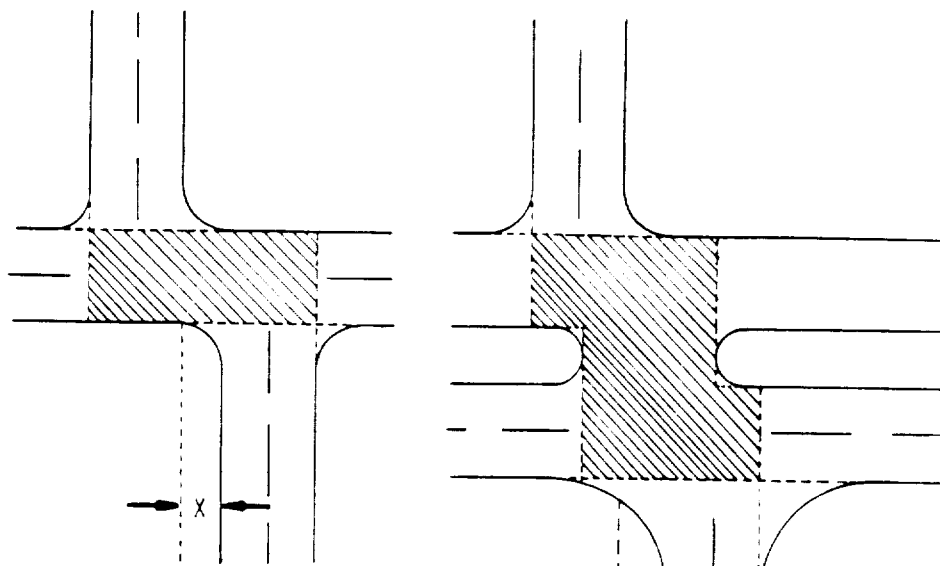


Variable Name: Relation to Junction (cont'd.)

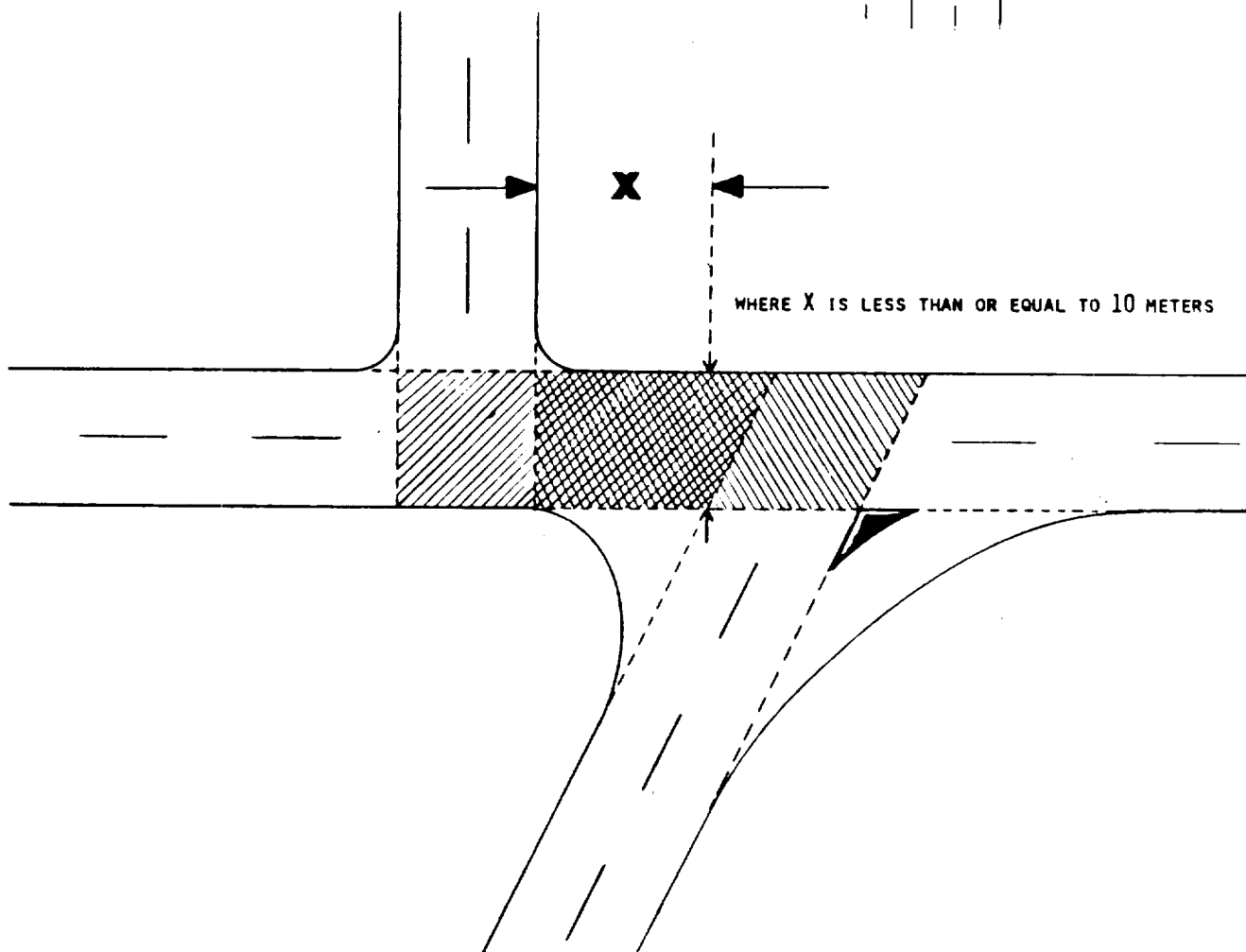
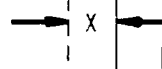
Four-leg Intersections



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

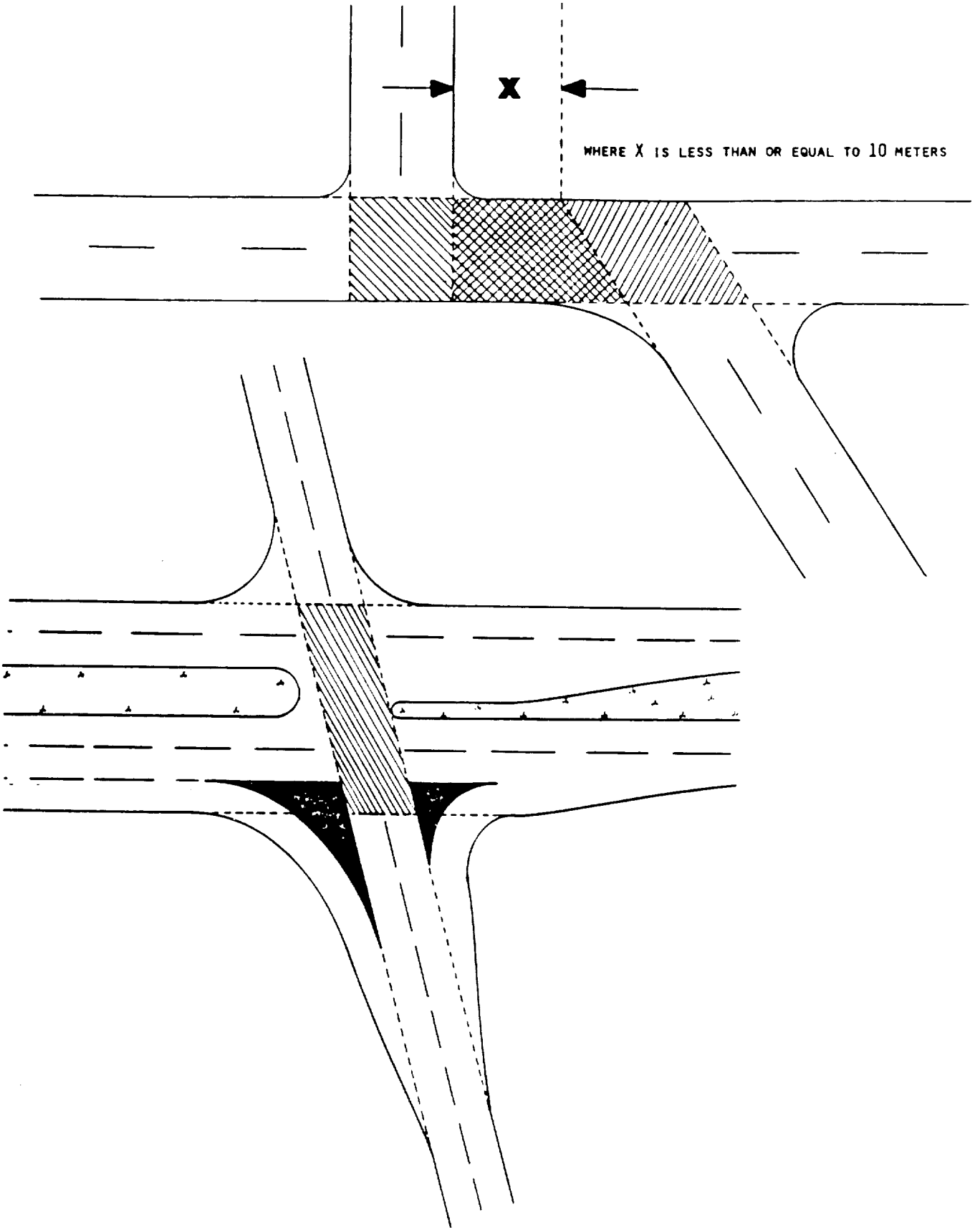


WHERE X IS LESS THAN OR EQUAL TO 10 METERS



WHERE X IS LESS THAN OR EQUAL TO 10 METERS

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



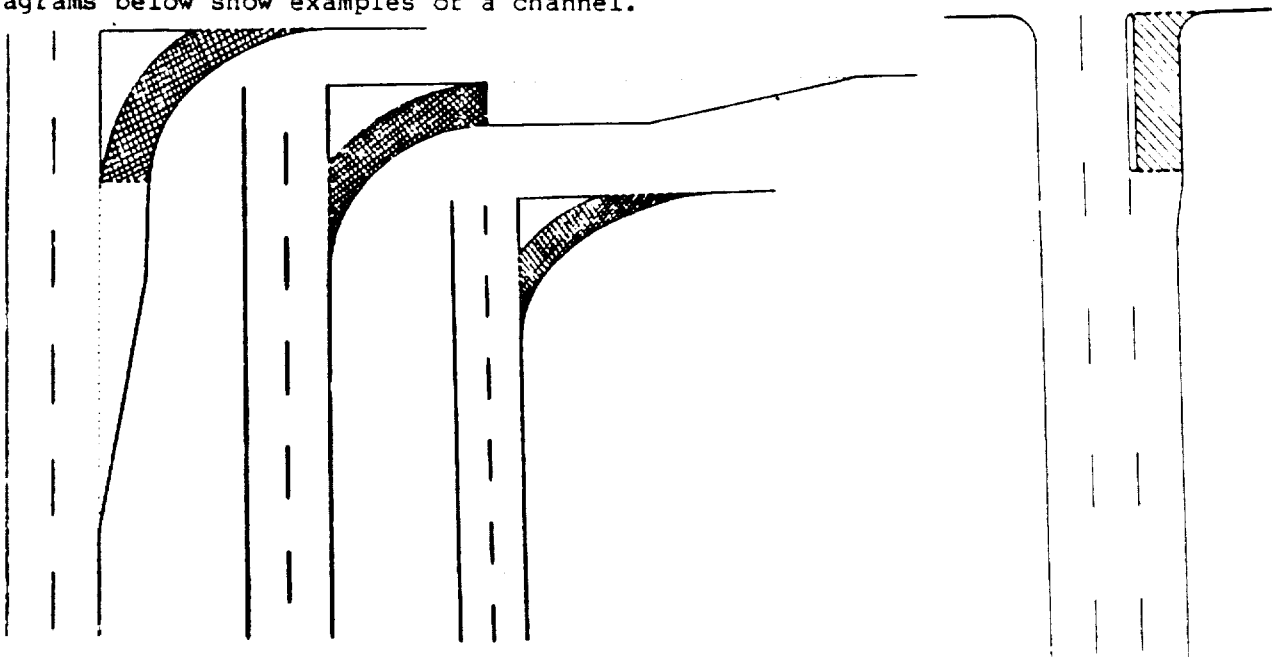
Variable Name: Relation to Junction (cont'd.)

Intersection related (code "06") 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)

"Traffic units" above means any traffic unit (involved or not involved in the accident). If the first harmful event occurs outside but near an intersection and involves a vehicle which was engaged or should have been engaged in making a intersection related maneuver such as turning, then intersection related (code "06") must be coded. However, if the loss of control is unrelated to the intersection, then code code non-junction ("01"). See examples, pages 17 - 19.

If an accident meets the criteria of intersection related ("06") but also meets the criteria for codes "07" through "13", then the appropriate code ("07" through "13") takes precedence. Remember, for codes "08" (Area of merge/divergence related), "11" (Driveway, alley access related), and "13" (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.

A channel (code "07") refers to any traffic lane that is directed into a path different than the through lanes by a traffic island. An island is defined as a raised or painted paved surface. The channel begins and ends at the extension of the island's lateral boundaries unless the channel is preceded or followed by an area of merge or divergence (see below). The diagrams below show examples of a channel.



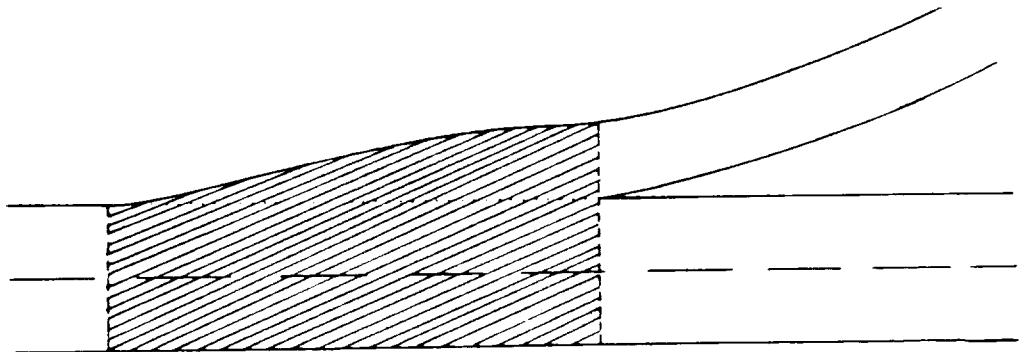
Code "07" (Channel) if the first harmful event occurs in the channel or on the traffic island. See Code "09" (Entrance or exit ramp) for difference between code "07" channel and "09" (Entrance or exit ramp).

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

Code "08" (Area of merge/diverge related) refers to the area in and adjacent to an auxiliary lane which is (1) adjacent to the through lane(s) and (2) precedes (diverge) or follows (merge) a ramp (entrance or exit --at grade or not at grade) or channel. A diverge area extends longitudinally from where the auxiliary lane begins and ends where the ramp (see below) or channel (see above) begins. A merge area extends longitudinally from where the ramp or channel ends and ends where the auxiliary lane ends. Both areas extend laterally across the through lane(s), for traffic in the same direction, ending at a center line, median, or road edge/curb. In order to use this code at least one involved pedestrian, other nonmotorist associated with a nonmotorist conveyance (see variable P08, Pedestrian or Nonmotorist Type), or road vehicle (ANSI D16.1-1976, section 2.2.6, page 5), involved in the first harmful event, must be entering or exiting from the ramp or channel. Do not use this code if the accident was precipitated by the actions of a noncontact road vehicle or person.

If the location of first harmful event (A10) is in an area of merge/diverge and is also an intersection (codes "02" thru "04"), intersection related (code "06") or in an interchange area (code "10"), code "08" (Area of merge/diverge related) takes precedence.

Sketched below is an example of the prolongation associated with an area of merge or diverge.



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

An entrance or exit ramp (code "09") 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 (1) as an additional lane associated with the connected roadway and (2) as an area of merge or divergence as discussed previously. 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.

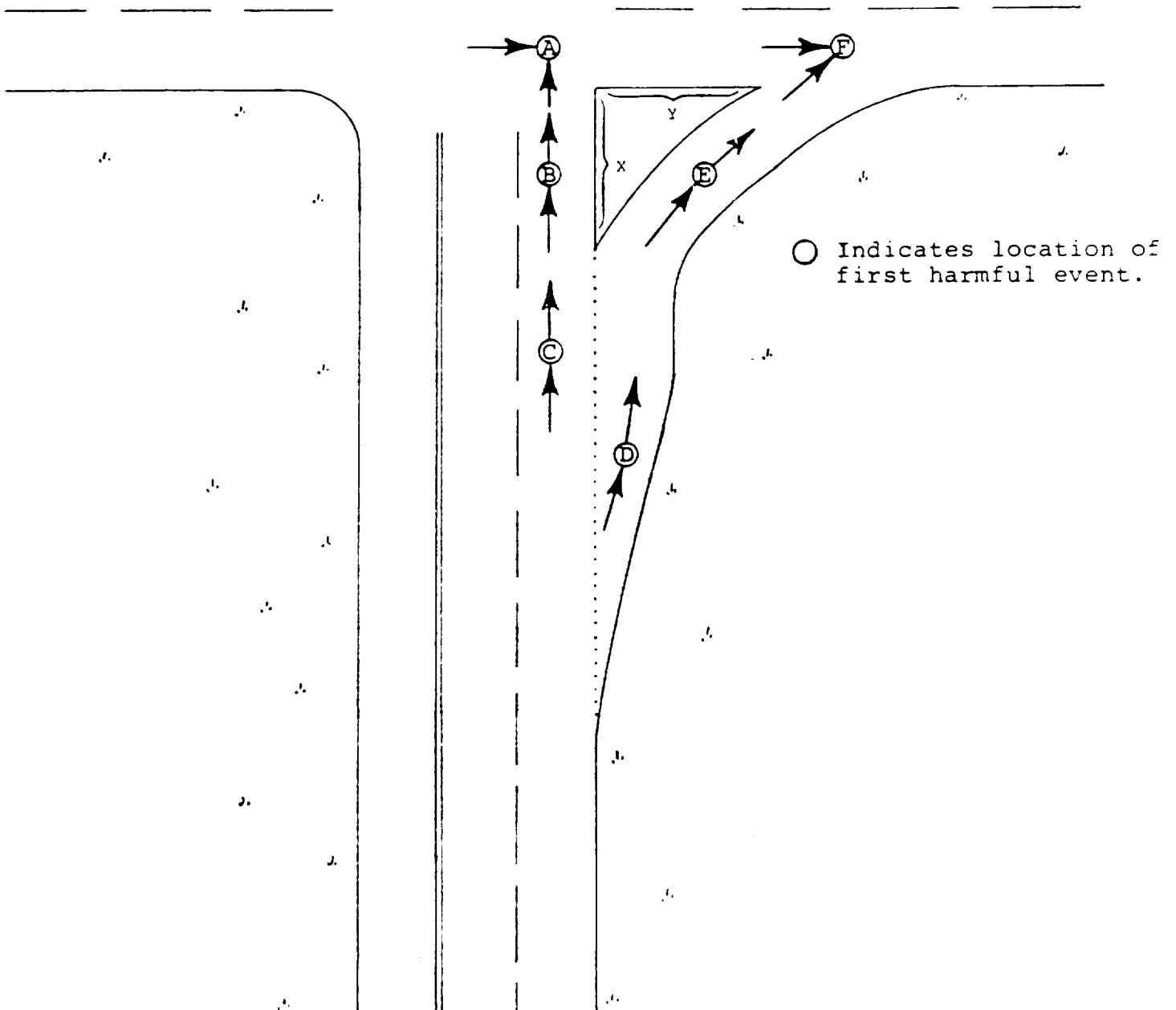
If the first harmful event occurs while going into, within, or coming out of a channel, then code the Relation to Junction as intersection (codes "02" through "05"--rare), non-junction ("01"), channel ("07"), area of merge/divergence related ("08"), or intersection related ("06"), depending upon whether 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 "09" (Entrance or exit ramp) regardless of whether or not the first harmful event resulted from some action that would qualify as intersection related (code "06").

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 "09") 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.



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

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

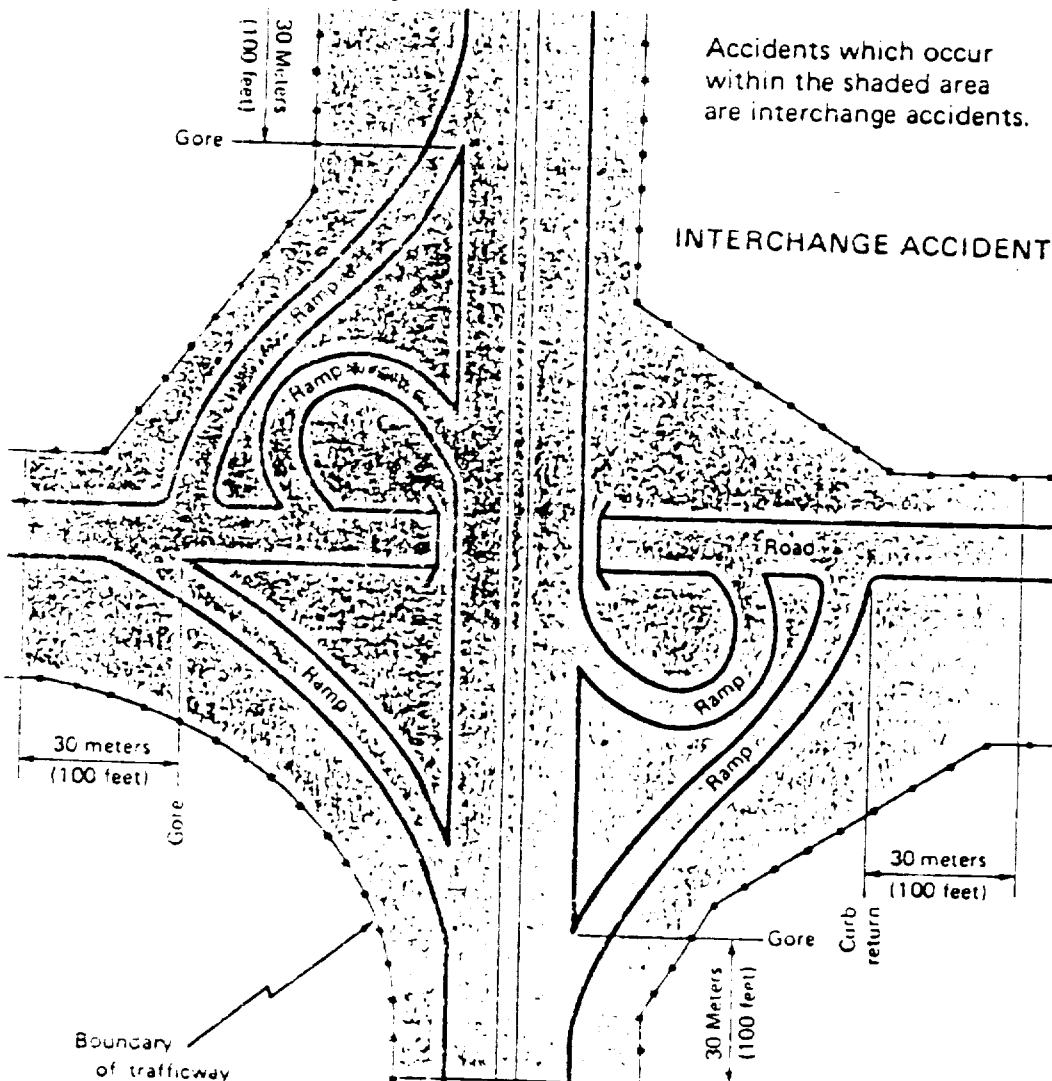


Variable Name: Relation to Junction (cont'd.)

An interchange area ("10") 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, channels, areas of merge/divergence, ramps, 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 an intersection, a channel, an area of merge/divergence, or on an entrance or exit ramp, then the intersection (codes "02" through "04"), channel ("07"), area of merge/divergence ("08"), or ramp ("09") takes precedence.

If a grade separation is present and the first harmful event occurs in and incidental to the junction of a ramp and a highway, then code interchange area ("10"). If the first harmful event meets the criteria of intersection related, interchange area ("10") is still used since it takes precedence.



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

Code "11" (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. Do not use this code if the accident was precipitated by the actions of a noncontact road vehicle or person.

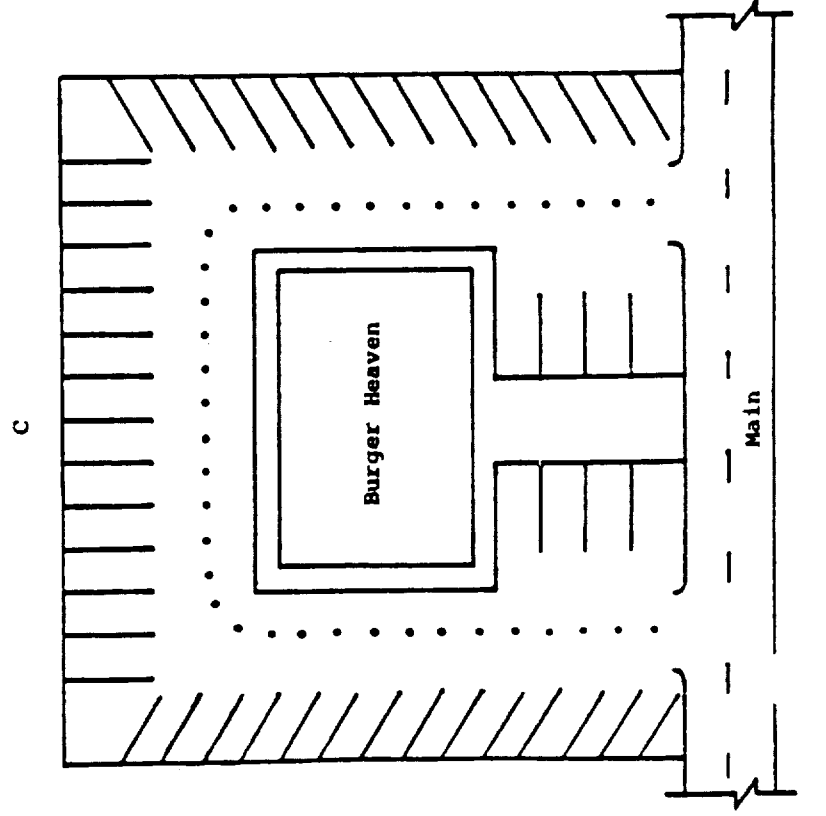
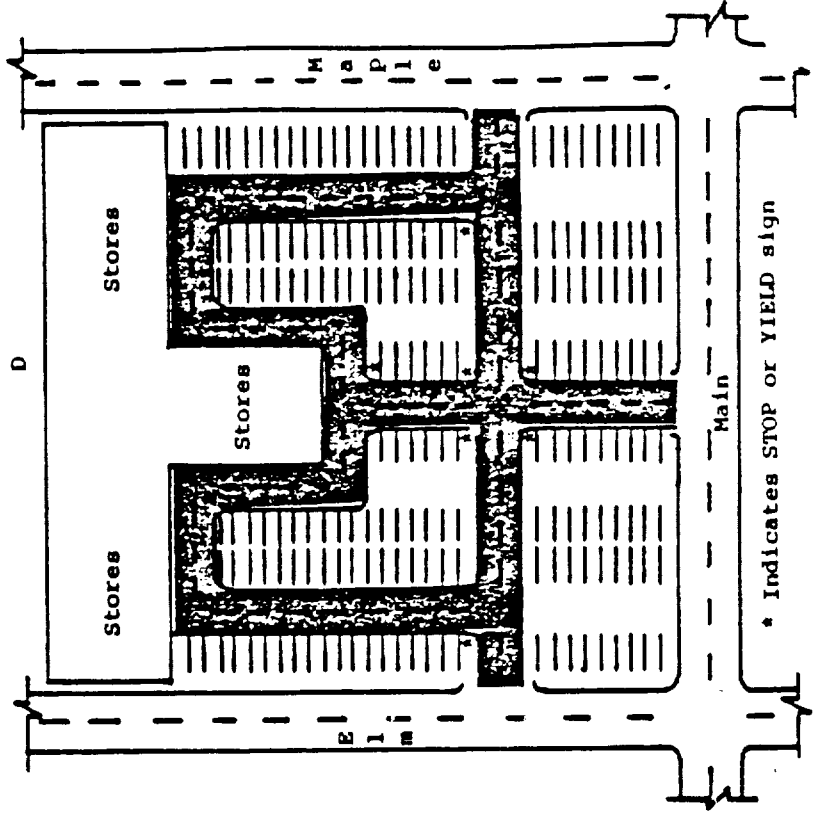
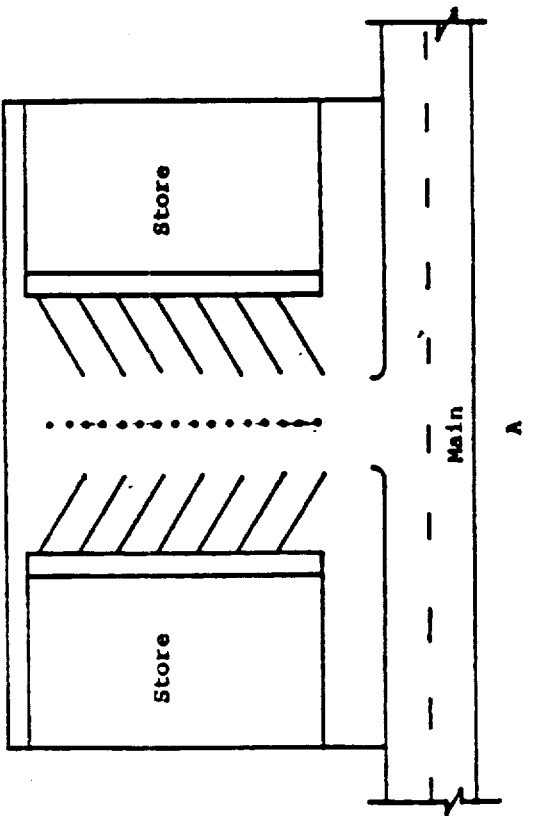
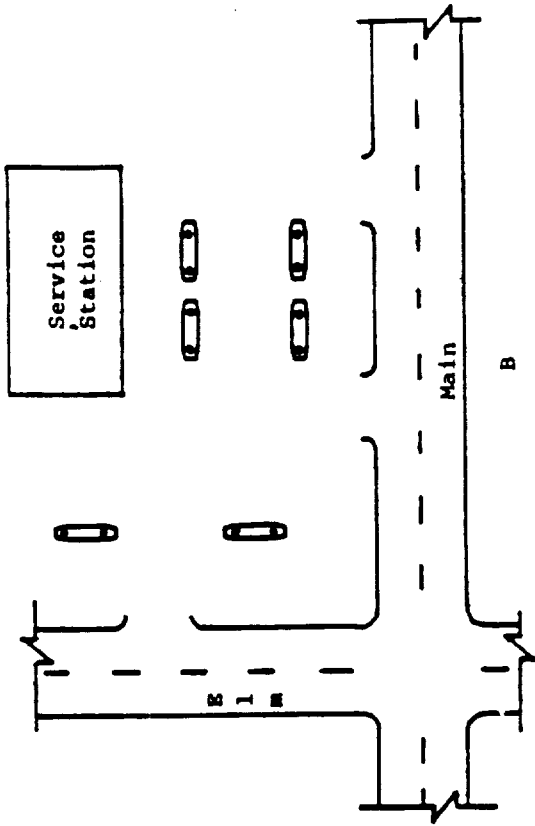
Where a controlled driveway/alley access junction overlaps (inside-to-inside of lateral boundary lines is less than or equal to 10 meters) a three leg intersection, code "03" (Four leg intersection) should be used.

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 "11"), code either "02" (Three leg intersection) if the first harmful event was within the intersection junction, or "06" (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 "11" (Driveway, alley access related) only if the criteria above are met and the location of the first harmful event is not within the intersection. Driveway access (code "11") is a roadway providing access to property adjacent to a trafficway. Alley access (code "11") 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.

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 (of the trafficway) (ANSI D16.1-1976, section 2.2.19, page 7) at the location of the first harmful event (on the private way). If the accident occurred in the throat, then code "11" (Driveway, alley access related) should be used. In cases where a pedestrian, other nonmotorist associated with a nonmotorist conveyance (see variable P08, Pedestrian or Nonmotorist's Type),



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

or road vehicle (ANSI D16.1-1976, section 2.2.6, page 5) is crossing laterally a private way (e.g., a driveway) and the pedestrian, nonmotorist, or vehicle is on the trafficway of the street or highway (e.g., within the horizontal extension of a sidewalk), then the "road" requirement of the "throat" rule is extended to include all of the trafficway. The road was used because it is more operationally defined than the trafficway; however, pedestrians, for example, crossing driveways who are struck by a vehicle entering the street or highway would technically not have their first harmful event occurring in the "throat". For this reason, where the trafficway is clearly defined, the throat can be extended up the private way to include any first harmful events which occur on the trafficway.

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.

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

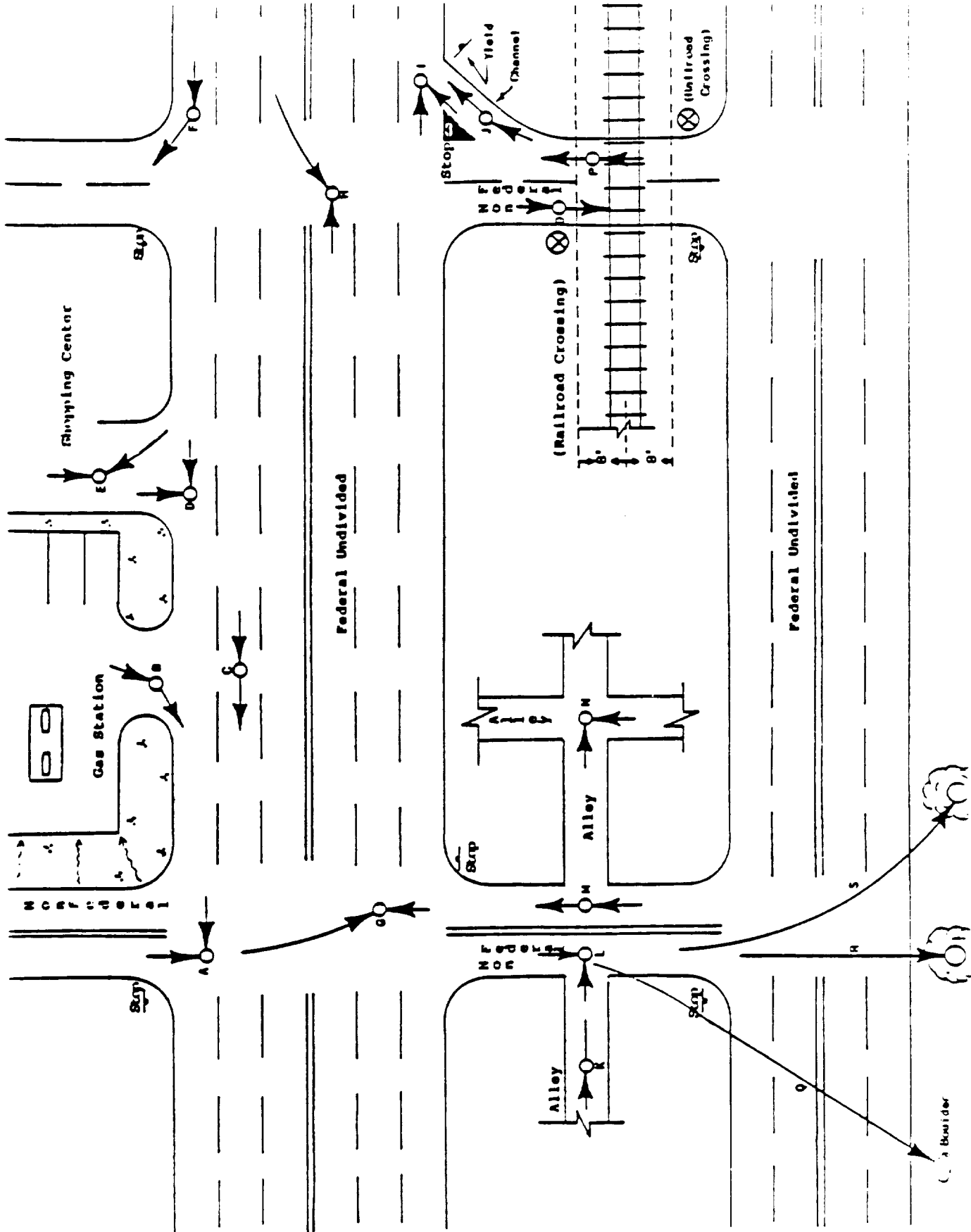
A railroad grade crossing (code "12") is the area formed by the at-grade connection of a railroad bed and a roadway. The railroad bed is defined, for NASS purposes, as the area encompassed within: (1) eight feet either side of the center of a single set of tracks, or (2) eight feet beyond the centers of the outside sets in the case of multiple sets.

If the first harmful event occurs in the area formed by the connection of the railroad bed and the roadway, then code "12" (Railroad grade crossing) should be used.

A crossover (code "13") 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 "13" (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. Do not use this code if the accident was precipitated by the actions of a noncontact road vehicle or person.

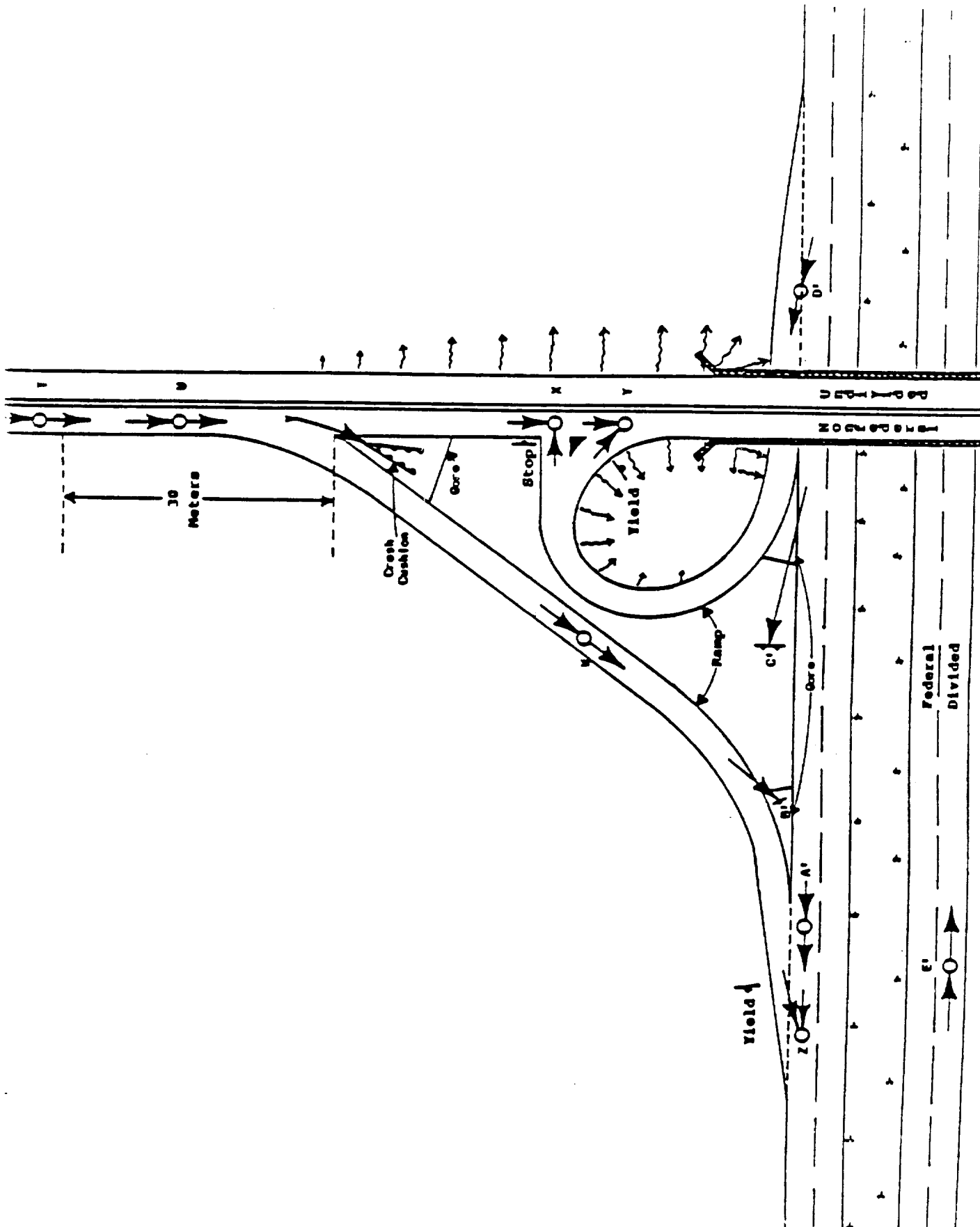
Median cuts which are directly across from or within 10 meters (33 feet) of the nearest lateral boundary line of any roadway (highway, street, ramp, driveway, or alley) are considered extensions of the roadway and do not count as an additional leg of the junction. The area between the roadways which 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 "11" (Driveway, alley access related).



ACCIDENT FORM

A24

(18)





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

Situation	A21 Federal Aid Class		A24 Relation to Junction										A27 Number of Lanes	A31 Trafficway Flow		A35 Traffic Control Device	
	Fed	Non Fed	Four leg	Three leg	Non-junction	Channel	Area of merge/diverge related	Entrance/exit ramp	Inter-change area	Driveway alley access related	Railroad Crossing	Number		Divided	Undivided	Yes	No
A	✓		✓									6		✓		✓	
B	✓								✓			1 or 2		✓		✓	
C	✓	✓			✓							6		✓		✓	
D	✓								✓			6		✓		✓	
E																	
F	✓				✓*							6		✓		✓	
G	✓		✓									2		✓		✓	
H	✓		✓									6		✓		✓	
I	✓				†							6		✓		✓	
J	✓					✓						1		✓		✓	✓
K	✓				✓							1		✓		✓	
L	✓								✓			2		✓		✓	
M	✓				✓				✓			2		✓		✓	
N	✓				✓							1		✓		✓	
O	✓				✓*							2		✓		✓	
P	✓				✓							2		✓		✓	
Q	✓				✓						✓	2		✓		✓	
R	✓				✓							2		✓		✓	
S	✓				†							2		✓		✓	
T	✓				✓							2		✓		✓	
U	✓											2		✓		✓	
V	✓											2		✓		✓	
W	✓								✓			2		✓		✓	
X	✓							✓				1		✓		✓	
Y	✓				✓							2		✓		✓	
Z	✓							✓				3	✓	✓		✓	
A'	✓							✓				3	✓	✓		✓	
B'	✓							✓				1		✓		✓	
C'	✓							✓				2	✓	✓		✓	
D'	✓							✓				3	✓	✓		✓	
E'	✓							✓				2	✓	✓		✓	

N O T A N A S S A C C I D E N T

\*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 A24 (Relation to Junction) would be coded as "06" (Intersection related) rather than "01" (Non-junction), and A35 (Traffic Control Device) would be coded, given their existence and relationship to the accident, on the basis of the applicable code rather than "00" (No controls).

†Intersection related ("06") should be coded for A24 (Relation to Junction).

Variable Name: School Bus Related

Format: 1 column - numeric

Beginning  
Column 45

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 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.

(V14, Body Type, need not equal 30). 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: Right or Left Turn on Red Related

Format: 1 column - numeric

Beginning  
Column 46

Element Values:

- 0 No  
Right turn related
- 1 Yes - turn permitted
- 2 Yes - turn prohibited  
Left turn related
- 3 Yes - turn permitted
- 4 Yes - turn prohibited
- 9 Unknown

Source: Police report is used to determine if the accident is related to a right or left turn; police report and scene inspection are used to determine if the turn was permitted or prohibited.

Remarks:

Code "0" (No) is used if the PAR does not indicate that a right or left turn was involved. Investigator opinion about the relationship between the accident and a right or left turning maneuver is not a consideration. In addition, code "0" (No) must be coded if the location of the first harmful event was not at or near an on-colors (see remarks section for A38, Traffic Control Device) signalized junction (intersections, some driveways, etc.). Further, all turning movements indicated to have occurred on the green (i.e., not against the red) cannot qualify the accident for consideration.

Code "1", "2", "3", or "4" (Yes ....) if the PAR indicates that a turning maneuver occurred (1) at an on-colors signalized junction, (2) against the red, and (3) was related to the accident. Codes "1" or "2" (Right turn related) are used if a right turning maneuver was involved and codes "3" or "4" (Left turn related) if a left turning maneuver was indicated.

Given that a turning maneuver was related, the investigator determines from the police report, one's knowledge of state law and/or local ordinance (if applicable), and investigation of the scene whether or not a turn on red was permitted (codes "1" and "3") or prohibited (codes "2" and "4").

Code "9" (Unknown) is used if the PAR indicates the presence of a turning maneuver at an on-colors signalized junction but does not indicate whether or not the turning maneuver was related to the accident. For example, if the diagram on the PAR shows a vehicle making a turning maneuver at a signalized junction but does not definitively state anywhere that the turning movement was (1) against the red and (2) related to the accident, then unknown ("9") should be coded.

Variable Name: Number of Travel Lanes

Format: 1 column - numeric

Beginning  
Column 47

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, Federal Aid System.

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, by their definition (see ANSI D16.1-1976, section 2.5.13), are separated from other through or turn related lanes. (NOTE: the separation normally will not involve a physical barrier.) Because channelized lanes are separated, they are not to be included. If the first harmful event occurs in a channel (see Remarks section A24, Relation to Junction), code the number of lanes in the channel. When the accident

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

occurs in a junction and the assessment is made at the mouth, channelized lanes will be excluded. However, if the location of the first harmful event is back upstream from a channelized junction, then the lane may be counted if it came from a turn bay or lane.

The number of lanes counted includes any which are narrowed or rendered unusable by restrictions of the right-of-way cited in variables A42 (Restriction of Roadway at Scene) or A43 (Additional Restriction of Roadway at Scene). Only those lanes ordinarily used for motor vehicle travel should be considered when coding this variable (i.e., pedestrian/bicycle lanes are excluded).

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 (line or turn arrow) markings, signs, or signals].

The number of lanes for driveways, widemouth parking lots, etc. should be coded as follows: if it is possible to determine the number of lanes through either lane markings or observed or customary use, code the actual number of lanes present. If the number of lanes cannot be accurately established, use code "9" (Unknown).

If the vehicle was on a channel or an entrance or exit ramp (A24, Relation to Junction, codes "07" and "09" respectively), code the number of lanes for that roadway section (also see A28, Median Type, remarks).

If crossover related ("13") is coded for variable A24, 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: Median Type

Format: 1 column - numeric

Beginning  
Column 48

Element Values:

- 0 No median
- 1 Curbed
- 2 Positive barrier
- 3 Unprotected
- 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 (A27). 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.)

In order to code this variable the investigator must first determine if the trafficway was divided at the point of assessment. A trafficway may be divided into two or more roadways. Any intentional separation (see exception below) of travel lanes, either opposing or lanes in the same direction, constitutes a division of a trafficway. Separations can be composed of physical barriers in addition to lateral distance. Further definitions help to describe medians: (1) Medians provide an insulating area between streams of moving traffic; (2) medians provide protection and control of cross and turning traffic; (3) medians provide a refuge for pedestrians.

Medians and gores (see remarks section for A12, Relation to Roadway, for definitions) separate roadways. A traffic island (associated with a channel) separates travel lanes but does not constitute a division of a trafficway because the associated channelized lane(s) is (are) not considered to be a separate roadway.

Variable Name: Median Type (cont'd.)

Entrance and exit ramps (see remarks section for A24, Relation to Junction, code "09" for definition) are considered separate (unique) roadways. Therefore, even though they are divided from their primary roadway [i.e., the one used for Federal Aid System (A21) classification purposes], their division is assessed independently. Ramps are not considered divided unless two ramps exist adjacent separated by a median (with or without a physical barrier). A ramp can divide into two ramps. A gore separates the ramps. The gore does not constitute a division.

Multiple medians could be present. If they are not, then this variable reports about the median that is present. If more than one is present and the first harmful event occurred in median (code "3" for A12, Relation to Roadway), then this variable reports about the median involved in the first harmful event. If more than one is present and the first harmful event did not occur in a median, then this variable reports about the first median encountered laterally to the left (with respect to normal traffic flow) from the first harmful event.

Physical division of roadways (e.g., concrete traffic barrier) overrides simple lateral division (e.g., grass median); therefore, code "2" (Positive barrier) takes precedence over codes "1" (Curbed) and "3" (Unprotected).

Code "0" (No median) if no medians are present independent of the presence of a gore or traffic island. Variable A29, Median Width, must equal "00" (No median), and variable A31, Trafficway Flow, must equal either "0" [Not physically divided (two way traffic)] or "3" (One way trafficway).

Code "1" (curbed) describes raised areas which are curbed including those protected by mountable curbs.

Code "2" (Positive barrier) refers to all concrete or other types of longitudinal barriers (i.e., all manufactured barriers). Also, bridge or underpass supporting structures and bridge rails take this code.

Code "3" (Unprotected) includes any vegetation, gravel, or paved flush--painted or unpainted--medians.

Vegetation, gravel median - includes trees, water, embankments, and ravines that separate a trafficway (i.e., nonmanufactured barrier).

Painted flush median can be described as solid painted lines spaced apart with the intent to divide a trafficway into two or more roadways. The intent to divide a trafficway into two or more roadways. The intent to divide means to purposely create a safety zone between streams of traffic. Division does not occur when double no passing lines are separated by a dashed center line or when double solid center lines are present and separated by no more than the width of a center line--allow a margin of error for poor workmanship. If a distance greater than the width of a painted line (about 4 inches) and not attributable to poor workmanship, exists between two painted (should be "solid") center lines, then a separation is considered to have occurred.

Variable Name: Median Width

Format: 2 columns - numeric

Beginning  
Column 49

Element Values:

Code actual measured value up to 96 feet  
00 No median  
97 97 feet and above  
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 (A27). 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.)

Code "00" (No median) if no median (code "0") was coded for A28, Median Type.

Medians are measured to the nearest foot from the center of roadway edge line to edge line, where present, or roadway edge (best estimate) to roadway edge, where edge lines are absent. Inside shoulders are thus included since the shoulder (for NASS purposes) may be a variety of surface types and its exact width difficult to determine.

Code "01" (1 foot) includes all distances less than 1.5 feet.

In some instances estimation may be required because of physical difficulties in taking the measurement at the appropriate location. The investigator should always attempt to obtain as good an approximation as possible. In some cases a point nearby can be used; other times the measurement may have to be made at a substantial distance (e.g., location of first harmful event is on a bridge spanning a river).



Variable Name: Access Control

Format: 1 column - numeric

Beginning  
Column 51

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 (A27). It is associated with the location of the first harmful event. If the roadway is an entrance or exit ramp, ANSI (D16.1-1976, section 3.7.3.4, pages 26-27) requires that the ramp be coded (full, partial, or uncontrolled) the same as the roadway of the higher (lower numerically) Federal Aid System classification (A21) which it connects. Determine which of the connected roadways is higher [if they are the same (A21), then choose the one that led to the ramp] and determine the value for this variable at the general area where the ramp connects with the roadway.

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" (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, A27. 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: Trafficway Flow

Format: 1 column - numeric

Beginning  
Column 52

Element Values:

- 0 Not physically divided (two way traffic)
- 1 Divided trafficway - median strip without traffic barrier
- 2 Divided trafficway - median strip with traffic barrier
- 3 One way trafficway
- 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 (A27). 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 "0" [Not physically divided (two way traffic)] can only be used whenever A28, Median Type, is coded "0" (No median). Remember although gores separate roadways and traffic islands (associated with channels) separate travel lanes neither is involved in the determination of trafficway division (see remarks section for A28, Median Type).

Code "1" (Divided trafficway - median strip without traffic barrier) and "2" (Divided trafficway - median strip with traffic barrier) most likely will be used whenever a trafficway division is reported [i.e., A28, Median Type, equal "1" (Curbed), "2" (Positive barrier), or "3" (Unprotected)]. It is presumed that the traffic travels in but one direction on the roadway associated with the location of the first harmful event. If multiple medians are present, choose the first median encountered laterally to the left (with respect to the normal traffic flow) from the first harmful event. A traffic barrier is any positive barrier (see code "2" for A28, Median Type). If the median has a barrier code "2"; otherwise, code "1" should be used.

Code "3" (One way trafficway) is used primarily whenever the trafficway is undivided [code "0" (No median) for A28, Median Type] and traffic flows in but one direction (e.g., one-way streets). However, this code can also be used where a median is present so long as all the traffic on the trafficway goes in the same direction. An example occurs where the opposing roadway of the same named trafficway had to be split by such a distance that the right-of-way divides to accommodate other property. If (rare) one of the trafficways is further divided into multiple roadways by a median, then in this instance code "3" (One way trafficway) should be used.

Variable Name: Interchange Geometry

Format: 1 column - numeric

Beginning  
Column 53

Element Values:

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

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

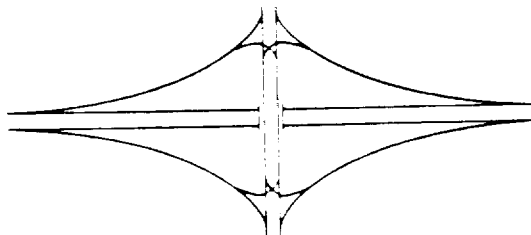
Remarks:

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, code "0" (No interchange).

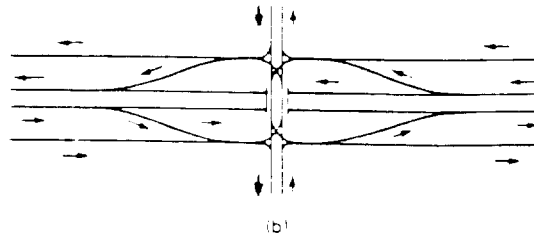
Definitions for codes "1" through "6" were taken from the Transportation and Traffic Engineering Handbook (1976), written by the Institute of Transportation Engineers--pages 645, 646, and 650-655.

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.

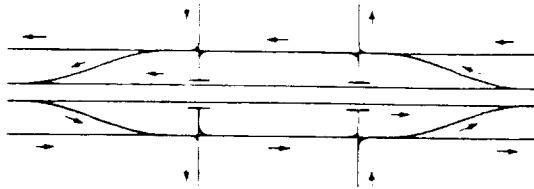


Regular  
Diamond  
Interchange

Variable Name: Interchange Geometry (cont'd.)



Diamond with slip ramp



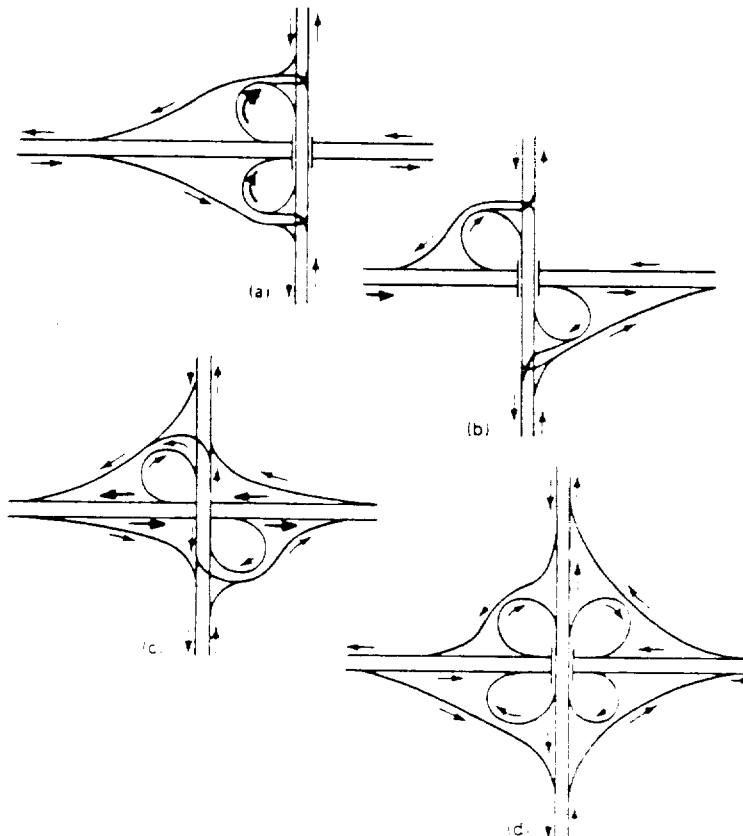
Split Diamond

(c)

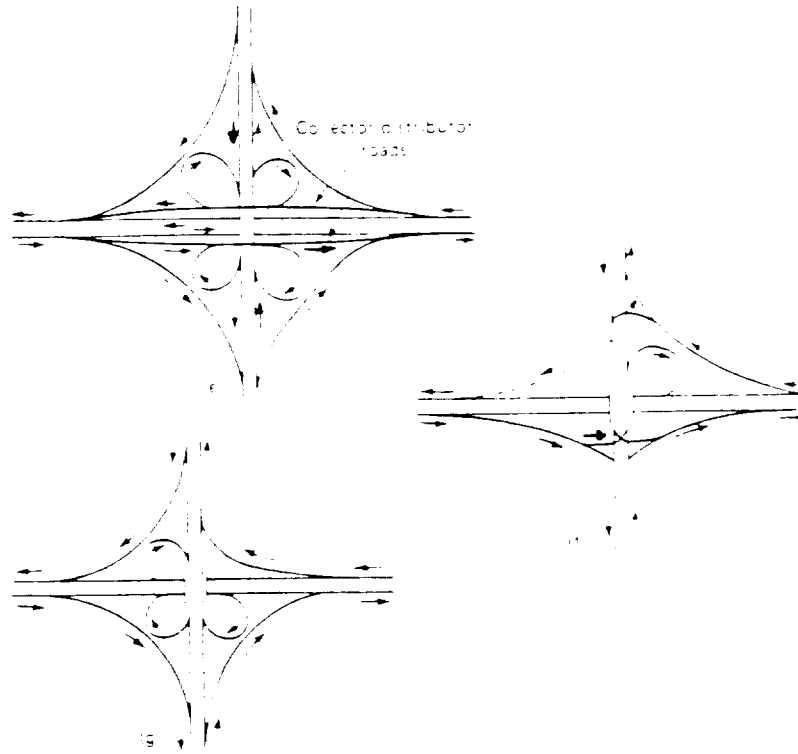
A partial diamond (code "2") is a four-leg interchange that basically fits the diamond configuration but lacks the existence of a single, one-way ramp in at least one quadrant.

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.

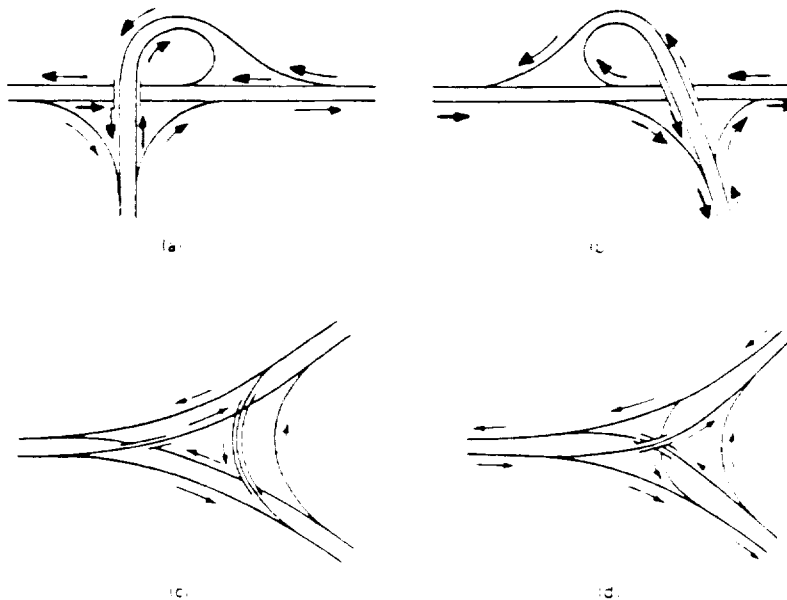


Variable Name: Interchange Geometry (cont'd.)

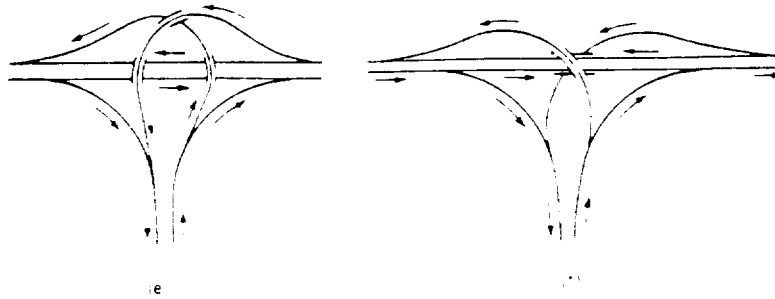


(a), (b), (c), (f), and (g) are examples of partial cloverleaves, while (d) and (e) are full cloverleaves.

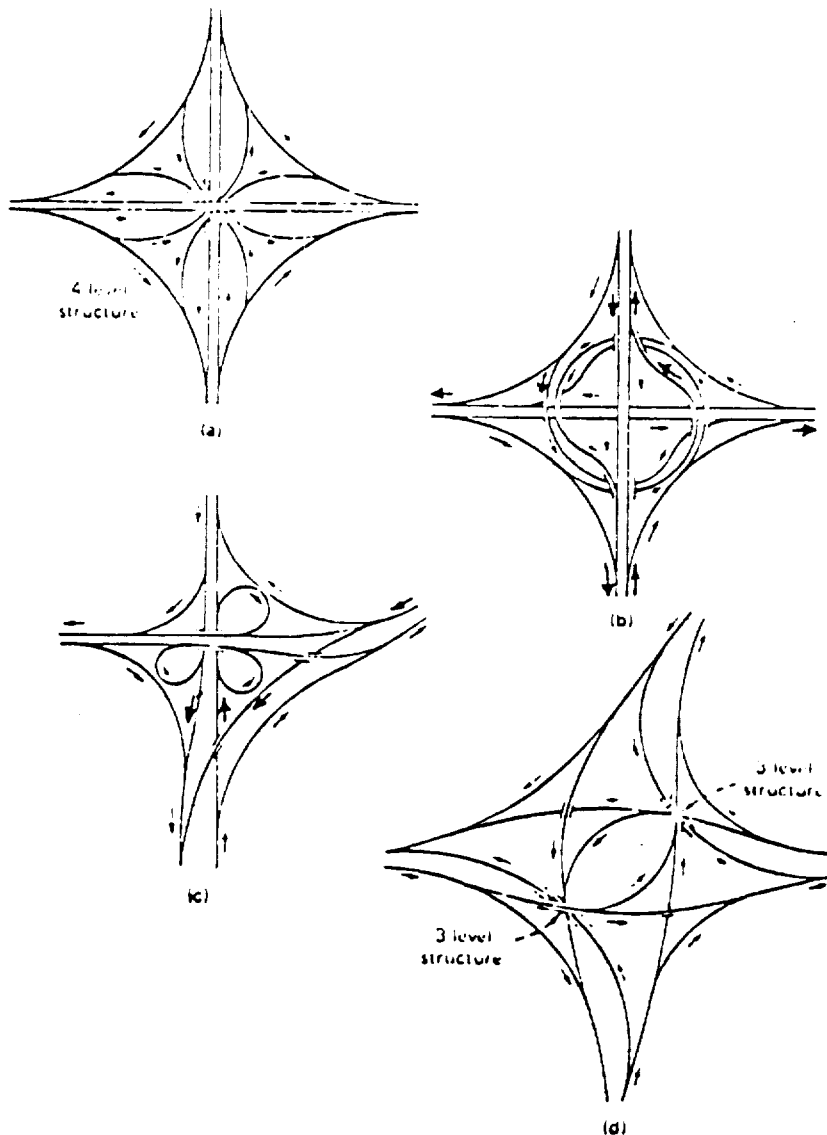
A trumpet (code "5") interchange is one with three approach legs. Code "trumpet" even if the interchange is a "Y" or a "T" interchange. Examples of each of these types is shown below.



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.



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 54

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 (A27). 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.)

Consider the same lanes which were used to determine the Number of Travel Lanes (A27), 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 A27, 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. A raised traffic island at the mouth of a roadway should be considered like a curb and thus not a shoulder. A designated parking lane should not be considered a shoulder for NASS purpose. On the other hand, a painted flush island or a paved median between two edgelines should be considered a shoulder.

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 D51, Shoulder Type - Left, and D52, 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").

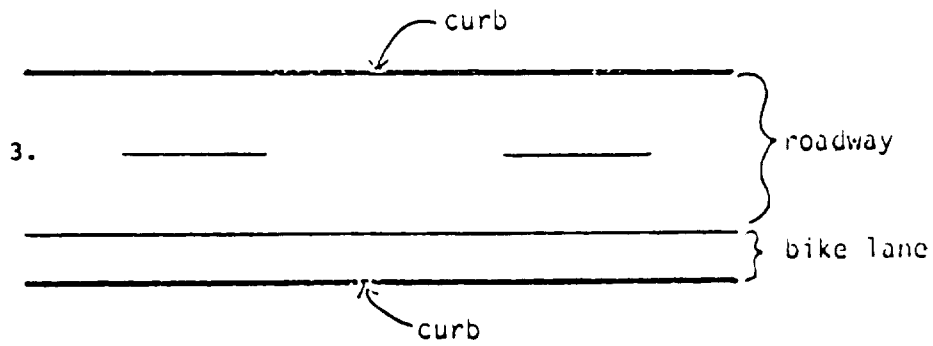
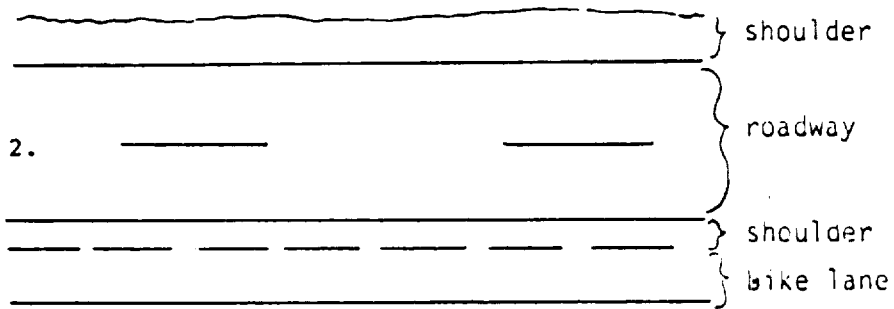
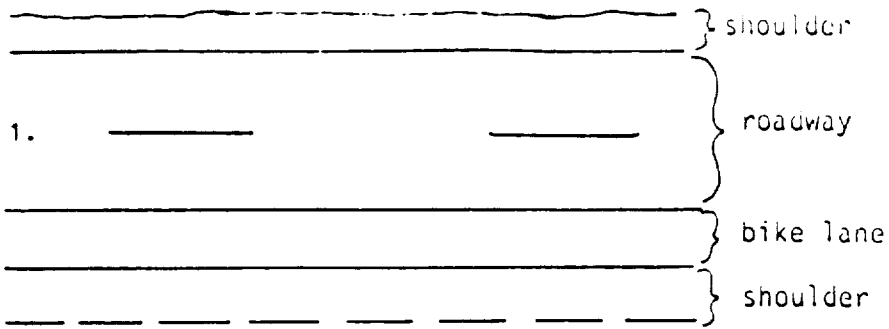
Code "0" (No shoulder) for any private way (ANSI D16.1-1976, section 2.2.2, page 5) that only becomes a NASS roadway because the accident is coded as driveway, alley access related (code "11") on A24, Relation to Junction [see Remarks page (5)].

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.

Pedestrian/bicycle lanes which exist between the roadway and improved shoulder, or outside but contiguous with the improved shoulder should be considered as extra shoulder width (examples 1 and 2 below). Pedestrian/bicycle lanes which exist contiguous with the roadway and bounded on the outside edge (curb, ditch, etc.) should not be considered a shoulder (example 3).



A33  
(3)



Variable Name: Roadway Alignment

Format: 1 column - numeric

Beginning  
Column 55

Element Values:

- 1 Straight
- 2 Curve
- 9 Unknown

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

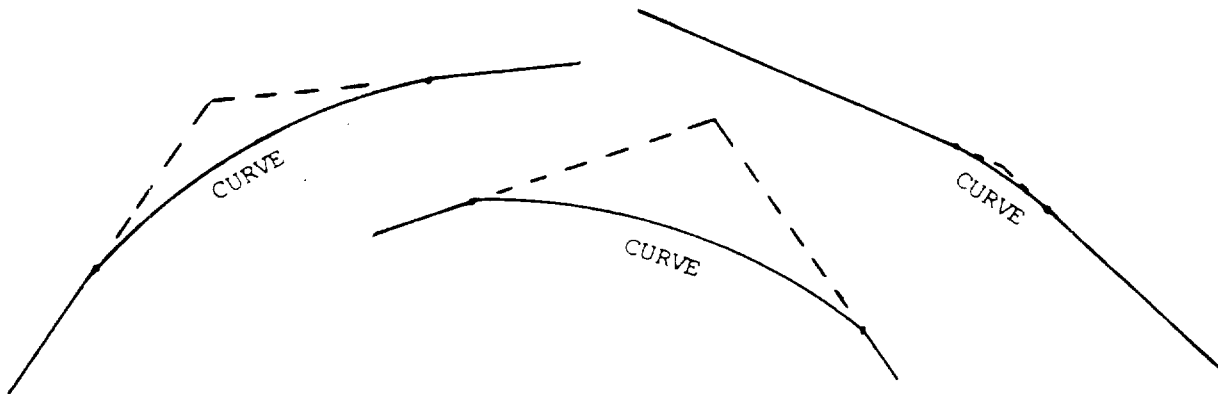
Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A27). 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.

Variable Name: Roadway Profile

Format: 1 column - numeric

Beginning  
Column 56

Element Values:

- 1 Level
- 2 Grade (> 2%)
- 3 Hillcrest
- 4 Sag
- 9 Unknown

Slope  
Measurement: (Please write the resultant  
percentage in this space on  
the driver form.)  
(v=\_\_\_\_)/(h=\_\_\_\_)

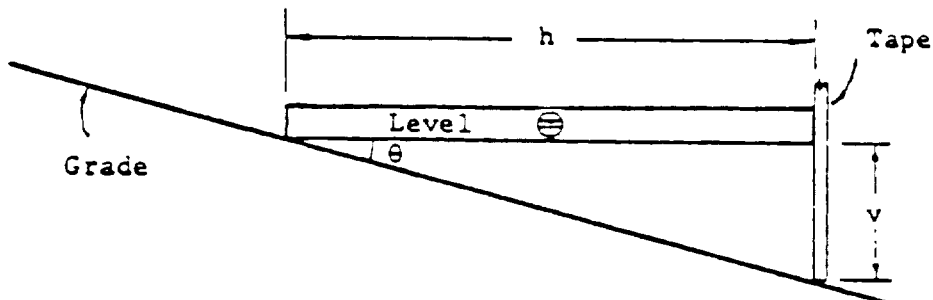
Source: Primary source is scene inspection; secondary sources include the police report and driver interviews.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A27). 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.)

For all scenes inspected, the slope measurement (gradient at first harmful event), horizontal (level) distance and vertical (perpendicular) distance must be taken and recorded in the spaces provided on the CSS form.

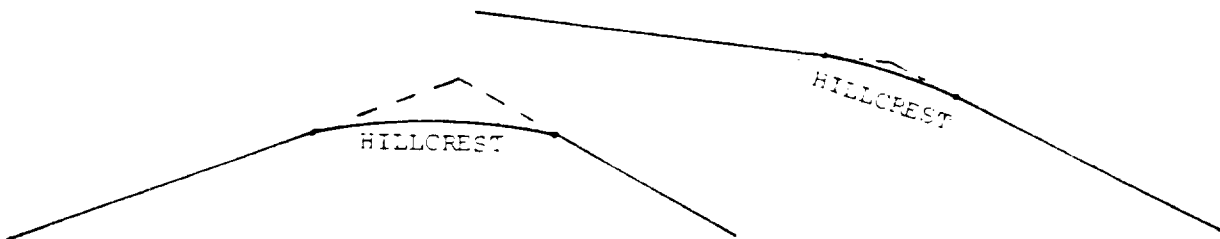


Variable Name: Roadway Profile (cont'd.)

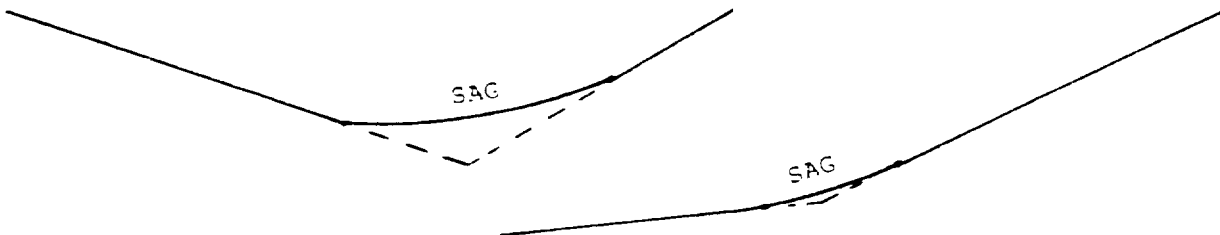
Code "1" (Level) refers to a tangent surface whose gradient is  $<2\%$ .

Code "2" [Grade ( $\geq 2\%$ )] refers to a tangent surface whose gradient is  $\geq 2\%$ .

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 57

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 (A27). 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.)

If the lateral cross section contains lanes of more than one surface type, code the surface type of the lane just beneath the location of the first harmful event. However, if the location is in a junction and the surface type in the junction differs longitudinally from the surface type in the mouth, code the surface type at the mouth.

Variable Name: Roadway Surface Condition

Format: 1 column - numeric

Beginning  
Column 58

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 (A27) 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 Control Device

Format: 2 columns - numeric

Beginning  
Column 59

Element Values:

00 No controls

Not at railroad grade crossing

Highway traffic signals

- 01 Traffic control signal (on colors) without pedestrian signal
- 02 Traffic control signal (on colors) with pedestrian signal
- 03 Traffic control signal (on colors) not known whether or not pedestrian signal
- 04 Flashing traffic control signal
- 05 Flashing beacon
- 06 Flashing highway traffic signal, type unknown or other than traffic control or beacon
- 07 Lane use control signal
- 08 Other highway traffic signal
- 09 Unknown highway traffic signal

Regulatory signs

- 20 Stop sign
- 21 Yield sign
- 28 Other regulatory sign
- 29 Unknown type regulatory sign

School zone signs

- 30 School speed limit sign
- 31 School advance or crossing sign
- 38 Other school related sign
- 39 Unknown type school zone sign

Warning signs

- 40 Warning sign

Miscellaneous controls

- 50 Officer, crossing guard, flagman, etc.

At railroad grade crossing

Active devices

- 60 Gates
- 61 Flashing lights
- 62 Traffic control sign
- 63 Wigwags
- 64 Bells
- 68 Other train activated device
- 69 Active device, type unknown

Passive devices

- 70 Crossbucks
- 71 Stop sign
- 72 Other railroad crossing sign
- 73 Special warning device - watchman, flagged by crew
- 78 Other passive device
- 79 Passive device, type unknown

Miscellaneous controls

- 80 Grade crossing controlled, type unknown

Whether or not at railroad grade crossing

- 98 Other
- 99 Unknown

Variable Name: Traffic Control Device (cont'd.)

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 (A27). 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).

According to ANSI D6.1-1978, section 2A-7, pages 2A-3,4 (Manual on Uniform Traffic Control Devices), signs are classified functionally as follows: Regulator signs give notice of traffic laws or regulations; Warning signs call attention to conditions on, or adjacent to, a highway or street that are potentially hazardous to traffic operations; and Guide signs show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information.

According to ANSI D6.1-1978, section 2A-10, pages 2A-4,5 signs come in standard shapes. The octagon shall be reserved exclusively for the STOP sign. The equilateral triangle, with one point downward, shall be reserved exclusively for the YIELD sign. The round shape shall be used for the advance warning of a railroad crossing and for the civil defense evacuation route marker. The pennant shape, an isosceles triangle, with its longest axis horizontal, shall be used to warn of no passing zones. The diamond shape shall be used only to warn of existing or possible hazards either on the roadway or adjacent thereto. The [vertical] rectangle, ordinarily with the longer dimension vertical, shall be used for regulatory signs, with the exception of STOP signs and YIELD signs. The [horizontal] rectangle, ordinarily with the longer dimension horizontal, shall be used for guide signs, with the exception of certain route markers and recreational area guide signs. The pentagon, point up, shall be used for School Advance and School Crossing signs. Other shapes are reserved for special purposes; for example, the shield or other characteristic design for route markers and cross-buck for railroad crossings.

According to ANSI D6.1-1978, section 2A-11, page 2A-5, signs can be distinguished by their color. The following general rules apply. Red is used as a background color on prohibitory type regulatory signs (e.g., STOP, DO NOT ENTER, WRONG WAY). It is also used as the circular outline and diagonal bar prohibitory symbol. Black may be used as a background (e.g., ONE WAY); it



Variable Name: Traffic Control Device (cont'd.)

is used as a message on white, yellow and orange signs. White is used as the background for route markers, guide signs, and regulatory signs (except STOP). It is used as the legend on brown, green, blue, black, and red signs. Orange is used only as a background color for construction and maintenance signs. Yellow is used as a background color for warning signs and for school signs. Brown, green, and blue are used as a background color for guide signs.

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

Guide signs do not constitute traffic controls.

The investigator should consider the intent of this question. If at the time of the accident there was no intent to control (regulate or warn) 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).

Focus on the road segment at the location of the first harmful event and select the traffic control device(s) which is (are) most related to the accident. If multiple devices are related, select the device of highest (lowest numerically) priority.

For example, if the intersection is channelized 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 (A27, Number of Travel Lanes) was chosen based on its through lanes or its channelized lanes.

The codes are prioritized in decreasing numerical value (i.e., "01" takes precedence over "02", "02 over "03", etc.--see exception associated with code "50"). Codes are grouped generally into those not at a railroad crossing ("01" through "50") and those at a railroad grade crossing ("60" through "80"). This means that highway traffic signals take precedence over regulatory signs, school zone signs, and warning signs. Regulatory signs take precedence over school and warning signs. School signs take precedence over warning signs. Likewise, active (railroad crossing) devices take precedence over passive devices. If a school guard, police officer, or other officially-designated person controls both pedestrian and vehicular traffic, code "50" (Officer, crossing guard, flagman, etc.) should be used. Any officially-designated person (code "50") takes precedence over values "00" through "40".

Codes "60" through "80" should only be used when the first harmful event occurs in the junction of a roadway and a railroad bed [i.e., A24, Relation to Junction, equals "12" (Railroad grade crossing)]. If A24 equals "12", then codes "00" or "60" through "80" should be used. Codes "01" through "50" should be used when the location of the first harmful event occurs anywhere else (i.e., A24 equals "01" through "11" or "13").

Variable Name: Traffic Control Device (cont'd.)

Codes "01", "02", or "03" [Traffic control signal (on colors) ....] is used for any signal which processes through the green, amber, and red cycles. The source of actuation is of no concern. If the amber phase is missing, an on-colors control device should still be coded.

If the signal has green, amber, and red cycle capability but is being used to flash amber/red only, then code "04" (Flashing traffic control signal) is used.

Code "05" (Flashing beacon) is used for any device capable of only flashing amber/red signals.

Code "07" (Lane use control signal) includes turn arrows and controls which govern the direction of traffic flow in the lane (i.e., traffic flows differently depending on time of day).

Code "28" (Other regulatory sign) includes speed limit signs, movement signs (e.g., NO TURN, LEFT TURN ONLY, DO NOT PASS, PASS WITH CARE, KEEP RIGHT, DO NOT ENTER, WRONG WAY, ONE WAY), parking signs (e.g., NO PARKING, EMERGENCY PARKING ONLY), pedestrian signs (e.g., NO HITCH HIKING, NO PEDESTRIANS), and other miscellaneous signs (e.g., STOP HERE ON RED, NO TURN ON RED, ROAD CLOSED TO THRU TRAFFIC, WEIGHT LIMIT ....., TRUCK ROUTE)--see ANSI D6.1-1978, sections 2B-10 through 2B-44, pages 2B-6 through 2B-36.

Codes "30" through "39" (School zone signs) should only be used if the first harmful event occurred 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.) See ANSI D6.1-1978, sections 7B-9 through 7B-13, pages 7B-2 through 7B-6, for examples of school zone signs.

Code "40" (Warning signs) is used for any black on yellow diamond shaped sign. Some black on yellow horizontal rectangular or vertical rectangular (speed advisory) signs are also included. See ANSI D6.1-1978, section 2C-1 through 2C-41, pages 2C-1 through 2C-22 for examples of signs.

Code "60" (Gates) is used if the railroad crossing is guarded by a combination of gates, flashing lights, and bells. See ANSI D6.1-1978, section 8C-2 through 8C-4, pages 8C-1 through 8C-5, for examples of flashing lights with and without gates.

Code "70" (Crossbucks) is coded if no train activated devices are present and a large "X", with the words RAILROAD CROSSING spelled out on the "X", is present--see ANSI D6.1-1978, section 8B-2, pages 8B-1 and 8B-2.

Code "72" (Other railroad crossing sign) includes the railroad advance warning sign (circle with black "X" on yellow background)--see ANSI D6.1-1978, section 8B-3, page 8B-3.

Variable Name: Traffic Control Device (cont'd.)

Code "98" (Other) includes a school bus with flashers activated where vehicles are required to stop.

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) and was related should be coded, unless a temporary control [e.g., stop sign ("20"), police officer ("50"), etc.] has been inserted, in which case the temporary control should be coded.

Variable Name: Traffic Control Device Functioning

Format: 1 column - numeric

Beginning  
Column 61

Element Values:

- 0 No traffic control
- 1 Traffic control not functioning
- 2 Traffic control functioning - functioning improperly
- 3 Traffic control functioning properly
- 9 Unknown

Source: Sources are scene inspection, police report, and driver interviews.

Remarks:

Code "0" (No traffic control) must only be used when A38, Traffic Control Device, is coded "00" (No controls).

Codes "1" (Traffic control not functioning), "2" (Traffic control functioning - functioning improperly), and "3" (Traffic control functioning properly) are used with respect to the traffic control device cited in A38, Traffic Control Device. Code "3" if the device reported was okay; code "1" if the device did not function at all (e.g., signal out). Code "2" is used when the device had some function but the function was improper or inadequate (e.g., signal works but cycles are short, long, or irregular; sign is covered by vegetation reducing line-of-sight). When this code ("2") is used PHOTOGRAPHS are to be taken of the traffic control device. It is a judgment as to whether function was merely improper versus nonexistent. Your decision will be judged on its reasonableness; annotate where necessary.

Code "9" (Unknown) is only used when A38, Traffic Control Device, is coded "99" (Unknown).

Variable Name: Accident Occurrence in School Zone

Format: 1 column - numeric

Beginning  
Column 62

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 (A27). 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 63

Element Values:

Level 2 Range: 15 through 55

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

00 No statutory limit

99 Unknown

Source: Primary sources are the scene inspection or statutory law. Do not use the police report for selecting this variable's value.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A27). 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.

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 A27 (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 "00" (No statutory limit) 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.).

If the first harmful event involves vehicles which have different applicable speed limits (e.g., automobile 55, truck 45) record the higher of the applicable limits.

Variable Name: Restriction of Roadway at Scene

Format: 1 column - numeric

Beginning

Column 65

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 (A43, 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.

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 (A42 and A43) 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 66

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 A42, Restriction of Roadway at Scene; therefore, code "0" for this variable (A43).

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 (A42, 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 A42 (Restriction of Roadway at Scene), while the remaining ones will be coded as "5" for this variable (A43).

If A42, 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 A42, Restriction of Roadway at Scene, and no additional restrictions ("0") coded for this variable.

Variable Name: SS6 - Emergency Medical Service

Format: 1 column - numeric

Beginning  
Column 67

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

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

Code "0" (No) means there are no emergency medical service 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, or not applicable for a particular PSU.

Variable Name: SS7 - Pole

Format: 1 column - numeric

Beginning  
Column 68

Element Values:

Blank - not in effect  
0 No  
1 Yes

Source: Special study procedures.

Remarks:

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

Code "0" (No) means there are no pole 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, or not applicable for a particular PSU.

Variable Name: SS8 - Longitudinal Barrier

Format: 1 column - numeric

Beginning  
Column 69

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

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

Code "0" (No) means there are no longitudinal barrier 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, or not applicable for a particular PSU.

Variable Name: SS9 - Crash Cushion

Format: 1 column - numeric

Beginning  
Column 70

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

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

Code "0" (No) means there are no crash cushion 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, or not applicable for a particular PSU.

Variable Name: SS10 - Pedestrian Typing

Format: 1 column - numeric

Beginning  
Column 71

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

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

Code "0" (No) means there are no pedestrian typing 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, or not applicable for a particular PSU.

Variable Name: SS11 - Honda Civic

Format: .1 column - numeric

Beginning  
Column 72

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

Code "1" (Yes) means that all five acceptability requirements for the Honda Civic special study have been satisfied.

Code "0" (No) means that this special study was not applicable, or acceptability requirements were not met.

"Blank" (not in effect) means that this special study was not active at the time this accident was sampled, or not applicable for a particular PSU.

Variable Name: SS12

Format: 1 column - numeric

Beginning  
Column 73

Element Values:

Blank - not in effect  
0 No  
1 Yes

Source: Special study procedures.

Remarks:

Code "1" (Yes) means that this special study was applicable.

Code "0" (No) means that this special study was not applicable.

"Blank" (not in effect) means that this special study was not active at the time this accident was sampled, or not applicable for a particular PSU.



Variable Name: SS13

Format: 1 column - numeric

Beginning  
Column 74

Element Values:

Blank - not in effect  
0 No  
1 Yes

Source: Special study procedures.

Remarks:

Code "1" (Yes) means that this special study was applicable.

Code "0" (No) means that this special study was not applicable.

"Blank" (not in effect) means that this special study was not active at the time this accident was sampled, or not applicable for a particular PSU.

Variable Name: SS14

Format: 1 column - numeric

Beginning  
Column 75

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

Code "1" (Yes) means that this special study was applicable.

Code "0" (No) means that this special study was not applicable.

"Blank" (not in effect) means that this special study was not active at the time this accident was sampled, or not applicable for a particular PSU.

Variable Name: SS15

Format: 1 column - numeric

Beginning  
Column 76

Element Values:

Blank - not in effect

0 No

1 Yes

Source: Special study procedures.

Remarks:

Code "1" (Yes) means that this special study was applicable.

Code "0" (No) means that this special study was not applicable.

"Blank" (not in effect) means that this special study was not active at the time this accident was sampled, or not applicable for a particular PSU.

Variable Name: Investigator I.D. Number

Format: 1 column - numeric

Beginning  
Column 10

Element Values:

Level 1 Range: 0 through 9

Source: Zone center.

Remarks:

The person who was primarily responsible for the completion of this Pedestrian and Nonmotorist Form shall enter his/her unique number.

Each investigator's unique number is assigned by the PSU's Zone Center.

This variable is a mandatory variable and cannot be changed.

Variable Name: Pedestrian or Nonmotorist's Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Level 1 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 beginning in the enclosed area. Assign numbers last to those persons in or on unenclosed areas.

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 Occupant of an animal related nonmotor vehicle transport device
- 5 Occupant of vehicle not in transport
- 8 Other nonmotorist (specify)
- 9 Unknown

Source: Investigator determined--inputs include the vehicle inspection, interviewee, and the police report.

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.

Code "4" (Occupant of an animal related nonmotor vehicle transport device) 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 in or on 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, occupant of an animal related nonmotor vehicle transport device, or occupant of a motor vehicle not in transport. Annotate in the space provided a description of the nonmotorist type.

Variable Name: Pedestrian or Nonmotorist's Age

Format: 2 columns - numeric

Beginning  
Column 14

Element Values:

Level 1 Range: 00 through 97, 99  
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 pedestrian's or nonmotorist's last birthday.

Variable Name: Pedestrian or 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:

Level 2 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: Pedestrian or Nonmotorist's Weight

Format: 3 columns - numeric

Beginning  
Column 19

Element Values:

Level 2 Range: 005 through 300 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:

Level 1 Range: 00-61, 99  
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 to the nearest month 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 tri-cycles.

Noncyclist ("00") is coded for all pedestrians, occupants of an animal related nonmotor vehicle transport device, occupants of vehicles not in transport, other nonmotorists, and passengers, if present, on a pedalcycle.

Note that 44 days or less equals one month; a month and a half equals two months.

PEDESTRIAN/NONMOTORIST DESCRIPTION OF ACCIDENT SEQUENCE

The interviewee should be allowed to give his/her complete narrative description of the accident sequence, without interruption. A synopsis of this uninterrupted description should be entered into the appropriate space on page 1. If additional space is required, use the back of page 1.

Specific questions should be entered in the space on page 1 or if additional space is needed on the back of page 1 usually prior to the time the interview is conducted. These questions should be asked after the interviewee has given his/her complete narrative. In some cases the interviewee will answer the specific questions during his/her narrative description of the accident.

Specific questions do not include those required, during the interview, to clarify statements made by the interviewee. If an interviewee makes a statement during the interview which is not clear as to its meaning, the interviewee should be queried for a more definitive answer to allow proper coding of the data.

ACCIDENT DIAGRAM

The accident diagram (page 2) should be completed as described by the interviewee. Investigator input (as far as accident dynamics are concerned) should not be used in completing the diagram. It should be drawn as described by the interviewee and the erroneous areas noted. Impact and final rest positions as well as vehicle and pedestrian/nonmotorist orientations should be documented in relation to an identifiable object/point in the environment. Pre-crash, crash, and post-crash headings of the involved vehicles and pedestrian/nonmotorist (when applicable) should also be documented relative to an environmental feature (i.e., road edge) and Magnetic North. Any related factors in the accident (e.g., parked/stopped vehicles) should also be properly placed in the diagram. These data may be needed for the final reconstruction of the accident.

Variable Name: Pedestrian or Nonmotorist's Location

Format: 2 columns - numeric

Beginning  
Column 24

Element Values:

- 01 Intersection related - in crosswalk
- 02 Intersection related - on roadway, not in crosswalk
- 03 Intersection related - on roadway, crosswalk not available
- 04 Intersection related - on roadway, crosswalk availability unknown
- 05 Intersection related - not on roadway
- 09 Intersection related - unknown
- 10 Nonintersection - in crosswalk
- 11 Nonintersection - on roadway, not in crosswalk
- 12 Nonintersection - on roadway, crosswalk not available
- 13 Nonintersection - on roadway, crosswalk availability unknown
- 14 Nonintersection - in parking lane
- 15 Nonintersection - on road shoulder
- 16 Nonintersection - bike path
- 17 Nonintersection - outside trafficway
- 18 Nonintersection - other, not on roadway
- 19 Nonintersection - unknown
- 99 Unknown

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

Remarks:

Select the value which best represents the location of the pedestrian or nonmotorist at the time of impact.

To code "intersection related" ("01" through "05", and "09") the pedestrian or nonmotorist must have been struck in the area formed by the junction of two or more trafficways. If the pedestrian was struck in the intersection (of the roadways), or in the crosswalks, sidewalks, or islands within the junction of the trafficways, use these codes.

A crosswalk is defined as a marked area (generally delineated by solid white lines) used by pedestrians when crossing a roadway. The crossing area must be marked (delineated) to be classified as a crosswalk for the purpose of this variable.

The remaining codes ("10" through "19") are applicable to accidents occurring in a nonintersection area, (i.e., not within the junction of two or more trafficways).

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

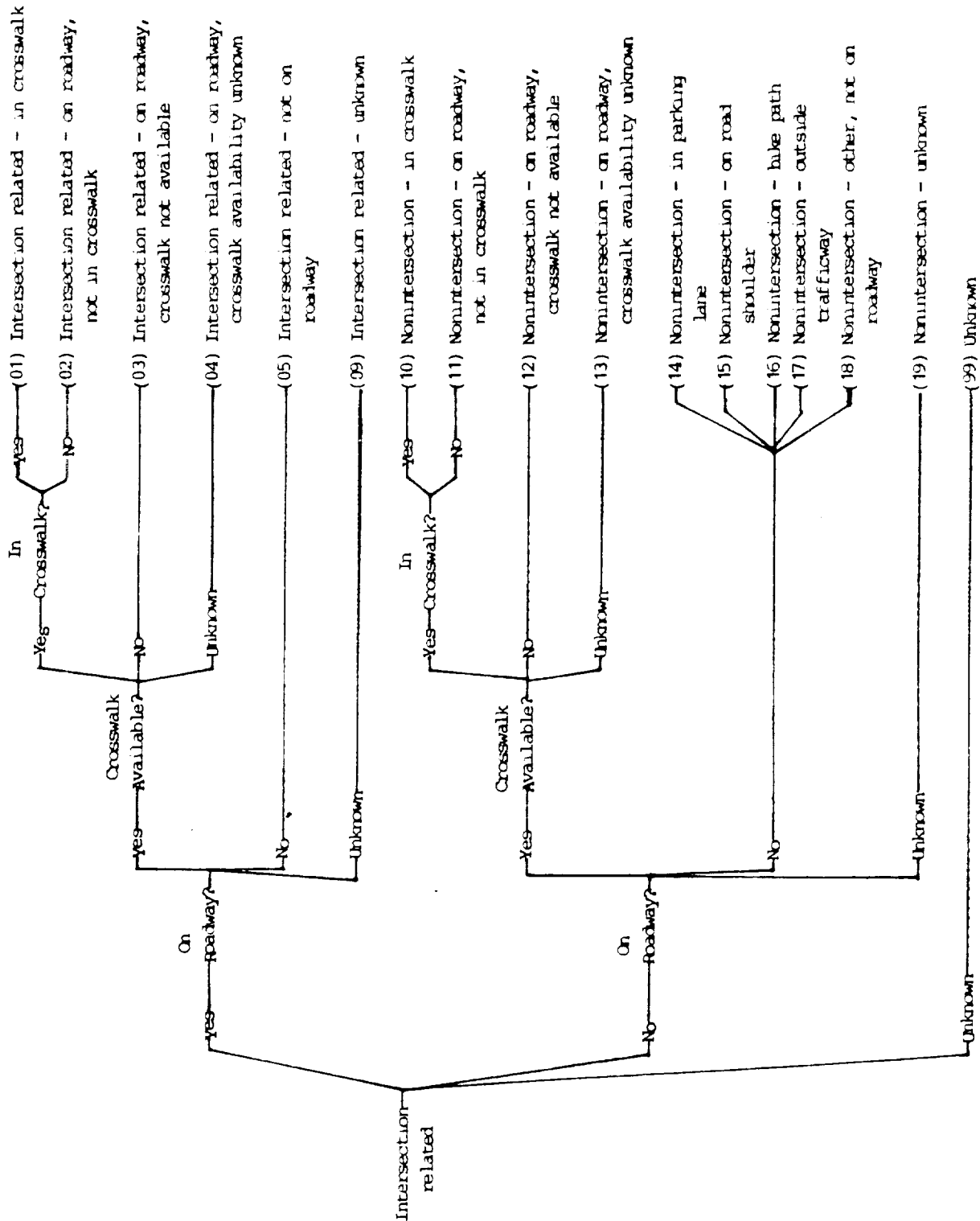
Variable Name: Pedestrian or Nonmotorist's Location (cont'd.)

Code "16" (Nonintersection - bike path) refers to any officially designated path or lane (on or off the road but not within the junction of two or more trafficways) 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). For the purpose of this variable, all bike paths, if marked, are considered off roadway.

Code "18" (Nonintersection - other, not on roadway) should be used whenever the pedestrian or nonmotorist is struck on the "roadside," (i.e., within the trafficway but not on the "road" and not within the junction of two or more trafficways).

Variable Name: Pedestrian or Nonmotorist's Location (cont'd.)

The following coding decision tree should be used to facilitate the proper coding of this variable. Items not previously defined in this manual follow the diagram.



PEDESTRIAN & NONMOTORIST FORM

P15 - P19

These variables are left blank so that numbering consistency can be maintained with compatible variables on the Occupant Data Form.



Variable Name: Treatment - Mortality

Format: 1 column - numeric

Beginning  
Column 26

Element Values:

- 1 Fatal
- 2 Fatal - ruled disease  
Nonfatal
- 3 Hospitalization
- 4 Transported and released
- 5 Treatment - other (specify)
- 6 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" (Fatal - ruled disease) is used in two situations. The first is when the effects of a disease can be deemed as a cause of the accident. Cause means that the on-set of the disease occurred prior to the first harmful event. When determining the time of on-set (relative to the first harmful event), the investigator can use any information source available. The investigator makes his/her determination after weighing all the evidence. (NOTE: The use of all available information sources is restricted to the determination of when the on-set occurred.) Additionally, code "2" (Fatal - ruled disease) is used when a medical examiner (or other official vested by the state to verify the cause of death) or an official medical report verifies that the death resulted from either (1) a diseased condition, or (2) not from accident related injuries.

Code "3" (Hospitalization) when hospitalization occurs as a result of injury (need not be taken directly to a hospital). See Hospital Stay (P21) for hospitalization criteria.

Code "4" (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 "5" (Treatment - other) includes doctor treatment, treatment at scene, first aid, self-treatment, hospital (if other than directly from scene but treated and released), etc.

Variable Name: Treatment - Mortality (cont'd.)

Code "6" (No treatment) includes persons transported to a hospital but who refuse treatment. As long as there was transportation directly from the scene, a refusal of treatment will not, on its own, affect the Final Stratification (A08) of the case.

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 "4" or "5", 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:

Level 1 Range: 00-61, 99

00 Not hospitalized

Code number of days hospitalized up to 60

61 61 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:

Level 1 Range: 00-62, 99

00 No working days lost

Code number of days for which work was lost up through 60

61 61 days or more

62 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 (except fatals) who do not qualify to lose working days.

If a person is fatal - ruled disease, fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room, then code "62" (Fatally injured) is used.

If a person expires within thirty days following the accident, code "62" regardless of whether or not the person missed any working days.

PEDESTRIAN & NONMOTORIST FORM

P22

(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 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, unless the person is fatally injured [codes "1" (Fatal) or "2" (Fatal - ruled disease) for P20, Treatment - Mortality].

### Injury Data From Interviewer

This page is separated into four body diagrams: front and back soft tissue injuries and front and back skeletal injuries. These diagrams allow the documentation of all injuries sustained by a pedestrian or nonmotorist in the accident, as stated by the interviewee.

The nature, location, and injury source should be documented as follows:

- Nature - As stated by the interviewee document the lesion sustained (e.g., laceration, fracture, concussion, etc.). The terms used by the interviewee may not necessarily coincide with the terms found in the OIC, but the injury should be documented as stated by the interviewee for ease of completion of this form during the interview. Length of unconsciousness, or state of consciousness on first observation by a medical specialist, and whether unconsciousness was a result of a head contact, should be noted.
- Location - The location of the injury, as stated by the interviewee, should be documented in two ways:
- By arrows, shading, bracketing (for large areas) on the body diagram; or
  - By written description (e.g., left lower arm, right third rib, etc.). The written description may be abbreviated to aid in completion of the page during the interview. Refer to the Injury Coding Manual for standard abbreviations and symbols.
- Source - The interviewee should be queried as to the source of the injury. This information gained from the interviewee may aid in the final coding of injury source in variables P33, P40, P47, P54, P61 and P68 and in the vehicle inspection (if not done previous to interview), and accident reconstruction. The injury source should be written immediately below the nature and written location of the injury and delineated by a horizontal line. If the interviewee does not know the source of the injury, unknown should be documented on the form.

PEDESTRIAN & NONMOTORIST FORM

P23 - P26

These variables are left blank so that numbering consistency can be maintained with compatible variables on the Occupant Data Form.

Variable Name: Relation of Interviewee to Pedestrian or Nonmotorist

Format: 1 column - numeric

Beginning  
Column 31

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 "2"- "6"), 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.



Official Injury Data  
Specific Medical Record Data Used in Coding OIC/AIS

The official injury data page contains the four body diagrams previously seen on page 3 (Injury Data from Interviewee). The same guidelines should be used to document the nature and the locations of all injuries, but medical records will be used as the only source of information. At times, the medical records will also aid in the determination of source of injuries (e.g., glass in wound) and should be documented on this page as stated in the description of source of injury for page 3.

On the official injury data page the injuries should be clearly and precisely located on the diagrams and the medical record classification of the injury and its extent should be completely annotated. All data used to code the OIC/AIS of injuries [e.g., size of lacerations, level of consciousness on first observation by a medical authority, length of unconsciousness, loss of consciousness, size of hematoma or hemothroax (in cc of blood), etc.], should be written with the diagram or, if the description is too long, written on the additional medical record data used in coding OIC/AIS (reverse of page 5).

### NASS Injury Coding Conventions

1. 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
2. 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
3. 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, \_\_CJ-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 unknown system/organ
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. 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
6. 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 below). Aspect code W (whole region) is used only if 50% or more of the body region is affected. 50% rule
7. If a lesion involves more than one aspect of a body region:
  - a. Try to determine if one of the aspects is predominant. If so, code that aspect.
  - b. If not, use the aspect code W (whole).Aspect Whole (W) Code
8. Burn injuries should be coded using the following guidelines:
  - a. If only one body region is burned, use that body region code (e.g., ARB1-1, burned right upper arm 1\*).
  - b. 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\*).
  - c. 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.
  - d. The Rule of Nines is used in the AIS severity level for (a), (b), and (c) above. See the Rule of Nines diagram.Burn Injuries and the rule of nines
9. The following definitions have been used traditionally to differentiate "sprain" and "strain" injuries:  

sprain - a joint injury which causes pain and disability depending on the degree of injury to ligaments and muscle tendons near the joint.

Strain versus sprain

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, use \_\_ SJ for sprains and \_\_ TM-1 for strains.

Neck injuries may sometimes be described as "sprains" and sometimes as "strains". For NASS purposes, neck injuries should be coded as "strains" (see above definitions).

No sprains to neck

10. Integumentary lesions to the forehead are coded "face superior", or FS\_\_ - \_\_ in the NASS Injury Coding Manual. Fractures to the frontal bone are coded Head Anterior (HAFS-\_\_).  
Coding the forehead
11. Coding of substantiated anatomic lesions to the brain:  
Anatomic Brain Lesions
  - a. If there are no substantiated anatomic lesions to the brain, the OIC and AIS will be coded as they appear in the Non-Anatomic Injuries section (see HEAD, Part C, Non-Anatomic Injuries).
  - b. 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 injury as it is specified in the "Anatomic Injuries" section (see HEAD, Part B, Anatomic Injuries). The AIS assigned will be determined by comparing: (1) the AIS which accompanies the specified injury in the "Anatomic Injuries" section, with (2) the AIS of the comparable injury in the "Non-Anatomic Injuries" section. The higher of the two AIS scores will be the one coded.
  - c. If there are two or more substantiated anatomic lesions to the brain, the OIC and the AIS will be coded as they appear in the "Anatomic Injuries" section.
12. "Friction Burns" are to be coded as abrasions. The same criteria for assigning AIS applies (see definitions of abrasion - major and superficial, in the Glossary). If there is information as to the degree (e.g., 1°, 2° or 3°) code: AIS = 1 for 1°, 2° or unspecified, AIS = 2 for 3°. Friction Burns
13. When an injury is described as a "\_\_\_\_\_ type of laceration" (e.g., avulsion type laceration, flap laceration) use the "L" (laceration) lesion code. For all ambiguous situations use "laceration" over puncture, perforation, or avulsion. Laceration Type Injuries
14. A single compression fracture of the spine involving > 1 vertebra and overlapping adjacent regions of the spine is to be coded as one injury (i.e., one line of code). Choose the more superior of the two regions for the aspect code. Compression Fractures
15. For axilla (armpit) injuries code the Body Region for whatever can be determined to be nearest; A (arm), C (chest) or I (between S (shoulder)). If unknown or unspecified use A (arm). Axilla Injuries
16. When "closed head injury," "head trauma," or other ambiguous phrase is the only information available, code HUUU-7. Closed Head Injury

- |  |                               |
|--|-------------------------------|
| <p>17. The AIS codes individual injuries only. Injuries to body parts which are present on both sides of the body (bilateral) are coded as two separate injuries. It should be remembered that within the OIC "Aspect" measures <u>the location of the injury</u> being reported. Therefore, bilateral is not used to code the occurrence of hemo- or pneumothorax (results) present bilaterally. Instead, an upgraded AIS will account for the presence of bilateral results.</p>   | <p>Bilateral Not<br/>Used</p> |
| <p>18. The distinction in coding individual skull fractures versus subsuming them under the crush classification lies in the displacement of brain tissue. If it can be determined that brain matter is forcibly extracted or moved from the cranium in conjunction with extensive fracturing, then the term "crushed skull" is applicable. Lack of specificity regarding the displacement of brain tissue tells the coder not to use the crush code and to code the fracturing as individual injuries. An HUUU-7 may be added if brain injuries are present but not specifically described.</p> | <p>Crushed Skull</p>          |
| <p>19. In the absence of other medical information, code broken neck as cervical spine, fracture, unspecified (NPPS-2).</p>  | <p>Broken Neck</p>            |

## NASS Injury Coding Procedures

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 rule concerning known injury sources below. Maximize ISS with-  
in that source
  - d. If you cannot increase the number of different ISS body regions or if you can choose between two or more injuries of the same source and AIS severity any of which constitute the 3rd ISS region, then choose the injury that has a known injury source. Maximize by  
contact points
  - e. 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 (e.g., no injuries requires one row). In the additional row "not injured" will be coded for all variables including AIS severity. If < 6 rows, close  
out next row with  
zeros
2. 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
3. Try to associate contact points with individual injuries. List individual injured areas (i.e., body regions) 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
4. 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
5. Pain, asphyxia, and hemorrhage represent results of injuries and are not injuries, per se; therefore, they 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
6. 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
7. Definitions and procedures for the NASS for coding injury source for direct, induced, and noncontact injuries are:  
  
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. Injury Sources

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 initiates 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 code ("90") is to be used only for the following specific types of Injuries:

Non-contact Injury Sources

- (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.

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

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
<b>Example 1</b>		
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
	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
<b>Example 2</b>		
Hip dislocation P.DJ-3	Knee strikes dash, forces transmitted along femur forcing femoral head out of the acetabulum	(05) Instrument panel

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
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 BTM-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

8. 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 O28 et al. (1st O.I.C. - Body Region).
- a. No interview; no medical; PAR injury severity rating: "K", "A", "B", or "C"; code: "injured, severity unknown"—9UUUU79709.
  - b. No interview; no medical; PAR injury severity rating: "U"; code: "unknown if injured"—9999999999.
  - c. No interview; no medical; PAR injury severity rating: "O"; code: "not injured"—0000000000.
  - d. No interview; no medical; PAR injury severity rating: "C", in addition "laceration to forehead" is reported; code: 6FSLI1 \_\_ 09.
  - e. No interview; no medical; no PAR mention of injury; hit & run vehicle/driver reported; code: "unknown if injured"—9999999999.
9. If the PAR is "blank" where the injury severity is assessed 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.
10. NASS does not code possible injuries, but injuries whose existence is considered to be probable are coded. If the words "possible" or "probable" are used, code accordingly (i.e., code the probable injuries only). If it is difficult to determine if an injury is probable or possible (i.e., use of other indistinct language such as "suspected," "appears to be," etc.), judge whether "possible" or "probable" based on the specific situation.

Coding PAR injury data

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

Code "Probable" Injuries

PEDESTRIAN & NONMOTORIST FORM

P28  
P35  
P42  
P49  
P56  
P63

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:

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

Source: Variables P34, P41, P48, P55, P62, and P69 respectively.

Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, 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.



P28  
 P35  
 P42  
 P49  
 P56  
 P63  
 (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:	$\frac{U}{32}$	$\frac{U}{33}$	$\frac{U}{34}$	$\frac{U}{35}$	$\frac{7}{36}$	$\frac{9}{37}$	$\frac{7}{38}$	$\frac{0 \text{ or } 9}{39}$	$\frac{1,2,3,4,5,6,7,8 \text{ or } 9}{40}$	
	$\frac{0}{41}$	$\frac{0}{42}$	$\frac{0}{43}$	$\frac{0}{44}$	$\frac{0}{45}$	$\frac{0}{46}$	$\frac{0}{47}$	$\frac{0}{48}$	$\frac{0}{49}$	
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 and 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.

PEDESTRIAN & NONMOTORIST FORM

P29  
P36  
P43  
P50  
P57  
P64

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:

A Anterior - front	P Posterior - back
* B Bilateral	R Right
C Central	S Superior - upper
I Inferior - lower	W Whole region
U Injured, unknown aspect	Ø Not injured
L Left	9 Unknown if injured

Source: Variables P34, P41, P48, P55, P62, and P69 respectively.

Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, the aspect of the injury and record it on the form.

\* Bilateral (B) is not to be used in coding Aspect of Injury in 1983.

PEDESTRIAN & NONMOTORIST FORM

P30  
P37  
P44  
P51  
P58  
P65

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	U Injured, unknown lesion
M Amputation	L Laceration
V Avulsion	O Other
B Burn	P Perforation, puncture
K Concussion	R Rupture
C Contusion	S Sprain
N Crushing	T Strain
G Detachment, separation	E Total severence
D Dislocation	Ø Not injured
F Fracture	9 Unknown if injured
Z Fracture and dislocation	

Source: Variables P34, P41, P48, P55, P62, and P69 respectively.

Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, its lesion and record it on the form.

P31  
P38  
P45  
P52  
P59  
P66

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:

W All systems in region	M Muscles
A Arteries - veins	N Nervous system
B Brain	P Pulmonary - lungs
D Digestive	R Respiratory
E Ears	S Skeletal
O Eye	C Spinal cord
H Heart	Q Spleen
U Injured, unknown system	T Thyroid, other endocrine gland
I Integumentary	G Urogenital
J Joints	V Vertebrae
K Kidneys	Ø Not injured
L Liver	9 Unknown if injured

Source: Variables P34, P41, P48, P55, P62, and P69 respectively.

Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, its system/organ and record it on the form.

PEDESTRIAN & NONMOTORIST FORM

P32  
P39  
P46  
P53  
P60  
P67

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: Variables P34, P41, P48, P55, P62, and P69 respectively.

Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, its A.I.S. value and record it on the form.

PEDESTRIAN & NONMOTORIST FORM

P33  
P40  
P47  
P54  
P61  
P68

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
- 06 Sunvisor
- \*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

P33  
P40  
P47  
P54  
P61  
P68  
(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

45 Backlight (rear window)  
46 Backlight storage rack, door, etc.  
\*49 Other rear objects

#### Exterior of Nonmotorist's Vehicle

51 Hood  
52 Outside hardware (e.g., outside mirror, antenna)  
\*53 Other exterior surface or tires  
59 Unknown exterior objects

#### Cycle

61 Handle bars or attachments  
62 Frame or suspension component or fender  
63 Seat  
64 Foot pedal, foot rest, foot pegs  
65 Wheel or tire  
66 Engine or transmission  
67 Gas tank, gas tank filling cap or neck  
\*69 Other cycle part

#### 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 Tires and wheels  
\*83 Other exterior of other motor vehicle  
84 Unknown exterior of other motor vehicle

P33  
 P40  
 P47  
 P54  
 P61  
 P68  
 (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.)

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

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 and 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 "5"), attach page 7 of a Vehicle Form to the Pedestrian and Nonmotorist Form and document any potential contact points.

The element values encoded can be based on physical evidence, occupant kinematics, and interviewee information. Although physical evidence is preferred, it does not have to be present to support a contact mechanism.

If a parked (not in transport) vehicle is impacted by an occupant of a vehicle in transport, use the "87" (other vehicle or object) code.

\*NOTE: Whenever an "other" code (i.e., "09", "15", "19", "29", "49", "53", "69", "73", "79", "83", or "87") is coded as injury source, clearly identify, in the space provided at the top of page 8 of the form, each description by value and injury number.



PEDESTRIAN & NONMOTORIST FORM

P34  
P41  
P48  
P55  
P62  
P69

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. A non-invasive external examination by a physician, though, should be coded either "02" (Hospital medical records other than emergency room) or "04" (Private physician) since it is generally a superficial listing of external injuries and possible internal injuries; therefore, injuries from this source should not be grouped with those from a thorough autopsy report.

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 was also listed on a facility's associated emergency room records, then the "02" code takes precedence. 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. However, this code includes non-invasive (external) examinations conducted by a physician or medical examiner on a deceased victim and documented as a hospital record.

P34  
 P41  
 P48  
 P55  
 P62  
 P69  
 (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). Also included in this code are non-invasive (external) examinations conducted by a private physician or similarly qualified life scientist on a deceased victim and documented as other than a hospital record (e.g., coroner's report).

In summary, examinations of deceased persons are distinguished first by qualifications of examiner [official (codes "01", "02", and "04") versus unofficial (code "05")], second by the type of examination [autopsy (code "01") versus non-invasive (codes "02" or "04)], and third by type of examination record [hospital (code "02") versus other than hospital (code "04")].

Code "05" (Lay coroner report) is used if the injury data is contained in a report where a non-invasive 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 P27.

PEDESTRIAN & NONMOTORIST FORM

P34  
P41  
P48  
P55  
P62  
P69  
(3)

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 "08" (Other) is used when data are obtained from an unofficial source different from those explicitly listed above (e.g., chiropractors).

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 and 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 No injury (O)
- 1 Possible injury (C)
- 2 Nonincapacitating injury (B)
- 3 Incapacitating injury (A)
- 4 Killed (K)
- 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-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.

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).

PEDESTRIAN & NONMOTORIST FORM

P70  
(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	O - 0
	blank = Occupant not present	- 9
Colorado*	5 = Fatal	K - 4
	4 = Evident - incapacitating	A - 3
	3 = Evident - nonincapacitating	B - 2
	2 = Possible injury	C - 1
	1 = No injury	O - 0

\*There is a box at the top of the PAR indicating number of persons injured. If this box is marked 0 and the injury code is left "blank", assume "No injury". If the box is marked 1 (or more) pertaining to the vehicle occupants in question and the injury code is "blank", assume "Injured, severity unknown". If "blanks" are present in both the persons injured box and the injury code box, assume "Unknown".

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
		- 9

Variable Name: Injury Severity (Police Rating) (cont'd.)

State	PAR Code/Definition			NASS Scheme/Code	
Indiana	Nature of Most Severe Injury	Location of Most Severe Injury	Victim's Injury Status		
	1-11 Any Entry	1-12 Any Entry	6 Dead	K - 4	
	1-11 Any Entry	1-12 Any Entry	2 Semiconscious 3 Incoherent 4 Unconscious	A - 3	
	1 Severed 2 Internal 4 Severe Burn 7 Severe Bleed (Arterial) 8 Fracture/dislocation	1-12 Any Entry	1 Conscious 5 Shock 7 Refused Med	A - 3	
	3 Minor Burn 6 Minor Bleed 10 Complaint of Pain 11 None Visible	3 Eye	1 Conscious 5 Shock 7 Refused Med	A - 3	
	3 Minor Burn 6 Minor Bleed	1-2, 4-12 (Any EXCEPT Eye)	1 Conscious 5 Shock 7 Refused Med	B - 2	
	5 Abrasion 9 Contusion/Bruise	1-12 Any Entry	1 Conscious 5 Shock 7 Refused Med	B - 2	
	10 Complaint of Pain 11 None Visible	1-2, 4-12 (Any EXCEPT Eye)	1 Conscious 5 Shock 7 Refused Med	C - 1	
	11 None Visible	Blank or Slashed	1 Conscious	O - 0	
	Blank or Slashed	Blank or Slashed	Blank or Slashed	O - 0	
	Unknown	Unknown	Unknown	U - 9	
	Iowa	1 = Fatal			K - 4
		2 = Major (incapacitating)			A - 3
3 = Minor (bruises and abrasions)			B - 2		
4 = Possible (complaint of pain)			C - 1		
Ø = Unknown			U - 9		
Blank = No documentation of driver or occupants on back of PAR			O - 0		
Louisiana	1 = Fatal			K - 4	
	2 = Severe			A - 3	
	3 = Noticeable			B - 2	
	4 = Complaint of pain or momentary unconsciousness			C - 1	
	5 = None			O = 0	

PEDESTRIAN & NONMOTORIST FORM

P70  
(4)

Variable Name: Injury Severity (Police Rating) (cont'd.)

State	PAR Code/Definition	NASS Scheme/Code		
Maryland	5 = Fatal	K - 4		
	4 = Incapacitating	A - 3		
	3 = Nonincapacitating	B - 2		
	2 = Possible injury	C - 1		
	1 = No injury/Damage only	O = 0		
	Blank = No documentation of driver or occupants on front of PAR			
Massachusetts	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 front of PAR	O - 0		
	= No set unknown code	- 9		
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 blank = Occupant not present	O - 0 - 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	A - 3
	Any entry	complaint of pain	Complaint of pain	
	Eye	burn, bleeding, complaint of pain	Moderate injury	A - 3
	Any entry	bleeding, contusion, bruise, abrasion	Complaint of pain	
	Any entry (except eye)	complaint of pain	Moderate injury	B - 2
	-	-	Complaint of pain	C - 1
	U	U	-	O - 0
		U	- 9	

Variable Name: Injury Severity (Police Rating) (cont'd.)

State	PAR Code/Definition			NASS Scheme/Code
New York	Location of Injury	Type of Complaint	Victim's Status	K - 4
	Any entry	Any entry	Apparent death	
	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
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			
Rhode Island	1 = Fatal injury at scene			K - 4
	2 = Visible signs of injury - bleeding or broken bones			A - 3
	3 = Other visible injury - bruises or abrasions			B - 2
	4 = No visible injury, but complaints of pain			C - 1
	Blank = No injury			O - 0



## PEDESTRIAN &amp; NONMOTORIST FORM

P70

(6)

Variable Name: Injury Severity (Police Rating) (cont'd.)

<u>State</u>	<u>PAR Code/Definition</u>	<u>NASS Scheme/Code</u>
Tennessee	4 = Dead at time of report	K - 4
	3 = Bleeding wound, distorted member	A - 3
	2 = Bruises, abrasions, swelling, limping, etc.	B - 2
	1 = Complaint of pain, no visible injury	C - 1
	Blank = No documentation of driver or occupants on front of PAR or on supplement	O - 0
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	

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: Police Reported Alcohol Presence

Format: 1 column - numeric

Beginning  
Column 88

Element Values:

- 0 No (alcohol not present)
- 1 Yes (alcohol present)
- 8 Not reported
- 9 Unknown

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 present in this pedestrian or nonmotorist in this accident. If the police report explicitly states or implies that alcohol was present or used by this pedestrian or nonmotorist prior to the accident, then code "1" [Yes (alcohol present)]. If there is no specific variable alcohol presence, see if it is addressed in the narrative description of the accident.

The phrase "present in this pedestrian or nonmotorist" means that this pedestrian or nonmotorist had consumed an alcoholic beverage. Presence is not an indication that alcohol was in any way a cause of the accident, even though it may have been. Finding opened or unopened alcoholic beverage with this pedestrian or nonmotorist does not by itself constitute presence.

In summary, if the police indicate alcohol presence in the pedestrian or nonmotorist via a specific data element on the police report form and/or if the police charges the pedestrian or nonmotorist with DWI or DUIL and/or if the police mention in the narrative section of the report that the pedestrian or nonmotorist had been drinking (or alcohol was present or involved) and/or the police report has a positive BAC test result (BAC > .00), then code "1" [Yes (alcohol present)].

Code "0" [No (alcohol not present)] if the investigating officer's assessment (as reported on the police report) is that no alcohol was present in this pedestrian or nonmotorist. If there is a specific location on the police report for assessment of alcohol presence but the investigating officer fails to make either a positive or negative assessment of alcohol presence, then code "8" (Not reported).

If the PAR has a block which is labeled "Alcohol/Drugs", then use any other information on the PAR to determine what was present, alcohol or some other type of drug. If no other information is available, then code "9" (Unknown) should be used.

Code "9" (Unknown) if the alcohol presence is unknown. In general police reports have blocks to check either positive or negative alcohol presence, hence one of the codes "0", "1", or "8" is the appropriate response. But if a police report has provision for the investigating officer to respond "unknown alcohol presence," then code "9" (Unknown).

Variable Name: Alcohol Test Result

Format: 2 columns - numeric

Beginning  
Column 89

Element Values:

Level 2 Range: 00 through 25

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, code "97" (AC test performed, results unknown) 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: Time of Death

Format: 2 columns - numeric

Beginning  
Column 91

Element Values:

Level 1 Range: 00 through 24, 31 through 60, 96, 99

00 Not fatal

96 Fatal - ruled disease

99 Unknown

Source: Police report, hospital/medical records, autopsy report, or other official records for actual time of death for fatally injured pedestrians or nonmotorists.

Remarks:

Code "00" should identify (from any source) all pedestrians or nonmotorists who are not fatally injured (i.e., death does not occur, or does not occur within thirty days of the accident).

All pedestrians or nonmotorists who die within thirty days of the accident should have their time-of-death recorded unless their death meets the criteria of the Fatal - ruled disease code "96."

Code "96" (Fatal - ruled disease) is used in two situations. The first is when the effects of a disease can be deemed as a cause of the accident. Cause means that the on-set of the disease occurred prior to the first harmful event. When determining the time of on-set (relative to the first harmful event), the investigator can use any information source available. The investigator makes his/her determination after weighing all the evidence. (NOTE: The use of all available information sources is restricted to the determination of when the on-set occurred.) Additionally, code "96" (Fatal - ruled disease) is used when a medical examiner (or other official vested by the state to verify the cause of death) or an official medical report verifies that the death resulted from either (1) a diseased condition, or (2) not from accident related injuries.

Code "01" should identify pedestrians or nonmotorists who die within (less than) one and a half hours of the time of the accident.

Variable Name: Time of Death (con't)

Codes "02" through "24" should identify pedestrians or nonmotorists who die in the period of time between one and a half hours from the time of the accident to twenty-four hours after the accident. The variable should be coded to the nearest hour except for code "24" which is used only for the period between twenty-three and a half hours after the accident and twenty-four hours after the accident.

Codes "31" through "60" should identify pedestrians or nonmotorists who die in the period of time between greater than twenty-four hours after the accident (24 hours and one minute is coded as "31" while 24 hours is coded as "24") and thirty days after the accident. (NOTE: One day = "31", two days = "32", ..., twenty-nine days = "59", and thirty days = "60".) The number of days should be rounded off to the nearest whole day except for code "60" which is used for the period between twenty-nine days and twelve hours and thirty days after the accident.

The exact time period which applies to each code is shown in the table below.

Variable Name: Time of Death (cont'd.)

Code	Time period in hours
01	0 - < 1 1/2
02	1 1/2 - < 2 1/2
03	2 1/2 - < 3 1/2
04	3 1/2 - < 4 1/2
05	4 1/2 - < 5 1/2
06	5 1/2 - < 6 1/2
07	6 1/2 - < 7 1/2
08	7 1/2 - < 8 1/2
09	8 1/2 - < 9 1/2
10	9 1/2 - < 10 1/2
11	10 1/2 - < 11 1/2
12	11 1/2 - < 12 1/2
13	12 1/2 - < 13 1/2
14	13 1/2 - < 14 1/2
15	14 1/2 - < 15 1/2
16	15 1/2 - < 16 1/2
17	16 1/2 - < 17 1/2
18	17 1/2 - < 18 1/2
19	18 1/2 - < 19 1/2
20	19 1/2 - < 20 1/2
21	20 1/2 - < 21 1/2
22	21 1/2 - < 22 1/2
23	22 1/2 - < 23 1/2
24	23 1/2 - 24

Code	Time period in days
31	> 1 - < 1 1/2
32	1 1/2 - < 2 1/2
33	2 1/2 - < 3 1/2
34	3 1/2 - < 4 1/2
35	4 1/2 - < 5 1/2
36	5 1/2 - < 6 1/2
37	6 1/2 - < 7 1/2
38	7 1/2 - < 8 1/2
39	8 1/2 - < 9 1/2
40	9 1/2 - < 10 1/2
41	10 1/2 - < 11 1/2
42	11 1/2 - < 12 1/2
43	12 1/2 - < 13 1/2
44	13 1/2 - < 14 1/2
45	14 1/2 - < 15 1/2
46	15 1/2 - < 16 1/2
47	16 1/2 - < 17 1/2
48	17 1/2 - < 18 1/2
49	18 1/2 - < 19 1/2
50	19 1/2 - < 20 1/2
51	20 1/2 - < 21 1/2
52	21 1/2 - < 22 1/2
53	22 1/2 - < 23 1/2
54	23 1/2 - < 24 1/2
55	24 1/2 - < 25 1/2
56	25 1/2 - < 26 1/2
57	26 1/2 - < 27 1/2
58	27 1/2 - < 28 1/2
59	28 1/2 - < 29 1/2
60	29 1/2 - 30

P75  
P76  
P77

Variable Name: 1st - Other Pedestrian/Nonmotorist Related Factors  
2nd - Other Pedestrian/Nonmotorist Related Factors  
3rd - Other Pedestrian/Nonmotorist Related Factors

Format: 2 columns - numeric

Beginning  
Column 93  
95  
97

Element Values:

00 No other pedestrian/nonmotorist related factors

Physical/Mental Condition

01 Non-physical (i.e., mental or emotional factor)

Physical Impairments

02 Blind  
03 Restricted sight  
04 Walking cane/crutches required  
05 Deaf  
06 Restricted to wheelchair  
07 Paraplegic  
08 Previous injury  
09 Other physical impairments (specify)

Drug Impairments

10 Drugs-medication (prescription, over-the-counter)  
11 Other drugs (excludes alcohol, includes uncontrolled substances)[specify]

Operator Related Factors

Pedalcyclist Related (Includes Animal Related)

20 Inattention  
21 Interference with operator by other passenger  
22 Operator inexperience  
23 Unfamiliar with roadway  
24 Overloading or improper loading of vehicles with passengers or cargo  
25 Operating vehicle in erratic, reckless, careless or negligent manner  
26 Improper or erratic lane changing  
27 Failure to keep in proper lane or running off roadway  
28 Making improper entry to or exit from trafficway  
29 Failure to yield right-of-way  
30 Failure to obey traffic signs, traffic control devices or traffic officers, failure to observe Safety Zones  
31 Failure to signal intentions  
32 Giving wrong signal  
33 Making right turn from left lane, making left turn from right lane  
34 Making other improper turn  
35 Driving wrong way on one-way roadway  
36 Driving on wrong side of roadway  
37 Failure to have lights on when required



PEDESTRIAN & NONMOTORIST FORM

P75  
P76  
P77  
(2)

Variable Name: 1st - Other Pedestrian/Nonmotorist Related Factors (cont'd.)  
2nd - Other Pedestrian/Nonmotorist Related Factors (cont'd.)  
3rd - Other Pedestrian/Nonmotorist Related Factors (cont'd.)

Pedestrian Related (Includes Other Nonmotorist)

- 38 Not seen by driver
- 39 Darting or running into roadway
- 40 Improper crossing of roadway or intersection
- 41 Walking with or against traffic, playing, working, sitting, lying, standing, etc., in roadway
- 42 Holding onto vehicle
  
- 98 Other (specify)
- 99 Unknown

Source: Police report, hospital/medical report, or other official records.

Remarks:

The purpose of these variables is to provide guidance to safety research on the involvement of these factors in accidents. Causal determinations must necessarily be based on more detailed investigations and other data, such as exposure data.

Related Factors are circumstances that may have contributed to the cause of an accident. For our purposes, regarding pedestrian/nonmotorist related factors, only those factors indicated by the investigating police officer on the PAR or identified in other official reports are to be considered for coding. These factors can appear anywhere on the report--in the narrative section, in the space for violations, in the column titled "Contributing Factors" or "Driver/Operator Action", etc.

As described in the coding attributes, pedestrian/nonmotorist related factors are divided into two groups: (1) Physical/Mental Conditions (codes "01"- "11"), and (2) Operator Related Factors (codes "20"- "42"). Physical/Mental Conditions can be police report indications and/or information taken from other official records (e.g., hospital/medical, autopsy reports, driver records, etc.). Operator Related Factors are restricted to police report indications only. Indications taken from the PAR are coded whether or not the PAR's contributing factor is accurate.

Only the pedestrian/nonmotorist related factors that apply to that particular pedestrian/nonmotorist should be coded. If only one factor applies, the code for it should be entered in the slots for the first variable. The following variables should be coded "00" (No other pedestrian/nonmotorist related factors), signifying no subsequent related factors. If two or three factors apply, code accordingly in ascending numerical order. If more than three codes apply, choose the three that seem the most significant. If no other pedestrian/nonmotorist related factors apply, code "00" (No other pedestrian/nonmotorist related factors) for all three variables.

PEDESTRIAN & NONMOTORIST FORM

P75

P76

P77

(3)

Variable Name: 1st - Other Pedestrian/Nonmotorist Related Factors (cont'd.)  
 2nd - Other Pedestrian/Nonmotorist Related Factors (cont'd.)  
 3rd - Other Pedestrian/Nonmotorist Related Factors (cont'd.)

Code "00" (No other pedestrian/nonmotorist related factors) is used if the investigating officer did not indicate any related factors for the pedestrian/nonmotorist in the accident and if related factors are not identified from other official sources.

Code "01" [Non-physical (i.e., mental or emotional factor)] includes anger, depression, excitement, illness, disease, blackout, etc. It also includes inattention for pedestrians.

Codes "02" through "11" (Physical and Drug Impairment) apply to impairments that are indicated on the PAR or specified in other official records.

Code "04" (Walking cane/crutches required) also includes ambulatory "walkers".

If both "06" (Restricted to wheelchair) and "07" (Paraplegic) apply, code "07". Reserve "06" for those persons who are restricted to a wheelchair, but are not paraplegic.

Codes "20" through "37" are Operator Related Factors and apply only to pedalcyclists and operators of nonmotorist conveyances (including animal related).

Code "21" (Interference with operator by other person) is to be used whenever the operator of a pedalcycle or nonmotorist conveyance (included animal related) is distracted or restricted by an occupant of that pedalcycle or conveyance.

Code "33" (Making right turn from left lane, making left turn from right lane) refers to any turn made from the wrong lane. It includes turning into a driveway, turning at an intersection, etc.

Code "34" (Making other improper turn) includes all of the turns that do not apply above (e.g., U-turns, turning at an intersection when it is not allowed, turning into the wrong lane, etc.).

Code "37" (Failure to have lights on when required) includes operating the pedalcycle or conveyance without the proper light equipment (e.g., headlights, taillights, etc.).

Codes "38" through "42" are primarily Pedestrian Related Factors, but also apply to Other Nonmotorists.

Code "38" (Not seen by driver) means "not visible" (i.e., having some quality that renders the pedestrian imperceptible to the driver). This can refer to pedestrians who wear dark clothing at night, very small children, etc.

PEDESTRIAN & NONMOTORIST FORM

P75  
P76  
P77  
(4)

Variable Name: 1st - Pedestrian/Nonmotorist Related Factors (cont'd.)  
2nd - Pedestrian/Nonmotorist Related Factors (cont'd.)  
3rd - Pedestrian/Nonmotorist Related Factors (cont'd.)

Code "39" (Darting or running into roadway) includes pedestrians running to cross the roadway, to retrieve a ball, etc.

Code "40" (Improper crossing of roadway or intersection) can be coded together with "39" if the pedestrian is both running and crossing the roadway improperly.

Code "42" (Holding onto vehicle) includes interfering with operator while attached to the vehicle as a pedestrian, or nonmotorist associated with a nonmotorist conveyance.

Code "98" [Other (specify)] does not include alcohol presence or involvement.

Code "99" (Unknown) in all three spaces only when the PAR specifically states "unknown contributing factors".

Variable Name: Investigator I.D. Number

Format: 1 column - numeric

Beginning  
Column 10

Element Values:

Level 1 Range: 1 through 9

Source: Zone center.

Remarks:

The person who was primarily responsible for the completion of the Vehicle Form shall enter his/her unique number.

Each investigator's unique number is assigned by the PSU's Zone Center.

This variable is a mandatory variable and cannot be changed.

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Level 1 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 has 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 (moving) vehicle strikes another 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 (moving) vehicle has frontal damage, the vehicle that has encroached upon the other shall be given the lower number in the sequence (e.g., vehicle one backs into the front of stopped vehicle two, and classical sideswipes where A10, Manner of Collision, equals "5" (Sideswipe, same direction) or "6" (Sideswipe, opposite direction)).

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

Variable Name: Vehicle Number (cont'd.)

essentially constant. Included within this definition are cradle likeages where the towed unit has two or more wheels off the ground.

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:

Level 1 Range: 00 through 97  
97 97 or more

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 48.

Code "01" (one occupant) is used in the case of a hit-and-run vehicle, where it is assumed that only one occupant/driver was present. Additional Occupant Forms (and thus the number coded here) can be submitted if reliable evidence exists that additional occupants were present.

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 stabilization of the object is coded as "0". The other motor vehicle (if in transport) 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.



OTHER VEHICLE UNDER CONSIDERATION (See Section 10.1)		TRACKING (Includes Controlled Turn)		NOT TRACKING	
OTHER VEHICLE/OBJECT/ Pedestrian or Nonmotorist	STATIONARY	Contacts Its Leading End <sup>1</sup> (Back or Front)	Contact is to Other Than its Leading End <sup>1</sup>	Contacts Its Leading End and/or Side <sup>2</sup>	(Significant yaw and/or rotation) 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	Should Not Report	STRIKING	STRIKING	STRIKING	Should Not Report
PEDESTRIAN OR NON-MOTORIST	STRUCK	STRIKING	STRUCK <sup>3</sup>	STRIKING	STRUCK

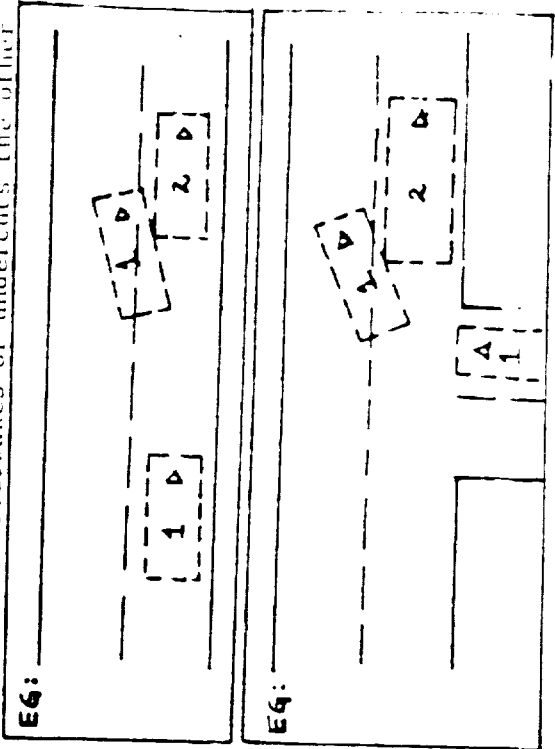
1. Leading End (Tracking): That end (Back or Front) of the vehicle under consideration which passes over a section of terrain before its opposite end.

2. 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.

3. Exception: Code "Striking" in those cases where the vehicle under consideration overtakes or undercuts the other vehicle/object/pedestrian or nonmotorist.

a. Overtaking: The vehicle under consideration is passing the other vehicle/object/pedestrian or nonmotorist and contacts the other vehicle/object/pedestrian or nonmotorist with its side.

b. Undercutting: The vehicle under consideration "cuts a corner" or turns in such a manner as to contact with its side the other vehicle/object/pedestrian or nonmotorist which is stationary or moving in the same general direction.



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, interviews, 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 Q, R, V, W, Y and Z are possibly affected as shown in the examples as follows:

- o Accident is stratified as "Z" in the Case Number-Stratification (A02) and subsequent investigation revealed that a vehicle was in fact towed; therefore, Final Stratification (A08) is coded as "W" or "V" depending on whether occupant was transported to hospital or not.
- o Accident is stratified as "R" 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 "Y".

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 Y and Z 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.]

Code 4 (Abandoned) should only be used when all the information available to the investigator, at the time of case submission, indicates that the vehicle still remained at the scene.

Remember, if a case was originally stratified under Case Number--Stratification (A02) as either "Y" or "Z", 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 "Y" or "Z" 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:

Level 2 Range: 60 through 84

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 1984 model is to be coded as "84".

Variable Name: Vehicle Make

Format: 2 columns - numeric

Beginning  
Column 19

Element Values:

Automobile

01 American Motors	49 Toyota
02 Jeep (includes AMC-Jeep, Kaiser)	50 Triumph
03 AM General	51 Volvo
	52 Mitsubishi
06 Chrysler	59 Other foreign
07 Dodge	<u>V13</u>
08 Imperial	31 Aston Martin
09 Plymouth	32 Bricklin
	33 Citroen
12 Ford	34 Delorean
13 Lincoln	35 Ferrari
14 Mercury	36 Hillman
	37 Jensen
18 Buick (includes Opel)	38 Lamborghini
19 Cadillac	39 Lotus
20 Chevrolet	40 Maserati
21 Oldsmobile	41 Morris
22 Pontiac	42 Rolls Royce/Bentley
23 GMC	43 Rover
	44 Simca
29 Other domestic	45 Sunbeam
<u>V13</u>	46 TVR
01 Studebaker/Avanti	58 Other foreign (e.g., Morgan, Singer)
02 Checker	
28 Other domestic (e.g., Desoto)	

Motored Cycles

30 Volkswagen (domestic and foreign)	[34] BMW
31 Alfa Romeo	60 BSA
32 Audi	61 Ducati
33 Austin/Austin Healey	62 Harley-Davidson
34 BMW	[37] Honda
35 Datsun	63 Kawasaki
36 Fiat	64 Moto-Guzzi
37 Honda	65 Norton
38 Isuzu	66 Suzuki
39 Jaguar	[50] Triumph
40 Lancia	67 Yamaha
41 Mazda	69 Other
42 Mercedes Benz	
[43] MG	
18] Opel	70 Mo-ped (all mo-peds whose manufacturer is not specifically listed above)
44 Peugeot	
45 Porsche	
46 Renault	
47 Saab	[ ] The brackets mean that the make's number has been previously listed.
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 or Reo	[51] Volvo
[35] Datsun	88 White
[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	88 Other truck or bus (e.g., Oshkosh, IVECO)
85 Kenworth	
86 Mack	
[41] Mazda	<u>Other make</u>
[42] Mercedes Benz	
[52] Mitsubishi	98 Other make (use codes 29, 59, 69, 70, or 95 if applicable)
87 Peterbilt	
[09] Plymouth	

Unknown make

99 Unknown make

## Alphabetical Listing of Makes

31 Alfa Romeo	83 FWD	65 Norton
03 AM General	23 GMC	21 Oldsmobile
01 American Motors	62 Harley-Davidson	18 Opel
5931 Aston Martin	5936 Hillman	87 Peterbilt
32 Audi	37 Honda	44 Peugeot
33 Austin	84 International	09 Plymouth
34 BMW	Harvester	22 Pontiac
5932 Bricklin	38 Isuzu	45 Porsche
80 Brockway	39 Jaguar	46 Renault
60 BSA	02 Jeep	5942 Rolls Royce/Bentley
18 Buick	5937 Jensen	5943 Rover
19 Cadillac	63 Kawasaki	47 Saab
2902 Checker	85 Kenworth	5944 Simca
20 Chevrolet	5938 Lamborghini	2901 Studebaker/Avanti
06 Chrysler	40 Lancia	48 Subaru
5933 Citroen	13 Lincoln	5945 Sunbeam
35 Datsun	5939 Lotus	66 Suzuki
5934 Delorean	86 Mack	50 Triumph
81 Diamond Reo or Reo	5940 Maserati	49 Toyota
07 Dodge	41 Mazda	5946 TVR
61 Ducati	42 Mercedes-Benz	30 Volkswagen
5935 Ferrari	14 Mercury	51 Volvo
36 Fiat	43 MG	88 White
12 Ford	52 Mitsubishi	67 Yamaha
82 Freightliner or White Freightliner	5941 Morris	
	64 Moto-Guzzi	

Variable Name: Vehicle Make (cont'd.)

Source: Primary source is the VIN during vehicle inspection; secondary sources include the police report, interviewees, and vehicle registration files.

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.

The Make codes are organized into general groups. These groups are:

- 01-29 - Domestic automobiles
- 30-59 - Foreign automobiles
- 60-70 (34, 37, 50) - Motored cycles
- 80-88 (02, 03, 07, 09, 12, 20, 23, 30, 35, 38, 41, 42, 48, 49, 51) - Trucks and Buses
- 29, 59, 69, 70, 95, 98 - Other
- 99 - Unknown

If the make of the vehicle is known and is not listed as one of the specific attributes, select an "other" code based upon the vehicle's body type (V14). Reference table below:

<u>V12 Vehicle Make</u>	<u>V13 Vehicle Model</u>	<u>V14 Body Type</u>
29 Other domestic automobile	01, 02, 28	01-13
59 Other foreign automobile	31-46, 58	01-13
69 Other motored cycle (except Moped)	61-69	20, 28, 29
70 Other Moped	61, 62, 69	21
95 Other Truck/Bus	01-04, 78, 88	30-79
98 Other	97, 00	80-89, 99

If the make of the vehicles is known (i.e., codes "01"- "03", "06"- "09", "12"- "14", "18"- "23", "29"- "52", "59"- "67", "69"- "70", "80"- "88", or "95" or "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 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)].

V12, Vehicle Make, and V13, Vehicle Model, have to be used in conjunction; therefore, refer to remarks for V13.

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	550,770,660, Classic, Brougham, Barcelona, X, Marlin	
03	Ambassador	880, 990, SST, DPL, Brougham	
04	Pacer	DL, Limited	68-70
05	AMX	(2-Seater)	
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), GT(1983 on)	80 on
09	Eagle	DL, Limited	81 on
10	SX4/Kamback	DL, Limited	
*	Alliance		
28	Other (domestic automobile)		
99	Unknown (automobile)		

Jeep (02)

01	CJ-2/CJ-3/CJ-4	Military	
02	CJ-5/CJ-6/CJ-7/CJ-8	Scrambler, Golden Eagle, Renegade, Laredo	
71	Cherokee	Wide Track Chief, Commando, Jeepster	
73	Pick-up	J-10, J-20, Honcho	
76	Wagoneer	Custom, Brougham Limited	
78	Other (light truck)		
79	Unknown (light truck)		
28	Other (domestic automobile)		
99	Unknown (automobile)		
00	Unknown [Jeep]		

AM General (03)

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)		
28	Other (domestic automobile)		
99	Unknown (automobile)		
00	Unknown [AM General]		

\* See Renault



Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>Chrysler (06)</u>			
07	LeBaron	S, Medallion, Salon	77 on
09	Cordoba	Crown, 300, LS	
10	Newport/New Yorker	Town and Country, Brougham, Custom, Royal, 300 (through 1971)	thru 82
14	E-Class	New Yorker, Fifth Ave.	83 on
28	Other (domestic 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		70-74
05	Challenger	R/T, T/A, Rallye	
06	Aspen	Custom, Special Edition, Police	
07	Diplomat	Medallion, "S", Salon	
08	Omni	024, De Tomaso, Miser, Charger 2.2, Custom, Shelby	
09	Mirada		
10	St. Regis		
11	Aries(K)	Custom, SE	
12	400	LS	
13	Rampage (car based pick-up)	2.2	
14	600	ES	83 on
33	Challenger-foreign		78 on
34	Colt	GT, Custom, Carousel, RS	
71	Ramcharger	Ram	
72	D50/Colt Pickup (foreign)	Power Ram, Ram 50	
73	D, W-Series Pickup	Ram, Custom, Royal, Miser	
74	Van	Sportsman Van, Royal, Maxiwagon, Ram	
75	Van Derivative	Karivan	
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)		
28	Other (domestic automobile)		
90	Medium/Heavy: COE, unk. entry position		
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
28	Other (domestic automobile)		
99	Unknown (automobile)		
<u>Plymouth (09)</u>			
01	Valiant/Duster/Scamp	100, 200, Taxi, Brougham, Signet, Custom, Special 340, Special 360, 340, 360	thru 75
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, Miser, Turismo 2.2, Custom	
11	Reliant(K)	Custom, SE	82 on
13	Scamp	GT	
	(car based pick-up)		
31	Cricket		
32	Arrow	GS, GT, Fire Arrow	
33	Sapporo		
34	Champ	Custom	
71	Trailduster		
72	Arrow pickup (foreign)		
74	Van (Voyager)	Sport, Premier	
78	Other (light truck)		
79	Unknown (light truck)		
28	Other (domestic 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	77-79
05	LTD II	Squire, Brougham	
06	LTD/Galaxy/Custom	XL, Landau, Ranch Wagon, Country Squire, S, 500, 500 XL, Brougham, Crown Victoria(81 & 82)	
07	Ranchero	500, GT, Squire, Custom	
	(car based pick-up)		
08	Maverick	Grabber	70-77
09	Pinto	MPG, Pony, ESS	71-80

## VEHICLE FORM

V13  
(4)

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>Ford</u> (12) (cont'd.)			
10	Torino/Gran Torino	Elite, GT, Cobra, Sport, Squire, Brougham	71-76
11	Granada	Ghia, L, GL, GLX	75 on
12	Fairmont	Fairmont-Futura (1978-1981)	78 on
13	Escort	L, GL, GLX, SS	81 on
14	EXP		82 on
15	Tempo	L, GL, GLX	83 on
16	Crown Victoria		83 on
31	English Ford	(e.g, Cortina)	
32	Fiesta		78-80
33	Laser	GL Ghia, GL Sport	83 on
70	Bronco II	Ranger based	83 on
71	Bronco	Full size truck based	
72	Courier Pickup (foreign)		
73	F-Series Pickup	F-100 to F-350	
74	Van	E-Series, Econoline, Club Wagon, Chateau, Cutaway based (e.g., box van, van bus/RV), P-Series, parcel	
75	Van derivative		
77	Ranger		82 on
78	Other (light truck)		
79	Unknown (light truck)		
81	Medium/Heavy: CBE	F-500 through F-800, L/LN/LNT/LT/LS/LTS-series FT8000, FT800D, FT800	
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)		
39	Unknown (truck)		
90	Medium/Heavy: COE, unk. entry position		
28	Other (domestic automobile)		
99	Unknown (automobile)		
00	Unknown [Ford]		

Lincoln (13)

01	Lincoln	Lincoln Continental (thru 81), Town Car (82 on)	
02	Mark	I, II, III, IV, V, VI	thru 82
05	Continental		82 on
11	Versailles		77-80
28	Other (domestic automobile)		
99	Unknown (automobile)		

Mercury (14)

02	Cyclone	GT, CJ, Spoiler	thru 71
03	Capri-Domestic		79 on
04	Cougar	Villager, Brougham, XR7 (thru 80)	67 on
05	Cougar XR7		81 on
06	Marquis/Monterey	Marauder, X-100, Parklane, Colony Park, S-55, Custom, Brougham, Grand (thru 82)	67 on
08	Comet	Caliente, Capri (1966-1967), GT, Voyager, 202	

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>Mercury (14) (cont'd.)</u>			
09	Bobcat		75-80
10	Montego	GT, MX, Villager, Brougham	67-76
11	Monarch	Ghia	75-81
12	Zephyr	Z7, GS	78 on
13	Lynx	L, LS, GS, RS	81 on
14	LN7		82 on
15	Topaz	L, LS, GS	83 on
16	Grand Marquis		83 on
31	Capri-foreign	Capri (1970-1978), Capri II	70-78
33	Pantera		
28	Other (domestic 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	thru 81
02	LeSabre/Wildcat/ Centurion	Estate wagon, Custom, Luxus, Sport Coupe, Wagon, Limited, Invicta	
03	Electra/Electra 225	Custom, Limited, Park Avenue, Wagon	
05	Riviera	"S" Type, "T" Type	73-75
08	Apollo	S/R, Skylark (1975)	82 on
10	Regal	G-car, "T" Type	75-81
12	Skyhawk	"S" Type, Road Hawk	76 on
15	Skylark	Limited, Sport, S/R, "S", Custom (see code 01), "T" Type, "T" Type Custom	82 on
16	Skyhawk	J-car, "T" Type	82 on
17	Century	A-car, "T" Type	thru 75
31	Opel Kadett		thru 75
32	Opel Manta/1900	Luxus, Rallye, Sports Coupe	thru 75
33	Opel GT		76-79
34	Opel Isuzu	Deluxe, Sport	
28	Other (domestic automobile)		
99	Unknown (automobile)		
<u>Cadillac (19)</u>			
03	DeVille/Brougham	Calais, 60-Special, Coupe, Sedan, Fleetwood	
04	Limousine	Fleetwood 75, Formal	
05	Eldorado	Touring Coupe, Biarritz	
06	Commercial Series	(e.g., ambulance/hearse)	thru 81
14	Seville	Elegante	76 on
16	Cimarron	J-car	82 on
28	Other (domestic automobile)		
99	Unknown (automobile)		

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<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 on
10	Monte Carlo	G-car	70 on
11	Vega	GT, Cosworth, Kamback	71-77
12	Monza	2 + 2, Spyder, Sport, Towne Coupe	75-80
13	Chevette	Scooter	76 on
15	Citation	X-car, X-11	80 on
16	Cavalier	J-car	82 on
17	Celebrity	A-car	82 on
70	Blazer	S-10 based	83 on
71	Blazer	Full size truck based	
72	LUV pickup (foreign)		
73	C, K-Series Pickup		
74	G-Series Van	Beauville, Chevy Van, Sport Van	
75	Van Derivatives	P-Series, Parcel Van	
76	Suburban		
77	S-10		82 on
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	PS6500, P6T042	
85	Bus	S60 series	
88	Other (truck)		
89	Unknown (truck)		
90	Medium/Heavy: COE, unk. entry position		
28	Other (domestic automobile)		
99	Unknown (automobile)		
00	Unknown [Chevrolet]		

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>Oldsmobile (21)</u>			
01	Cutlass	Supreme, Calais, Cruiser, "S", "LS", Salon, Brougham, Vista Cruiser, 442, F-85 (thru 1972), Rallye 350, Hurst Olds	
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	75-80
12	Starfire	"SX"	73 on
15	Omega	Brougham, Salon, F-87, F-85 (1975 on), X-car (1980 on)	
16	Firenza	J-car	82 on
17	Ciera	A-car, Cutlass Ciera, ES, Brougham	92 on
28	Other (domestic 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	
05	P-Car		77
08	Ventura	SJ, Custom, II, Sprint, GTO (1974 on)	68 on
09	Firebird/Trans Am	Esprit, Formula, Skybird, Redbird, Yellowbird, Spring	
10	Grand Prix	LJ, SJ, Brougham, G-car	75-77
11	Astre	Safari, Wagon, SJ, Custom	76 on
12	Sunbird	Sport, Safari, Wagon	81 on
13	T-1000/1000		78 on
15	Phoenix	LJ, SJ, X-car, (1980 on)	82 on
16	J-2000/2000	J-car, Sunbird Convertible, LE, SE	82 on
17	6000	A-car, STE	
28	Other (domestic automobile)		
99	Unknown (automobile)		
<u>GMC (23)</u>			
07	Caballero/Sprint		83 on
70	Jimmy	S-15 based	
71	Jimmy	Full sized truck based	
73	C, K-Series Pickup		
74	G Van/Vandura, Rally Van		
75	Van Derivatives	P-Series, Value Van, Magnavan	
76	Suburban		82 on
77	S-15		

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>GMC (23) (cont'd.)</u>			
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	
82	Medium/Heavy: COE, low entry	W-6000, W-7000	
83	Medium/Heavy: COE, high entry	Astro 95	
84	Medium/Heavy: unk. engine location	P5G500, P68042	
85	Bus	B-6000	
88	Other (truck)		
89	Unknown (truck)		
90	Medium/Heavy: COE, unk. entry position		
28	Other (domestic automobile)		
99	Unknown (automobile)		
00	Unknown [GMC]		

Other domestic (29)

01	Studebaker/Avanti		
02	Checker		
28	Other (domestic automobile) [e.g., Desoto]		

Volkswagen (30)

31	Karmann Ghia		
32	Beetle		
33	Super Beetle		
34	411/412	Squareback, Fastback	
35	Squareback/Fastback	Type 3, 1600	
36	Rabbit	L, GTI Sport, LS Custom, GL Deluxe	
37	Dasher		
38	Scirocco		
39	The Thing		
40	Jetta		
41	Quantum		
43	Rabbit Pickup		
74	Van/Vanagon/Camper		
78	Other (light truck)		
79	Unknown (light truck)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Volkswagen]		

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Alfa Romeo (31)</u>			
31	Spider	Veloce, 2000/1750, all roadsters	
32	Sports Sedan	Alfetta, Berlina, 2000/1750, Giulia Super, 4 door sedans	
33	Sprint Veloce	Alfetta GT 2000 GTV, 1750 GTV, Giulia Sprint GT, all 2 door coupes	
34	GTV-6		
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>Audi (32)</u>			
31	Super 90		
32	100	LS, GL	
33	Fox		
34	4000		
35	5000	Coupe	
36	Quattro		82 on
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>Austin/Austin Healey (33)</u>			
31	Marina	GT	
32	America		
33	Healey Sprite		
34	Healey 3000	Healey 100	
35	Mini		
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>BMW (34)</u>			
31	1600, 2002	Tii	
32	Coupe	3.0CS, 2800 CS	
33	Bavaria Sedan	2500, 2800	
34	630, 633		
35	320i		
36	524i, 528i, 530i, 533i	TD, Automatic	83 on
37	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)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [BMW]		



Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
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Datsun/Nissan (35)

31	F-10		
32	200 SX		
33	B210/210/1200	Honeybee	
34	240/260/280	Z, ZX, 2 + 2	
35	310		
36	510	PL	
37	610	PL	
38	710	PL	
39	810/Maxima	Maxima	
40	Roadster (SPL 311/ SRL 311)	1600/2000 Convertible	thru 70
41	PL 411/RL 411		
42	Stanza	XE	82 on
43	Sentra		83 on
44	Pulsar	NX	83 on
72	Pickup		
78	Other (light truck)		
79	Unknown (light truck)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Datsun]		

Fiat (36)

31	124 (Coupe/Sedan)	Sport	
32	124 (Spider)	Spider 2000	
33	Brava/131		
34	850 (Coupe & Spyder)		
35	128		
36	X-1/9		
37	Strada		
58	Other (foreign automobile)		
99	Unknown (automobile)		

Honda (37)

31	Civic	1300, 1500, CVCC	
32	Accord	LX, CVCC	
33	Prelude		
34	600	Coupe, Sedan	
51	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)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Honda]		

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Isuzu (38)</u>			
31	I Mark	Gemini	
72	P'up (Pick-up)	Rodeo	
78	Other (light truck)		
79	Unknown (light truck)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Isuzu]		
<u>Jaguar (39)</u>			
31	XJ-S Coupe		
32	XJ6/XJ12 Sedan/Coupe L, XJ, C, 420/340 Sedans		
33	XK-E	2 + 2, V-12 roadster, 120	
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>Lancia (40)</u>			
31	Beta Sedan/HPE		
32	Beta Coupe/Zagato		
33	Scorpion		
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>Mazda (41)</u>			
31	RX2		
32	RX3		
33	RX4		
34	RX7		
35	GLC		
36	Cosmo		
37	626		
38	808		thru 76
39	Mizer		thru 72
40	R-100		
41	618/616		
42	1800		
72	Pick-up	B-2200	
78	Other (light truck)		
79	Unknown (light truck)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Mazda]		

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<b>Mercedes-Benz (42)</b>			
31	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 37)]	
32	230 SL/280 SL (2 passenger)		
33	350 SL/450 SL/380 SL		
34	350 SLC/450 SLC/380 SLC		
35	300 SEL/280 SEL	TD-T, TD, CDT	
36	450 SEL/380 SEL	SL, SLC	
37	450 SE	280 S, 280 SE (1975 on), 300 SD Sedan	
38	600/6.9 Sedan	Pullman	
75	Van Derivative	Kurbstar	82 on
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)		
90	Medium/Heavy: COE, unk. entry position		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Mercedes-Benz]		

**MG (43)**

31	MG Midget		
32	MGB		
33	MGB GT		
34	MGA		
35	TA/TC/TD/TF		
36	MGC	MGC/GT	
58	Other (foreign automobile)		
99	Unknown (automobile)		

Mitsubishi See V12 Code (52) listed after VolvoOpel See Buick--(18)

Variable Name: Vehicle Model (cont'd.)

<u>Model Code</u>	<u>Vehicle Line</u>	<u>Includes</u>	<u>Model Years</u>
<u>Peugeot (44)</u>			
31	304		
32	403		
33	404		
34	505/504	STI	
35	604	SL, D	
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>Porsche (45)</u>			
31	911	S, E, T, SC, Carrera	
32	912/912E		
33	914	914/6	
34	924	Turbo	
35	928	S	
36	930/Turbo		82 on
37	944		
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>Renault (46)</u>			
31	LeCar	5	
32	10/Dauphine/ Caravelle/R-8		
33	12	R12	
34	15	R15TL	
35	16		
36	17	R17, Gordini Coupe	
37	R18i		
38	Fuego	TL, TS, GTL, GTS	83 on
39	Alliance	L, DL, Limited	
58	Other (foreign automobile)		
99	Unknown (automobile)		
<u>Saab (47)</u>			
31	99/99E/900	Turbo	
32	Sonnet	Sonnet III, Sonnet 97	
33	95/96/97		
58	Other (foreign automobile)		
99	Unknown (automobile)		

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>Subaru (48)</u>			
31	FE/GF/DL/STD/GL/G/ GLF	4 wheel drive	
32	Star		
33	360		
43	Brat	DL, GL	
78	Other (light truck)		
79	Unknown (light truck)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Subaru]		
<u>Toyota (49)</u>			
31	Corona	Custom, Deluxe, Mark II, 1900, 2000	
32	Corolla	1100, 1200, 1600, Deluxe, Custom, SR 5	
33	Celica	1900, 2000, GTS	
34	Celica Supra	Soarer	
35	Cressida		
36	Crown	2300, 2600	
37	Carina	2000	
38	Tercel	4WD Wagon	
39	Starlet		
71	Landcruiser		
72	Pick-up	Chinooks, LN44	
78	Other (light truck)		
79	Unknown (light truck)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Toyota]		
<u>Triumph (50)</u>			
31	Spitfire	I, II, III, IV, 1500	
32	GT6		
33	TR4	TR3, TR2, TR4A	
34	TR6	TR 250	
35	TR7/TR8		
36	Herald	Vitesse	
37	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)		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Triumph]		

Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<u>Volvo (51)</u>			
31	122	S	
32	142/144/145	S, Deluxe, GL, GLS, E	
33	164	S, E	
34	242/244/245	Deluxe, DL, GLE, GLT, GL	
35	262/264/265	GL	
36	1800	E, S, ES	
37	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)		
90	Medium/Heavy: COE, unk. entry position		
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Volvo]		
<u>Mitsubishi (52)</u>			
31	Starion	2 + 2	83 on
32	Tredia		83 on
33	Cordia		83 on
72	Pickup		83 on
58	Other (foreign automobile)		
99	Unknown (automobile)		
00	Unknown [Mitsubishi]		
<u>Other import (59)</u>			
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		
58	Other (foreign automobile) [e.g., Morgan, Singer]		

Variable Name: Vehicle Model (cont'd.)

MOTORED CYCLE (60-69)

V12

BSA (60)  
Ducati (61)  
Harley-Davidson (62)  
Kawasaki (63)  
Moto-Guzzi (64)  
Norton (65)  
Suzuki (66)  
Yamaha (67)  
Other Motored Cycle (69)

V13

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)

V12Mo-ped (70)V13

61 0- 50 cc  
 62 51-124 cc  
 69 Unknown (cc)

TRUCKS AND BUSES (80-83, 85-88)

V12

Brockway (80)  
Diamond Reo or Reo (81)  
Freightliner or White Freightliner (82)  
FWD (83)  
Kenworth (85)  
Mack (86)  
Peterbilt (87)  
White (88)

V13

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: conventional (engine out front)  
 86 Bus: flat front, front engine  
 87 Bus: flat front, rear engine  
 88 Other (truck)  
 89 Unknown (truck)  
 90 Medium/Heavy: COE, unk. entry position

†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 Years
<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)		
90	Medium/Heavy: COE, unk. entry position		
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, Gramman]	

Other make (98)

00	Unknown		
97	Other (e.g., snowmobile, go-cart)		
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.  
 †Truck as used here includes (1) any truck of unknown GVWR, (2) medium or heavy trucks, and (3) buses.



Variable Name: Vehicle Model (cont'd.)

Model Code	Vehicle Line	Includes	Model Years
<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, DCO, 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)		
90	Medium/Heavy: COE, unk. entry position		
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		
97	Other (e.g., snowmobile, go-cart)		
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.

†Truck as used here includes (1) any truck of unknown GVWR, (2) medium or heavy trucks, and (3) buses.

Variable Name: Vehicle Model (cont'd.)

Unknown make (99)

00 Unknown (as to automobile, motored cycle, light truck, or truck)  
 69 Unknown (motored cycle)\*  
 79 Unknown (light truck)\*  
 89 Unknown (truck†)\*  
 98 Other automobile (unknown if domestic or foreign)\*  
 99 Unknown (automobile)\*

\*Use these codes even 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.

†Truck as used here includes (1) any truck of unknown GVWR, (2) medium or heavy trucks, and (3) buses.

Source: Primary source is the VIN during vehicle inspection; secondary sources include police report, interviewees, and vehicle registration.

Remarks:

The model codes are organized into general groups. These groups are:

01-28, 99 - domestic passenger car (automobile)  
 31-58, 99 - foreign passenger car (automobile)  
 60-69 - motored cycles (including motorcycles, mini-bikes, motor scooters, dirt bikes, and mo-peds)  
 70-79 - light trucks (including truck based utility vehicles, light duty pickup trucks, standard pickup trucks, vans, van based station wagons, van based buses, van derivatives, and truck based station wagons)  
 80-90 - trucks and buses [includes all trucks over 10,000 lbs. GVWR except those pickup type trucks mentioned under Body Type (V14) code "50" (Pickup), and all buses except those that are van based]

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

Motored Cycle

61 0-50cc  
 62 51-124cc  
 63 125-349cc  
 64 350-449cc  
 65 450-749cc  
 66 750cc or over  
 69 Unknown cc

Variable Name: Vehicle Model (cont'd.)

These codes should be used to indicate the manufacturer's model size, rather than the actual piston displacement. For example, a 1980 Honda CB 750 has an original piston displacement of 749cc. This would be coded as "66" (750 or over).

Trucks/Buses

- 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: conventional (engine out front)
- 86 Bus: flat front, front engine
- 87 Bus: flat front, rear engine
- 88 Other (truck)
- 89 Unknown (truck)
- 90 Medium/Heavy: COE, unk. entry position

†Use code "85" (Bus) if the frontal plane or the engine location is unknown.

Other make (99)

- 28 Other domestic automobile
- 58 Other foreign automobile
- 78 Other light truck
- 88 Other truck\*\*
- 97 Other (e.g., snowmobile, go-cart)

Unknown make (99)

- 00 Unknown (as to automobile, motored cycle, light truck, or truck)
- 69 Unknown (motored cycle)\*
- 79 Unknown (light truck)\*
- 89 Unknown (truck\*\*)\*
- 98 Other automobile (unknown if domestic or foreign)\*
- 99 Unknown (automobile)\*

\*Use these codes even 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.

\*\*Truck as used here includes (1) any truck of unknown GVWR, (2) medium or heavy trucks, and (3) buses.

V12, Vehicle Make, and V13, Vehicle Model, have to be used in conjunction; therefore, refer to remarks for V12.

Variable Name: Body Type

Format: 2 columns - numeric

Beginning  
Column 23

Element Values:

Automobiles

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

Automobile Derivatives and Short Utility Vehicles

- 10 Auto based pickup (includes El Camino, Caballero, Ranchero, Brat)
- 11 Auto based panel (cargo station wagon, includes auto based ambulance/hearse)
- 12 Short utility - not truck based (includes Jeep CJ-5, Jeep CJ-7, Renegade, Landrover, Pre-78 Bronco, Landcruiser, Thing)
- 13 Large limousine - more than four side doors or stretched chassis

Motorcycles

- 20 Motorcycle
- 21 Mopeds (motorized bicycles)
- 28 Other motorcycle (minibikes, motorscooters)
- 29 Unknown motorcycle type

Bus (excludes van based)

- 30 School bus (designed to carry students, not cross country or transit)
- 31 Cross country/intercity (designed for long distance)
- 32 Transit bus (includes short ride city bus and medium range suburban bus)
- 38 Other bus (e.g., bus based motor home)
- 39 Unknown bus type

Van Based Light Truck ( $\leq$  10,000 lbs. GVWR)

- 40 Van (includes VW bus, Vanagon, Kombi, Beauville, Chateau, Club Wagon, Sportman; excludes moving van)
- 41 Van-commercial cutaway (includes box van, multi-stop, parcel, van pickups)
- 42 Van based motor home
- 48 Other van type
- 49 Unknown van type

Variable Name: Body Type (cont'd.)

Light Conventional Truck (Pickup style cab,  $\leq$  10,000 lbs. GVWR)

- 50 Pickup (includes open box and caps)
- 51 Pickup with slide-in camper
- 52 Pickup based motorhome (chassis mounted)
- 53 Cab chassis based (includes rescue vehicles, light stake, dump, and tow trucks)
- 54 Truck based panel
- 55 Truck based station wagon (4-door; includes Suburban, Travelall, Wagoneer)
- 56 Truck based utility (2-door; includes Blazer, Bronco - 78 on, Jimmy)
- 58 Other light conventional truck (e.g., stretched Suburban limousine)
- 59 Unknown light conventional truck
- 69 Unknown light truck (van or pickup)

Medium/Heavy Truck (> 10,000 lbs. GVWR)

- 70 Step vans
- 71 Single unit straight truck (10,000 lbs. < GVWR  $\leq$  26,000 lbs.)
- 72 Single unit straight truck (> 26,000 lbs. GVWR)
- 73 Medium/heavy truck based motor home
- 74 Truck-tractor with no cargo trailer
- 75 Truck-tractor pulling one or more trailers
- 77 Truck-tractor (unknown if pulling trailer)
- 78 Unknown medium/heavy truck type
- 79 Unknown truck type (light/medium/heavy)

Other Vehicles

- 80 Snowmobile
- 81 Farm equipment other than trucks
- 82 ATV, all terrain vehicle (e.g., dune/swamp buggy)
- 83 Construction equipment other than trucks (e.g., grader, off road)
- 88 Other (e.g., go cart, fork lift, city street sweeper)
- 89 Unknown other vehicle
- 99 Unknown body type

Source: Primary source is vehicle inspection; secondary sources include police report, interviewees, and vehicle registration.

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 originally manufactured).

Variable Name: Body Type (cont'd.)

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, such as older Corvettes or XKÉ's. This would also include "targa" tops. Removable solid roof sections that were bolted on at the factory are considered standard roofs. Cars with sun roofs or "T" tops 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.

Codes "03", "05" (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 Isetta, street rods without doors, etc.

Code "11" (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 V63, Vehicle Special Use.

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 "20" (Motorcycle) is restricted to "standard" motorcycles [i.e., it excludes minibikes, motorscooters, or any motorcycles with sidecars attached--these are coded under "28" (Other motorcycle)].

Code "21" [Moped (motorized bicycle)] refers to a motor-driven cycle whose speed attainable in 1 mile is 30 mph or less, which is equipped with a motor that produces 2-brake horsepower or less. If an internal combustion engine is used, the piston displacement shall not exceed 50 cc and the power drive system shall not require the operator to shift gears.

Codes "30" through "39" refer to vehicles (excluding vans, truck-based station wagons, etc.) which are designed to transport more than ten persons.

Code "30" (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 "31" (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.

Variable Name: Body Type (cont'd.)

Code "32" (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 "38" (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 "39" (Unknown type bus) is used when the investigator has no information which would allow more specific classification in one of the bus codes.

Code "40" (Van) includes VW bus, Econoline, Chevy Van, Dodge Tradesman, and station wagons based on these models.

Codes "40" and "55" (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 "41" (Van-commercial cutaway) includes all derivatives other than motor homes that are based on a van chassis, even if greater than 10,000 lbs. GVWR (e.g., Chevrolet Hi Cube Van, Dodge Kary Van, Ford Econoline Parcel Delivery Van).

Code "48" (Other van type) would be used for light duty vans that would not qualify for a more specific code. Possible inclusions for this could be some special use mail vans, milk trucks or light duty step vans. Note that step vans over 10,000 lbs. GVWR would be coded "70".

Code "50" (Pickup) includes all trucks based on a pickup chassis, even if greater than 10,000 lbs. GVWR (e.g., Chevrolet C30, Ford F350, Dodge D300, etc.).

Code "77" (Unknown if pulling trailer) can be used when you know that a truck tractor was involved, but it is unknown if a trailer was attached.

Code "82" (Dune buggy, swamp buggy, etc.) also can be used if an amphibious vehicle is encountered.

Code "83" 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 ("83"). 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 ("71" or "72").

Variable Name: Body Type (cont'd.)

Code "88" (Other) is used for special vehicles which are exclusive of the above special vehicle codes (e.g., go-cart).

Fire trucks will be coded based on GVWR and Body Type, and identified under V17, Seating Capacity/Truck Vocation, code "51" (Fire apparatus) and V63, Vehicle Special Use, code "7" (Fire).



Variable Name: Towed Trailing Unit (V14 ≠ 75, 77)

Format: 1 column - numeric

Beginning  
Column 25

Element Values:

- 0 No towed unit (or V14 = 75, 77)  
Yes, towed trailing unit hitch type  
 1 Clamp on (temporary)  
 2 Bumper hitch (bolted)  
 3 Frame  
 4 Fifth wheel  
 5 Other  
 6 Unknown hitch type

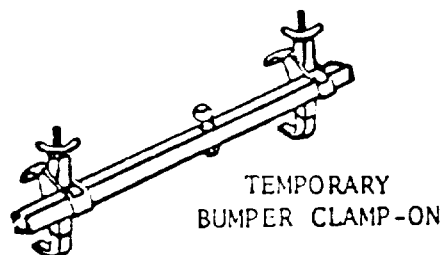
Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

Remarks:

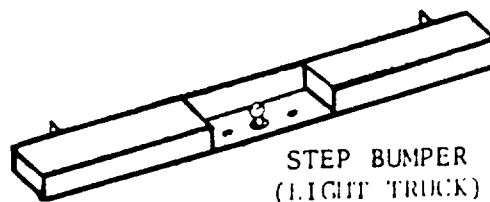
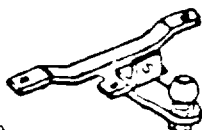
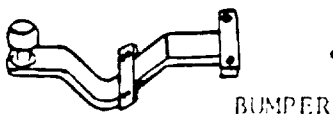
A towed trailing unit includes horse trailers, fifth wheel trailers, travel trailers, camper trailers, boat trailers, truck trailers or any other trailer (except as excluded above).

Code "0" (No towed unit) is used when it is unknown whether or not a trailer was being towed, or when no wheeled unit was being towed by the vehicle, or when V14 (Body Type) is coded "75" (Truck tractor pulling one or more trailers).

Code "1" (Clamp on) is used to describe a trailer hitch that is mounted by bands or clamps that are tightened around the bumper face (no holes are drilled in the bumper for mounting purposes).

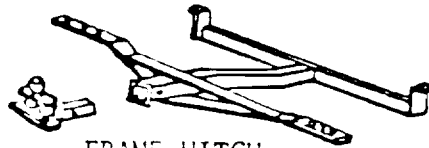


Code "2" (Bumper hitch) is used to describe a trailer hitch that is permanently mounted by drilling holes and bolting the hitch to the bumper. Also included would be a trailer ball mounted on a step bumper.



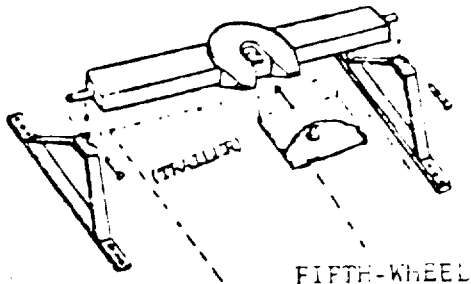
Variable Name: Towed Trailing Unit (V14 ≠ 75, 77) [cont'd.]

Code "3" (Frame) is used to describe a trailer hitch that is permanently mounted by drilling holes and bolting (or welding) the hitch to the frame rails. In most cases, this type of hitch is also attached to the bumper.

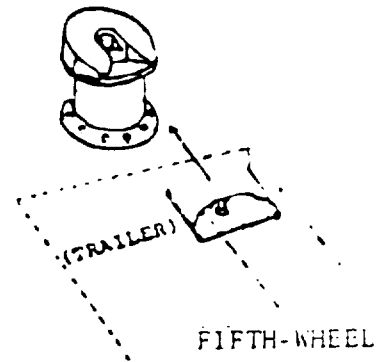


FRAME HITCH

Code "4" (Fifth wheel) is used to describe a trailer hitch that is a permanently mounted rounded plate upon which the trailer rests and is coupled to the towing unit.

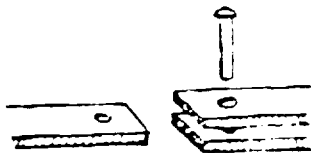


FIFTH-WHEEL



FIFTH-WHEEL

Code "5" (Other) is used to code a trailer hitch that cannot be described by using one of the more specific codes 1 through 4. Also included would be nonfixed linkage (i.e., rope, cable, chain), even if the nonfixed linkage is attached to a specific hitch type.



CLEVIS AND PIN



PINTLE AND RING

Code "6" (Unknown hitch type) is used when it is known that a trailer was being towed (V14 ≠ 75, 77) but the specific hitch type is unknown.

Variable Name: Cab Configuration

Format: 1 column - numeric

Beginning  
Column 26

Element Values:

0 Not a truck (e.g., automobile, motorcycle)

Cab Over Engine (COE)

1 COE, high entry

2 COE, low entry

3 COE, unknown entry

Conventional (CBE - Cab Behind Engine)

4 2-door (standard)

5 2-door extended cab/4-door crew cab

6 Unknown number of doors

7 Cab alongside engine (CAE)

8 Other

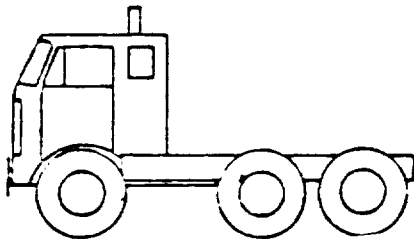
9 Unknown

Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

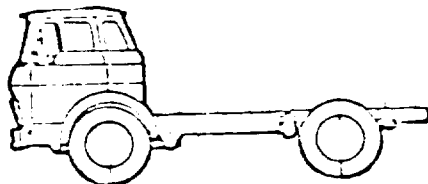
Remarks:

<u>Code</u>	<u>Description</u>
-------------	--------------------

1	COE, high entry
---	-----------------



2	COE, low entry
---	----------------

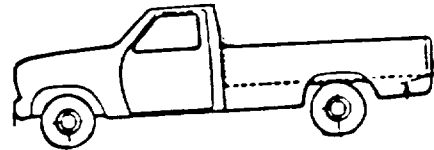
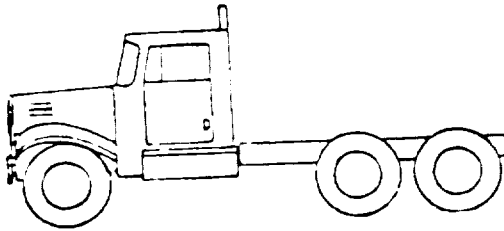


Variable Name: Cab Configuration (cont'd.)

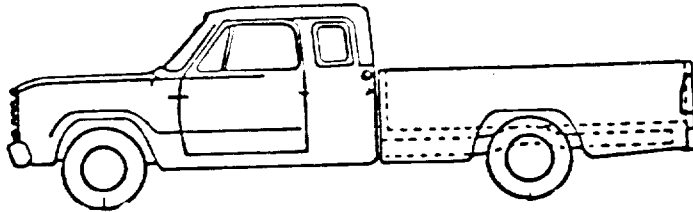
Code      Description

3      Code "3" is used when it can be determined that the truck has a COE configuration, however, it is unknown whether it has a high or low entry.

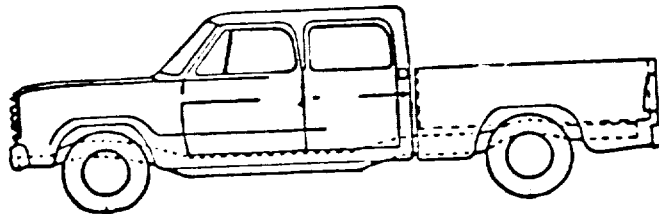
4      CBE - 2-door (standard)



5      CBE - 2-door extended cab/4-door crew cab



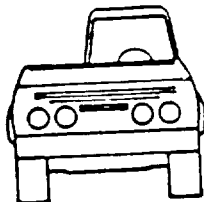
Extended Cab



Crew Cab

6      Code "6" is used when it can be determined that the truck has a CBE (Conventional) configuration, however, the number of doors is unknown.

7      Cab alongside engine (CAE)



Variable Name: Cab Configuration (cont'd.)

<u>Code</u>	<u>Description</u>
8	Code "8" (Other) is used when the truck cab configuration cannot be classified using one of the above codes. This code is also used for vans (V14 = 40-49) and busses (V14 = 30-39).
9	Code "9" (Unknown) is used when the cab configuration cannot be determined (e.g., no vehicle inspection). Code "9" is also used when it cannot be determined if the vehicle is a truck or another motor vehicle.

The relationship between this variable and V14, Body Type, is shown in the table below.

If V14 Equals	Then V16 Equals
01-29	0
30-49	8
50-79,99	1-9
80-89	0

Variable Name: Seating Capacity/Truck Vocation

Format: 2 columns - numeric

Beginning  
Column 27

Element Values:

Passenger Vehicles by Designated Seating Capacity

Motorcycle/Automobile/Van/Bus (exclude pickups)

- 01 One seat position
- 02 Two seat positions
- 03 Three seat positions
- 04 Four seat positions
- 05 Five seat positions
- 06 Six seat positions
- 07 Seven seat positions
- 08 Eight seat positions
- 09 Nine seat positions
- 10 10 to 19 seat positions
- 11 20 to 49 seat positions
- 12 50 or more seat positions
- 13 Motorhome (any light or medium truck based)
- 14 Ambulance/EMS (any auto or truck based)
- 19 Unknown passenger vehicle seating capacity

Cargo Vehicles by Vocation (Cargo Configuration)

Platform

- 20 Platform, flat bed
- 21 Platform with device (e.g., self-loader, spreader)
- 22 Stake
- 23 Drop frame, low bed, lowboy
- 24 Livestock carrier
- 28 Other platform (specify)

Open

- 30 Pickup box (non-dump, includes open box and caps)
- 31 Pickup with slide-in camper
- 32 Dump (any light, medium, or heavy truck based)
- 33 Dump with blade (front with under carriage)
- 34 Hopper (grain)
- 35 Auto carrier/transport (includes boat)
- 36 Van-open top
- 38 Other open (specify)

Closed

- 40 Van-closed top (any light, medium or heavy truck based, e.g., multi-stop)
- 41 Low bed van (e.g., moving van)
- 42 Refrigerated or insulated
- 43 Mobile home
- 44 Beverage, bottler
- 45 Container (e.g., piggy back)
- 46 Tank-liquid and gaseous
- 47 Tank-dry bulk
- 48 Other closed (specify)

Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Service/Utility

- 50 Garbage, refuse (including dumpster)
- 51 Fire apparatus
- 52 Concrete mixer
- 53 Wrecker, tow
- 54 Crane, aerial basket
- 55 Service, mobile repair (e.g., phone line truck)
- 56 Pole (e.g., pipe or log)
- 57 Armored truck
- 58 Other service/utility (specify)
- 71 Truck-tractor - no trailer
- 72 Chassis, incomplete vehicle
- 88 Other cargo vehicle (specify)
- 97 Other nontruck (e.g., construction paver, farm tractor)
- 98 Unknown cargo configuration
- 99 Unknown if passenger or cargo vehicle

Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs, and police report.

Remarks:

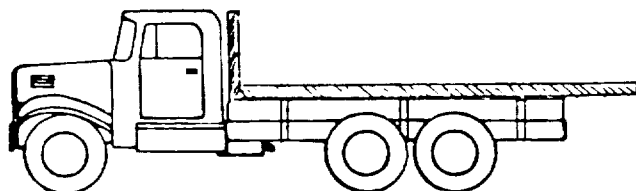
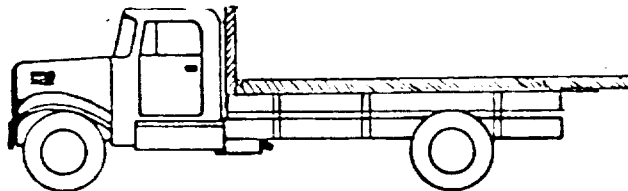
Any motor vehicle designed primarily to transport people should be encoded using elements 01-19 to indicate "designed" seating capacity. For those vehicles manufactured with restraints at each "designed" seat (approximately 1968 and newer) which have not been altered (removed restraints or seat types exchanged) the "designed" seating capacity can generally be determined by the number of restraints installed in the vehicle. For altered vehicles, vans with add-on (rigidly attached) seats, or most vehicles manufactured prior to 1968 the seating capacity can be determined from the seat width. Seats that are not rigidly attached to the vehicle are not considered as part of the seating capacity.

Code    Description

20    Platform, flatbed <sup>4</sup> 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:

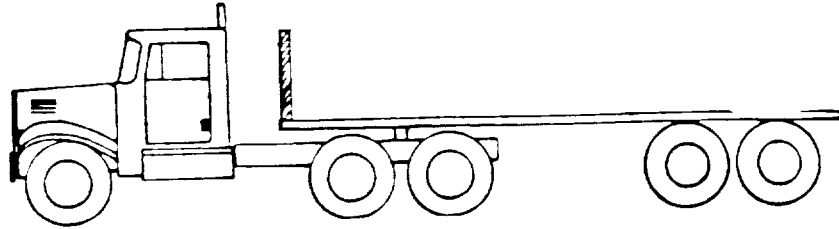
- V14 = 53, 71 or 72
- V15 = 0
- V17 = 20



Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Code    Description

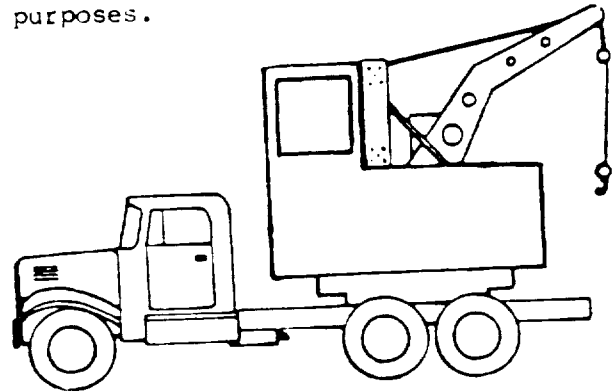
V14 = 75  
V15 = 0  
V17 = 20



21    Platform with 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:

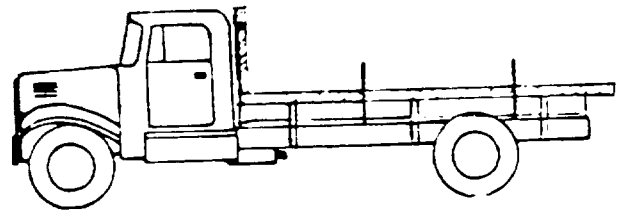
V14 = 53, 71 or 72  
V15 = 0  
V17 = 21



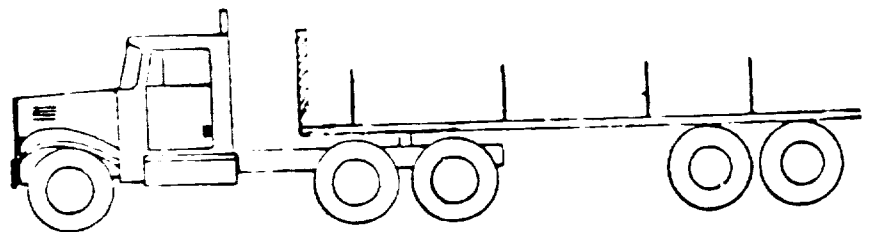
22    Stake - A body having a floor without sides or roof with stakes securely mounted around the perimeter to confine the commodity to the cargo area.

Example:

V14 = 53, 71 or 72  
V15 = 0  
V17 = 22



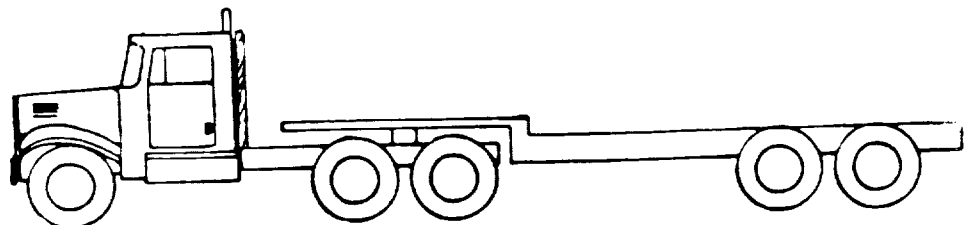
V14 = 75  
V15 = 0  
V17 = 22



23    Drop frame, low bed, lowboy - A trailer with a platform body constructed to provide a low loadnig height and designed for the transportation of extremely heavy or bulky property.

Example:

V14 = 75  
V15 = 0  
V17 = 23





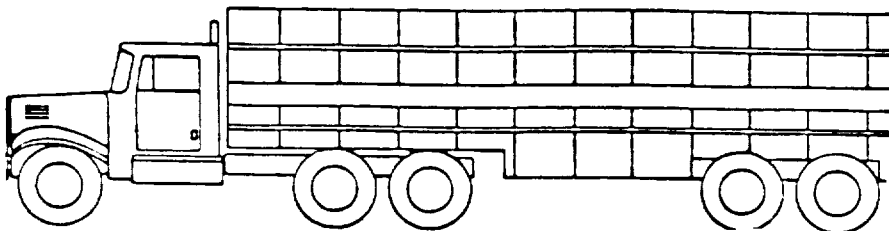
Variable Name: Seating Capacity/Truck Vocation (cont'd).

Code    Description

- 24    Livestock carrier - A rack body with or without roof designed primarily for transportation of livestock.

Example:

V14 = 75  
V15 = 0  
V17 = 24



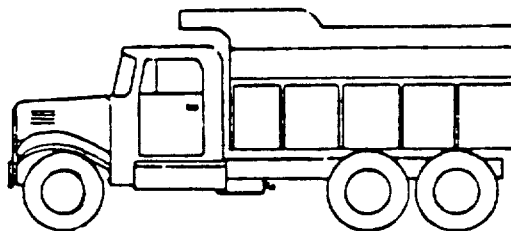
- 30    Pickup box (non-dump, includes open box and caps) - A cap is attached to top of the pickup bed and is not enclosed when standing by itself.

- 31    Pickup with slide-in camper - A slide-in camper is an enclosed (self-contained) unit that slides into the bed of the pickup.

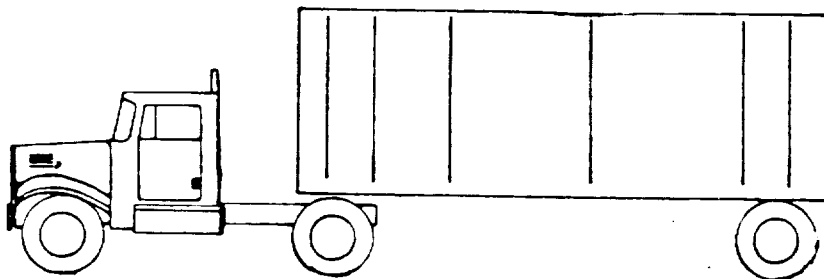
- 32    Dump - A low side open box body, designed primarily to transport dry fluid commodities in bulk, which can be tilted or otherwise manipulated to discharge its load by gravity.

Example:

V14 = 53, 71 or 72  
V15 = 0  
V17 = 32



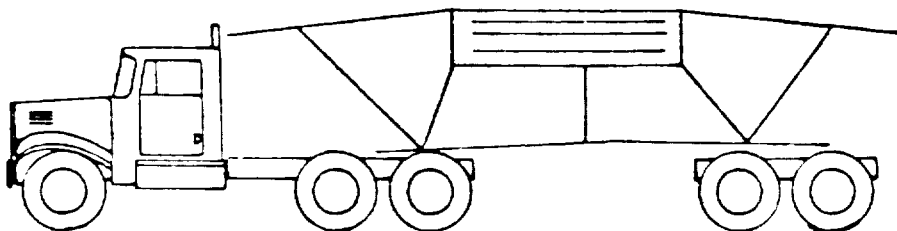
V14 = 75  
V15 = 0  
V17 = 32  
V19 = 06



- 35    Auto carrier/boat carrier - A body designed primarily for the transportation of other transport vehicles.

Example:

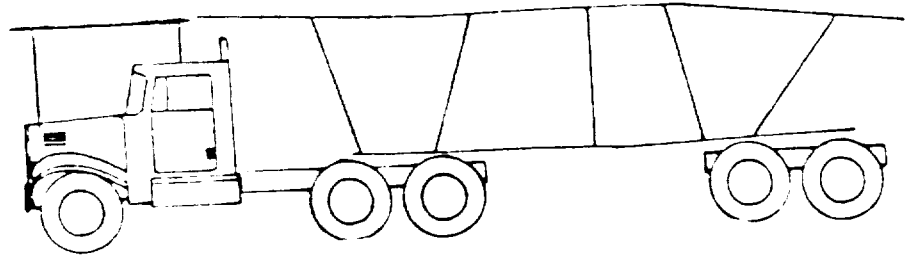
V14 = 75  
V15 = 0  
V17 = 35



Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Code    Description

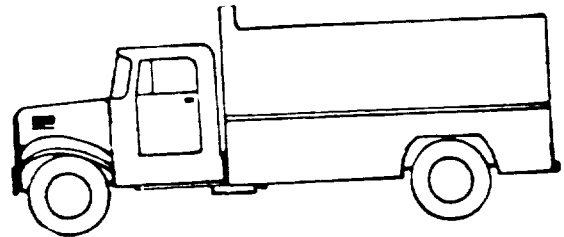
V14 = 75  
V15 = 0  
V17 = 35



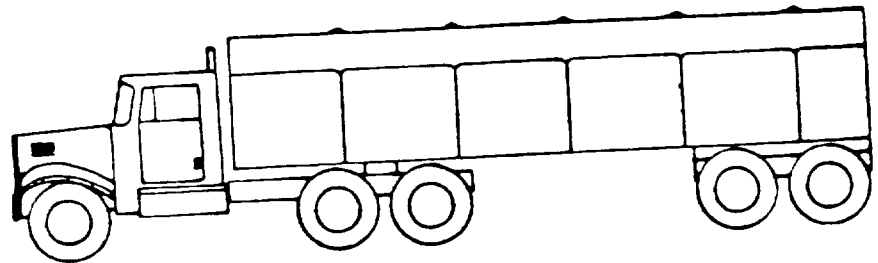
36    Van-open top - A body with high closed sides and ends, and a removable top, which usually is a tarpaulin cover.

Example:

V14 = 53, 71 or 72  
V15 = 0  
V17 = 36



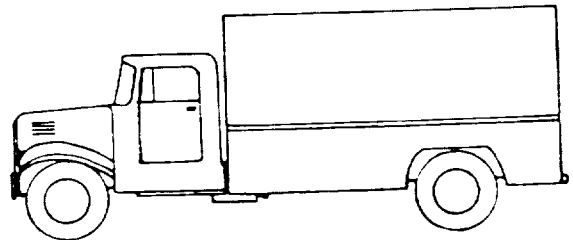
V14 = 75  
V15 = 0  
V17 = 36



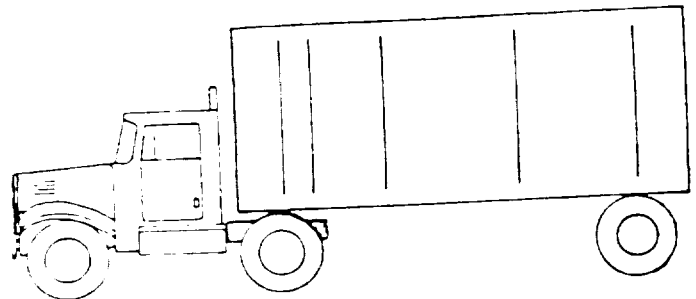
40    Van-closed top - A fully enclosed body designed primarily for the transportation of package commodities.

Example:

V14 = 41, 53, 70, 71 or 72  
V15 = 0  
V17 = 40



V14 = 75  
V15 = 0  
V17 = 40



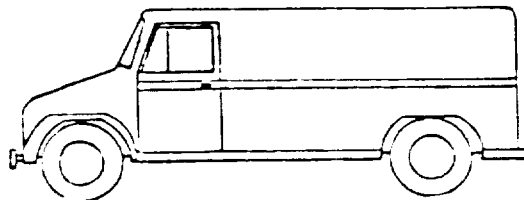
Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Code    Description

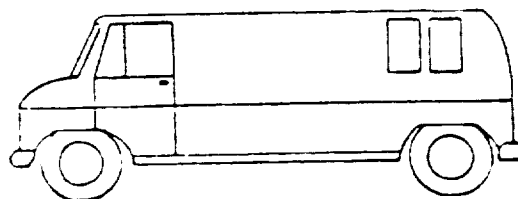
40    Van-closed top (e.g., multi-stop or walk-in) - A fully enclosed body with driver's compartment integral and designed for easy access.

Example:

V14 = 70  
V15 = 0  
V17 = 40



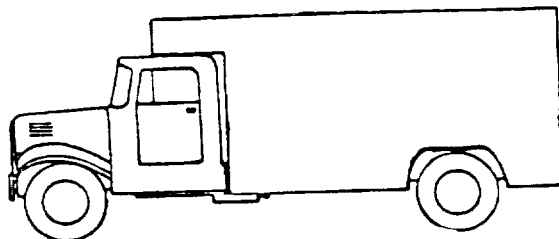
V14 = 70  
V15 = 0  
V17 = 40



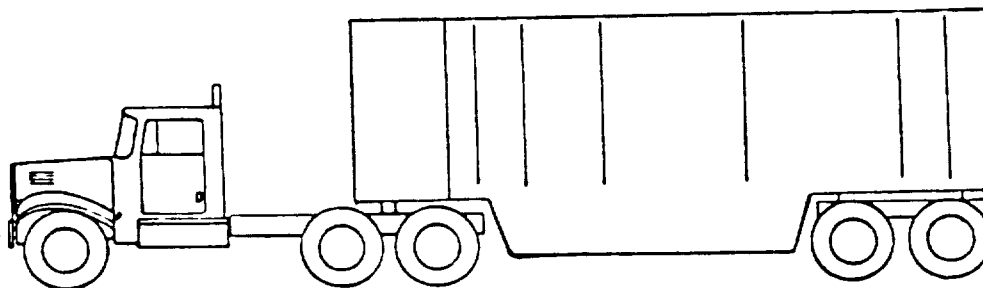
41    Low bed van (e.g., moving van) - A van body designed primarily for transportation of furniture or household goods. Customarily, when truck-mounted, it includes an integral driver's compartment.

Example:

V14 = 41, 53, 71 or 72  
V15 = 0  
V17 = 41



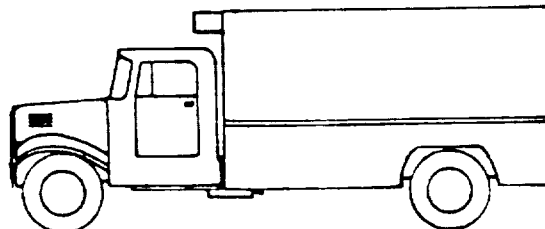
V14 = 75  
V15 = 1  
V17 = 41



42    Refrigerated or insulated -- A van body designed primarily for the transportation of commodities or the vending of food, beverage, or confections at controlled temperatures. It may be provided with equipment for refrigeration or heating.

Example:

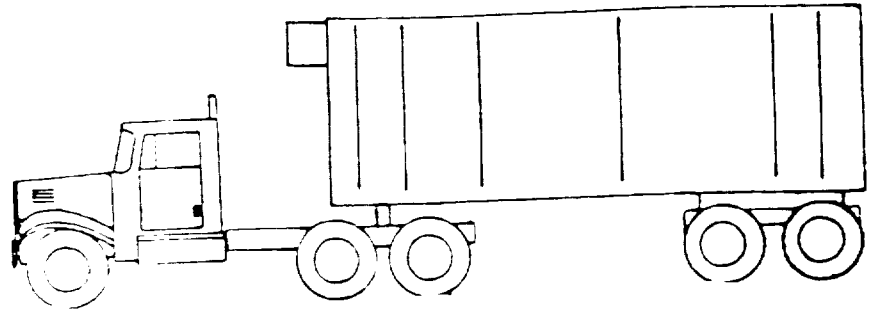
V14 = 41, 48, 53, 70, 71 or 72  
V15 = 0  
V17 = 42



Variable Name: Seating Capacity/Truck Vocation (cont'd).

Code    Description

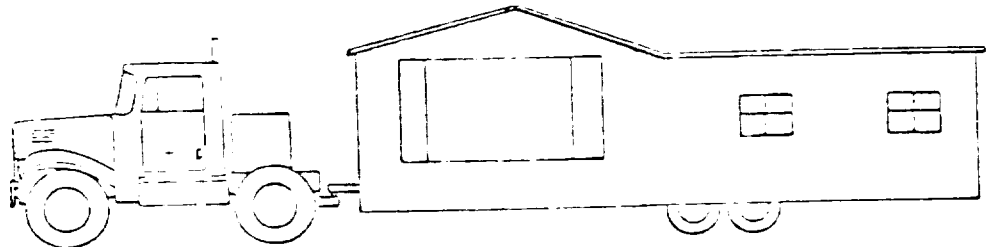
V14 = 75  
V15 = 0  
V17 = 42



43    Mobile home - A body designed for use as an abode with bunk(s), including house body and camper body.

Example:

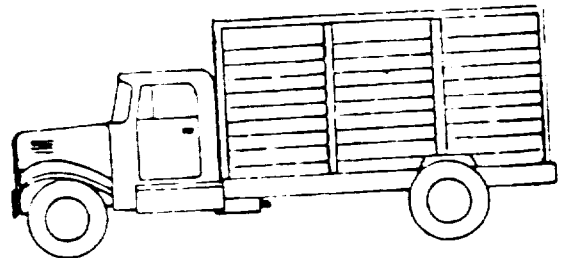
V14 = 75  
V15 = 0  
V17 = 43



44    Beverage, bottler - A body designed primarily for the transportation of cased, bottled beverages on opened or closed shelves, A-frame or pallets.

Example:

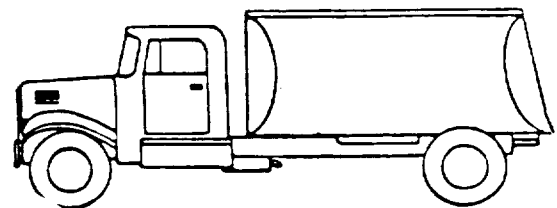
V14 = 71 or 72  
V15 = 0  
V17 = 44



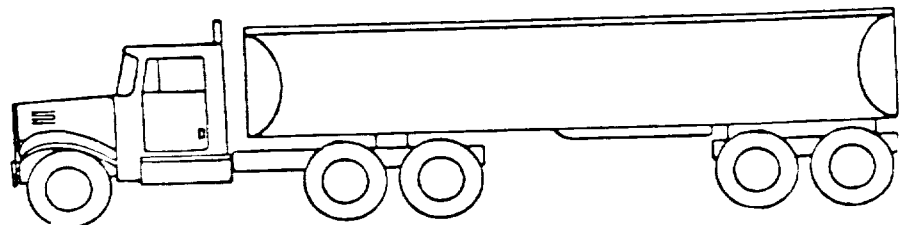
46    Tank-liquid and gaseous - A body designed for the transport of bulk liquid commodities (i.e., petroleum, oil, water, etc.).

Example:

V14 = 53, 71 or 72  
V15 = 0  
V17 = 46



V14 = 75  
V15 = 0  
V17 = 46



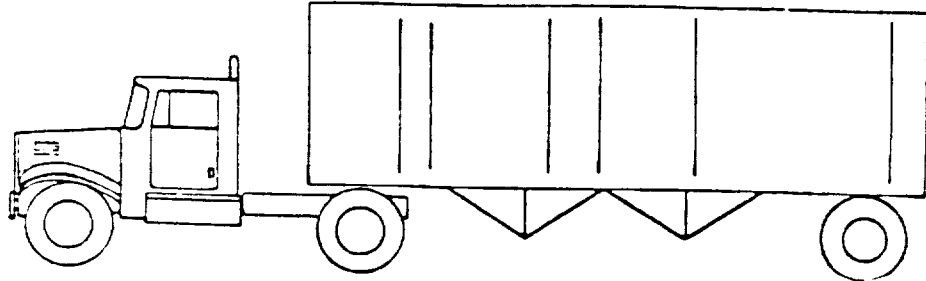
Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Code    Description

- 47    Tank-dry bulk - A body designed for the transport of bulk dry commodities (i.e., grain or dry chemicals).

Example:

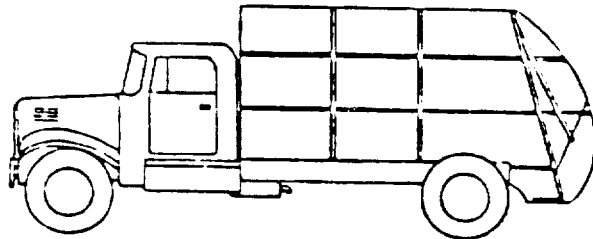
V14 = 75  
V15 = 0  
V17 = 47



- 50    Garbage, refuse - A body designed primarily for the collection of garbage and refuse. It is frequently equipped within the body.

Example:

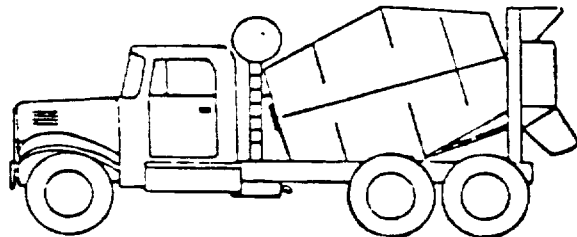
V14 = 71 or 72  
V15 = 0  
V17 = 50



- 52    Cement mixer - A body designed and equipped to mix or agitate concrete.

Example:

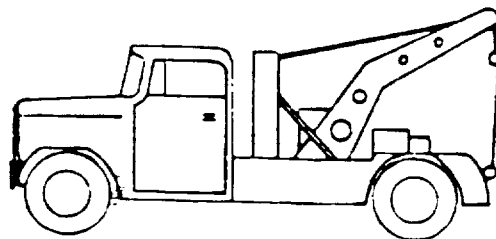
V14 = 71 or 72  
V15 = 0  
V17 = 52



- 53    Wrecker, tow - 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 = 54, 71 or 72  
V15 = 0  
V17 = 53



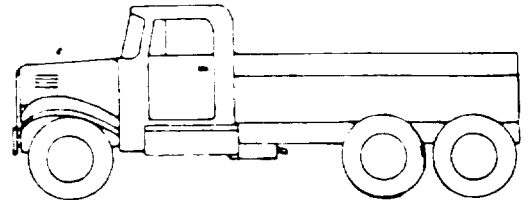
Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Code    Description

55    Service, 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:

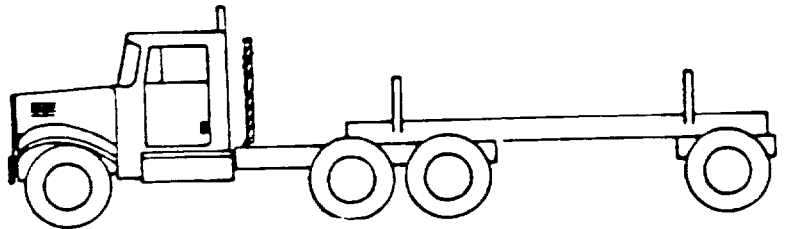
V14 = 53, 71 or 72  
 V15 = 0  
 V17 = 55



56    Pole - 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:

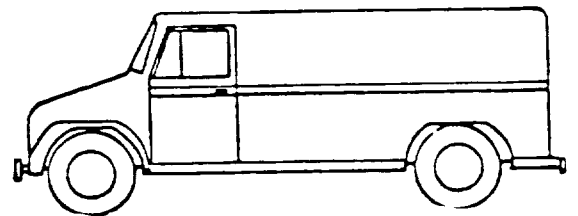
V14 = 75  
 V15 = 0  
 V17 = 56



57    Armored truck - An enclosed cargo body with integral driver's compartment so constructed as to protect cargo and crew from overt attack.

Example:

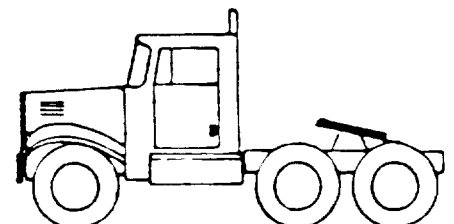
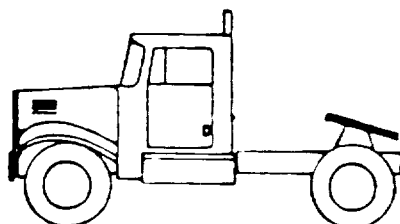
V14 = 41, 53, 70, 71 or 72  
 V15 = 0  
 V17 = 57



71    Truck-tractor - no trailer - Any vehicle constructed primarily to pull a semi-trailer, full trailer, pole trailer, house trailer or equipment.

Example:

V14 = 74  
 V15 = 0  
 V17 = 71

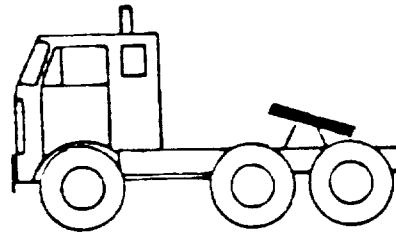
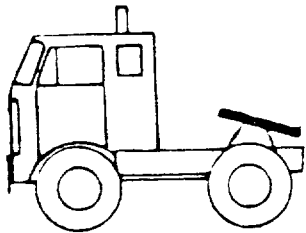


Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Code    Description

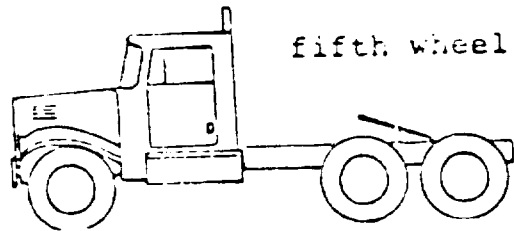
Cab over engine (COE) configuration

V14 = 74  
V15 = 0  
V17 = 71



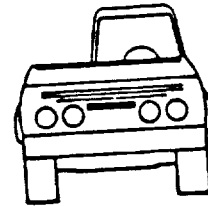
Cab behind engine (CBE) configuration

V14 = 74  
V15 = 0  
V17 = 71

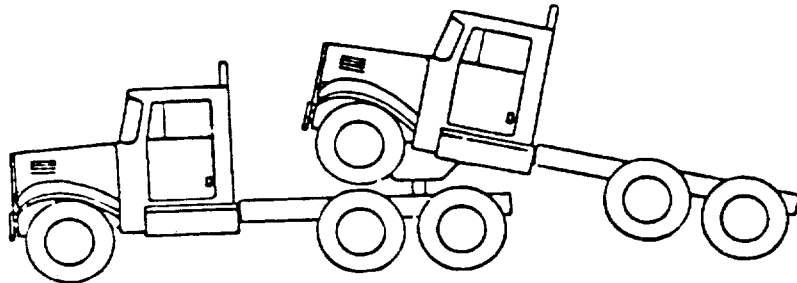


Cab alongside engine (CAE) configuration

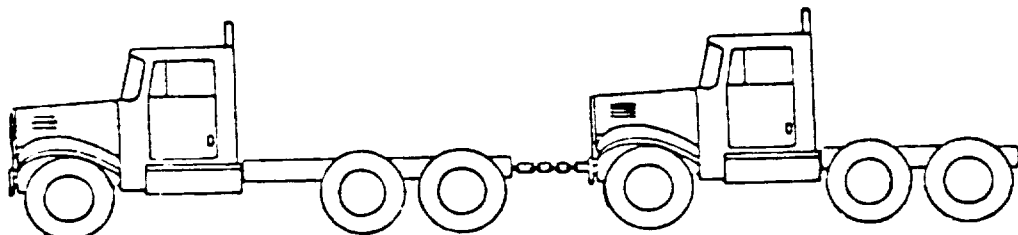
V14 = 74  
V15 = 0  
V17 = 71



V14 = 74  
V15 = 1  
V17 = 71



V14 = 74  
V15 = 1  
V17 = 71



Variable Name: Seating Capacity/Truck Vocation (cont'd.)

Other (Codes "28", "38", "48", "58", and "97") - Includes any body style that is known and can be typed, yet cannot be coded in one of the specific attributes.

Unknown (Codes 19 and 99) - Includes body types that can be identified as either passenger or cargo vehicles but the seating capacity/cargo configuration is unknown.

Unknown (Code 99) - 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 as being passenger or cargo.



Variable Name: Tractor With Dromedary

Format: 1 column - numeric

Beginning  
Column 29

Element Values:

- 0 Not truck over 10,000 lbs. GVWR (V14 ≠ 70 - 78)
- 1 No
- 2 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.

V19  
V20  
V21  
V22

Variable Name: Number of Axles - Power Unit (Trucks Over 10,000 lbs. GVWR - V14 = 70-78)  
 Number of Axles - 1st Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 70-78)  
 Number of Axles - 2nd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 70-78)  
 Number of Axles - 3rd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 70-78)

Format: 1 column - numeric

Beginning  
Column 30  
31  
32  
33

Element Values:

- |   |   |   |               |
|---|---|---|---------------|
| 0 | Not truck over 10,000 lbs. GVWR (V14 ≠ 70-78) | 5 | Five          |
| 1 | One   | 6 | Six           |
| 2 | Two   | 7 | Seven or more |
| 3 | Three   | 8 | No trailer    |
| 4 | Four  | 9 | Unknown       |

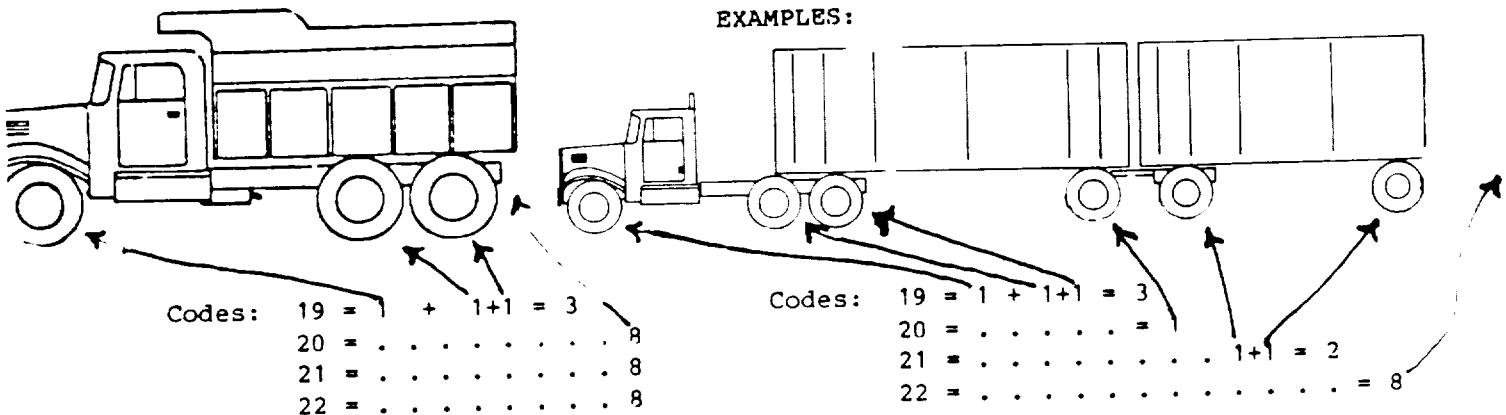
Source: Primary source is vehicle inspection; secondary sources include driver interview, photographs (newspaper, police, etc.), and police report.

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.

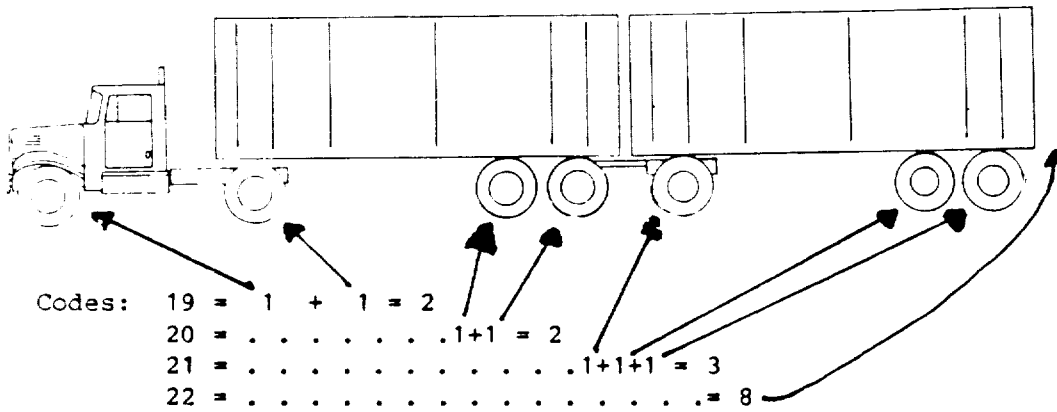
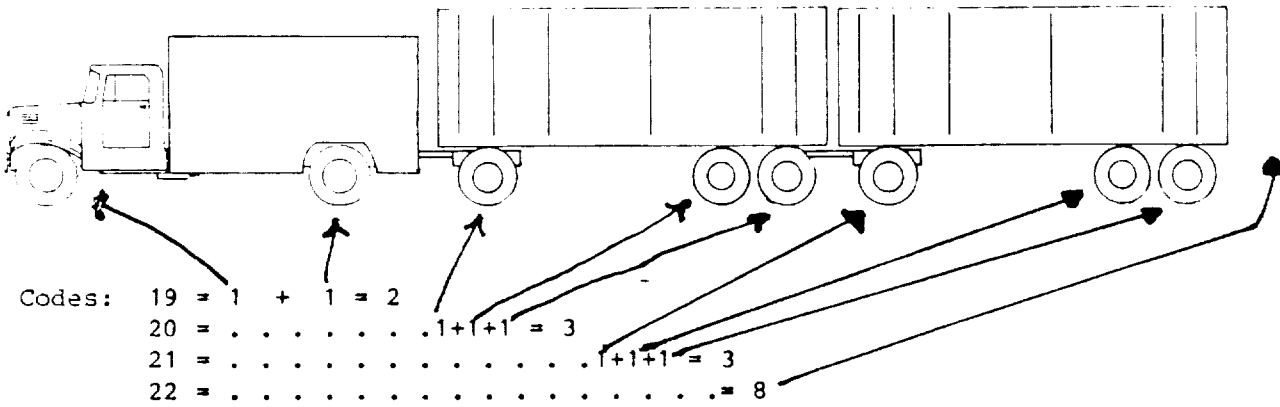
Liftable axles (axles which are intermittently load bearing) are coded independent of their position at the time of the accident; it doesn't matter if they were up or down.

"DOLLY LEGS", which are used to hold up the front of a semi-trailer when not attached to a tractor, should not be counted as an axle for Variables 20-22.



V19  
 V20  
 V21  
 V22  
 (2)

Variable Name: Number of Axles - Power Unit (Trucks Over 10,000 lbs. GVWR - V14 = 70-78) [cont'd.]  
 Number of Axles - 1st Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 70-78) [cont'd.]  
 Number of Axles - 2nd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 70-78) [cont'd.]  
 Number of Axles - 3rd Trailer (Trucks Over 10,000 lbs. GVWR - V14 = 70-78) [cont'd.]



Variable Name: Type of Brakes (Trucks Over 10,000 lbs. GVWR - V14 = 70-78)

Format: 1 column - numeric

Beginning  
Column 34

Element Values:

- 0 Not truck over 10,000 lbs. GVWR (V14 ≠ 70-78)
- 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.

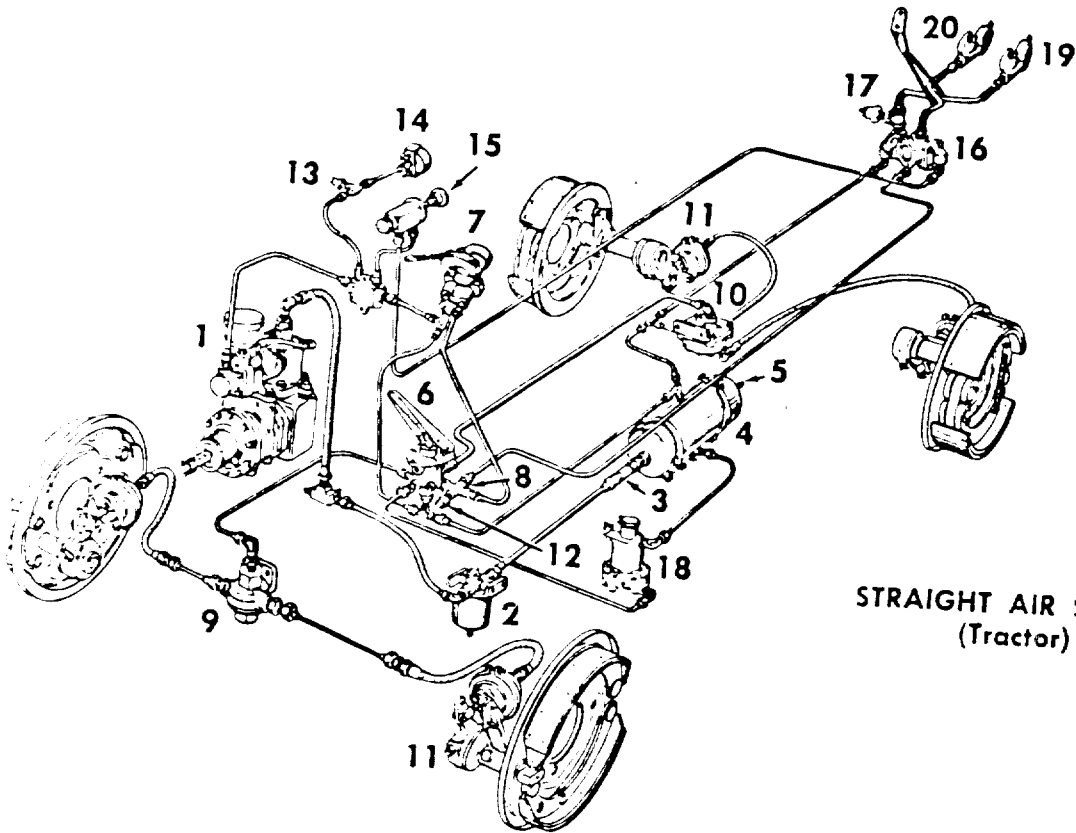
For tractor/trailer units, code the brake system of the tractor and annotate the trailer brake system on the vehicle sketch (pages 3H-3K).

Air (code "1") brakes are normally recognized by a cylinder chamber that is attached to the brake drum.

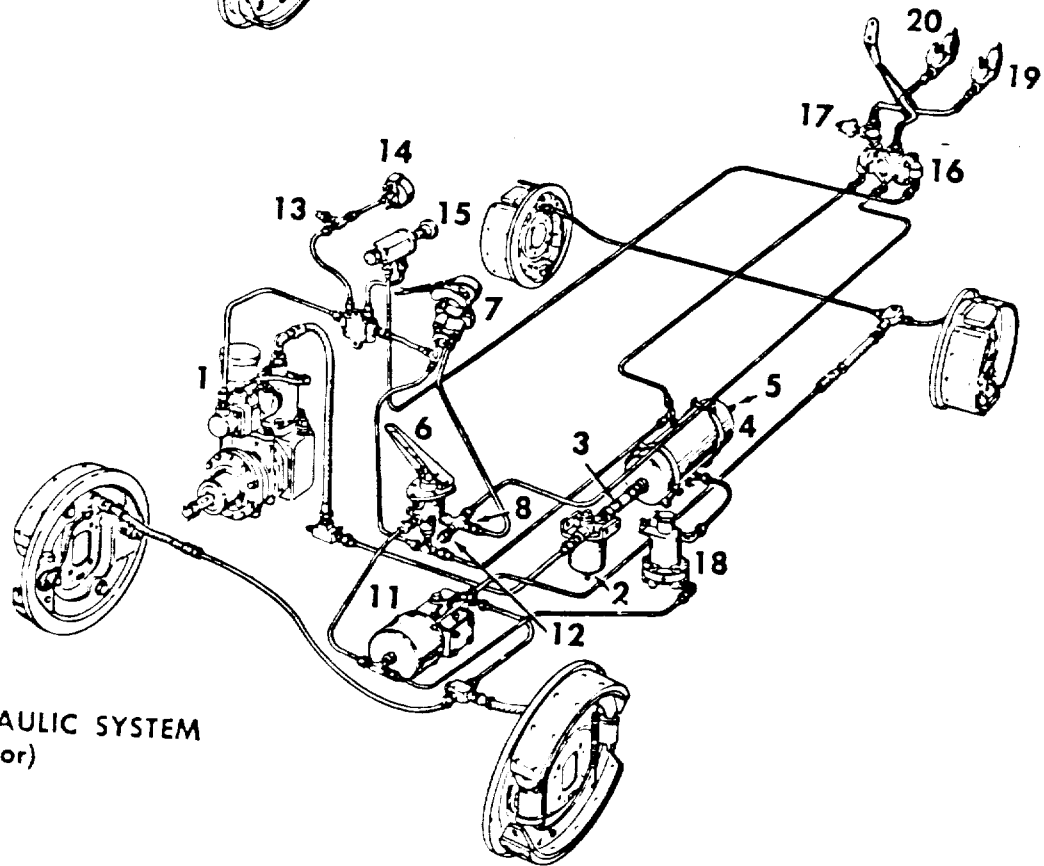
Hydraulic (code "2") brakes are normally recognized by a fluid line that leads directly into the brake drum.

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 = 70-78)  
[cont'd.]

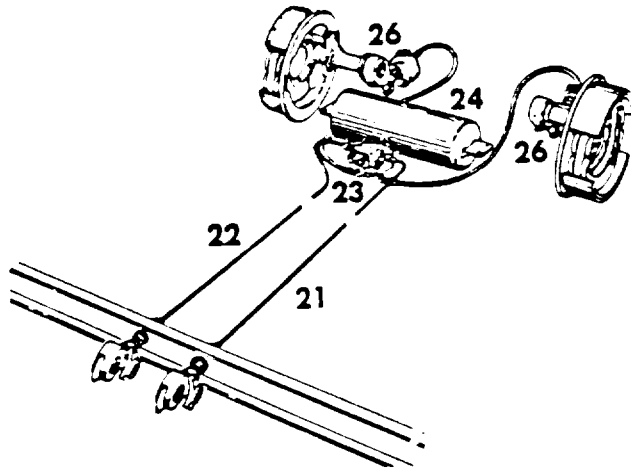


STRAIGHT AIR SYSTEM  
(Tractor)

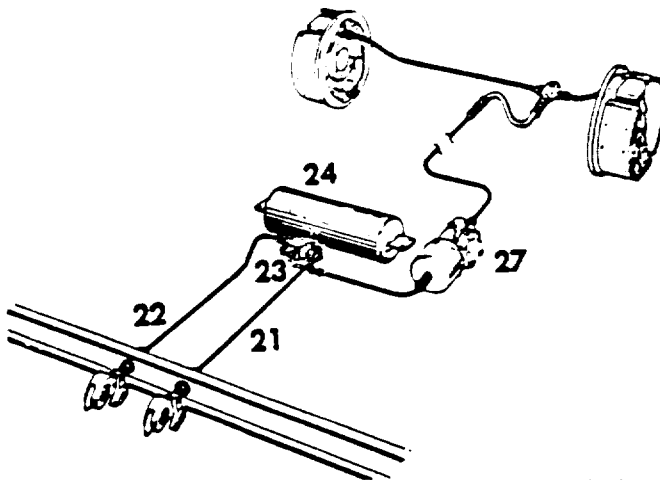


AIR-OVER-HYDRAULIC SYSTEM  
(Tractor)

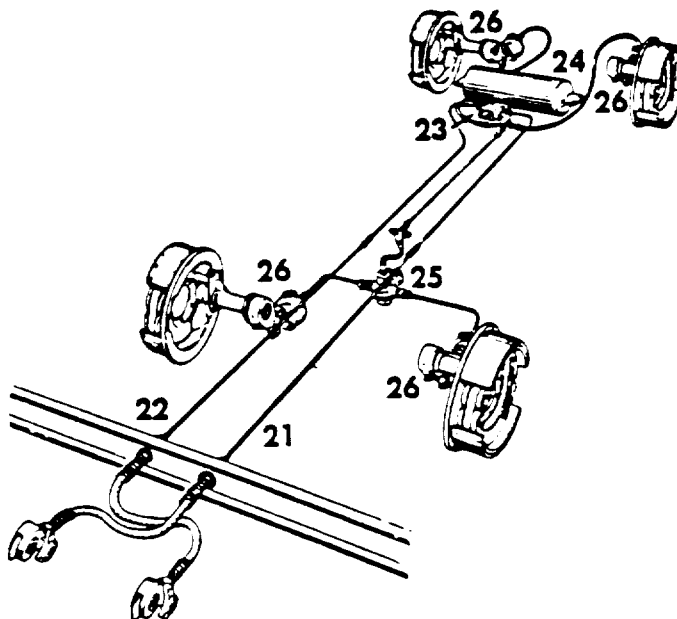
Variable Name: Type of Brakes (Trucks Over 10,000 lbs. GVWR - V14 = 70-78)  
[cont'd.]



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 value
4. Air tank
5. Reservoir safety value
6. Foot application value
7. Hand application value
8. Two-way check value
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

Variable Name: Gross Vehicle Weight Rating (GVWR) (V14 = 70-78)

Format: 1 column - numeric

Beginning  
Column 35

Element Values:

- 0 Not truck over 10,000 lbs. GVWR (V14 ≠ 70-78)
- 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, reference books, police report, and vehicle registration files.

Remarks:

Gross vehicle weight rating (GVWR) is the value specified by the manufacturer as the acceptable loaded weight of a single vehicle or power unit. This would include all equipment, fuel, body, cargo, driver, etc.

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.)

Code "0" is used for any motor vehicle not classified as a truck with a GVWR greater than 10,000 lbs.

Codes "1" through "6" are used to identify the manufacturer's GVWR (10,000 - infinity) for vehicles classified as trucks (V14 - 70-78).

Code "9" is used when a truck could be over 10,000 lbs. GVWR, however, the specific GVWR is unknown. If the specific GVWR is unknown, yet it is known to be under 10,000 lbs. GVWR, code "0" would apply. Code "9" is also used when the vehicle body type cannot be determined (e.g., hit and run vehicle).

INSTRUCTIONS FOR COMPLETION OF FIELD MEASUREMENTS PAGE

Document all the necessary field measurements on this page following the Crush Measurement Techniques protocol as specified in the Vehicle Inspection section of the NASS Accident Investigation Procedures Manual. Complete the top portion (measurements related to shift and bowing) when applicable. The first line would be used for base line measurements. The second line would be used for free space adjustments, and the third line would be used for recording the crush resultant. Use as many lines as necessary when applying averaging techniques. 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, seven lines will be necessary to describe the damage profile and all seven lines will have the same impact number but different L, C, and D measurements. Note that the measurements on the seventh 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 3A through 3P) are keyed to the investigator's descriptive statements on the back of the page.

All the observed damage is sketched on page 3A (or 3B through 3P) 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 crosshatching (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 (column 7 of CDC/TDC) are measured and documented on page 3A (or 3B through 3P). Also, the damage to the tires, wheel steer angles, type of transmission, average track (front track for tractors and straight trucks), maximum width (cab width for tractors and straight trucks), curb weight, overall length, engine size (number of cylinders and displacement) of the vehicle, and the location of maximum crush are measured and documented on the page.

For Pedestrian accidents involving the front of the vehicle the back of the page must also be completed with the following measurements. The measurements should be adjusted to reflect the at-impact condition of the vehicle (i.e. adjust for post-crash tire deflation or body damage) and should be taken at or near the area of pedestrian contact.

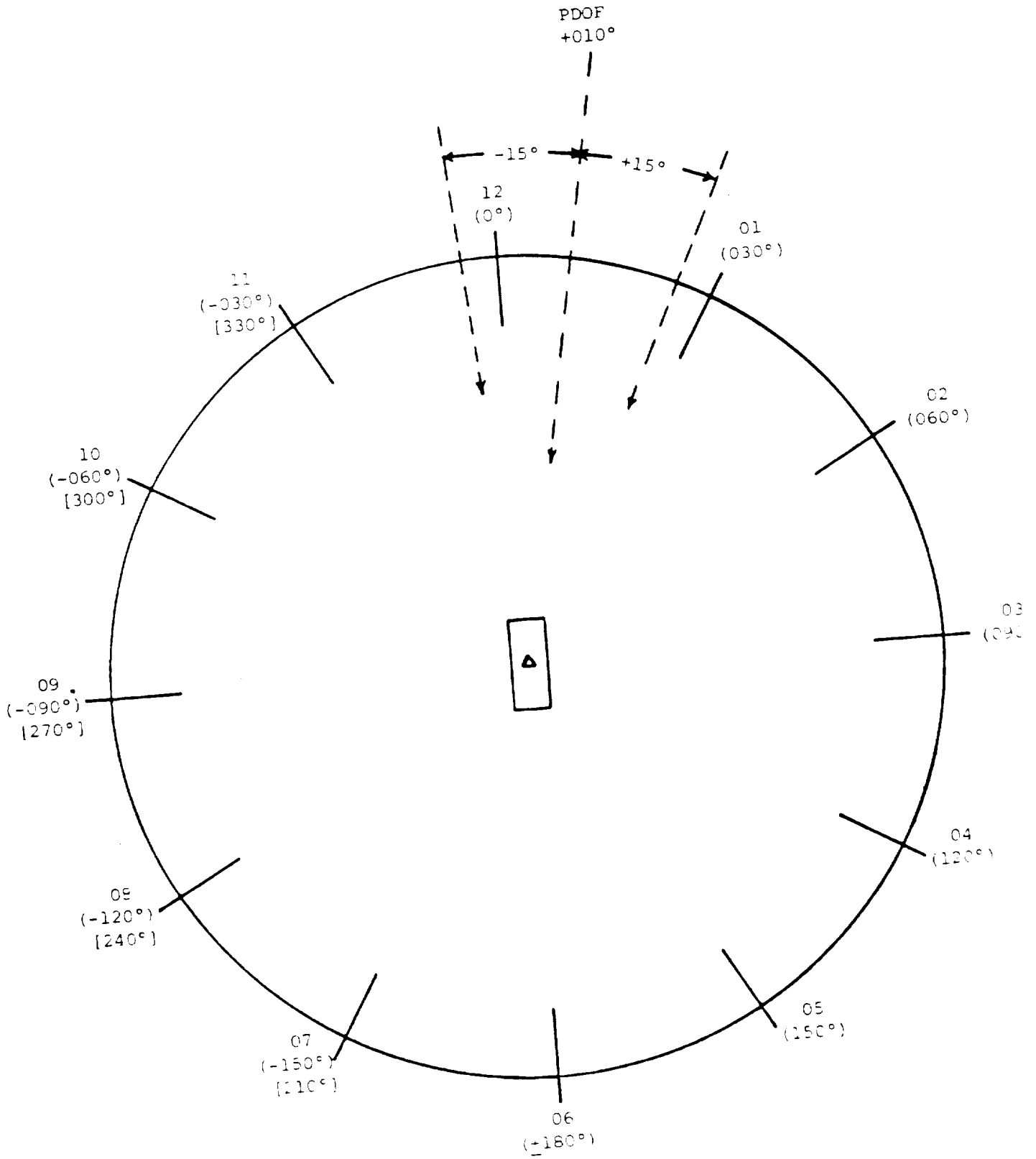
- a) Bumper Heights: is measured vertically from the ground to the top of the bumper.
- b) Contact Height-to End of Vertical: is measured vertically from the ground to the end (transition point between the front vertical plane and the hood horizontal plane) of the vertical plane (e.g. for the pictured Vega the end of the vertical plan is at the top of the louvers in the grill). Where the end of the vertical plane is not easily discernable use the 45 degree midpoint between the vertical and horizontal planes. An example of an unusual vehicle would be the V.W. Beetle where the end of the vertical plane occurs at the top of the bumper.

- c) Hood Height-to Horizontal: is measured vertically from the ground to the front edge of the hood (e.g. for the pictured Vega the hood height would be measured from the ground to the height of the hood at the seam between the hood and the grill).
- d) Bumper Lead: is the protrusion of the bumper from the grill measured horizontally.
- e) Hood Length: is measured horizontally from the end of the vertical plane (as defined in Contact Height) to the base of the windshield (e.g. for the pictured Vega the hood length would be measured from the top of the louvers in the grill to the base of the windshield).
- f) Wrap Distance(s): is measured (continuously along the vehicle profile) from the ground to each distinguishable pedestrian contact point (e.g. dents) on the grill, hood and windshield and each point measured should be identified (e.g. top of grill/hip; middle of hood/shoulder; windshield/head).

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.



## VEHICLE FORM

V25  
V34  
V43  
V52

Variable Name: 1st C.D.C./T.D.C. - Sequence Number of Impact (this vehicle)  
2nd C.D.C./T.D.C. - Sequence Number of Impact (this vehicle)  
3rd C.D.C./T.D.C. - Sequence Number of Impact (this vehicle)  
4th C.D.C./T.D.C. - Sequence Number of Impact (this vehicle)

Format: 1 column - numeric

Beginning  
Column 36  
48  
60  
72

## Element Values:

Blank - no impact  
1-7 - First through seventh  
8 - Eighth or additional  
9 - Unknown

Source: Primary sources are the scene and vehicle inspections; secondary sources include the police report and interviewees.

## Remarks:

"Sequence Number of Impact (this vehicle)" is the chronological sequence of impacts to a specific vehicle. In V25, V34, V43, and V52, these impacts are arranged in order of descending severity. Severity level should be based on CRASH output when available; otherwise, it must be based on damage severity.

CDC/TDCs are listed at the top of page 4 of the Vehicle Form in the order of their occurrence and are linked with a sequence impact number specific to this vehicle. In other words, the first line contains the CDC/TDC representing the damage caused by the first impact to this vehicle. The second line contains the CDC representing the damage caused by the second impact to this vehicle, etc. If more than four impacts occurred to this vehicle, list the additional CDC-related information on the back of page 4. When the CDC/TDCs are ranked at the bottom of page 4 (Vehicle Form) in the descending order of delta "V" severity, its corresponding sequential impact number (this vehicle) is also coded. For example, a vehicle is struck in the rear, loses control and sideswipes a parked car, then continues on finally striking a large tree. The front to rear end collision would be sequential impact number one, the sideswipe sequential impact number two and the tree sequential impact number three. By means of the CRASH program and inspection, the impact severities are ranked tree, rear ending, and sideswipe. Therefore, V25 would be coded 3, V34 would be coded 1, and V43 would be coded 2. V52 would be left blank since there was no fourth impact.

VEHICLE FORM

V26  
V35  
V44  
V53

Variable Name: 1st C.D.C./T.D.C. - Object Contacted  
2nd C.D.C./T.D.C. - Object Contacted  
3rd C.D.C./T.D.C. - Object Contacted  
4th C.D.C./T.D.C. - Object Contacted

Format: 2 columns - numeric

Beginning  
Column 37  
49  
61  
73

Element Values:

00 Noncollision  
01 through 30 - If the object contacted by the vehicle under consideration was a motor vehicle in transport, code the Vehicle Number assigned to that vehicle.

Collision with Stationary Object

31 Motor vehicle not in transport  
32 Tree (< 6 inches in diameter)  
33 Tree (> 6 inches in diameter)  
Highway/Traffic Supports  
34 Luminaire--breakaway  
35 Luminaire--nonbreakaway  
36 Large sign--breakaway  
37 Large sign--nonbreakaway  
38 Small sign--breakaway  
39 Small sign--nonbreakaway  
40 Utility pole  
41 Other post, pole or support  
42 Traffic signal pole  
43 Fence  
44 Mail box  
45 Delineator  
46 Other movable object (specify)  
47 Culvert  
48 Railroad tracks  
49 Curb  
50 Abutment  
51 Wall (stone, rock, metal, etc.)  
52 Embankment--earth  
53 Embankment--rock, stone or concrete  
54 Building, rigid  
55 Building, nonrigid  
56 Bridge pier or abutment  
57 Bridge rail  
58 Bridge parapet end  
59 Guardrail (non-median)  
60 Guardrail (median)

61 Concrete barrier (non-median)  
62 Concrete barrier (median)  
63 Other median barrier  
64 Other longitudinal barrier (non-median)  
65 Impact attenuator/crash cushion  
66 Ground  
67 Train  
68 Ditch  
69 Other stationary/fixed object (specify)

Collision with Nonstationary Object

70 Animal  
71 Trailer, disconnected in transport  
72 Train  
73 Other nonstationary objects (specify)  
81 through 95  
If the object contacted by the vehicle under consideration was a pedestrian or nonmotorist, add eighty (80) to the Pedestrian or Nonmotorist number, and code the resultant sum (e.g., 5 + 80 = 85)  
96 Vehicle occupant  
97 Other object (specify)  
99 Unknown

Source: Primary sources are the scene and vehicle inspections; secondary sources include the police report and interviewees.

## VEHICLE FORM

V26  
 V35  
 V44  
 V53  
 (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.)  
 3rd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 4th C.D.C./T.D.C. - Object Contacted (cont'd.)

## 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 MAR80.

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" (Tree ....), measure the diameter of the tree on the horizontal plane at the point of impact.

For pole (codes "34" through "42") the word "pole" used in a general sense, includes all types of supports for utility lines, light standards, traffic control signals, and signs. A pole may be made of wood, metal, or concrete and may have various cross-sectional shapes and dimensions. The pole must be nontemporary (i.e., have a permanent base). The pole must be at least five feet in height with the minimum cross-sectional dimension greater than two inches. U-shaped (  ) support (other than C-Channels) or supports are not poles.

V26  
 V35  
 V44  
 V53  
 (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.)  
 3rd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 4th C.D.C./T.D.C. - Object Contacted (cont'd.)

Codes "34" and "35" (Luminaire ....) refer to a pole whose primary purpose is to support one or more light standards. A secondary purpose may be to support a traffic signal or sign. Private luminaires are not eligible.

Codes "36" through "39" (Sign pole ....) refer to a pole whose sole purpose is to support one or more highway traffic sign(s) that provides warning, guidance, or regulatory information. Private signs are not eligible.


Codes "34", "36", and "38" (... breakaway) refer to a breakaway device that is designed to readily disengage, fracture, or bend away from an impacting vehicle above a predetermined force level. A pole fitted with such a breakaway device is a breakaway pole; otherwise, it is a nonbreakaway pole. Common types include: slip base (steel); frangible base (cast aluminum); and progressive shear (galvanized steel or stainless steel).

Codes "35", "37", and "39" (... nonbreakaway) refer to supports which are not designed to "break away" and reduce the deceleration force experienced by the vehicle.

For codes "36" and "37" (Large sign ....) the support pole's largest cross-sectional dimension is greater than or equal to 4 inches.

For codes "38" and "39" (Small sign ....) the support pole's largest cross-sectional dimension must be greater than or equal to 2 inches and less than 4 inches.

Code "40" (Utility pole) refers to a pole whose primary purpose is to support utility lines. A secondary purpose may be to support a light standard, traffic signal, or sign.

Code "41" (Other post, pole, or support) includes U-shaped () supports (e.g., STOP or YIELD signs), other small poles that are less than 2 inches in cross-sectional dimension, all private (nonhighway, nontraffic) signs and supports, and any other post, pole, or support not coded in codes "34" through "40" and "42" through "45". [NOTE: This code does not relate directly with A10, First Harmful Event, equaling "31" (Other post, pole, or support) since STOP or YIELD signs would be coded "27" (Highway/Traffic sign post) for A10.]

Code "42" (Traffic signal pole) refers to a pole whose primary purpose is to support a traffic signal. A secondary purpose may be to support a sign.

If you are unable to identify the type of pole (or barrier, although the barrier types are not detailed here) impacted, help is available from the following contacts listed in the table below. Contact with these individuals should be infrequent and should only be made when the team is unable to make a determination.



## VEHICLE FORM

V26  
V35  
V44  
V53  
(4)

Variable Name: 1st C.D.C./T.D.C. - Object Contacted (cont'd.)  
2nd C.D.C./T.D.C. - Object Contacted (cont'd.)  
3rd C.D.C./T.D.C. - Object Contacted (cont'd.)  
4th C.D.C./T.D.C. - Object Contacted (cont'd.)

PSU	----FHWA----		Contact Name	Phone
	Region	Site		
01	5	2	No contact	
02	5	10	Robert Dogyans	(616) 788-2381
03	7	11	(Team leader has own contacts)	
04	5	16	Jim Lindemuth or Dan Vanlaine	(517) 754-7443
05	5	20	Wayne Smith	(616) 849-2811
06	5	23	Dan Shamo	(219) 362-6125
07	5	27	No contact	
26	1	5	James Pierson	(914) 331-5533
27	3	1	Bob Johnson	(814) 437-5711, Ext. 374
28	3	4	John Laughler	(215) 687-1600, Ext. 369
29	1	14	No contact	
30	3	17	Angelo Boezi	(717) 962-4062
31	3	21	John Laughler	(215) 687-1600, Ext. 369
32	3	22	Andy Rost	(412) 565-2555
33	1	24	Ed Dannehy	(518) 393-0863
51	4	6	Ron Register	(305) 776-4300
52	4	7	James Braden - Shelby County	( ) 668-0173
			Billy Franklin - St. Clair Cty.	( ) 274-2112
53	6	9	Jim Allbritton	(501) 534-1612
54	4	19	Gene Edmonds	(704) 258-6178
55	4	26	Carl Guin	( ) 759-4281
76	10	8	No contact	
77	6	3	Bob Lay	(512) 465-6366
78	7	12		
79	9	13	Jim Collins	(415) 557-0154
80	8	15	Bill Tucker	(303) 757-9271
81	9	18	John Churchman	(602) 782-1646
82	6	25	Parker Bell	(505) 983-0630
83	8	30	Clint Gregory	(605) 773-3462
84	6	29	Bob Lay	(512) 465-6366
85	10	28	No contact	

Code "43" (Fence) includes both the fence material and the support posts.

Code "44" (Mail box) includes mail box and any supporting posts associated with it.

Code "46" (Other movable objects) includes other stationary objects that are readily movable--compare with code "69" (other stationary/fixed object). Examples include trash cans, grocery carts, unoccupied pedalcycles, small boulders, etc.

V26

V35

V44

V53

(5)

Variable Name: 1st C.D.C./T.D.C. - Object Contacted (cont'd.)  
 2nd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 3rd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 4th C.D.C./T.D.C. - Object Contacted (cont'd.)

Code "47" (Culvert) is a man made structure that allows passage over a drainage area. A ditch (code "68") ends where a culvert begins and resumes on the opposite side of the culvert.

Code "50" (Abutment), is a structural member that supports an overhead structure that is used for other than vehicular or pedestrian traffic (e.g., support for a tunnel, overhead pipeline, etc.). Abutments related to bridges should be coded "56" (Bridge pier or abutment).

Code "56" (Bridge pier or abutment) is a structural member of a bridge that supports an overpass structure used for vehicular or pedestrian traffic. This code is directly related to A10, First Harmful Event, code "21" (Bridge pier or abutment). See A10, Code "21" figure 8 for descriptive drawing.

Code "57" (Bridge rail) is a longitudinal barrier located on a bridge and is used when the contact was with any portion of the rail except for the parapet end. This code is directly related to A10, Forst Harmful Event, code "23" (Bridge rail).

Code "58" (Bridge parapet end) is the end structure of a bridge rail (including concrete supports for the bridge rail ends). This code is directly related to A10, First Harmful Event, code "22" (Bridge parapet end).

Code "59" [Guardrail (non-median)] is a longitudinal barrier, designed as a guardrail, located on the outside of the road surface. Guardrails which are located in gore areas (ANSI D16.1-1976, section 2.5.20, page 15) are considered guardrails (non-median) (code "59"), 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 guardrail was located. See page V26 et al. (6), types 01-09, for examples of guardrails.

Code "60" [Guardrail (median)] is a longitudinal barrier, designed as a guardrail [e.g., types 01-09 on V26 et al. (6)] located in a median.

Code "61" [Concrete barrier (non-median)] is a concrete safety shape barrier [e.g., types 10 or 17 on V26 et al. (6 or 7)] located on the outside of the road surface. Concrete barriers located in gore areas are considered concrete barriers (non-median) (code "61"), 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 barrier was located.

Code "62" [Concrete barrier (median)] is a concrete safety shape barrier [e.g., types 10 and 17 on V26 et al. (6 and 7)] located in a median.

Code "63" (Other median barrier) is a barrier designed as a median barrier [e.g., types 12-16, 18-21 on V26 et al (7)] located in the median.

V36  
V35  
V44  
V53  
(6)

	TYPE 01	TYPE 01	TYPE 02	TYPE 03
SYSTEM	G1 Cable Guardrail	G1 6" - Ø Wood Post, Cable Guardrail (Wood Post)	G2 "C" Beam (Steel) Wood Post	G3 Box Beam
BARRET DESCRIPTION	14' 6" S365.7 steel Three 3/4" diameter steel cables ----- 5/16" diameter steel hex bolts 6"x18"x24" steel plate welded to post	12' 6" 9/8" dia. ad' treated wood posts Three 3/4" diameter cables, steel hex bolts, steel 5/16" diameter hex bolts, steel 6"x18"x18" precast concrete bearing block	12' 6" nominal S365.7 steel Steel "C" section, 12 GA ----- 5/16" diameter steel bolt 6"x18"x24" steel plate welded to post	6' 6" S365.7 steel 6"x6"x0 180° steel tube 1.5"x3"x1/4" steel angle, 64" long 3/8" dia. steel bolt (beam to end of 6"x18"x24" steel plate welded to post

	TYPE 04	TYPE 05	TYPE 06	TYPE 07
SYSTEM	G4 (1) Blacked-Out "C" Beam (Steel) Post	G4 (2) Blacked-Out "C" Beam (Steel) Post	G4 (3) Blacked-Out "C" Beam (Steel) Post	G4 (5) Blacked-Out "C" Beam (Steel) Post
BARRET DESCRIPTION	6' 3" 6"x6" Douglas Fir Steel "C" section, 12 GA 6"x18"x24" Blacked Out Fir Block 5/16" diameter carriage bolts None	6' 3" 6"x6" Douglas Fir Steel "C" section, 12 GA 6"x18"x24" Blacked Out Fir Block 5/16" diameter carriage bolts None	6' 3" 6"x6" steel post Steel "C" section, 12 GA 6"x18"x24" Blacked Out Fir Block 5/16" diameter bolt None	6' 3" 4 1/2"x5 1/2"x3/16" TC" steel post Steel "C" section, 12 GA 4 1/2"x5 1/2"x3/16" TC" steel post 5/16" diameter bolt None

	TYPE 08	TYPE 09	TYPE 10
SYSTEM	G5 I-Beam (Steel) Post	G6 I-Beam (Strong Post)	Concrete Safety Shape
BARRET DESCRIPTION	6' 3" 6"x6" steel Steel beam post Steel beam post Steel beam post Steel beam post		

VEHICLE FORM

V26

V35

V44

V53

(7)

	TYPE 12	TYPE 13	TYPE 14	TYPE 15
SYSTEM	#1 Cable	#2 1/2" Section (Steel Post)	#3 Bar Steel	#4a Blocked Out "V" Beam (Steel Post)
BARrier DESCRIPTION	8' 0" 40'-124' 1" Two 1/2" diameter steel cables	12' 0" 325.7 Two steel 1/2" sections	6' 0" 325.7 1" x 1/2" steel tube	4' 0" 2" x 4" Douglas Fir Two 1/2" section (see Note 2)
POST SPACING	8' 0"	12' 0"	6' 0"	4' 0"
POST TYPE	Two 1/2" diameter steel cables	Two steel 1/2" sections	1" x 1/2" steel tube	Two 1/2" section (see Note 2)
BEAM TYPE	None	None	None	Two 2" x 4" Douglas Fir 2" x 4"
OFFSET BRACKETS	None	None	None	None
MOUNTING BOLTS	1/2" diameter steel 1/2" bolt	5/16" bolts	Steel padlock	5/8" diameter bolts
POST INGS	Varies	2" x 1/2" steel plate welded to post	2" x 1/2" steel plate welded to post	None

	TYPE 16	TYPE 17	TYPE 18	TYPE 19
SYSTEM	#4a Blocked Out "V" Beam (Steel Posts)	#5 Concrete Retarder Barrier	#6 Aluminum Extrusion	#7 1" x 1/2" Steel Tube
BARrier DESCRIPTION	4' 0" 325.7 Two steel 1/2" sections	Continuously poured reinforced concrete section	6' 0" Aluminum 1" or steel 325.7	12' 0" 325.7 Two steel 1/2" sections
POST SPACING	4' 0"	12' 0"	6' 0"	12' 0"
POST TYPE	Two steel 1/2" sections	Concrete Retarder Barrier	Aluminum extrusion	Two steel 1/2" sections
BEAM TYPE	None	Barrier can be anchored to details of structure (see Note 1)	None	None
OFFSET BRACKETS	None	Barrier can be anchored to details of structure (see Note 1)	None	None
MOUNTING BOLTS	1/2" diameter steel bolts	See Note 1 for further details of anchorage configuration (see Note 1)	None	None
POST INGS	None	None	None	None

	TYPE 20	TYPE 21
SYSTEM	#4a Blocked Out "V" Beam (Steel Posts)	#8 Steel Beam (Steel Posts)
BARrier DESCRIPTION	4' 0" 325.7 Two steel 1/2" sections	6' 0" 325.7 Two steel 1/2" sections
POST SPACING	4' 0"	6' 0"
POST TYPE	Two steel 1/2" sections	Two steel 1/2" sections
BEAM TYPE	None	None
OFFSET BRACKETS	None	None
MOUNTING BOLTS	1/2" diameter steel bolts	1/2" diameter steel bolts
POST INGS	None	None

## VEHICLE FORM

V26  
 V35  
 V44  
 V53  
 (8)

Variable Name: 1st C.D.C./T.D.C. - Object Contacted (cont'd.)  
 2nd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 3rd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 4th C.D.C./T.D.C. - Object Contacted (cont'd.)

Code "64" [Other longitudinal barrier (non-median)] is any barrier that does not meet the requirements for codes "59" or "61" and is located on the outside of the road surface or in a gore area.

Code "65" (Impact Attenuator/Crash Cushion) refers to crash cushions 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.

Code "66" (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 "68" (Ditch) is a man made structure for drainage purposes. When the sides of the ditch are approximately of equal height it makes no difference which side of the ditch was struck; however, if the struck side is substantially higher than the other side, code the impact with the struck side as an embankment (codes "52" and "53"). Substantial means that an embankment existed had the ditch not been present.

Code "69" (Other stationary/fixed object) is any other object of sufficient mass, or anchored, such that it is not readily movable--compare with code "46" (other movable objects). Examples include large boulders, large logs (fallen trees), etc.

Code "70" (Animal) should be coded if the object contacted was an animal (stationary or nonstationary). Where a nonmotorist was associated with the animal [i.e., on the animal, or on or in an animal powered nonmotor vehicle transport device (see P08, Pedestrian and Nonmotorist Type, code "4")] use the following scheme. If the contact is to (1) the animal, the animal and the person, the animal and the conveyance, or the animal, conveyance, and the person, code "70" (Animal); (2) the conveyance or to both the conveyance and the person, code "73" (Other nonstationary objects); or (3) to the person, code the person's Pedestrian or Nonmotorist's Number plus 80 (codes "81" through "95").

Code "73" (Other nonstationary objects) refers to any other object that is moving (exceptions include a stationary pedalcycle associated with a pedalcyclist or a stationary nonmotorist conveyance associated with a nonmotorist).

V26  
 V35  
 V44  
 V53  
 (9)

Variable Name: 1st C.D.C./T.D.C. - Object Contacted (cont'd.)  
 2nd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 3rd C.D.C./T.D.C. - Object Contacted (cont'd.)  
 4th C.D.C./T.D.C. - Object Contacted (cont'd.)

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). For a pedalcyclist or nonmotorist associated with a nonmotorist conveyance, code "73" (Other non-stationary objects) if the impact was with the pedalcycle, the conveyance, the pedalcycle and pedalcyclist, or the conveyance and nonmotorist associated with the conveyance; code "81" through "95" if the impact was with the person(s).

Codes "81" through "95" are used to identify contacted pedestrian or non-motorists where the code is derived by adding eighty (80) to that person's unique number and coding the resultant sum (e.g., 5 + 80 = 85). 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.

VEHICLE FORM

V27  
V36  
V45  
V54

Variable Name: 1st C.D.C./T.D.C. - Direction of Force  
2nd C.D.C./T.D.C. - Direction of Force  
3rd C.D.C./T.D.C. - Direction of Force  
4th C.D.C./T.D.C. - Direction of Force

Format: 2 columns - numeric

Beginning  
Column 39  
51  
63  
75

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
07 7 o'clock	

Incremental Values for Above Force Directions (C.D.C. only)

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 to the top structure as a result of non-horizontal force application to the top. In other words, the combined value (Direction of Force + Incremental Value for CDC only) is coded under this variable.

Code variables 26, 35, 44 and 53 (1st, 2nd, 3rd, and 4th C.D.C./T.D.C. - Object Contacted) with the appropriate code(s) when the object contacted is known regardless of how the C.D.C./T.D.C.s, variables 27-32, 36-41, 45-50, and 54-59 are coded.

V27  
V36  
V45  
V54  
(2)

Variable Name: 1st C.D.C./T.D.C. - Direction of Force (cont'd.)  
2nd C.D.C./T.D.C. - Direction of Force (cont'd.)  
3rd C.D.C./T.D.C. - Direction of Force (cont'd.)  
4th C.D.C./T.D.C. - Direction of Force (cont'd.)

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 MAR80, or SAE J1301.

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 for a top structure impact). Also use "00" (Non-horizontal force) with any other circumstance which is consistent with the directions contained in SAE, J224 MAR80, or SAE J1301.

If there is only one CDC, it should be entered in variables 27-32, 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").

$\frac{9}{48} \frac{9}{49} \frac{9}{50} \frac{9}{51} \frac{9}{52} \frac{9}{53} \frac{9}{54} \frac{9}{55} \frac{9}{56} \frac{9}{57} \frac{9}{58} \frac{9}{59}$

Rank order any CDCs on the basis of the CRASH program results, if used.

If there are two or more CDCs, and if CRASH is exercised on none or on a portion of the CDCs, subjectively order the 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 27-32 if it is felt to represent the highest change in velocity (delta "V"); it should be coded in variables 36-41 if it is felt to represent the second highest delta "V", etc. It should not be coded if it is felt to represent the fifth highest or lesser delta "V".

If no CDC/TDC has been recorded for a vehicle which has sustained but one impact, row variables 27-32 are coded as unknown ("99" or "9") and the remaining rows are left "Blank". If no CDC/TDCs are recorded for a vehicle which has sustained more than one impact, fill in the required number of CDC/TDC rows to cover each impact with unknowns ("99" or "9") and leave the remaining ones blank. If an unknown number of impacts occurred, fill in the entire block of CDC/TDC rows with the appropriate CDC/TDCs (or unknowns, if applicable). If a vehicle has sustained multiple impacts and, for example, 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 27-32 are coded as unknown ("99" or "9") and the generated CDC/TDC is coded in row variables 36-41.



## VEHICLE FORM

V27  
V36  
V45  
V54  
(3)

Variable Name: 1st C.D.C./T.D.C. - Direction of Force (cont'd.)  
2nd C.D.C./T.D.C. - Direction of Force (cont'd.)  
3rd C.D.C./T.D.C. - Direction of Force (cont'd.)  
4th C.D.C./T.D.C. - Direction of Force (cont'd.)

No CDC/TDCs may be entered in the row variables 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 the CDC/TDC row variables, all other CDC/TDC columns in that row must be coded "9" (Unknown); however, variables 32, 41, 50 and 59 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. For pedestrian accidents only, in the absence of a vehicle inspection or insufficient damage profile information, a CDC/TDC may be derived from interview information obtained from drivers, occupants, eyewitnesses, or the struck pedestrian.

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 alteration which does not detract from the investigator's confidence in those measurements.)

Leave the CDC/TDC row variables "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 V26, V35, V44 and V53 [1st (2nd) (3rd) (4th) C.D.C./T.D.C. - Object Contacted] even though the CDC/TDC row variables are left "Blank" because they are not in scope for classification.

For Intraunit force type damages (i.e., Jackknife), where multiple CDC/TDCs may be coded, if a vehicle inspection is not obtained, multiple CDC/TDCs (1\*\*99999999 1) need to be coded.

\*\* Code actual object contacted if known (i.e., in a jackknife the objects contacted would be that vehicle's number.

## VEHICLE FORM

V28  
V37  
V46  
V55

Variable Name: 1st C.D.C./T.D.C. - Deformation Location  
2nd C.D.C./T.D.C. - Deformation Location  
3rd C.D.C./T.D.C. - Deformation Location  
4th C.D.C./T.D.C. - Deformation Location

Format: 1 column - alphanumeric

Beginning  
Column 41  
53  
65  
77

Element Value:

<u>C.D.C.</u>	<u>T.D.C.</u>
Blank - no C.D.C./T.D.C.	Blank - no C.D.C./T.D.C.
F Front	F Front
R Right side	R Right side
L Left side	L Left side
B Back (rear)	B Back of unit with cargo area rear of trailer or straight truck)
T Top	D Back (rear of tractor)
U Undercarriage	C Rear of cab
9 Unknown	V Front of cargo area
	T Top
	U Undercarriage
	9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

See remarks section for variables V27 and V36, etc.

VEHICLE FORM

V29  
V38  
V47  
V56

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  
 3rd C.D.C./T.D.C. - Specific Longitudinal or Lateral Location  
 4th C.D.C./T.D.C. - Specific Longitudinal or Lateral Location

Format: 1 column - alphanumeric

Beginning  
Column 42  
54  
66  
78

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 of 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 V27 and V36, etc.

V30  
V39  
V48  
V57

Variable Name: 1st C.D.C./T.D.C. - Specific Vertical or Lateral Location  
2nd C.D.C./T.D.C. - Specific Vertical or Lateral Location  
3rd C.D.C./T.D.C. - Specific Vertical or Lateral Location  
4th C.D.C./T.D.C. - Specific Vertical or Lateral Location

Format: 1 column - alphanumeric

Beginning  
Column 43  
55  
67  
79

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 V27 and V36, etc.

VEHICLE FORM

V31  
V40  
V49  
V58

Variable Name: 1st C.D.C./T.D.C. - Type of Damage Distribution  
2nd C.D.C./T.D.C. - Type of Damage Distribution  
3rd C.D.C./T.D.C. - Type of Damage Distribution  
4th C.D.C./T.D.C. - Type of Damage Distribution

Format: 1 column - alphanumeric

Beginning  
Column 44  
56  
68  
80

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 V27 and V36, etc.

V32  
V41  
V50  
V59

Variable Name: 1st C.D.C./T.D.C. - Deformation Extent Guide  
 2nd C.D.C./T.D.C. - Deformation Extent Guide  
 3rd C.D.C./T.D.C. - Deformation Extent Guide  
 4th C.D.C./T.D.C. - Deformation Extent Guide

Format: 2 columns - alphanumeric

Beginning  
 Column 45  
 57  
 69  
 81

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 V27 and V36, etc.

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.

## VEHICLE FORM

V33

V42

V51

V60

Variable Name: 1st C.D.C./T.D.C. - Sequence Number of Impact (in accident)  
2nd C.D.C./T.D.C. - Sequence Number of Impact (in accident)  
3rd C.D.C./T.D.C. - Sequence Number of Impact (in accident)  
4th C.D.C./T.D.C. - Sequence Number of Impact (in accident)

Format: 2 columns - alphanumeric

Beginning	
Column	47
	59
	71
	83

## Element Values:

Blank - no impact  
1-7 - First through seventh  
8 - Eighth or additional  
9 - Unknown

## Remarks:

In accidents involving multiple vehicles and multiple impacts, the events are numbered in sequence by chronology in reference to the entire accident. This total accident sequence number is coded adjacent (V33, V42, V51 or V60) to the CDC/TDC that was produced during this event. For example, three cars are waiting at a red light. A pickup truck rear ends the third car in line and pushes it into the second car which in turn is pushed into the first car. The sequential impact numbers in this accident would be as follows:

Number 1 - pickup vs. 3rd car  
Number 2 - 3rd car vs. 2nd car  
Number 3 - 2nd car vs. 1st car

Do not forget that the numbers are actually encoded in accordance with CDC/TDC prioritization.

Variable Name: Vehicle Identification Number

Format: 17 columns - alphanumeric

Beginning  
Column 84

Element Values:

Code the entire VIN, left justify

##### No VIN

9999999999999999 Unknown

Source: Primary source is vehicle inspection; secondary sources are the police report and the vehicle registration files.

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: 3U62S1ØØ932 \_\_\_\_\_  
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 \_\_\_\_\_



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.  
300 New Center Building  
Detroit, Michigan 48202
- (3) Lee S. Cole  
Davis Publishing Co.  
Post Office Box 841  
Santa Cruz, California 95060

(Vehicle Identification 1938-1868  
Vehicle Identification 1968-1981)

Variable Name: Registration of Vehicle

Format: 1 column - numeric

Beginning  
Column 101

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, police report, and vehicle registration files.

Remarks:

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).

Vehicles displaying a valid temporary registration certificate are to be considered registered. Expired registrations are not valid and are to be ignored when selecting the proper attribute. Vehicles displaying dealer's tags are not registered (code "0"). The assumption is that the association between the tag and the vehicle is short-lived.

Code "0" means that the vehicle has no currently valid registration. This would include expired registrations and exempt vehicles.

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.

Variable Name: Vehicle Special Use (this trip)

Format: 1 column - numeric

Beginning  
Column 102

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
- 7 Fire
- 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:

- o externally identifiable to other traffic units as a school/pupil transport vehicle;
- o operated or owned by a public or private school-type institution;
- o where the institution's students may range from pre-school through high school;
- o whose occupants, if any, are associated with the institution; and,
- o the vehicle is in operation at the time of the accident to and from the school or on a school-sponsored activity or trip.

V14, Body Type, need not equal 30. The vehicle may 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.

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 Use (this trip) [cont'd.]

For codes "4" (Military), "5" (Police), "6" (Ambulance), and "7" (Fire), 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).

Code "7" (Fire) refers to a readily identifiable (lights or markings) vehicle which is owned by any government (typically local) or cooperative agency. This vehicle is presumed to be in special use at all times. For volunteer fire companies, firefighting apparatus and other vehicles owned by the company or government qualify for code "7". Privately owned vehicles, even if equipped with lights, do not qualify.

Military fire vehicles are coded "4" (Military).

Variable Name: Odometer Reading

Format: 3 columns - numeric

Beginning  
Column 103

Element Values:

Level 2 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.

Variable Name: Passenger Compartment Integrity

Format: 1 column - numeric

Beginning  
Column 106

Element Values:

- 0 No passenger compartment
- 1 No integrity loss
- Yes, integrity was lost through:
- 2 Windshield
- 3 Door (side)
- 4 Door (rear)
- 5 Roof
- 6 Windshield & door (side)
- 7 Other combination of above
- 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.

Code "0" (No passenger compartment) if the vehicle has no passenger compartment (e.g., motorcycle).

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.

Code "3" [Door (side)] refers to any door (including cargo doors) along the left or right side of a vehicle that is not separated from the passenger compartment by a full partition.

Code "4" [Door (rear)] refers to a door at the back of a vehicle (not a rear side door). For this door to qualify, there can be no full partition between this rear door and the passenger compartment. For example, rear doors or hatchbacks and stationwagons would qualify; a trunk lid would not.

VEHICLE FORM

V65

(2)

Variable Name: Passenger Compartment Integrity (cont'd.)

Code "5" (Roof) includes convertibles, "T-tops", targa tops and removable tops that are up or in place. These tops should not be coded as having lost integrity if they are removed or in the down position prior to impact. Sun/Moon roofs are also excluded, even if shattered.

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 107

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 buckles 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 108

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 109

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:

- o Belt/fittings damaged by occupant loading: deformed anchorages, stretched webbing, latch metal peening (loading impression on metal);
- o Placement of belts: on, behind, or under seatbacks or benches; and,
- o 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").

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.

### 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.

## INSTRUCTIONS FOR COMPLETION OF VEHICLE INTERIOR PAGE

Sketch and label (A,B,C,...etc.) all occupant contact points or evidence of contact (i.e., dents, skin transfer, etc.) on the appropriate diagram, identifying the occupant number (or seat location) and possible body part contacting at each point on the diagram. Using the table, document the "Interior Part Contacted" (i.e., dash, radio knob, AC duct, etc.), the "Supportive Physical Evidence" (i.e., dent, skin or cloth transfer, hair, scuff, etc.), and the "Confidence Level of Contact Point" (your confidence that the point is indeed an occupant contact from this accident). If you are reasonably certain that the area was contacted during this accident circle the ①; if you think it is only a possible contact, then circle the ②.

The diagram of the steering column should be used to show steering wheel deformation and contacts to the column.

The overhead view of the interior (center right part of page) should be used to indicate areas of intrusion, deformation of seat backs, rear seat area occupant contacts, in some cases the direction of occupant travel from seat position to contacted areas, and in some cases areas where the vehicle interior has bulged outward.

Variable Name: Type of Most Severe Impact This Vehicle, This Vehicle's Role

Format: 1 column - numeric

Beginning  
Column 110

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 location
- 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 V28, 1st C.D.C./T.D.C. - Deformation Location, where V28 is other than "9" or "Blank". This association and unknown as well as out of scope damage classifications for V28 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 V28, 1st C.D.C./T.D.C. - Deformation Location, to determine the value or range of values for V69, Type of Most Severe Impact This Vehicle, This Vehicle's Role.

IF		THEN
V28 equals:		V69 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).

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 MAR80 and SAE J1301 for selection of the proper plane.

"Vehicle" as used in this variable is the same as V14, Body Type, plus any trailers connected by means of a fixed linkage at the time of impact. The four planes (front, right, left, rear) are measured with respect to the entire vehicle (capsule). In contrast, any trailer disconnected prior to impact is treated as an object.

Variable Name: Role of Other Contacted Vehicle, Object, or Person (for same impact as above)

Format: 1 column - numeric

Beginning  
Column 111

Element Values:

- 0 Nonimpact
- 1 Front of other vehicle
- 2 Side of other vehicle
- 3 Rear of other vehicle
- 4 Intraunit damage
- 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 V69, 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 V27 through V32 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., V27-V32, V36-V41, V45-V50 or V54-V59) 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 V27-V32), then use the table below to select the appropriate value. Remember, this table, as its predecessor (V69), is only interpretable in one direction.

IF		THEN
V28, V37, V46 or V55 equals		V70
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

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 maps to this vehicle's most severe impact (for whatever reason), then code the most appropriate response.

Code "4" (Intraunit damage) is used whenever the most severe impact for the vehicle under consideration was produced by (1) its trailer and/or towed trailing unit for TDC applicable vehicles or (2) its towed trailing unit and/or cargo for CDC applicable vehicles.

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 nonmotorists and trailers which disconnect.

Code "7" (Pedestrian or nonmotorist) whenever the most severe impact for the vehicle under consideration occurred with a pedestrian, pedalcyclist, occupant of an animal related nonmotor vehicle transport device, 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.

Code "8" (Motorcycle or moped) whenever the most severe impact for the vehicle under consideration was produced by a motorcycle or moped.

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 112

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 interviewees.

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 "20"- "29" (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 113

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 interviewees.

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 "75" (Truck tractor pulling one or more trailers), on variable V14 (Body Type). Code "75" (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) whenever there is 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 under controlled situations (e.g., backing, parking, etc.).

Variable Name: Submission of Potential Safety Problem Bulletin

Format: 1 column - numeric

Beginning  
Column 114

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.

This list is provided for guidance and is not intended to be inclusive.

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 used.

#### 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 on 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.

POTENTIAL SAFETY PROBLEM BULLETIN

Reporting Date: \_\_\_\_\_

SEND TO: Vernon Roberts, NRD-32  
National Highway Traffic Safety Administration  
Nassif Building, Room 6213  
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 sanitized police report)

\_\_\_\_\_  
(continue on back)

ITEM DESCRIPTION (include hardware and photographs if possible)

Variable Name: Hazardous Cargo

Format: 1 column - numeric

Beginning  
Column 115

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 exceeding 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 (1) for details.



Variable Name: Hazardous Cargo (cont'd.)

HAZARD CLASS	DEFINITIONS
	<p>ORM-A, B or C (Other Regulated Materials) - 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>NOTE: 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 Sec. 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. Use this code if (1) neither a truck (light, medium, or heavy) nor a van (i.e., V14 = 40-79) was involved and (2) the police report does not state whether the vehicle was carrying hazardous cargo and (3) no additional information is available (i.e., no vehicle inspection and no interview).

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.

Code "9" (Unknown) should be used when no information is available on hazardous cargo. For example, a transient truck is involved in an accident with minor damage; the police report does not address hazardous cargo, and an interview is not available. This circumstance should be coded "9". For unknown hazardous cargo in passenger cars, motorcycles, buses, and other vehicles (i.e., V14 = 01-39, 80-89), use code "0" (No hazardous cargo).

# DOT Hazardous Materials Warning Placards

\* Numbers in each square refer to illustration numbers, Tables 1 and 2.

				<p>When the container, tank 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:</p> <p>When 5,000 pounds or more of one class of hazardous materials is loaded at one loading facility, the placard for that class in TABLE 2 must be added.</p>	

Cargo Tanks and Portable Tanks

Placard motor vehicles, freight containers, and rail cars containing any quantity of hazardous materials listed in TABLE 1.

Hazard Classes	* No.
Class A explosives	1
Class B explosives	2
Poison A	4
Inflammable solid, DANGEROUS (HEAVY label only)	12
Radioactive material (YELLOW III label)	16
Radioactive material (blue label)	17
Class C explosives (fissile, containing more than 100 grams)	16-17
Class C explosives (low specific activity, containing 10 grams or less)	16-17

Placard motor vehicles and freight containers containing 1,000 pounds or more gross weight of hazardous materials classes listed in

**Table 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.

Hazard Classes	* No.
Class C explosives	3
Blasting agent	2
Nonflammable gas	1
Nonflammable gas, Chlorine	1
Nonflammable gas, Fluorine	15
Nonflammable gas, Oxygen (pressurized liquid)	8
Flammable gas	6
Combustible liquid	10
Flammable liquid	9
Flammable solid	11
Oxidizer	10
Organic peroxide	11
Poison B	15
Corrosive material	14
Irritating material	13

## 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.

















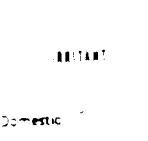








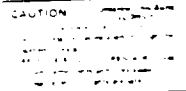
## FREIGHT CONTAINERS

- 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, Compressed, Flammable and Oxidizer Placards - Sec. 172.504, Table 2
- Electric Placard - Sec. 172.644 (1)
- Gaseous Placard - Sec. 172.642 (1)
- Square Background for Rail Car Placards - Sec. 172.510, Tables 1 and 2
- Empty Placard - Sec. 172.625

# DOT Hazardous Materials Warning Labels

				 Poison A		
 CHLORINE				 Note: For use in addition to other required labels	 DANGEROUS WHEN WET	
 ORGANIC PEROXIDE	 Poison B	 Irritant Domestic	 Irritant Export	 RADIOACTIVE I	 RADIOACTIVE II	 RADIOACTIVE III
 CORROSIVE		 Magnetized Material	 Cargo Aircraft Only	<b>EMPTY</b>	 CAUTION	

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 HMT 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. 172.406 (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 (d))

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.

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))

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))

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))

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))

NOTE: Printing Errors  
RADIOACTIVE MATERIALS LABELS  
1. Top portion of RADIOACTIVE I label should be white.  
2. Red bars on all labels should follow the word RADIOACTIVE.

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.

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 GAS 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 to Title 49 Code of Federal Regulations Part 172.



U.S. DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
HAZARDOUS MATERIALS TRANSPORTATION BUREAU  
WASHINGTON, D.C. 20590

Variable Name: Vehicle Curb Weight

Format: 3 columns - numeric

Beginning  
Column 116

Element Values:

Level 2 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 "75" (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 V76 (Vehicle Cargo Weight).

If variable V15 (Towed Trailing Unit) is coded "1" (Yes) and variable V14 (Body Type) is not coded as "75" (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 V76 (Vehicle Cargo Weight). For example, the weight of a boat trailer and its cargo are coded as Vehicle Cargo Weight (V76), distinct from the weight of the vehicle.

When coding a pickup (V14, Body Type, equal 50 or 51) or car [e.g., El Camino (V14 = 10)] 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 V76, Vehicle Cargo Weight. However, chassis-mounted campers are to be included in this variable.

Variable Name: Vehicle Curb Weight (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 for the model and annotate that the "average" was reported.

When the vehicle specifications do not report the vehicle weight with the proper engine size then adjustments must be made. First, try to determine the weight differences from the vehicle specifications. If the weight difference cannot be determined from the specifications then adjust as follows: 8 cyl. to 6 cyl. - subtract 100 lbs.; 6 cyl. to 4 cyl. - subtract 75 lbs.

Add 100 lbs. to the shipping weight to obtain a curb weight on all light duty vehicles (except motored cycles, snowmobiles, and other unusual vehicle types).

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

Annotate the source used in the space provided on the Vehicle Form under this variable.

Variable Name: Vehicle Cargo Weight

Format: 3 columns - numeric

Beginning  
Column 119

Element Values:

Level 2 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 interviews.

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 "75" (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 "75" (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 V75, Vehicle Curb Weight.

Code "997" (99,650 pounds or more) if the cargo weight is 99,650 lbs. or more.

Code "999" (Unknown) if cargo weight is unknown.

Variable Name: Investigator Reported Source of Cargo Weight

Format: 1 column - numeric

Beginning  
Column 122

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 cargo is present and the total cargo weight of V76 (Vehicle Cargo Weight) is less than 50 pounds (i.e., if V76 equals "000"), then V77 can equal "1" (Measured) or "2" (Estimated).

If the cargo weight (V76) is coded greater than or equal to 50 pounds, then code this variable as "1" (Measured), "2" (Estimated), or "3" (Rated capacity) respectively.



### RECONSTRUCTION PROGRAM

Four options or methods for calculating the Delta V are available in the reconstruction program. Delta V is a vector quantity giving the difference in velocity over the collision or crushing phase of an impact. The direction is the same as that of the principal direction of force.  $\Delta V = \vec{V}_{\text{separation}} - \vec{V}_{\text{impact}}$ .

#### DAMAGE ALGORITHM (CRASH 3)

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 (CRASH 3)

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, allow prediction of 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. Your best efforts as a trained, experienced investigator are required to obtain reliable evidence in these challenging situations.

#### RECONCILIATION OF DIFFERENT RESULTS BETWEEN DAMAGE AND TRAJECTORY (CRASH 3)

When evidence from the scene and the vehicle are present, the execution of the reconstruction program 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. Make sure directions of rotation, points on the paths, and end-of-rotation points are specified correctly.

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 V78 through V82.

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 reconstruction run.

If agreement does not occur, the RERUN execution on the reconstruction 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 V79 through V82.

For known occupants with unknown weights, use the occupant's age or age group in the table below to determine the appropriate weight to add.\*

Age	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Male	17	25	30	35	39	43	48	53	59	66	73	83	93	105
Female	16	24	29	33	37	41	45	51	59	67	77	86	97	106
Age	14	15	16	17	18-24	25-34	35-44	45-54	55-64	65-97				
Male	119	131	142	149	161	172	176	175	170	163				
Female	115	121	124	125	128	132	139	145	144	142				

Age Group	Child (0-12)	Adolescent (13-17)	Adult (18-97)
Male	50**	130***	170
Female		120***	137

\*Sources of Information:

- Weight and Heights of Adults 18-74 Years of Age: United States, 1971-1974. Vital and Health Statistics: Series 11, Data from the National Health Survey; Number 211. DHEW publication (PHS) 79-1659. Table 4, page 17; data based on 50th percentile.

- NCHS Growth Curves for Children Birth-18 Years: United States. Vital and Health Statistics: Series 11, Data from the National Health Survey; Number 165. DHEW publication (PHS) 79-1650. Tables 10, page 34, and 14, page 38; data based on 50th percentile at half year age to the nearest pound.

\*\*Based on 6 and 7 year olds rounded to the nearest 5 pounds.

\*\*\*Based on 15 year olds rounded to the nearest 5 pounds.

MISSING VEHICLE ALGORITHM

The data for the Missing Vehicle Algorithm is entered in the same manner as the data is entered for CRASH 3 "Damage Only" Algorithm.

The minimum information required on the missing, or not inspected vehicle, is:

- o Vehicle make/model/year or size category  
(Table 8-1 in CRASH 3 Manual)
- o Mass [curb weight + occupant(s) weight + cargo weight], if available.
- o Area of damage (at least third character of CDC - "Area of deformation").

The information required on the inspected vehicle is the same as that information needed to run CRASH 3.

YIELDING OBJECT ALGORITHM

The data for the Yielding Object Algorithm is entered in the same manner as the data is entered for CRASH 3 "Damage Only" Algorithm.

Certain characteristics of the struck object are required data in order to reconstruct a Delta V. These characteristics depend on the type or category of the object that is struck. Record the following data for each category of object listed below:

1. Wood Utility Pole
  - a. pole diameter.
  - b. degree of fracture: partial, complete shear, undamaged.
  - c. degree of shift in ground: inches, degrees.
2. Non-movable (fixed) deformable objects (e.g., barriers, buildings, etc.)
  - a. type of structure and material
  - b. size of structure (barrier post size, area of contact on building, etc.).
  - c. degree of damage to structure (Rough crush profile or max crush).
3. Movable objects (e.g., mailbox, fence post, animal, pedestrian, objects not rigidly attached to ground).
  - a. description of object.
  - b. approximate mass/weight of the object.
  - c. distance object was thrown from POI to FRP.

Variable Name: Basis for Total Delta V (highest)

Format: 1 column - numeric

Beginning  
Column 123

Element Values:

Delta V calculated

- 1 CRASH program damage-only routine
- 2 CRASH program damaged and trajectory routine
- 3 Missing vehicle algorithm
- 4 Yielding object algorithm
- 5 Other technique used

Delta V not calculated

- 6 At least one vehicle (which may include this vehicle) is beyond the scope of an acceptable reconstruction program: regardless of collision conditions.
- 7 All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction technique: regardless of the adequacy of damage data.
- 8 All vehicles and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

Source: Investigator determined--inputs include CRASH output (if applicable), vehicle inspection, scene inspection, police report, and photographs.

Remarks:

This variable is used to indicate what reconstruction algorithm or technique was used to compute this vehicle's highest Delta V (results coded in variables V79-V82), or the reason a reconstruction program was not applied to the most severe impact.

Code "1" (CRASH program damage-only routine) means that the CRASH3 output (coded in variables V79-V82) is based upon vehicle damage only.

Code "2" (CRASH program damage and trajectory routine) means that the CRASH3 output (coded in variables V79-V82) is based on trajectory evidence documented at the scene, in addition to vehicle damage.

Code "3" (Missing vehicle algorithm) means that in a two vehicle impact that one vehicle is inspected (damage measurements and CDC are obtained) but for the other vehicle the damage measurements (including CDC) are missing but enough data is available to use the missing vehicle algorithm.

Code "4" (Yielding object algorithm) means that in a vehicle/object impact that the object yielded but adequate data is available to use the yielding object algorithm.

Code "5" (Other technique used) means that a technique other than CRASH, missing vehicle algorithm, and yielding object algorithm was used to determine delta V. Identify the technique in the space provided.

Variable Name: Basis for Total Delta V (highest) [cont'd.]

Code "6" (At least one vehicle ....) means that one of the vehicles including this vehicle involved in this vehicle's most severe collision cannot be adequately represented by the parameters in an acceptable reconstruction size/stiffness categories (e.g., large truck, motorcycle, bus, etc.). As a general rule in NASS, any vehicle that is not applicable for CDC is not applicable for an acceptable for reconstruction program.

Code "7" (All vehicles within scope ....) means that the involved vehicles fit the vehicle parameters for an acceptable reconstruction program; however, the collision type is beyond the scope of the program (e.g., rollover, sideswipe, etc.).

Code "8" (All vehicles and collision ....) means that the involved vehicles and the collision type are applicable for an acceptable reconstruction program (1 through 5 above), but due to insufficient data on one (or both) of the vehicles (or object), an acceptable reconstruction program (1 through 5 above) cannot be used.

V78	V79	V80-V81	V82
1, 5	00 - 97	-97 - +97	0000 - 9997
6, 7, or 8	_99	_99	9999

The character "\_" means leave the first space "blank".

Variable Name: Total Delta V

Format: 2 columns - numeric

Beginning  
Column 124

Element Values:

Level 1 Range: 00 through 97, 99

Nearest k.p.h.

00 Less than 0.5 k.p.h.

97 97 k.p.h and above

99 Unknown

Source: Reconstruction program.

Remarks:

Complete an acceptable reconstruction program (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs by severity, for variables V25-V60 of the Vehicle Form. If a CDC is entered in row variables V27-V32 and it was used in exercising the reconstruction program, code the Total Delta V as shown in the results.

Code this variable as "99" (Unknown), if results for the most severe impact are unobtainable. If the CDC associated with the reconstruction program was only entered in row variables V35-V41 (secondary), enter the Total Delta V as shown in the results on the space available in the secondary (noncoded) column of this variable.

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 126

Element Values:

Level 1 Range: -97 k.p.h. through +97 k.p.h., \_99

Nearest k.p.h.

±00 Greater than -0.5 and less than 0.5 k.p.h.

±97 97 k.p.h. and above

\_99 Unknown

Source: Reconstruction program.

Remarks:

Complete an acceptable reconstruction program (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs by severity for variables V25-V60 of the Vehicle Form. If a CDC is entered in row variables V27-V32 (highest) and it was used in exercising the reconstruction program, code the Longitudinal Component of Delta V as shown in the results.

Code this variable as "99" (Unknown), if the results for the most severe impact are unobtainable. If the CDC associated with reconstruction program was only entered in row variables V35-V41 (secondary), enter the Longitudinal Component of Delta V as shown in the results on the space available in the secondary (noncoded) column of this variable.

The character "\_" means leave the first space "blank".



Variable Name: Lateral Component of Delta V

Format: 3 columns - numeric

Beginning  
Column 129

Element Values:

Level 1 Range: -97 k.p.h. through +97 k.p.h., \_99

Nearest k.p.h.

±00 Greater than -0.5 and less than 0.5 k.p.h.

±97 97 k.p.h. and above

\_99 Unknown

Source: Reconstruction program.

Remarks:

Complete an acceptable reconstruction program (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs by severity for row variables V25-V60 of the Vehicle Form. If a CDC is entered in row variables V27-V32 (highest) and it was used in exercising the reconstruction program, code the Lateral Component of Delta V as shown in the results.

Code this variable as "99" (Unknown), if the results for the most severe impact are unobtainable. If the CDC associated with the reconstruction program was only entered in row variables V35-V41 (secondary), enter the Lateral Component of Delta V as shown in the results on the space available in the secondary (noncoded) column of this variable.

The character "\_" means leave the first space "blank".

Variable Name: Energy Absorption

Format: 4 columns - numeric

Beginning  
Column 132

Element Values:

Level 1 Range: 0000 through 9997, 9999 newton-meters

Nearest 100 newton-meters (joules)

0000 Less than 50 newton-meters  
9997 999,650 newton-meters or more  
9999 Unknown

Source: Reconstruction program.

Remarks:

Complete an acceptable reconstruction program (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs by severity for variables V25-V60 of the Vehicle Form. If a CDC is entered in row variables V26-V33 (highest) and it was used in exercising the reconstruction program, code the Energy Absorbed as shown in the results.

Code this variable as "9999" (Unknown) if the result for the most severe impact are unobtainable. If the CDC associated with the reconstruction program was only entered in row variables V35-V41 (secondary), enter the Energy Absorbed as shown in the results on the space available in the secondary (noncoded) column of this variable.

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 reconstruction program is exercised in the english version and the amount of energy absorbed exceeds 737,462 ft-lbs., code "9997".

If the reconstruction program is exercised in the metric version and the amount of energy absorbed exceeds 999,999 nt.m, the output will appear as "\*\*\*\*\*", code "9997". 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 equivalent nt.m. The english version should indicate that the amount of energy absorbed is greater than 737,462 ft-lbs.

Variable Name: Reconstruction Damage Data for Highest Delta V - L

Format: 4 columns - numeric

Beginning  
Column 136

Element Values: (metric values)

Level 2 Range: 0005 through 0600 centimeters

Nearest centimeter

Blank - No reconstruction output for most severe impact

9999 Unknown

Source: Reconstruction program.

Remarks:

The output of the reconstruction program contains a "Summary of the Damage Data". The value of "L" coded must be the same as the "L" value given in this reconstruction program output's Summary. This is the value of L that is used in the reconstruction 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 "reconstruction program L". (NOTE: The "L" measurement used in the reconstruction program considers both direct and induced damage.)

If there is no reconstruction attempt on the most severe impact, leave this variable "blank".

If there is a reconstruction attempt on the most severe impact, but this variable is unknown, code "9999" (Unknown).

When no value is entered into the reconstruction program (e.g., CDC only run), code "9999" (Unknown).

Variable Name: Reconstruction Program Damage Data for Highest Delta V - C1  
Reconstruction Program Damage Data for Highest Delta V - C2  
Reconstruction Program Damage Data for Highest Delta V - C3  
Reconstruction Program Damage Data for Highest Delta V - C4  
Reconstruction Program Damage Data for Highest Delta V - C5  
Reconstruction Program Damage Data for Highest Delta V - C6

Format: 3 columns - numeric

Beginning  
Column 140

Element Values: (metric values)

Level 2 Range: 000 through 150 centimeters

Nearest centimeter

Blank - No reconstruction output for most severe impact

999 Unknown

Source: Reconstruction 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 reconstruction output Summary. These are the C-values used in the reconstruction 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 reconstruction purposes. In this example, the C-values coded (V84) are averaged C-measurements. [NOTE: If only 4 C-measurements are taken (i.e.,  $L \leq 16"$ ), then leave C5 and C6 "Blank".]

If there is no reconstruction attempt run on the most severe impact, leave these variables "blank".

If there is a reconstruction attempt on the most severe impact, but these variables are unknown, code "999" (Unknown).

When no value is entered into the reconstruction program (e.g., CDC only run), code "999" (Unknown).

Variable Name: Reconstruction Program Damage Data for Highest Delta V  $\pm$  D

Format: 4 columns - numeric

Beginning  
Column 158

Element Values:

Level 2 Range: -300 centimeters through +300 centimeters

Nearest centimeter

Blank - No reconstruction output for most severe impact

$\pm$ 000 Greater than -0.5 and less than +0.5 centimeters

\_999 Unknown

Source: CRASH Program Summary Form (input data).

Remarks:

This is the measured value of "D" entered in the reconstruction program, and remember that it is the induced plus direct "D" that is used in the reconstruction 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.

If there is no reconstruction attempt run on the most severe impact, leave this variable "blank".

If there is a reconstruction attempt run on the most severe impact, but this variable is unknown, code "\_999" (Unknown).

When no value is entered into the reconstruction program (e.g., CDC only run), code "\_999" (Unknown).

The character "\_" means leave the first space "blank".

Variable Name: Travel Speed

Format: 2 columns - numeric

Beginning  
Column 162

Element Values:

Level 1 Range: 00 through 97, 99  
Nearest m.p.h.  
00 Stopped or less than 0.5 m.p.h.  
97 97 m.p.h. or higher  
99 Unknown

Source: Police report only.

Remarks:

Code the travel speed for this vehicle if indicated on the police report by the investigating officer. Do not use estimates by drivers or witnesses.

Code to the nearest m.p.h. as in the examples:

Reported Speed: 40 m.p.h.  
Code: 40

Reported Speed: 40.2 m.p.h.  
Code: 40

Reported Speed: 40.5 m.p.h.  
Code: 41

Code "00" if stopped or less than 0.5 m.p.h.

Code "97" if 97 m.p.h. or greater.

Code "99" if the estimated travel speed is unknown.

If the travel speed is reported as a range, code the average. For example, if reported as 55-60 m.p.h., code "58".

VEHICLE FORM

V87  
V88  
V89

Variable Name: 1st - Other Vehicle Related Factors  
2nd - Other Vehicle Related Factors  
3rd - Other Vehicle Related Factors

Format: 2 columns - numeric

Beginning  
Column 164  
166  
168

Element Values:

00 No other vehicle related factors

Defective

- 01 Tires
- 02 Wheels
- 03 Brake system
- 04 Steering system
- 05 Suspension
- 06 Power train
- 07 Exhaust system
- 08 Headlights
- 09 Signal lights
- 10 Other lights (specify)
- 11 Horn
- 12 Mirrors
- 13 Wipers
- 14 Body, doors
- 15 Driver seating and control
- 16 Trailer hitch
  
- 98 Other (specify)
- 99 Unknown

Source: Police report.

Remarks:

The purpose of these variables is to provide guidance to safety research on the involvement of these factors in accidents. Causal determinations must necessarily be based on more detailed investigations and other data, such as exposure data.

Related Factors are circumstances that may have contributed to the cause of an accident. For our purposes, regarding vehicle related factors, only those factors indicated by the investigating police officer on the PAR are to be considered for coding. These factors can appear anywhere on the report--in the narrative section, in the space for violations, in the column titled "Contributing Factors" or "Vehicle Defects", etc.

V87  
 V88  
 V89  
 (2)

Variable Name: 1st - Other Vehicle Related Factors (cont'd.)  
 2nd - Other Vehicle Related Factors (cont'd.)  
 3rd - Other Vehicle Related Factors (cont'd.)

As described in the coding attributes, vehicle related factors are police accident report (PAR) indications of defects. The vehicle related factors are taken directly from the PAR whether or not the PAR's contributing factor is accurate.

Only the vehicle related factors that apply to that particular vehicle should be coded. If only one factor applies, the code for it should be entered in the slots for the first variable. The following variables should be coded "00" (No other vehicle related factors), signifying no subsequent related factors. If two or three factors apply, code accordingly in ascending numerical order. If more than three codes apply, choose the three that seem the most significant. If no other vehicle related factors apply, code "00" (No other vehicle related factors) for all three variables.

Code "00" (No other vehicle related factors) if a vehicle defect was not indicated by the investigating officer as a related factor in the accident.

Codes "01" through "16" are to be applied when the specific vehicle component is indicated as defective on the PAR. It is not necessary that the PAR indicate this as a cause of the accident.

Code "03" (Brake system) includes parking brake.

Code "06" (Power train) includes engine, transmission, drive shaft, differential, etc.

Code "07" (Exhaust system) includes exhaust manifolds, headers, muffler, tailpipe, etc.

Code "14" (Body, doors) includes trunk, hood, tailgate, rear doors of cargo vans, etc.

Code "16" (Trailer hitch) is to be applied to a defective trailer hitch only. An improper trailer hitch qualifies as a driver-related factor [code "37" (Operating without required equipment) in the Driver Related Factors section.

Code "99" (Unknown) in all three spaces only when the PAR specifically states "unknown contributing factors".

Components may be defective through inadequate design, through improper maintenance or absence of maintenance. For NASS purposes, it would require additional sources of data to ascertain this information; thus, it is not a matter to be considered in coding these variables. If it appears on the PAR or in the opinion of the investigator based on his observations of the accident data in the PAR and all other available sources to be related to inadequate design, then a Potential Safety Problem Bulletin should also be filed.

For hit and run vehicles, code "00" (No other vehicle related factors) for all three variables unless the PAR indicates the presence of a factor.



Variable Name: Investigator I.D. Number

Format: 1 column - numeric

Beginning  
Column 10

Element Values:

Level 1 Range: 1 through 9

Source: Zone center.

Remarks:

The person who was primarily responsible for the completion of the Driver Form shall enter his/her unique number.

Each investigator's unique number is assigned by the PSU's Zone Center.

This variable is a mandatory variable and cannot be changed.

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Level 1 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:

Level 2 Range: 00 through 10  
99 Unknown  
97 97 or more

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.

Code "99" (Unknown) is used in the case of a hit-and-run vehicle--unless reliable evidence clearly establishes the number of occupants present.

Variable Name: Driver Presence in Vehicle

Format: 1 column - 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 D44 and D60 through D65 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 the 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:

Level 1 Range: 01 through 61, 99  
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 = 13, 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:

Level 1 Range: 001 through 997, 999  
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: Total Mileage All Vehicles (Past Twelve Months)

Format: 3 columns - numeric

Beginning  
Column 21

Element Values:

Level 1 Range: 001 through 997, 999  
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.

The mileage recorded should include the cumulative mileage driven, during the twelve months prior to the accident date, of all motor vehicles driven by this driver.

For new drivers who have not driven for twelve months, determine their miles per month average and multiply by twelve.

Variable Name: Type of Operation or Carrier  
(Vehicle Over 10,000 lbs. GVWR)

Format: 1 column - numeric

Beginning  
Column 24

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 or passengers
- 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 or passengers) 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 Regulated

Format: 1 column - numeric

Beginning  
Column 25

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 solely within the commercial zone of a municipality or large city (generally pickup and delivery drivers) are exempt from BMCS regulations.

Variable Name: Federal Safety Regulated (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.

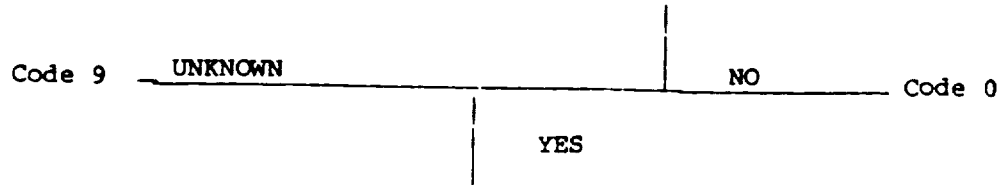
If you determine that the carrier is not DOT (BMCS) regulated, code "1" [Motor carrier not subject to U.S. DOT (BMCS) regulations]. If you determine the carrier is regulated, next inquire as to whether this particular trip was part of an intercity operation. That is, ask the driver if he/she was moving 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).

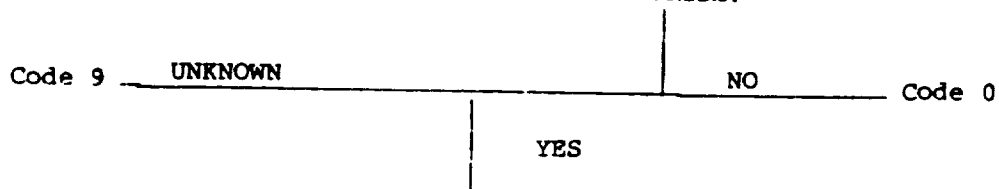
The flowchart which follows depicts this questioning process.

FEDERAL SAFETY REGULATED

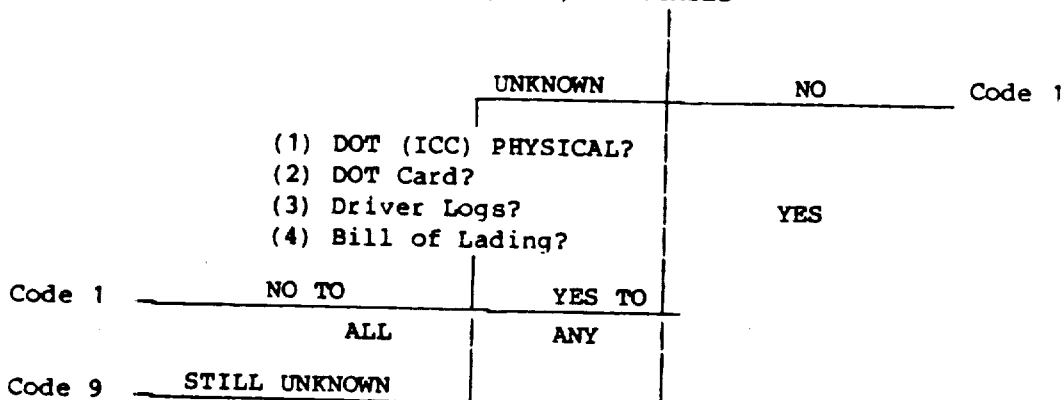
VEHICLE > 10,000 lbs GVW?



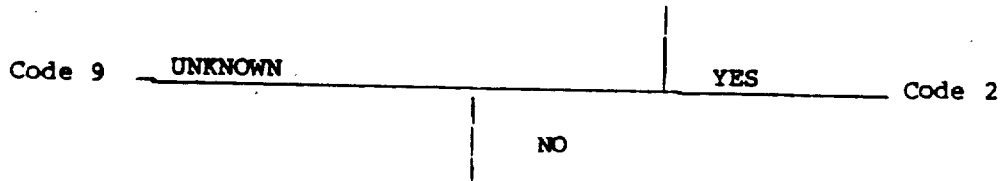
COMMERCIAL ENTERPRISE?



DOT (BMES) REGULATED



INTER-CITY OPERATION?



LOCAL PICK-UP OR DELIVERY



Variable Name: Driver's Classification  
 [Vehicle Over 10,000 lbs. GVWR]

Format: 1 column - numeric

Beginning  
 Column 26

Element Values:

Blank - Driver not present (D09)  
 0 Noncommercial or not vehicle over 10,000 lbs. GVWR

[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.

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 #2 hit his vehicle head-on.



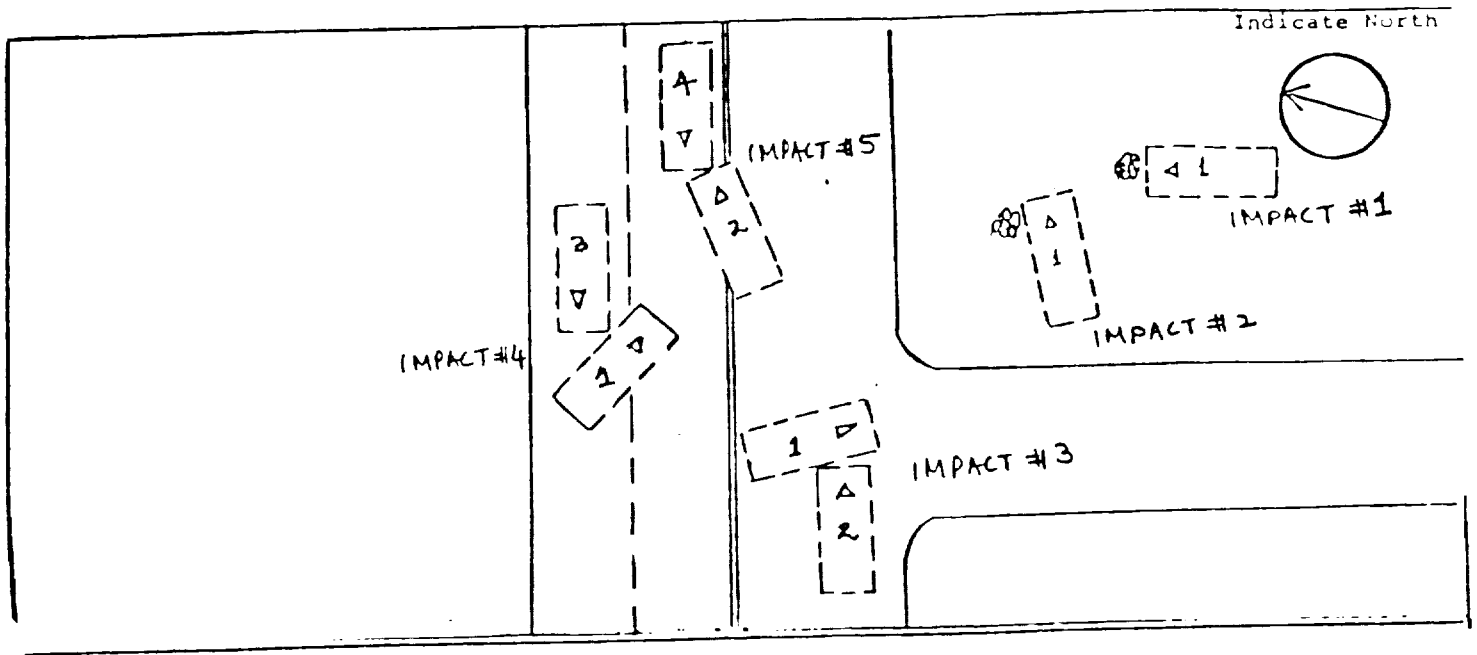








FINAL DIAGRAM BASED ON ALL INTERVIEWS, POLICE  
AND SCENE INSPECTION



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 [Final Impact Sequence (Final Impact Sequence (Investigator))] is determined as shown above and entered in corresponding Driver Forms. (See next page.)



Variable Name: Driver Education

Format: 1 column - numeric

Beginning  
Column 27

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
- 8 Other formal driver training (e.g., college, military, etc.)
- 9 Unknown
- Motorcycle Driver Training
- 0 No formal driver training
- 1 In training at time of accident
- 6 Motorcycle driver training
- 9 Unknown
- Heavy [and Medium] Vehicle Driver Training (> 10,000 lbs. GVWR)
- 0 No formal driver training
- 1 In training at time of accident
- 4 Truck driver training school
- 5 Motor carrier program - On-the-Job-Training
- 7 Vocational training (CETA, Job Corp, other government sponsored training, etc.)
- 8 Other formal driver training (e.g., college, military, etc.)
- 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 (including traffic schools), 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.

What type of vehicle the driver was operating in this accident determines how his/her Driver Education (D16) is coded.

There are three specific classes of drivers considered. These are: passenger vehicle drivers (including light trucks and vans), motorcycle drivers, and heavy truck drivers (GVWR over 10,000 lbs.).

Variable Name: Driver Education (cont'd.)

The table below shows which attributes of this variable apply to the different driver classes.

Type	V14	D09	D16
Driver Not Present	Any	2	Blank
Automobile or Light Truck Driver Training	01-13,40-42,48-56, 58,59,69,80-82,88	1	0-3,8,9
Motorcycle Driver Training	20,21,28,29	1	0,1,6,9
Heavy [and Medium] Vehicle Driver Training	30-32,38,39,70-75, 77-79,81,83	1	0,1,4,5,7-9
Unknown	89,99	1	9

The type of driver training that heavy vehicle and motorcycle drivers receive is of particular interest. If the driver is driving a heavy vehicle then this variable measures the type of training the driver has received in vehicles over 10,000 lbs. GVWR. Since codes "4" (Truck driver training school), "5" (Motor carrier program - On-the-Job-Training), and "7" [Vocational training (CETA, Job Corp, other government sponsored training, etc.)] are assumed to use heavy vehicles, these codes are not applicable for motorcycle drivers or automobile or light truck drivers. Similarly codes "2" (High school driver training) and "3" (Commercial driver training) apply only to automobile or light truck drivers, and code "6" (Motorcycle driver training) applies only to motorcycle drivers. Code "8" (Other formal driver training (e.g., college, military, etc.) applies only to automobile or light truck drivers and heavy vehicle drivers. Codes "0" (No formal driver training) and "1" (In training at time of accident) must be applied within the context of the driver's status.

Code "0" (No formal driver training) should be used if a driver received no driver training for the class vehicle he/she was driving at the time of the accident.

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 heavy [and medium] vehicle 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 heavy [and medium] vehicle driver is provided with on-the-job type training [whether formal (e.g., classroom) or informal] by the motor carrier that employs him/her.



Variable Name: Driver Education (cont'd.)

If a heavy [and medium] vehicle driver attended a driver training school and received on-the-job-training from his/her employer, then code the type of training that occurred most recently. Similar coding would take place for an automobile driver who took both high school and college driver training courses.

Code "6" (Motorcycle driver training) refers to any formal training for driving a motorcycle.

Variable Name: Frequency Driving Road

Format: 1 column - numeric

Beginning  
Column 28

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

D18  
D19  
D20

Variable Name: D18 - Last Action Prior to Avoidance Maneuvers  
D19 - Second to Last Action Prior to Avoidance Maneuvers  
D20 - Third to Last Action Prior to Avoidance Maneuvers

Format: 2 columns - numeric

Beginning  
Column 29  
31  
33

Element Values:

Blank - Driver not present (D09)  
Movements essentially straight ahead  
00 No actions  
01 Moving straight, details unknown, or no maneuvers  
02 Straight ahead in proper direction, including curves in roadway  
03 Overtaking other vehicle on left, left of center line  
04 Overtaking other vehicle on left, right of center line (includes one-way roadways without center lines)  
05 Overtaking another vehicle on right  
06 Straight ahead in left turn lane  
07 Straight ahead in right turn lane  
08 Changing lanes to left  
09 Changing lanes to right  
10 Merging from left (roadway narrows on left)  
11 Merging from right (roadway narrows on right)  
12 On wrong side of roadway  
13 In wrong direction on one-way roadway  
14 Swerving to left  
15 Swerving to right  
16 Slowing or stopping  
17 Skidding longitudinally  
18 Skidding laterally  
19 Spinning or yawing  
20 Jackknifing  
21 Stopped in traffic  
22 Starting from stop  
23 Increasing speed  
Turning movements  
30 Turning, details unknown  
31 Left from left turn bay or special lane  
32 Left from left (proper) lane  
33 Left from other lane, legal  
34 Left from other lane, illegal  
35 Left from unknown lane  
36 U-turn  
37 Right from special lane  
38 Right from right (proper) lane  
39 Right from other lane, legal  
40 Right from other lane, illegal  
41 Right from unknown lane

DRIVER FORM

D18  
D19  
D20  
(2)

Variable Name: D18 - Last Action Prior to Avoidance Maneuvers (cont'd.)  
D19 - Second to Last Action Prior to Avoidance Maneuvers (cont'd.)  
D20 - Third to Last Action Prior to Avoidance Maneuvers (cont'd.)

Entering traffic lane

- 50 Entering traffic lane, details unknown
- 51 From entrance ramp on left
- 52 From entrance ramp on right
- 53 From shoulder on left
- 54 From shoulder on right
- 55 From parking space at left curb
- 56 From parking space at right curb
- 57 From driveway on left
- 58 From driveway on right

Leaving traffic lane

- 60 Leaving traffic lane, details unknown
- 61 To exit ramp on left
- 62 To exit ramp on right
- 63 To shoulder on left
- 64 To shoulder on right
- 65 To parking space at left curb
- 66 To parking space at right curb
- 67 To driveway on left
- 68 To driveway on right

Parking on or adjacent to traffic lane

- 70 Parking, details unknown
- 71 On left shoulder
- 72 On right shoulder
- 73 At left curb
- 74 At right curb
- 75 In traffic lane (on roadway) on left
- 76 In traffic lane (on roadway) on right
- 77 Double parking on left
- 78 Double parking on right

Miscellaneous movements

- 81 Backing in roadway
- 82 Backing from parking on left
- 83 Backing from parking, on right
- 84 Backing across traffic
- 85 Backing on shoulder
- 86 Vehicle pushed by other vehicle
- 87 Vehicle pushed by pedestrian
- 88 Not in motion (parked or standing - driver in vehicle)
- 89 Loss of air pressure in tire (blowout or other)

- 98 Other
- 99 Unknown

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

D18  
D19  
D20  
(3)

Variable Name: D18 - Last Action Prior to Avoidance Maneuvers (cont'd.)  
D19 - Second to Last Action Prior to Avoidance Maneuvers (cont'd.)  
D20 - Third to Last Action Prior to Avoidance Maneuvers (cont'd.)

Remarks:

"Blank" indicates that no driver was present.

Action prior to avoidance maneuver means the driver's movement of the vehicle either (1) just prior to his/her realization of an impending danger, or (2) just prior to impact if the driver either (a) took no action or (b) had no time to attempt any evasive maneuvers.

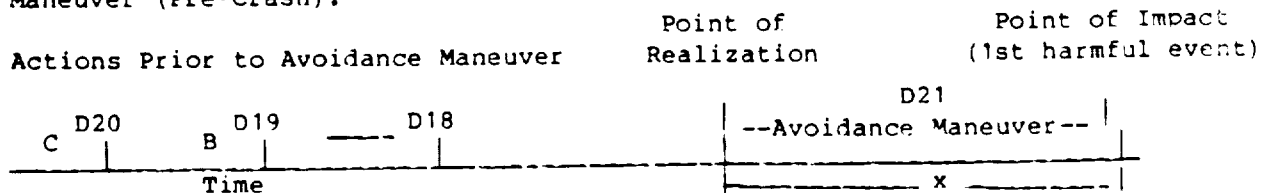
Code the driver's actions (up to three) in reverse chronological order starting with (D18) his realization of an impending danger and working backwards in time. (Note that D18 happens after D19, and D19 happens after D20.)

In an attempt to clarify the terms "impending danger" and "just prior to impact," an understanding of the intent for this variable must be considered. Analysts are attempting to identify the actions executed by a driver prior to the recognition of an imminent impact. In other words, they are concerned with the time frame which immediately precedes the Impact/Avoidance Maneuver sequence.

As an example: a driver traveling along a highway suddenly realizes the traffic in front of him has come to a stop. The driver applies the brake and attempts to steer right, but impacts the stopped vehicle. For the purposes of this variable, the driver's action prior to realization of the impending impact should be coded. In this case, D18 should be coded "02" (Straight ahead in proper direction), D19 and D20 should be coded "00" (No actions).

To illustrate the changeable nature of this variable, the above example has been changed slightly. The driver of the subject vehicle avoids the rear end collision by departing the right side of the roadway. However, the vehicle impacts a utility pole. The driver was not aware that a pole impact would occur and subsequently did not attempt any evasive maneuvers prior to the pole contact. In this situation, the last three actions taken by the driver before the collision with the pole should be coded. The recommended coding for this example is: D18=64 (to shoulder on right), D19=15 (swerving to right), and D20=16 (slowing or stopping).

A relationship exists between these variables and D21, Attempted Avoidance Maneuver (Pre-Crash).



## DRIVER FORM

D18  
 D19  
 D20  
 (4)

Variable Name: D18 - Last Action Prior to Avoidance Maneuvers (cont'd.)  
 D19 - Second to Last Action Prior to Avoidance Maneuvers (cont'd.)  
 D20 - Third to Last Action Prior to Avoidance Maneuvers (cont'd.)

Drivers' statements about what occurred just prior to impact can roughly be grouped into three categories. First, there are drivers who say that "I never saw him/her; I didn't know I was going to be in an accident until I was hit." For these drivers "x" equals zero. No realization occurred. Second, some drivers say that they saw the impending impact coming but state that "I didn't have time to do anything." For these drivers "x" is greater than zero but still very small. However, realization occurred, but D21 for this category as well as the preceding one is coded "00" (No avoidance actions). In the third category are those drivers who realized the impending impact and had sufficient time to do something (independently of whether or not they did)--"x" is sufficiently large.

What drivers do after realization is coded on D21, Attempted Avoidance Maneuver (Pre-Crash); what this driver was doing up to the point of realization is coded on these variables. The points "A", "B", and "C" indicate the reverse chronological order of prior actions. In almost all cases D18, Last Action Prior to Avoidance Maneuvers, should be coded with some action [i.e., not "00" (No actions)] even if the action was no more complicated than traveling straight ahead ("02"). Further, if there are less than three actions prior to avoidance maneuvers, close out these variables with zeros. For example, if the investigator determines the driver was just driving down the road and was struck, the correct coding would be: D18=02, D19=00 and D20=00.

If very little is known concerning the driver's actions prior to the accident which requires the use of the element "...details unknown" then D19 and D20 should be coded "99" (unknown).

Do not code "definitely known maneuvers" after the use of the element "...details unknown." However, a "...details unknown" element can be used following a definitely known element, but two (2) "...details unknown" should not be used. Do not code "...details unknown" from a category which has already been coded with a "definitely known" element (i.e., "01" should not be used if "02" was previously selected).

The "unknown" (99) element will always follow the use of a "...details unknown" element. The only exception would be if "...details unknown" was coded for D20.

D18  
D19  
D20  
(5)

Variable Name: D18 - Last Action Prior to Avoidance Maneuvers (cont'd.)  
D19 - Second to Last Action Prior to Avoidance Maneuvers (cont'd.)  
D20 - Third to Last Action Prior to Avoidance Maneuvers (cont'd.)

The following table is provided as a guide to the proper coding conventions.

	D18	D18	D18	D18
D18	D≠00	D≠00	D≠00/P	U
D19	D	P	U	U
D20	D, P, or U	U	U	U

Categories:

- D = Definitely known action
- P = Partially known action
- U = Unknown action

D = Codes 00, 02 through 23, 31 through 41, 51 through 58, 61 through 68, 71 through 78, and 81 through 89, and 98.  
P = Codes 01, 30, 50, 60, and 70.  
U = Code 99.

Use of the word "driveway" in codes "57", "58", "67", or "68" means a driveway that otherwise would not be a NASS roadway--see Remarks section for A24, Relation to Junction page (5), paragraphs 5 and 6. If the driveway would be considered a NASS roadway then treat entrances or exits as "turning movements" (codes "30"--"41").

Variable Name: Attempted Avoidance Maneuver (Pre-Crash)

Format: 2 columns - numeric

Beginning  
Column 35

Element Values:

Blank - Driver not present (D09)  
00 No avoidance actions  
01 Braking (no lockup)  
02 Braking (lockup)  
03 Pumping brakes (modulation)  
04 Releasing brakes  
05 Steering left  
06 Steering right  
07 Braking and steering left  
08 Braking and steering right  
09 Accelerating  
10 Accelerating and steering left  
11 Accelerating and steering right  
98 Other action (specify)  
99 Unknown

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

Remarks:

"Blank" indicates that no driver was present.

Attempted avoidance maneuvers (pre-crash) are movements/actions taken by the driver to avoid the impending crash after realization of an impending danger but before actual crash (impact). See discussion on preceding page.

Code the attribute which best describes the actions taken by the driver.

Code "00" (No avoidance actions) is used whenever the driver did not have time to attempt any evasive (pre-crash) maneuvers.



Variable Name: How Many Accidents Within Past Twelve Months (as Driver)

Format: 1 column - numeric

Beginning  
Column 37

Element Values:

Blank - Driver not present (D09)  
Code actual value up through 7  
8 8 or more  
9 Unknown

Source: Driver interview.

Remarks:

"Blank" indicates that no driver was present.

Record the number of accidents the driver was involved in as a driver within the past twelve (12) months inclusive from the date of the accident as reported by the driver.

Code "0" (0 accidents) if the driver was not involved as a driver in any accident within the past twelve months inclusive from the date of accident. Remember that it is not necessary for the driver to be licensed to be involved in an accident as a driver.

Code "9" (Unknown) means that the interviewee did not know (e.g., surrogate interviewee) or the interviewee refused to answer this question.

Variable Name: Traffic Violation Charged--Speeding

Format: 1 column - numeric

Beginning  
Column 38

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 D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with speeding but additional charges are "pending", the investigator should code D23 as "1" (Yes) and D24 through D31 as "0" (No).

Variable Name: Traffic Violation Charged--Driving While Intoxicated (or DUIL)

Format: 1 column - numeric

Beginning  
Column 39

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 D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with DWI or DUIL (driving under the influence of liquor) but additional charges are "pending", the investigator should code D24 as "1" (Yes) and D23 and D25-D31 as "0" (No).

Variable Name: Traffic Violation Charged--Reckless Driving

Format: 1 column - numeric

Beginning  
Column 40

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 D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with reckless driving but additional charges are "pending", the investigator should code D25 as "1" (Yes) and D23, D24, and D26-D31 as "0" (No).

Caution must be exercised when coding "careless driving". Careless driving may or may not be the same as "reckless driving". Be sure to check with your State license agency regarding their similarity.

Variable Name: Traffic Violation Charged--Driving with Suspended or Revoked License

Format: 1 column - numeric

Beginning  
Column 41

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 D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with driving while suspended or revoked but additional charges are "pending", the investigator should code D26 as "1" (Yes) and D23-D25 and D27-D31 as "0" (No).

Variable Name: Traffic Violation Charged--Failure to Yield Right-of-Way

Format: 1 column - numeric

Beginning  
Column 42

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 failing to yield the right-of-way, then code "1" (Yes). Code this violation independent of variable D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with failure to yield right-of-way but additional charges are "pending", the investigator should code D27 as "1" (Yes) and D23-D26 and D28-D31 as "0" (No).

Variable Name: Traffic Violation Charged--Following Too Closely

Format: 1 column - numeric

Beginning  
Column 43

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 following too closely or for failure to keep proper distance, then code "1" (Yes). Code this violation independent of variable D36, Driver License Status [e.g., under age driver-D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with following too closely but additional charges are "pending", the investigator should code D28 as "1" (Yes) and D23-D27 and D29-D31 as "0" (No).

Variable Name: Traffic Violation Charged--Running a Traffic Signal or Stop Sign

Format: 1 column - numeric

Beginning  
Column 44

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 running a traffic signal or stop sign, then code "1" (Yes). Code this violation independent of variable D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with running a traffic signal or stop sign but additional charges are "pending", the investigator should code D29 as "1" (Yes) and D23-D28, D30 and D31 as "0" (No).



Variable Name: Traffic Violation Charged--Other Violation Charged

Format: 1 column - numeric

Beginning  
Column 45

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), driving with either a suspended or revoked license, failure to yield right-of-way, following too closely (failure to keep proper distance), or running a traffic signal or stop sign, then code "1" (Yes). Code this violation independent of variable D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with an "other" violation (e.g., improper center lane usage) but additional charges are "pending", the investigator should code D30 as "1" (Yes) and D23-D29 and D31 as "0" (No).

Variable Name: Traffic Violation Charged--Unknown Violation Charged

Format: 1 column - numeric

Beginning  
Column 46

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 eight variables (D23 through D30) should be coded no ("0"). Code this violation independent of variable D36, Driver License Status [e.g., under age driver--D36 = 1 (Not licensed)].

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 D23 through D31. However, if the driver is charged with an unspecified violation but additional charges are "pending", the investigator should code D31 as "1" (Yes) and D23-D30 as "0" (No).

Variable Name: Police Reported Alcohol Presence

Format: 1 column - numeric

Beginning  
Column 47

Element Values:

Blank - Driver not present (D09)  
0 No (alcohol not present)  
1 Yes (alcohol present)  
8 Not reported  
9 Unknown

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 present in the driver in this accident. If the police report explicitly states or implies that alcohol was present or used by the driver prior to the accident, then code "1" [Yes (alcohol present)]. If there is no specific variable concerning alcohol presence, see if it is addressed in the narrative description of the accident.

The phrase "present in the driver" means that the driver had consumed an alcoholic beverage. Presence is not an indication that alcohol was in any way a cause of the accident, even though it may have been. Finding opened or unopened alcoholic beverages in the vehicle does not by itself constitute presence.

In summary, if the police indicate alcohol presence in the driver via a specific data element on the police report form and/or if the police charges the driver with DWI or DUIL and/or if the police mention in the narrative section of the report that the driver had been drinking (or alcohol was present or involved) and/or the police report has a positive BAC test result (BAC > .00), then code "1" [Yes (alcohol present)].

Code "0" [No (alcohol not present)] if the investigating officer's assessment (as reported on the police report) is that no alcohol was present in the driver. If there is a specific location on the police report for assessment of alcohol presence but the investigating officer fails to make either a positive or negative assessment of alcohol presence, then code "8" (Not reported).

If the PAR has a block which is labeled "Alcohol/Drugs", then use any other information on the PAR to determine what was present, alcohol or some other type of drug. If no other information is available, then code "9" (Unknown) should be used.

Variable Name: Police Reported Alcohol Presence (cont'd.)

Code "9" (Unknown) if the alcohol presence is unknown. In general police reports have blocks to check either positive or negative alcohol presence, hence one of the codes "0", "1", or "8" is the appropriate response. But if a police report has provision for the investigating officer to respond "unknown alcohol presence", then code "9" (Unknown).

Hit-and-run drivers should be coded "9" (Unknown) for this variable unless clear evidence to the contrary exists.

Variable Name: Alcohol Test Results

Format: 2 columns - numeric

Beginning  
Column 48

Element Values:

Level 2 Range: 00 through 25

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, or 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. Investigators should obtain BAC test results whenever possible. Code "97" should be used only after all available sources have been exhausted. Verbal BACs obtained from official sources are acceptable if written approval (or approval via the message system) has been obtained from the Zone Center.

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 50

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:

This variable describes the origin of the license the driver possesses, regardless of whether the license is valid for the type of vehicle being driven at the time of the accident, or is suspended/revoked.

"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. If a driver's license is suspended or revoked but was originally registered in the U.S. or by the military, then code "1" (Domestic) should be used.

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.

See reference table for coding variables D34, D36, and D37 following the remarks section of variable D37 (Driver License Type Compliance).

## 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) is in effect.

The system differs for each of the two following situations: the first involves the NASS PSU team leader, and the second involves the team leader and the FARS Analyst. The two situations are:

- (a) Driver records for drivers who reside within an operating NASS PSU State. (Attached is a list of NASS PSU States.)
- (b) Driver records of drivers who reside in a Non-NASS State. Attached is a list of NHTSA FARS CTMs.

Please note that this procedure does not address drivers who reside in another country.

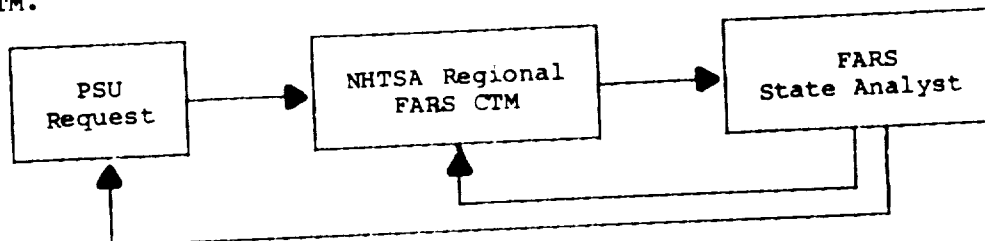
### DRIVER RECORD ACQUISITION SYSTEM

#### A. Driver Records for Drivers Who Reside within the NASS PSU State

In your own State, follow your established procedures. In another NASS PSU State, contact a NASS team in the State and have them obtain the driver records for you. Be sure to provide all of the information the team tells you is necessary to obtain the record. Informatics can be used to identify the driver record needed.

#### B. Driver Records for Drivers Who Reside in a Non-NASS State

The NASS PSU Team Leader will complete the enclosed information request and send it 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.



LIST OF NASS PSU STATES

The following States contain at least one operating NASS PSU:

<u>STATE</u>	<u>PSU(s)</u>	<u>STATE</u>	<u>PSU(s)</u>
Alabama	P52,P55	Missouri	P03
Arizona	P81,P87	Nebraska	P78
Arkansas	P53	New Jersey	P29
California	P79,P88,P90	New Mexico	P82
Colorado	P80	New York	P26,P33,P34,P36
Florida	P51,P56	North Carolina	P54,P58
Illinois	P01,P07,P08	Pennsylvania	P27,P28,P30,P31,P32,P37
Indiana	P06,P13	Rhode Island	P39
Iowa	P14	South Dakota	P83
Louisiana	P60	Tennessee	P57
Maryland	P38	Texas	P77,P84,P86
Massachusetts	P35	Washington	P76,P85
Michigan	P02,P04,P05,P09,P11	Wisconsin	P10,P12
Mississippi	P59		

Driver records from states identified above are to be requested through the appropriate NASS PSU(s) of that state.

LIST OF NHTSA FARS REGIONS

<u>REGION 1</u>	<u>REGION 2</u>	<u>REGION 3</u>		
*Connecticut	New Jersey	*Delaware		
*Maine	New York	Maryland		
Massachusetts	*Puerto Rico	Pennsylvania		
*New Hampshire		*Virginia		
Rhode Island		*Washington, D.C.		
*Vermont		*West Virginia		
<u>REGION 4</u>	<u>REGION 5</u>	<u>REGION 6</u>		
Alabama	Illinois	Arkansas		
Florida	Indiana	Louisiana		
*Georgia	Michigan	New Mexico		
*Kentucky	*Minnesota	*Oklahoma		
Mississippi	*Ohio	Texas		
North Carolina	Wisconsin			
*South Carolina				
Tennessee				
<u>REGION 7</u>	<u>REGION 8</u>	<u>REGION 9</u>	<u>Region 10</u>	
Iowa	Colorado	Arizona	*Alaska	
*Kansas	*Montana	California	*Idaho	
Missouri	*North Dakota	*Hawaii	*Oregon	
Nebraska	South Dakota	*Nevada	Washington	
	*Utah			
	*Wyoming			

\* Driver records are to be requested through the NHTSA FARS Regional CTMs only for those states identified with an asterisk (\*).



State	NASS PSU Number	NHTSA FARS Region	State	NASS PSU Number	NHTSA FARS Region
Alabama	P52,P55	4	Nebraska	P78	7
*Alaska		10	*Nevada		9
Arizona	P81,P87	9	*New Hampshire		1
Arkansas	P53	6	New Jersey	P29	2
California	P79,P88,P90	9	New Mexico	P82	6
Colorado	P80	8	New York	P26,P33,P34,P36	2
*Connecticut		1	North Carolina	P54,P58	4
*Delaware		3	*North Dakota		8
Florida	P51,P56	4	*Ohio		5
*Georgia		4	*Oklahoma		6
*Hawaii		9	*Oregon		10
*Idaho		10	Pennsylvania	P27,P28,P30,P31,P32,P37	3
Illinois	P01,P07,P08	5	*Puerto Rico		2
Indiana	P06,P13	5	Rhode Island	P39	1
Iowa	P14	7	*South Carolina		4
*Kansas		7	South Dakota	P83	8
*Kentucky		4	Tennessee	P57	4
Louisiana	P60	6	Texas	P77,P84,P86	6
*Maine		1	*Utah		8
Maryland	P38	3	*Vermont		1
Massachusetts	P35	1	*Virginia		3
Michigan	P02,P04,P05,P09,P11	5	Washington	P76,P85	10
*Minnesota		5	*Washington, D.C.		3
Mississippi	P59	4	*West Virginia		3
Missouri	P03	7	Wisconsin	P10,P12,	5
*Montana		8	*Wyoming		8

\* Driver records are to be requested through the NHTSA FARS Regional CTMs only for those states identified with an asterisk (\*).

NHTSA FARS Regional CTMs

REGION 01

Winsor Coleman  
NHTSA Region 1  
Transportation Systems Center  
55 Broadway  
Kendall Square  
Cambridge, Massachusetts 02142

REGION 03

Charles Alwine  
NHTSA Region 3  
Airport Plaza Building  
793 Elkridge Landing Road  
Linthicum, Maryland 21090

REGION 05

James W. Downey  
NHTSA Region 5  
Executive Plaza, Suite 214  
1010 Dixie Highway  
Chicago Heights, Illinois 60411

REGION 07

William Reitinger  
NHTSA Region 7  
P.O. Box 19515  
Kansas City, Missouri 64141

REGION 09

John R. Nelson  
NHTSA Region 9  
Two Emearcadero Center  
Suite 610  
San Francisco, California 94111

REGION 02

Thomas Louizou  
NHTSA Region 2  
222 Mamaroneck Avenue  
Suite 204  
White Plains, New York 10605

REGION 04

Alec Nations  
NHTSA Region 4  
1720 Peachtree Road, N.W.  
Suite 501  
Atlanta, Georgia 30309

REGION 06

Pat Sutherland  
NHTSA Region 6  
819 Taylor Street  
Fort Worth, Texas 76102

REGION 08

Harold Jones  
NHTSA Region 8  
555 Zang Street  
Denver, Colorado 80228

REGION 10

Perry Chandler  
NHTSA Region 10  
Federal Building, Room 3140  
915 Second Avenue  
Seattle, Washington 98147

NOTE: The NHTSA FARS Regional CTMs should be contacted only when driver records are being requested from a non-NASS state -- states without a NASS PSU.

DRIVER INFORMATION

Driver's Name:

Driver's License No.:

Driver's Address:

D37	D36
<p align="center">LICENSE CLASS VEHICLE COMPLIANCE</p> <p>0 - No License Required                  1 - No License, License Required                  2 - Valid License for This Class Vehicle Only                  3 - One Valid License, but Not for This Class Vehicle                  4 - Multiple Class Licenses, Valid License for This Class Vehicle                  5 - Multiple Class Licenses, No Valid License for This Class Vehicle                  9 - Unknown</p>	<p align="center">LICENSE STATUS</p> <p>0 - None Required                  1 - None                  2 - Valid                  3 - Suspended                  4 - Revoked                  5 - Expired                  6 - Canceled or Denied                  7 - Learner's Permit                  8 - Temporary                  9 - Unknown</p>

D35	D16	D44
<p align="center">COMPLIANCE WITH LICENSE RESTRICTIONS</p> <p>0 - No Restrictions                  1 - Restrictions Complied With                  2 - Restrictions Not Complied With                  3 - Restrictions, Compliance Unknown                  9 - Unknown</p>	<p align="center">DRIVER TRAINING</p> <p>0 - None                  1 - High School                  2 - Commercial                  3 - School Bus                  4 - Traffic School                  5 - Two or more Types                  6 - Training, Type Unknown                  9 - Unknown</p>	<p align="center">PREVIOUS RECORDED ACCIDENTS</p> <p>Actual Value Except                  00 - None                  99 - Unknown</p>
Not Applicable		

D43	D42	D40
<p align="center">PREVIOUS RECORDED SUSPENSIONS AND REVOCATIONS</p> <p>Actual Value Except                  00 - None                  99 - Unknown</p>	<p align="center">PREVIOUS DWI CONVICTIONS</p> <p>Actual Value Except                  00 - None                  99 - Unknown</p>	<p align="center">PREVIOUS SPEEDING CONVICTIONS</p> <p>Actual Value Except                  00 - None                  99 - Unknown</p>

D41
<p align="center">PREVIOUS OTHER HARMFUL MV CONVICTIONS</p> <p>Actual Value Except                  00 - None                  99 - Unknown</p>

<p>38. Driver License Restrictions*</p> <p>___ (0) No restrictions                  ___ (1) Corrective or contact lenses                  ___ (2) Mechanical aid                  ___ (3) Limited to daylight only                  ___ (4) Automatic transmission                  ___ (5) Outside mirror                  ___ (6) Prosthetic aid                  ___ (7) Limited to employment                  ___ (8) Other restrictions:                  _____                  ___ (9) Unknown</p>	<p>39. Additional Driver License Restrictions*</p> <p>___ (0) No additional restriction                  ___ (2) Mechanical aid                  ___ (3) Limited to daylight only                  ___ (4) Automatic transmission                  ___ (5) Outside mirror                  ___ (6) Prosthetic aid                  ___ (7) Limited to employment                  ___ (8) Other restrictions:                  _____                  ___ (9) Unknown</p>
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\*If there are restrictions from driver records that cannot be matched with codes "1" through "7", write these restrictions in the space provided for code "8" (Other restrictions).

NATIONAL ACCIDENT SAMPLING SYSTEM DATA

REQUEST FROM THE FATAL ACCIDENT REPORTING SYSTEM ANALYST

TO: \_\_\_\_\_  
Appropriate FARS Regional CTM

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 the State of \_\_\_\_\_. Below and 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 the 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:

BODY TYPE:

OWNER'S ADDRESS:

YEAR:

LICENSE NO.:

MAKE:

PLATE YEAR:

MODEL:

VIN:

VEHICLE MAKE	14	15	VEHICLE MODEL	16	17	BODY TYPE	18	19	MODEL YEAR	20	21									
(See Instruction Manual)			(See Instruction Manual)			(See Instruction Manual)			Actual Value except 99 - Unknown											
VEHICLE IDENTIFICATION NUMBER				22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Actual Value Except Zero Fill if no VIN Nine Fill if Unknown																				
REGISTRATION STATE										39	40									
GSA Codes Except																				
00 - Not Applicable					95 - U.S. Government Tags															
92 - No Registration					96 - Military Vehicle															
93 - Multiple State Reg. in State					97 - Foreign Countries															
94 - Multiple State Reg. Out-of-State					99 - Unknown															

## Acquiring Canadian Driver Records for NASS

Cooperative arrangements between NHTSA and Transport Canada for obtaining driver/vehicle information concerning Canadians involved in motor vehicle accidents occurring within the U.S. have been finalized.

In the event that a Canadian driver or vehicle is involved in a NASS accident, please call the appropriate individual (based on Canadian province) for the required information (see attachment).

Also, please realize that this is a cooperative arrangement and that it is possible that these individuals may contact you for similar information on U.S. drivers involved in accidents which occurred in Canada. Should you receive such a request, please obtain and send them the necessary information.

CONTACTS FOR INFORMATION ON ACCIDENT-INVOLVED MOTOR VEHICLE DRIVERS AND VEHICLES

PROVINCE	AGENCY	CONTACT	AREA CODE	TELEPHONE NUMBERS
Nova Scotia	Technical University of Nova Scotia	Dr. Charles Miller Dr. Robert Ralrd Vince Doiron Carol Price	902	423-1526 (ext. 224) 429-8300 (ext. 161)
New Brunswick	HALIFAX, Nova Scotia University of New Brunswick	Prof. J. D. Innes Gary Smith Gordon Tuftf	506	454-9099
Quebec	FREDERICTON, N.B. McGill University	Prof. A. Thompson Mrs. D. Steiner Jonathan Shanks	514	392-4200 392-4796 392-4673
	MONTREAL, Quebec Ecole Polytechnique	Prof. Michael Gou Alexandre Cazin Francois Morin Jocelyne Chretien	514	344-4669 344-4769 344-4721 344-4720
Ontario	University of Toronto TORONTO, Ontario University of Western Ontario	Prof. M. Davis Mr. L. Black D. Kean Prof. E. Nowak Alan German Zygmund Gorski	416	978-5054 679-3323 679-6565 679-6565 786-3528
Manitoba	LONDON, Ontario University of Manitoba	Dr. G. W. Mulligan Carol Sobie Peter Male	204	
Saskatchewan	WINNIPEG, Manitoba University of Saskatchewan SASKATOON, Saskatchewan	Miss Pat Hamilton	306	343-3171 343-3795
Alberta	University of Calgary	Dr. John Read Irene Wingate Peter Marsh	403	284-6005 284-5041 284-5042
British Columbia	CALGARY, Alberta University of British Columbia VANCOUVER, British Columbia	Dr. Dave Erickson Shirley McGuire	604	228-4753 or 228-6851
Prince Edward Island Newfoundland Yukon Northwest Territories	Transport Canada OTTAWA, Ontario	Brian Hendrick Ted Richards Mike Bertrand	603	993-9851

Variable Name: Compliance With License Restrictions

Format: 1 column - numeric

Beginning  
Column 51

Element Values:

- Blank - Driver not present (D09)
- 0 No restrictions
- 1 Restrictions complied with
- 2 Restrictions not complied with
- 3 Restrictions, compliance unknown
- 9 Unknown

Source: Police report, other official records, or vehicle inspection when a vehicle related restriction applies.

Remarks:

"Blank" indicates that no driver was present.

The vehicle inspection can be used to determine compliance with a restriction that is related to vehicle structure (e.g., outside mirrors, automatic transmission, mechanical aids, etc.).

Code "0" (No restrictions) must be coded if D36, Driver License Status, equals "0" (No license required) or "1" (Not licensed). 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 a definition of the license. Restrictions, on the other hand, are requirements specific to individual drivers.

If a driver has more than one license restriction, compliance with restrictions should be coded as follows: If it is known that the driver complied with all license restrictions, use code "1" (restrictions complied with). If it is known that the driver did not comply with at least one restriction, use code "2" (restrictions not complied with). If the compliance of at least one restriction is unknown, then code "3" (restrictions, compliance unknown) should be used.

If a driver had a "learner's permit" (D36, Driver License Status, equal "7") 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 not complied with" since it is not a restriction (i.e., 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).

On the other hand, if a driver with a valid driver's license for the vehicle type being operated, but restricted to driving during certain periods only, is caught driving outside the specified time periods, then code "2" (Restrictions not complied with).

Variable Name: Driver License Status (for this vehicle)

Format: 1 column - numeric

Beginning  
Column 52

Element Values:

- Blank - Driver not present (D09)
- 0 No license required
- 1 Not licensed
- 2 Valid
- 3 Suspended
- 4 Revoked
- 5 Expired
- 6 Canceled or denied
- 7 Learner's permit
- 8 Temporary
- 9 Unknown

Source: Official driver record and police report. Official driver records take precedence over police reported information.

Remarks:

If variable D34 (license source) is coded "9" (unknown), then variable D36 must be coded "9" (unknown).

"Blank" indicates that no driver was present.

Code "0" (No license required) means that a license was not required for the vehicle being driven (e.g., mopeds in some states).

Code "1" (Not licensed) should be used only when it has been reasonably established that the driver is not registered (anywhere) or that the driver's license held is not valid for the type of vehicle being driven during this accident. 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 (class) of license they possess and the validity of the license. 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 D30, Traffic Violation Charged--Other Violation Charged. If the investigator is uncertain as to whether or not the person possesses a license, then code "9" (Unknown) should be used.

Code "2" (Valid) refers to a valid license held by the driver that is valid for the class of vehicle being driven. As an example, a 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 "1" should be used. However, if the driver possesses the required motorcycle license, code "2" (valid) would be used.



Variable Name: Driver License Status (cont'd.)

Code "2" (Valid) 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 D38 (Driver License Restriction) or D39 (Additional Driver License Restriction) if applicable. If the police cite the driver for the violation, then the information would be recorded under variable D30 (Traffic Violation Charged--Other Violation Charged).

Codes "3" (Suspended), "4" (Revoked), or "5" (Expired) are only used when a driver has a license for the class of vehicle being driven and they take precedence over codes "2", "7", or "8". If the driver has a license that is suspended, revoked, or expired but would not be applicable for this type of vehicle, then code "1" no license.

Code "6" (Cancelled or denied) is used whenever the driver's official driver record indicates that the driver's license for the class of vehicle driven in this accident (1) was cancelled or (2) the driver's request for a license, or an extension of one, was denied. If the driver has a license that is cancelled or denied, but would not be applicable for this type of vehicle, then code "1" no license.

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. If the learner's permit is valid for the type of vehicle being driven in this accident use code "7"; if not, use code "1".

Code "8" (Temporary) includes any type of nonpermanent license issued for a period of time less than that for a permanent license (e.g., temporary license to drive within a resort area; temporary license issued to foreign nationals). Short term permanent licenses are not temporary (e.g., license issued to elderly drivers requiring frequent retesting). In order to use this code, the temporary license must be valid for the type of vehicle being driven during the accident; if not, use code "1". Interim licenses held by new drivers awaiting a permanent driver license identification from the state are not temporary.

Code "9" (Unknown) should be used when the driver has a license but the validity for this type of vehicle is uncertain or if it is unknown whether the driver had a license or not (e.g., hit-and-run). Code "9" must be used when variable D34 (license source) is coded "9" (unknown).

See reference table for coding variables D34, D36, and D37 following the remarks section of variable D37 (Driver License Type Compliance).

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: Driver License Type Compliance

Format: 1 column - numeric

Beginning  
Column 53

Element Values:

- Blank - Driver not present (D09)
- 0 No license required
- 1 No license, license required
- 2 Valid license (for this class vehicle only)
- 3 One (single class) valid license (but not for this class vehicle)
- 4 Multiple class license - valid license for this class vehicle
- 5 Multiple class license - no valid license for this class vehicle
- 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 required) means that a license was not required for the vehicle being driven (e.g., mopeds in some states). If D36, Driver License Status, is coded "0" (No license required), then it must also be coded here.

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 D30, Traffic Violation Charged--Other Violation Charged. If the investigator is uncertain as to whether or not the person possesses a license, then code "9" (Unknown) should be used.

Code "2" [Valid license (for this class vehicle only)] refers to the class of vehicle being driven. Class here is similar to the notion of class D10, Months Driving Experience This Class of Vehicle, except for light trucks and passenger cars which are considered distinct classes in D10, but are considered in the same class of this variable (i.e., a standard operators license is for a single class of vehicle). As an example, the driver has a "motorcycle" driver's license only and was driving a motorcycle at the time of the accident; code "2" should be used.

Variable Name: Driver License Type Compliance (cont'd.)

Code "3" [One (single class) valid license (but not for this class vehicle)] refers to drivers with a valid license but not for the class of vehicle driven at the time of the accident. As an example, the driver has an "operator's license" when a "public passenger" type license is required. For this driver, "3" 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 "3" should be used if the driver was involved in this accident while driving a motorcycle.

Code "4" (Multiple class license - valid license for this class vehicle) refers to drivers with a multiple class license who were driving a class of vehicle specified in the multiple class license. As an example, the driver has an "operator's license" for any motor vehicle through 8,000 lbs. gross weight and for any motor-driven cycles; if the driver was involved in this accident while driving a motorcycle, then code "4".

Code "5" (Multiple class license - no valid license for this class vehicle) refers to drivers with a multiple class license who were driving a class of vehicle not covered by this multiple class license. As an example, the driver has a multiple class license for any motor-driven cycles and any motor vehicle except truck-tractor semitrailer combinations; if the driver was involved in this accident while driving a tractor-semitrailer combination, then code "5".

The phrase "multiple class license" means that the State which issued the driver's license (the one reported on the PAR) indicates that the driver is qualified to operate more than one class of vehicle. Having licenses from more than one state, territory, etc., does not constitute a multiple class license. In fact, the license reported to the police is the one reported about on this and the preceding variable (D36, Driver License Status).

Code "9" (Unknown) should be used when the driver has a license but the type or validity are uncertain or if it is unknown whether the driver had a license or not (e.g., hit-and-run). Also, code "9" is used when the vehicle type is known to be a vehicle which does not require a driver to be licensed (e.g., Mopeds or Farm Tractors in some states) and variables D34 and D36 are coded "9".

A cross reference table for coding variables D34, D36 and D37 follows:

Cross Reference Tables For D34, D36, D37

D37  
(3)

D34	D36	0	1	2	3	4	5	6	7	8	9
0		Y	Y	N	N	N	N	N	N	N	N
1		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9		N	N	N	N	N	N	N	N	N	Y

D34	D37	0	1	2	3	4	5	9
0		Y	Y	N	N	N	N	N
1		Y	Y	Y	Y	Y	Y	Y
2		Y	Y	Y	Y	Y	Y	Y
9		N	N	N	N	N	N	Y

D36	D37	0	1	2	3	4	5	9
0		Y	N	N	N	N	N	N
1		N	Y	N	Y	N	Y	Y
2		N	N	Y	N	Y	N	Y
3		N	Y	N	N	N	Y	Y
4		N	Y	N	N	N	Y	Y
5		N	Y	N	N	N	Y	Y
6		N	Y	N	N	N	Y	Y
7		N	N	Y	N	Y	N	Y
8		N	N	Y	N	Y	N	Y
9		N	N	N	N	N	N	Y

Y = Valid Combination  
N = Invalid Combination

REMINDER: D34 = Applies to any license entry in the driver's record  
D36 = Applies to this vehicle only.  
D37 = Applies according to the code meaning (generally this vehicle).

Variable Name: Driver License Restrictions

Format: 1 column - numeric

Beginning  
Column 54

Element Values:

- Blank - Driver not present (D09)
- 0 No restrictions
  - 1 Corrective or contact lenses
  - 2 Mechanical aid
  - 3 Limited to daylight only
  - 4 Automatic transmission
  - 5 Outside mirror
  - 6 Prosthetic aid
  - 7 Limited to employment
  - 8 Other restrictions (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.

These restrictions are ascendingly ordered if more than one element is applicable. Code the lowest numerically-valued restriction on this variable.

Code "0" (No restrictions) must be coded if D36, Driver License Status, equals "0" (No license required) or "1" (Not licensed).

Code "2" (Mechanical aid) refers to a special mechanical device attached to the vehicle (e.g., hand controlled brakes).

Code "6" (Prosthetic aid) refers to a device attached to the driver (e.g., artificial limb).

If a driver had a "learner's permit" (variable D36 = 7, Driver License Status) 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 a part of the definition of the license. Restrictions, on the other hand, are requirements specific to individual drivers.

Variable Name: Additional Driver License Restrictions

Format: 1 column - numeric

Beginning  
Column 55

Element Values:

- Blank - Driver not present (D09)
- 0 No additional restriction
  - 2 Mechanical aid
  - 3 Limited to daylight only
  - 4 Automatic transmission
  - 5 Outside mirror
  - 6 Prosthetic aid
  - 7 Limited to employment
  - 8 Other restrictions (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 (D38, Driver License Restriction, equals code "0"), or only one restriction was reported. The restriction reported on the preceding variable (D38) 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 "8" (Other restriction) should be coded for this variable.

In addition, code "0" (No additional restriction) must be coded if D36, Driver License Status, equals "0" (No license required) or "1" (Not licensed).

If a driver had a "learner's permit" (variable D36 = 7, Driver License Status) 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 56

Element Values:

Level 1 Range: 0 through 9

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).

If the state record does not include the number of previous speeding convictions, then this variable should be coded as "9" (Unknown).

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 57

Element Values:

Level 1 Range: 0 through 9

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).

If the state record does not include the number of previous moving violation convictions, then this variable should be coded as "9" (Unknown).

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 (or DUIL)

Format: 1 column - numeric

Beginning  
Column 58

Element Values:

Level 1 Range: 0 through 9

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).

If the state record does not include the number of previous driving while intoxicated convictions (or DUIL), then this variable should be coded as "9" (Unknown).

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 59

Element Values:

Level 1 Range: 0 through 9

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).

If the state record does not include the number of previous recorded suspensions and revocations, then this variable should be coded as "9" (Unknown).

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 60

Element Values:

Level 1 Range: 0 through 9

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).

If the state record does not include the number of previous recorded accidents, then this variable should be coded as "9" (Unknown).

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 federal aid and functional 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 D45 (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 (D46-D49, D51-D59) 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) Federal Aid System (A21) classification. If the values are the same, then proceed to rule (2). In either case, record the value in variable A21, Federal Aid System.
- (2) Choose the roadway with the greater number of lanes (variable D45). 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 alleys and driveways where the street used by the other vehicle is always chosen. (NOTE: This exception applies only to in-a-junction accidents. If the first harmful event occurred outside the junction and on the driveway or alley, then the not-in-a-junction rules are followed and the driveway or alley is selected at the accident level.)

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 (A27-A31, A33-A41) based on the values recorded for that roadway's traffic unit level environmental variables (D45-D49, D51-D59). The values will be nearly identical.

- (b) Not-in-a-junction. [NOTE: An accident whose Relation to Junction (A24) was listed as "intersection related" (code "06") 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 accordance 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.

If a vehicle is in transport on a trafficway but not on a roadway (e.g., motorcyclist riding along on the shoulders or roadside), assign the vehicle to the roadway which best fits the vehicle's direction of travel. Use the point on the chosen roadway nearest the first harmful event.

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.

If a vehicle departed the roadway from a junction prior to the first harmful event, go to the mouth of the roadway that brought the vehicle into the junction to determine the traffic unit level environmental variables.

- (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 (D45) 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 (D46-D49, D51-D59), 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 or the location where the vehicle last left the roadway if it occurred "off roadway". Record Federal Aid System (A21) for the roadway at this location. In addition, determine the appropriate values for each of the remaining accident level environmental variables (A27-A31, A33-A41).

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

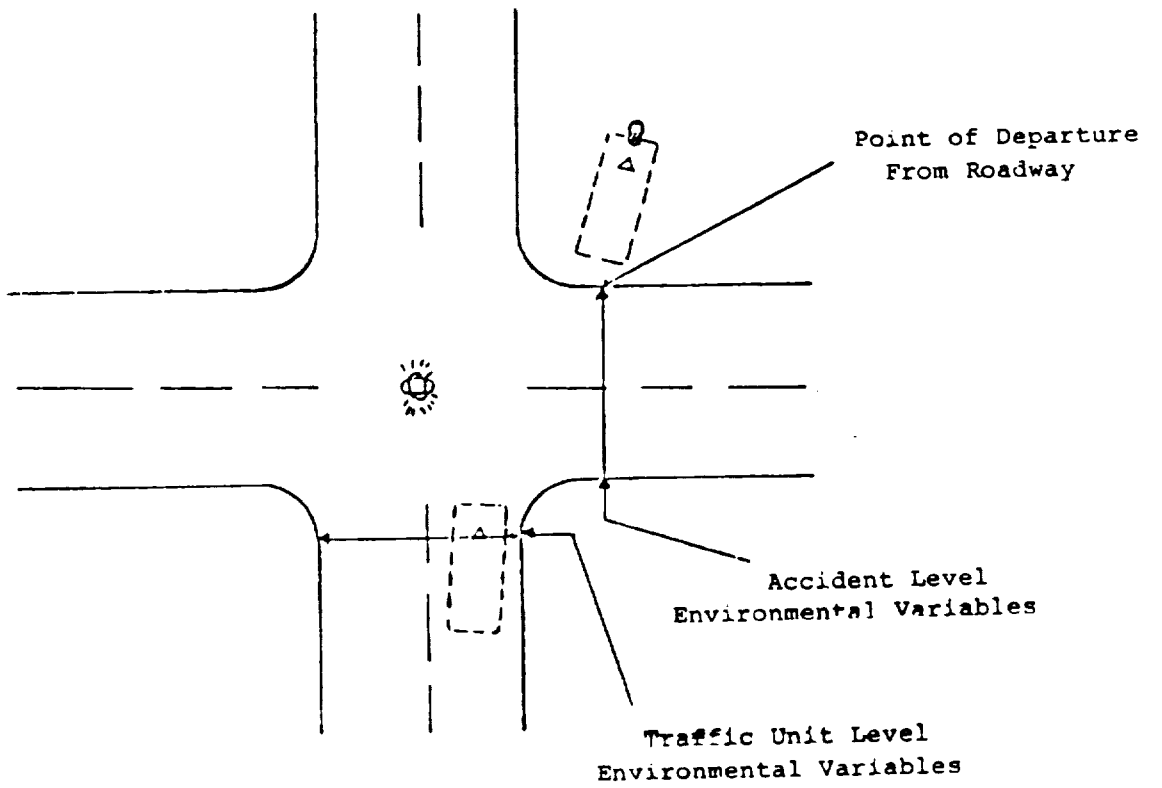
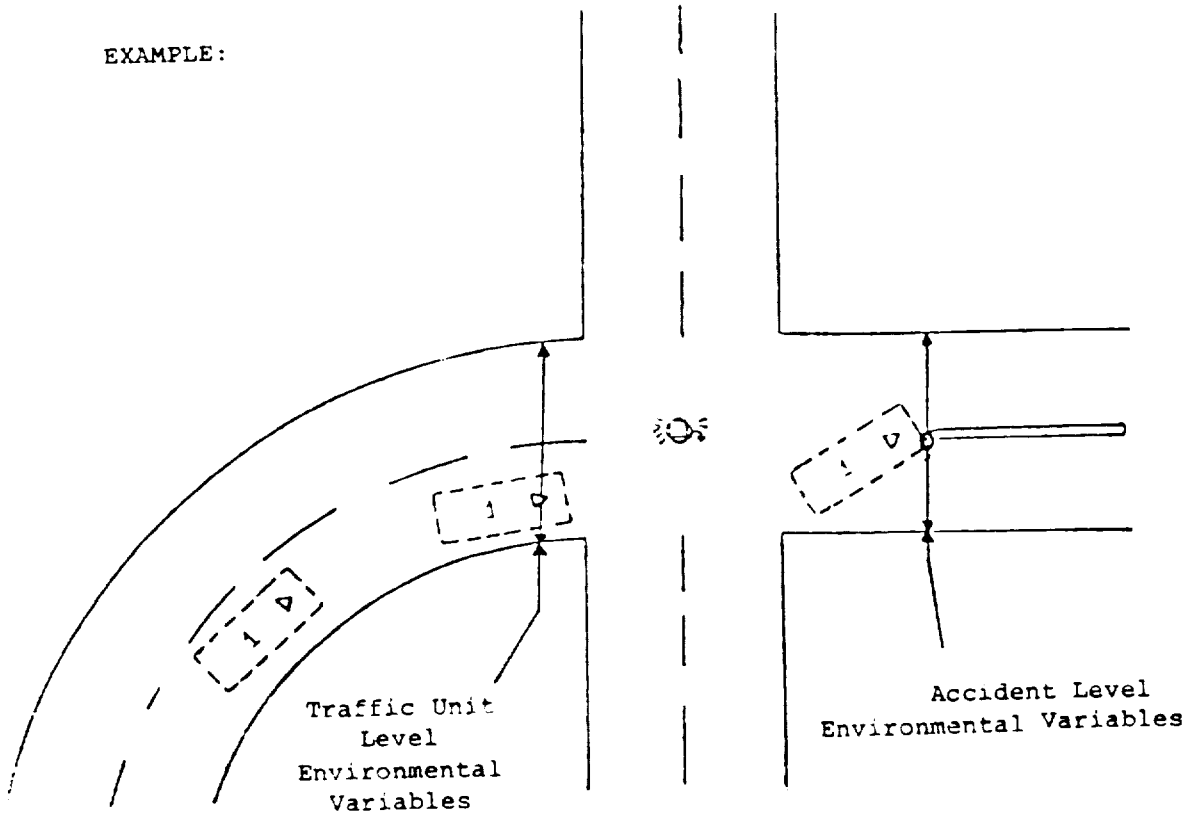
as a NASS roadway if it were not for the "throat" rule (see Variable A24, Relation to Junction, fifth page, paragraphs 5 and 6). In these instances, the accident level environmental variables should be the same as the traffic unit level environmental variables for the involved in transport vehicle.

The accident and traffic unit level variables may also differ where a vehicle was not attempting to negotiate a junction. Recall on sub-page (3) Situation A where a vehicle departed roadway X, prior to its junction with roadway Y, but enters roadway Y laterally before a harmful event occurs. If the vehicle impacts an object or a pedestrian or nonmotorist (see P08, Pedestrian or Nonmotorist's Type) on the road, then use roadway Y for the accident level and roadway X for the traffic unit level. However, if the object or pedestrian or nonmotorist was not impacted until after the vehicle crossed the road for roadway Y, then roadway X would be used at both the accident and traffic unit levels.

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.



EXAMPLE:



Variable Name: Was the Driver's Vehicle in a School Zone (for use in coding A40)

Format: None

Beginning Not  
Column Applicable

Element Values:

Yes

No

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 (D45). 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 D44, 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).

Variable Name: Number of Travel Lanes

Format: 1 column - numeric

Beginning  
Column 61

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, by their definition (see ANSI D16.1-1976, section 2.5.13), are separated from other through or turn related lanes. (NOTE: The separation normally will not involve a physical barrier.) Because a channelized lane is separated, it should not be included unless it is preceded by a turn bay or turn lane and this bay or lane is felt to be most representative of the driver's environment just prior to impact.

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 A42 (Restriction of Roadway at Scene) or A43 (Additional Restriction of Roadway at Scene).

Only those lanes ordinarily used for motor vehicle travel should be considered when coding this variable (i.e., pedestrian/bicycle lanes are excluded).

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 (line or turn arrow) marking, signs, or signals].

The number of lanes for driveways, widemouth parking lots, etc. should be coded as follows: If it is possible to determine the number of lanes through either lane markings or observed or customary use, code the actual number of lanes present. If the number of lanes cannot be accurately established, use code "9" (unknown).

If the vehicle was on a channel or an entrance or exit ramp (A24, Relation to Junction, codes "07" and "09" respectively), code the number of lanes for that roadway section (also see D46, Median Type, remarks).

If the vehicle was in a crossover or on a driveway (see A24, Relation to Junction, definitions for codes "11" and "13") 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: Median Type

Format: 1 column - numeric

Beginning  
Column 62

Element Values:

- 0 No median
- 1 Curbed
- 2 Positive barrier
- 3 Unprotected
- 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 (D45). 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 D44, Previous Recorded Accidents.)

Two-way left turn lanes do not divide a trafficway.

Physical division of roadways (e.g., concrete traffic barrier) overrides simple lateral division (e.g., grass median); therefore, code "2" (Positive barrier) takes precedence over codes "1" (Curbed) and "3" (Unprotected).

In order to code this variable the investigator must first determine if the trafficway was divided at the point of assessment. A trafficway may be divided into two or more roadways. Any intentional separation (see exception below) of travel lanes, either opposing or lanes in the same direction, constitutes a division of a trafficway. Separations can be composed of physical barriers in addition to lateral distance. Further definitions help to describe medians:

1. Medians provide an insulating area between streams of moving traffic.
2. Medians provide protection and control of cross and turning traffic.
3. Medians provide a refuge for pedestrians.

Variable Name: Median Type (cont'd.)

Medians and gores (see Remarks section for A12, Relation to Roadway, for definitions) separate roadways. A traffic island (associated with a channel) separates travel lanes but does not constitute a division of a trafficway because the associated channelized lane(s) is (are) not considered to be a separate roadway.

Entrance and exit ramps (see remarks section for A24, Relation to Junction, code "09" for definition) are considered separate (unique) roadways. Therefore, even though they are divided from their primary roadway [i.e., the one used for Federal Aid System (A21) classification purposes], their division is assessed independently. Ramps are not considered divided unless two ramps exist adjacent separated by a median (with or without a physical barrier). A ramp can divide into two ramps. A gore separates the ramps. The gore does not constitute a division.

Multiple medians could be present. If they are not, then this variable reports about the median that is present. If more than one is present and the first harmful event occurred in median (code "3" for A12, Relation to Roadway), then this variable reports about the median involved in the first harmful event. If more than one is present and the first harmful event did not occur in a median, then this variable reports about the first median laterally to the left (with respect to normal traffic flow) from the first harmful event.

Code "0" (No median) if no medians are present independent of the presence of a gore or traffic island. Variable D47, Median Width, must equal "00" (No median), and variable D49, Trafficway Flow, must equal either "0" [Not physically divided (two way traffic)] or "3" (One way trafficway).

Code "1" (Positive barrier) refers to all concrete or other types of longitudinal barriers (i.e., all manufactured barriers). Also, bridge or underpass supporting structures and bridge rails take this code.

Code "3" (Unprotected) includes any vegetation, gravel, or paved flush--painted or unpainted--medians.

Vegetation or gravel median includes trees, water, embankments, and ravins that separate a trafficway (i.e., nonmanufactured barrier).

A painted flush median can be described as solid painted lines spaced apart with the intent to divide a trafficway into two or more roadways. The intent to divide means to purposely create a safety zone between streams of traffic.

Division does not occur when double no passing lines are present and separated by no more than the width of a center line--allow a margin of error for poor workmanship. If a distance greater than the width of a painted line (about 4 inches and not attributable to poor workmanship, exists between two painted (should be "solid") center lines, then a separation is considered to have occurred.

Variable Name: Median Width

Format: 2 columns - numeric

Beginning  
Column 63

Element Values:

Code actual measured value up to 96 feet  
00 No median  
97 97 feet and above  
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 (D45). 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 D44, Previous Recorded Accidents.)

Code "00" (No median) if no median (code "0") was coded for D46, Median Type.

Medians are measured to the nearest foot from the center of roadway edge line to edge line, where present, or roadway edge (best estimate) to roadway edge, where edge lines are absent. Inside shoulders are thus included since the shoulder (for NASS purposes) may be a variety of surface types and its exact width difficult to determine.

Code "01" (1 foot) includes all distances less than 1.5 feet.

In some instances estimation may be required because of physical difficulties in taking the measurement at the appropriate location. The investigator should always attempt to obtain as good an approximation as possible. In some cases a point nearby can be used; other times the measurement may have to be made at a substantial distance (e.g., location of first harmful event is on a bridge spanning a river).

If the width varies substantially in the area that fits the most representative description, then multiple measurements and averaging are required.

Variable Name: Access Control

Format: 1 column - numeric

Beginning  
Column 65

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 (D45). It is associated with the location of this vehicle's first harmful event. If the roadway is an entrance or exit ramp, ANSI (D16.1-1976, section 3.7.3.4, pages 26-27) requires that the ramp be coded (full, partial, or uncontrolled) the same as the roadway of the higher (lower numerically) Federal Aid System classification (A21) which it connects. Determine which of the connected roadways is higher [if they are the same (A21), then choose the one that led to the ramp] and determine the value for this variable at the general area where the ramp connects with the roadway.

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 D44, 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, D45. 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: Trafficway Flow

Format: 1 column - numeric

Beginning  
Column 66

Element Values:

- 0 Not physically divided (two way traffic)
- 1 Divided trafficway - median strip without traffic barrier
- 2 Divided trafficway - median strip with traffic barrier
- 3 One way trafficway
- 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 (D45). 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 D44, Previous Recorded Accidents.)

Code "0" [Not physically divided (two way traffic)] can only be used whenever D46, Median Type, is coded "0" (No median). Remember although gores separate roadways and traffic islands (associated with channels) separate travel lanes, neither is involved in the determination of trafficway division (see remarks section for D46, Median Type).

Code "1" (Divided trafficway - median strip without traffic barrier) and "2" (Divided trafficway - median strip with traffic barrier) most likely will be used whenever a trafficway division is reported [i.e., D46, Median Type, equal "1" (Curbed), "2" (Positive barrier), or "3" (Unprotected)]. It is presumed that the traffic travels in but one direction on the roadway associated with the location of the first harmful event. If multiple medians are present, choose the first median encountered laterally to the left (with respect to the normal traffic flow) from the first harmful event. A traffic barrier is any positive barrier (see code "2" for D46, Median Type). If the median has a barrier code "2"; otherwise, code "1" should be used.

Code "3" (One way trafficway) is used primarily whenever the trafficway is undivided [code "0" (No median) for D46, Median Type] and traffic flows in but one direction (e.g., one-way streets). However, this code can also be used where a median is present so long as all the traffic on the trafficway goes in the same direction. An example occurs where the opposing roadway of the same named trafficway had to be split by such a distance that the right-of-way divides to accommodate other property. If (rare) one of the trafficways is further divided into multiple roadways by a median, then in this instance code "3" (One way trafficway) should be used.

Variable Name: Highway Performance Monitoring System  
(HPMS) Sample Number

Format: 13 columns - alphanumeric (First column  
is numeric and identifies the county with  
the PSU.)

Beginning  
Column 67

Element Values:

Code value contained on maps supplied by NCSA  
00000000000000 Not in HPMS sample  
99999999999999 Unknown  
----- (Blank) HPMS data not available

County Codes: PSUs that do not have multiple counties should use a county  
code of "1".

PSU 12  
1 Green  
2 Iowa  
3 Lafayette

PSU 13  
1 Benton  
2 Jasper  
3 Newton  
4 White

PSU 14  
1 Appanoose  
2 Monroe  
3 Lucas  
4 Wayne  
5 Decatur  
6 Clarke

PSU 38  
1 Charles  
2 Prince Georges

PSU 52  
1 Shelby  
2 St. Clair

PSU 53  
1 Lincoln  
2 Desha  
3 Chicot  
4 Ashley  
5 Drew

PSU 54  
1 Rutherford  
2 Cleveland

PSU 59  
1 Kemper  
2 Lauderdale  
3 Newton

PSU 60  
1 Natchitoches  
2 Winn  
3 Jackson

PSU 76  
1 Skagit  
2 San Juan  
3 Island

PSU 80  
1 Gilpin  
2 Jefferson

PSU 82  
1 Bernalillo  
2 Sandoval

PSU 83  
1 Harding  
2 Lawrence  
3 Butte  
4 Meade  
5 Corson  
6 Dewey  
7 Ziebach  
8 Perkins

PSU 84  
1 Zapata  
2 Jim Hogg  
3 Starr  
4 Brooks  
5 Kenedy  
6 Willacy

Source: NCSA supplied maps.

Remarks:

Most counties or cities within the PSUs contain highway road segments which are part of FHWA's Highway Performance Monitoring System (HPMS). When the location of the first harmful event occurs in one of these segments, that segment's FHWA assigned code is to be reported on this variable. Since the codes are not county independent, PSUs with multiple counties must specify the county in which the highway segment was located. The first column of this 13 column field is reserved for the county code. Single county and city PSUs use a county of "1" in the first column.

It may or may not be difficult to determine exactly where the HPMS segment begins and/or ends. If the segment begins and/or ends near a junction, be sure to include the junction in the segment so that in-junction first harmful events will be covered. However, remember that a vehicle must be travelling on the roadway which is sampled for the junction accident to be considered associated with the HPMS segment.

Variable Name: Highway Performance Monitoring System  
(HPMS) Sample Number [cont'd.]

If the first harmful event occurred in the segment but the most representative description of the driver's (vehicle's) environment just prior to the collision would not be in the segment, then code "000000000000" (Not in HPMS sample) (e.g., junction accident in which the segment begins on the opposite side of the roadway from the vehicle's direction of travel). If the first harmful event occurs outside the segment but the most representative description of the driver's environment just prior to the collision corresponds with the segment, then encode the segment's code (e.g., the first harmful event occurs just beyond the junction at which the segment ends). If the first harmful event occurs off roadway and the most representative description of the driver's environment just prior to the collision measured from the last point at which the vehicle was on a roadway is in the segment, then encode the segment's code. If it cannot be determined if the driver's environment was in the segment (e.g., because it is unclear where the segment begins or ends), then code "999999999999" (Unknown).

Variable Name: Shoulder Type - Left  
Shoulder Type - Right

Format: 1 column - numeric

Beginning

Column 80

81

Element Values:

- 0 No shoulder
- 1 Surfaced 2-6 ft.
- 2 Surfaced > 6 ft.
- 3 Gravel or other granular material 2-6 ft.
- 4 Gravel or other granular material > 6 ft.
- 5 Natural earth, with or without turf 2-6 ft.
- 6 Natural earth, with or without turf > 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 (D45). 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 D44, Previous Recorded Accidents.)

Consider the same lanes which were used to determine the Number of Travel Lanes (D45), 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.

D51

D52

(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. A raised traffic island at the mouth of a roadway should be considered like a curb and thus not a shoulder. A designated parking lane should not be considered a shoulder for NASS purposes. On the other hand, a painted flush island or a paved median between two edgelines should be considered a shoulder. If the traffic island is the most representative description of the driver's environment just prior to impact, then select the appropriate response.

On these variables, the investigator should identify not only the presence (codes "1" through "6") of a shoulder, but also its type. Using the definitions above, code the attribute which best describes the shoulder type. Surfaced stabilized areas (codes "1" and "2") take precedence over gravel or granular stabilized areas (codes "3" and "4") and over unstabilized areas (codes "5" and "6"). For areas of the same type, but different surfaces within that type, add the widths of the surfaces together [e.g., 3 ft. turf and 5 ft. ground equals 8 ft. of "Natural earth, with or without turf" (code "6")]. For example, an area composed of a 3 foot wide gravel stabilized area followed by an additional 5 feet of unstabilized area, would be coded "3" (Gravel or other granular material 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 "1" (Surfaced 2-6 ft.). Likewise, 3 feet of concrete followed by 2 feet of gravel and 4 feet of grass is coded as "1" (Surfaced 2-6 ft.). Further, a 1 foot wide granular area adjacent to 7 feet of grass-covered earth is coded "6" (Natural earth, with or without turf > 6 ft.) since a minimum of two feet of granular 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").

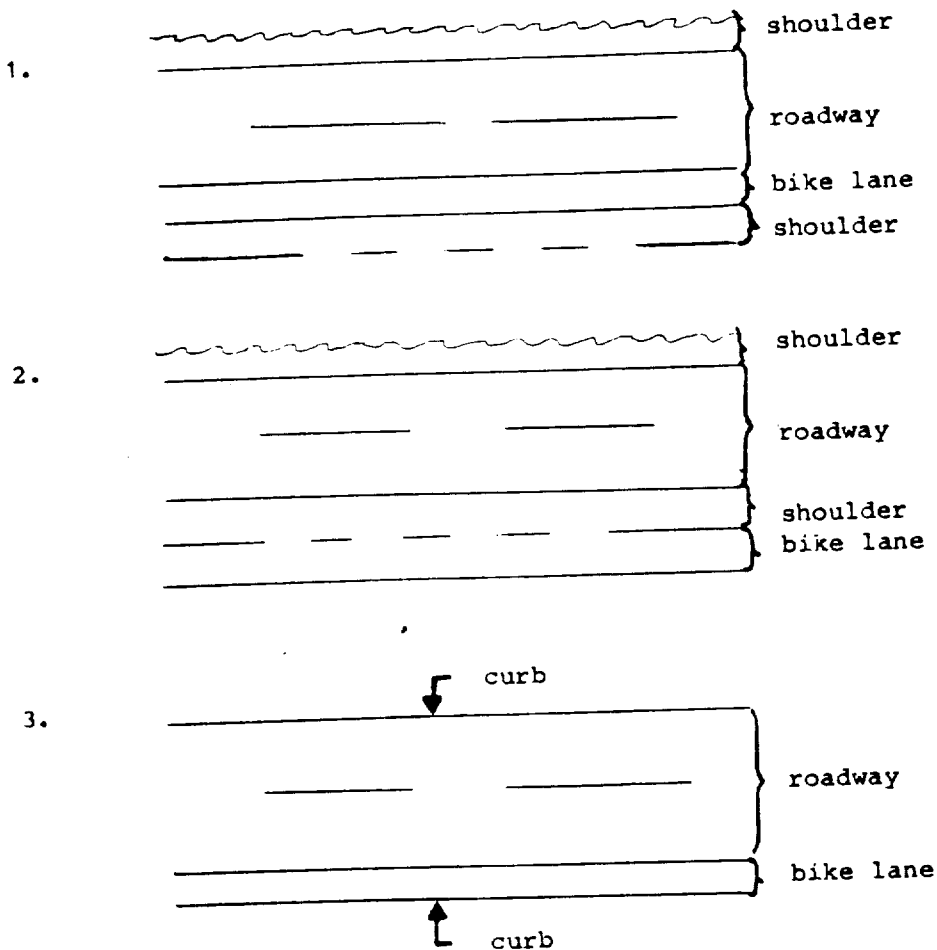
D51  
D52  
(3)

Variable Name: Shoulder Type - Left (cont'd.)  
Shoulder Type - Right (cont'd.)

Code "0" (No shoulder) for any private way (ANSI D16.1-1976, section 2.2.2, page 5) that only becomes a NASS roadway because the accident is coded as driveway, alley access related (code "11") on A24, Relation to Junction [see Remarks page (15)].

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.

Pedestrian/bicycle lanes which exist between the roadway and improved shoulder, or outside but contiguous with the improved shoulder should be considered as extra shoulder width (examples 1 and 2 below). Pedestrian/bicycle lanes which exist contiguous with the roadway and bounded on the outside edge (i.e., curb, ditch, etc.) should not be considered a shoulder (example 3).



Variable Name: Roadway Alignment

Format: 1 column - numeric

Beginning  
Column 82

Element Values:

- |   |             |                             |
|---|-------------|-----------------------------|
| 1 | Straight    | Length of chord = _____ ft. |
| 2 | Curve right | Middle ordinate = _____ in. |
| 3 | Curve left  |                             |
| 9 | Unknown     |                             |

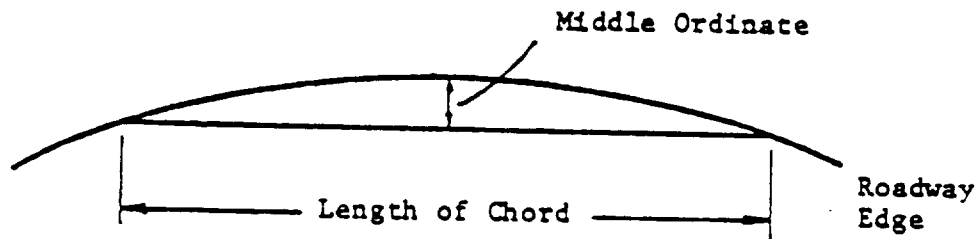
Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D45). 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 D44, Previous Recorded Accidents.)

Whenever a curve ("2" or "3") is coded for this variable, the investigator must record the length of chord and middle ordinate in the spaces provided on the CSS form. A 100' chord length is recommended, however, a 50' chord is acceptable.

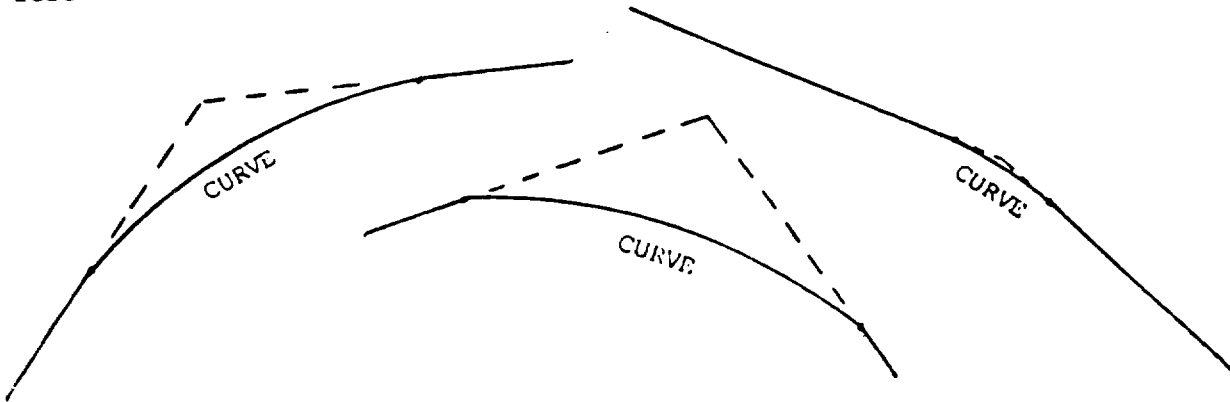


NOTE: The chord should be placed so that the middle ordinate falls in the area where the traffic unit level variables are taken.

Variable Name: Roadway Alignment

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.



Variable Name: Roadway Profile

Format: 1 column - numeric

Beginning  
Column 83

Element Values:

- 1 Level (< 2% grade)
- 2 Positive grade
- 3 Negative grade
- 4 Hillcrest
- 5 Sag
- 9 Unknown

Slope  
Measurement: (Please write the resultant  
percentage in this space on  
the driver form.)  
(V=\_\_\_\_)/(h=\_\_\_\_)

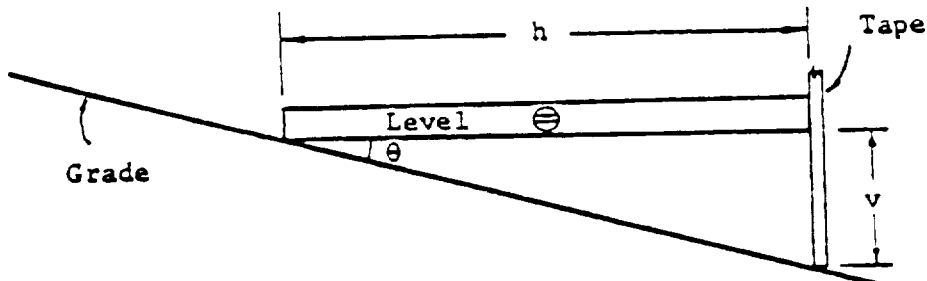
Source: Primary source is scene inspection; secondary sources include the police report and the driver interview.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D45). 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 D44, Previous Recorded Accidents.)

The slope measurement, horizontal (level) distance and vertical (perpendicular) distance must be measured in the area where the traffic unit level variables are taken and recorded in the spaces provided on the CSS forms.

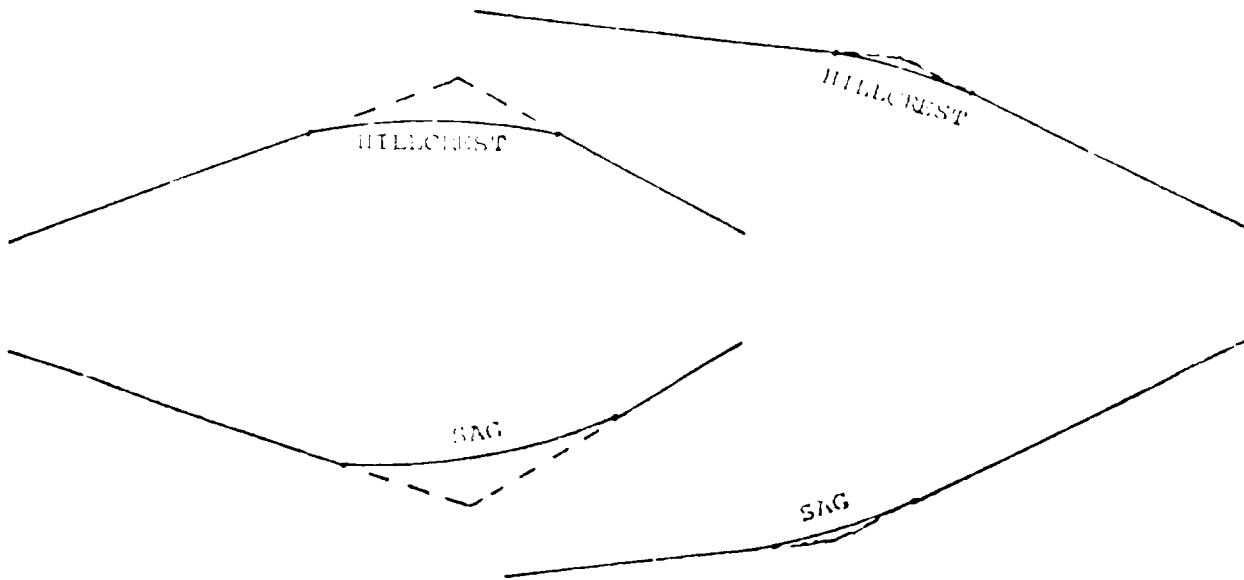


Code "1" [Level (< 2% grade)] refers to a tangent surface whose gradient is < 2%.

Variable Name: Roadway Profile

Codes "2" (Positive grade) and "3" (Negative grade) refer to a tangent surface whose gradient is  $\geq 2\%$ . The vehicle's direction of travel determines whether the grade is positive (uphill) or negative (downhill).

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 above examples:

Variable Name: Roadway Surface Type

Format: 1 column - numeric

Beginning  
Column 84

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 (D45). 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 D44, Previous Recorded Accidents.)

If the lateral cross section contains lanes of more than one surface type, code the surface type of the lane the driver's vehicle was travelling on prior to impact.

Variable Name: Roadway Surface Condition

Format: 1 column - numeric

Beginning  
Column 85

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 (D45) 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: Speed Limit

Format: 2 columns - numeric

Beginning  
Column 86

Element Values:

Level 2 Range: 15 through 55  
Code actual posted or statutory speed limit in m.p.h.  
00 No statutory limit  
99 Unknown

Source: Primary sources are scene inspection or statutory law. Do not use the police report for selecting this variable's value.

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D45). 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 D44, 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.

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 D45 (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 "00" (No statutory limit) 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: Traffic Control Device Functioning

Format: 1 column - numeric

Beginning  
Column 88

Element Values:

- 0 No traffic control
- 1 Traffic control not functioning
- 2 Traffic control functioning - functioning improperly
- 3 Traffic control functioning properly
- 9 Unknown

Source: Sources are scene inspection, police report, and the driver interview.

Remarks:

Code "0" (No traffic control) must only be used when D59, Traffic Control Device, is coded "00" (No controls).

Codes "1" (Traffic control not functioning), "2" (Traffic control functioning - functioning improperly), and "3" (Traffic control functioning properly) are used with respect to the traffic control device cited in D59, Traffic Control Device. Code "3" if the device reported was okay; code "1" if the device did not function at all (e.g., signal out). Code "2" is used when the device had some function but the function was improper or inadequate (e.g., signal works but cycles are short, long, or irregular; sign is covered by vegetation reducing line-of-sight). When this code ("2") is used PHOTOGRAPHS are to be taken of the traffic control device. It is a judgment as to whether function was merely improper versus nonexistent. Your decision will be judged on its reasonableness; annotate where necessary.

Code "9" (Unknown) is only used when D59, Traffic Control Device, is coded "99" (Unknown).

Variable Name: Traffic Control Device

Format: 2 columns - numeric

Beginning  
Column 89

Element Values:

00 No controls

Not at railroad grade crossing

Highway traffic signals

01 Traffic control signal (on colors) without pedestrian signal

02 Traffic control signal (on colors) with pedestrian signal

03 Traffic control signal (on colors) not known whether or not pedestrian signal

04 Flashing traffic control signal

05 Flashing beacon

06 Flashing highway traffic signal, type unknown or other than traffic control or beacon

07 Lane use control signal

08 Other highway traffic signal

09 Unknown highway traffic signal

Regulatory signs

20 Stop sign

21 Yield sign

28 Other regulatory sign

29 Unknown type regulatory sign

School zone signs

30 School speed limit sign

31 School advance or crossing sign

38 Other school related sign

39 Unknown type school zone sign

Warning signs

40 Warning sign

Miscellaneous controls

50 Officer, crossing guard, flagman, etc.

At railroad grade crossing

Active devices

60 Gates

61 Flashing lights

62 Traffic control sign

63 Wigwags

64 Bells

68 Other train activated device

69 Active device, type unknown

Passive devices

70 Crossbucks

71 Stop sign

72 Other railroad crossing sign

73 Special warning device - watchman, flagged by crew

78 Other passive device

79 Passive device, type unknown

Miscellaneous controls

80 Grade crossing controlled, type unknown

Whether or not at railroad grade crossing

98 Other

99 Unknown

Variable Name: Traffic Control Device (cont'd.)

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 (D45). 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 D44, Land Use.)

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

According to ANSI D6.1-1978, section 2A-7, pages 2A-3,4 (Manual on Uniform Traffic Control Devices), signs are classified functionally as follows: Regulator signs give notice of traffic laws or regulations; Warning signs call attention to conditions on, or adjacent to, a highway or street that are potentially hazardous to traffic operations; and Guide signs show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information.

According to ANSI D6.1-1978, section 2A-10, pages 2A-4,5 signs come in standard shapes. The octagon shall be reserved exclusively for the STOP sign. The equilateral triangle, with one point downward, shall be reserved exclusively for the YIELD sign. The round shape shall be used for the advance warning of a railroad crossing and for the civil defense evacuation route marker. The pennant shape, an isosceles triangle, with its longest axis horizontal, shall be used to warn of no passing zones. The diamond shape shall be used only to warn of existing or possible hazards either on the roadway or adjacent thereto. The [vertical] rectangle, ordinarily with the longer dimension vertical, shall be used for regulatory signs, with the exception of STOP signs and YIELD signs. The [horizontal] rectangle, ordinarily with the longer dimension horizontal, shall be used for guide signs, with the exception of certain route markers and recreational area guide signs. The pentagon, point up, shall be used for School Advance and School Crossing signs. Other shapes are reserved for special purposes; for example, the shield or other characteristic design for route markers and crossbuck for railroad crossings.

According to ANSI D6.1-1978, section 2A-11, page 2A-5, signs can be distinguished by their color. The following general rules apply. Red is used as a background color on prohibitory type regulatory signs (e.g., STOP, DO NOT ENTER, WRONG WAY). It is also used as the circular outline and diagonal bar prohibitory symbol. Black may be used as a background (e.g., ONE WAY); it



Variable Name: Traffic Control Device (cont'd.)

is used as a message on white, yellow and orange signs. White is used as the background for route markers, guide signs, and regulatory signs (except STOP). It is used as the legend on brown, green, blue, black, and red signs. Orange is used only as a background color for construction and maintenance signs. Yellow is used as a background color for warning signs and for school signs. Brown, green, and blue are used as a background color for guide signs.

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

Guide signs do not constitute traffic controls.

The investigator should consider the intent of this question. If at the time of the accident there was no intent to control (regulate or warn) 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).

Focus on the road segment just prior to the location of the first harmful event and select the traffic control device(s) which is (are) most related to the accident. If multiple devices are related, select the device of highest (lowest numerically) priority.

For example, if the intersection is channelized 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 (D45, Number of Travel Lanes) was chosen based on its through lanes or its channelized lanes.

The codes are prioritized in decreasing numerical value (i.e., "01" takes precedence over "02", "02" over "03", etc.--see exception associated with code "50"). Codes are grouped generally into those not at a railroad crossing ("01" through "50") and those at a railroad grade crossing ("60" through "80"). This means that highway traffic signals take precedence over regulatory signs, school zone signs, and warning signs. Regulatory signs take precedence over school and warning signs. School signs take precedence over warning signs. Likewise, active (railroad crossing) devices take precedence over passive devices. If a school guard, police officer, or other officially-designated person controls both pedestrian and vehicular traffic, code "50" (Officer, crossing guard, flagman, etc.) should be used. Any officially-designated person (code "50") takes precedence over values "00" through "40".

Codes "60" through "80" should only be used when the first harmful event occurs in the junction of a roadway and a railroad bed [i.e., A24, Relation to Junction, equals "12" (Railroad grade crossing)]. If A24 equals "12", then codes "00" or "60" through "80" should be used. Codes "01" through "50" should be used when the location of the first harmful event occurs anywhere else (i.e., A24 equals "01" through "11" or "13").

Variable Name: Traffic Control Device (cont'd.)

Codes "01", "02", or "03" [Traffic control signal (on colors) ....] is used for any signal which processes through the green, amber, and red cycles. The source of actuation is of no concern. If the amber phase is missing, an on-colors control device should still be coded.

If the signal has green, amber, and red cycle capability but is being used to flash amber/red only, then code "04" (Flashing traffic control signal) is used.

Code "05" (Flashing beacon) is used for any device capable of only flashing amber/red signals.

Code "07" (Lane use control signal) includes turn arrows and controls which govern the direction of traffic flow in the lane (i.e., traffic flows differently depending on time of day).

Code "28" (Other regulatory sign) includes speeds limit signs, movement signs (e.g., NO TURN, LEFT TURN ONLY, DO NOT PASS, PASS WITH CARE, KEEP RIGHT, DO NOT ENTER, WRONG WAY, ONE WAY), parking signs (e.g., NO PARKING, EMERGENCY PARKING ONLY), pedestrian signs (e.g., NO HITCH HIKING, NO PEDESTRIANS), and other miscellaneous signs (e.g., STOP HERE ON RED, NO TURN ON RED, ROAD CLOSED TO THRU TRAFFIC, WEIGHT LIMIT ...., TRUCK ROUTE)--see ANSI D6.1-1978, sections 2B-10 through 2B-44, pages 2B-6 through 2B-36.

Codes "30" through "39" (School zone signs) should only be used if the first harmful event occurred 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.) See ANSI D6.1-1978, sections 7B-9 through 7B-13, pages 7B-2 through 7B-6, for examples of school zone signs.

Code "40" (Warning signs) is used for any black on yellow diamond shaped sign. Some black on yellow horizontal rectangular or vertical rectangular (speed advisory) signs are also included. See ANSI D6.1-1978, section 2C-1 through 2C-41, pages 2C-1 through 2C-22 for examples of signs.

Code "60" (Gates) is used if the railroad crossing is guarded by a combination of gates, flashing lights, and bells. See ANSI D6.1-1978, section 8C-2 through 8C-4, pages 8C-1 through 8C-5, for examples of flashing lights with and without gates.

Code "70" (Crossbucks) is coded if no train activated devices are present and a large "X", with the words RAILROAD CROSSING spelled out on the "X", is present--see ANSI D6.1-1978, section 8B-2, pages 8B-1 and 8B-2.

Code "72" (Other railroad crossing sign) includes the railroad advance warning sign (circle with black "X" on yellow background)--see ANSI D6.1-1978, section 8B-3, page 8B-3.

Variable Name: Traffic Control Device (cont'd.)

Code "98" (Other) includes a school bus with flashers activated where vehicles are required to stop.

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) and was related should be coded, unless a temporary control [e.g., stop sign ("20"), police officer ("50"), etc.] has been inserted, in which case the temporary control should be coded.

D60

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Variable Name: 1st - Other Driver Related Factors  
 2nd - Other Driver Related Factors  
 3rd - Other Driver Related Factors

Format: 2 columns - numeric

Beginning

Column 91

93

95

Element Values:

00 No other driver related factors

Physical/Mental Condition

01 Non-physical (i.e., mental or emotional factor)  
 02 Drowsy, sleepy, asleep, fatigued  
 03 Depression  
 04 Illness, disease, blackout

Physical Impairments

05 Deaf  
 06 Restricted to wheelchair  
 07 Paraplegic  
 08 Previous injury  
 09 Other physical impairments (specify)

Drug Impairments

10 Drugs-medication (prescription, over-the-counter)  
 11 Other drugs (excludes alcohol, includes illegal substances)(specify)

Operator Related Factors

20 Inattention  
 21 Interference with driver by other passenger  
 22 Operator inexperience  
 23 Unfamiliar with roadway  
 24 Overloading or improper loading of vehicles with passengers or cargo  
 25 Operating vehicle in erratic, reckless, careless or negligent manner  
 26 Improper or erratic lane changing  
 27 Failure to keep in proper lane or running off roadway  
 28 Making improper entry to or exit from trafficway  
 29 Failure to obey traffic signs, traffic control devices or traffic officer, failure to observe Safety Zones  
 30 Failure to signal intentions  
 31 Giving wrong signal  
 32 Making right turn from left lane, making left turn from right lane  
 33 Making other improper turn  
 34 Driving wrong way on one-way roadway  
 35 Driving on wrong side of roadway  
 36 Failure to dim lights or to have lights on when required  
 37 Operating without required equipment

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Variable Name: 1st - Other Driver Related Factors (cont'd.)  
2nd - Other Driver Related Factors (cont'd.)  
3rd - Other Driver Related Factors (cont'd.)

- 38 Creating unlawful noise or using equipment prohibited by law
- 39 Passing where prohibited by posted signs, pavement markings, hill, curve or school bus displaying warning not to pass
- 40 Passing on wrong side
- 41 Passing with insufficient distance or inadequate visibility or failing to yield to overtaking vehicle
- 42 Passing through or around barrier positioned to prohibit or channel traffic
- 43 Failure to observe warnings or instructions on vehicles displaying them
- 44 Driving less than posted minimum
- 45 Operating at erratic or suddenly changing speeds
- 46 High speed chase with police in pursuit
- 47 Illegal driving on road shoulder, in ditch, on roadside, or on sidewalk or path
- 48 Starting or backing improperly
- 49 Stopping in roadway (vehicle not abandoned)
- 50 Opening vehicle door into moving traffic or while vehicle is in motion
- 51 Towing or pushing vehicle properly
  
- 98 Other (specify)
- 99 Unknown

Source: Police report, hospital/medical report, or other official records.

Remarks:

The purpose of these variables is to provide guidance to safety research on the involvement of these factors in accidents. Causal determinations must necessarily be based on more detailed investigations and other data, such as exposure data.

Related Factors are circumstances that may have contributed to the cause of an accident. For our purposes, regarding driver related factors, only those circumstances indicated by the investigating police officer on the PAR or identified in other official reports are to be considered for coding. These factors can appear anywhere on the report--in the narrative section, in the space for violations, in the column titled "Contributing Factors" or "Driver Action", etc.

As described in the coding attributes, driver related factors are divided into two groups: (1) Physical/Mental Conditions (codes "01"- "11"), and (2) Operator Related Factors (codes "20"- "51"). Physical/Mental Conditions can be police report indications and/or information taken from other official records (e.g., hospital/medical, autopsy reports, driver records, etc.). Operator Related Factors are restricted to police report indications only. Indications taken from the PAR are coded whether or not the PAR's contributing factor is accurate.

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(3)

Variable Name: 1st - Other Driver Related Factors (cont'd.)  
 2nd - Other Driver Related Factors (cont'd.)  
 3rd - Other Driver Related Factors (cont'd.)

Only the driver related factors that apply to that particular driver should be coded. If only one factor applies, the code for it should be entered in the slots for the first variable. The following variables should be coded "00" (No other related factors), signifying no subsequent related factors. If two or three factors apply, code accordingly in ascending numerical order. If more than three codes apply, choose the three that seem the most significant. If no other driver related factors apply, code "00" for all three variables. Do not include any factors already coded as a violation in D23 through D30.

Code "00" (No other driver related factors) is used if the investigating officer did not indicate any related factors for the driver in the accident and if related factors are not identified from other official sources.

Code "01" [Non-physical (i.e., mental or emotional factor)] includes anger, excitement, etc.

Code "04" (Illness, disease, blackout) includes nausea.

Codes "05" through "11" (Physical and Drug Impairments) apply to impairments that are indicated on the PAR or specified in other official records.

If both "06" (Restricted to wheelchair) and "07" (Paraplegic) apply, code "07". Reserve "06" for those persons who are restricted to a wheelchair, but are not paraplegic.

Code "11" (Other drugs ....) is used for illegal substances (e.g., heroin/morphine, marijuana which are not obtained as a result of a prescription, etc.).

Codes "20" through "51" are Operator Related Factors and generally refer to specific actions performed by the driver.

Code "21" (Interference with driver by other passenger) refers to situations where the driver is distracted or physically restricted by the passenger. If the driver is simply conversing with the passenger, code "20" (Inattention).

Code "25" (Operating vehicle in erratic, reckless, careless, or negligent manner) does not include erratic lane changing (code "26") or erratic speed changing (code "45").

Codes "26" (Improper or erratic lane changing) and "27" (Failure to keep in proper lane or running off roadway) differ in that the former involves intentionally changing lanes and the latter does not. Code "27" refers to a driver who fails to keep his vehicle in its lane, or unintentionally leaves

D60  
D61  
D62  
(4)

Variable Name: 1st - Other Driver Related Factors (cont'd.)  
2nd - Other Driver Related Factors (cont'd.)  
3rd - Other Driver Related Factors (cont'd.)

it (e.g., a drunk who weaves, all or part of the vehicle repeatedly crossing an edge line or a lane marker).

Code "28" (Making improper entry or exit from trafficway) does not include an uncontrolled departure of the roadway. It should also be distinguished from starting or backing improperly (see code "48").

Code "32" (Making right turn from left lane, making left turn from right lane) refers to any turn made from the wrong lane. It includes turning into a driveway, turning at an intersection, etc. Code "33" (Making other improper turn) includes all of the turns that do not apply above, e.g., U-turns, turning at an intersection when it is not allowed, turning into the wrong lane, etc.

Code "37" (Operating without required equipment) can refer to an improper trailer hitch, no snow tires in the winter months of some states, no chains on tires for use on mountain roads, no outside mirror when the driver's license requires one, etc.

Code "38" (Creating unlawful noise or using equipment prohibited by law) includes using legal equipment illegally, e.g., vehicles with low hydraulic or air shock absorbers, etc.

Code "43" (Failure to observe warnings or instructions on vehicles displaying them) includes failure to observe warnings or instructions on snow plows, construction equipment, etc.

Code "47" (Illegal driving on road shoulder, in ditch, on roadside, or on sidewalk or path) presumes that the driver was in control of his vehicle or the road shoulder, sidewalk, etc., prior to the first harmful event.

Code "48" (Starting or backing improperly) only applies when the driver is parking, leaving a parked position, or other maneuvers that are not traffic control related.

Code "49" [Stopping in roadway (vehicle not abandoned)] does not include stopping for a traffic signal, sign, traffic officer, legal turn, etc.

Code "98" [Other (specify)] does not include alcohol involvement, speeding (in any form), driving while intoxicated (or DUIL), reckless driving with a suspended or revoked license, failure to yield right-of-way, following too closely, running a traffic signal or stop sign, or any other factor for which a citation was issued listed in D30, Other Violation Charged.

Code "99" (Unknown) in all three spaces only when the PAR specifically states "unknown contributing factors".

For hit and run vehicles, code "00" (No other driver related factors) for all three variables unless the PAR indicates the presence of a factor.

DRIVER FORM

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D64  
D65

Variable Name: 1st - Other Environmental Related Factors  
2nd - Other Environmental Related Factors  
3rd - Other Environmental Related Factors

Format: 2 columns - numeric

Beginning  
Column 97  
99  
101

Element Values:

00 No other environmental related factors

Vision Obscured By

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

Swerving or Loss of Control Due to

- 20 Severe crosswind
- 21 Wind from passing truck
- 22 Slippery surface
- 23 Avoiding debris or objects in roadway
- 24 Ruts, holes, bumps in roadway
- 25 Avoiding animals in roadway
- 26 Avoiding vehicle in roadway
- 27 Avoiding pedestrian, pedalcyclist, other nonmotorist in roadway
- 28 Avoiding standing water, snow, oilslick or ice patch on roadway

Roadway Features

- 30 Inadequate warning of exits, lanes narrowing, traffic controls, etc.
- 31 Pavement marking obscured or absent
- 32 Surface washed out (caved in, road slippage)
- 33 Shoulder too low or high
- 34 Inadequate construction or poor design of roadway, bridge, etc.
- 35 Vehicle unattended in roadway

- 98 Other (specify)
- 99 Unknown

Source: Police report.



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D64

D65

(2)

Variable Name: 1st - Other Environmental Related Factors (cont'd.)  
2nd - Other Environmental Related Factors (cont'd.)  
3rd - Other Environmental Related Factors (cont'd.)

Remarks:

The purpose of these variables is to provide guidance to safety research on the involvement of these factors in accidents. Causal determinations must necessarily be based on more detailed investigations and other data, such as exposure data.

Related Factors are circumstances that may have contributed to the cause of an accident. For our purposes, regarding environmental related factors, only those circumstances indicated by the investigating police officer on the PAR are to be considered for coding. These factors can appear anywhere on the report--in the narrative section, in the space for violations, in the column titled "Contributing Factors" or "Driver Action", etc.

As described in the coding attributes, environmental related factors are police accident report (PAR) indications of factors. The environmental related factors are taken directly from the PAR whether or not the PAR's contributing factor is accurate.

Only the environmental related factors that apply to that particular driver should be coded. If only one factor applies, the code for it should be entered in the slots for the first variable. The following variables should be coded "00" (No other environmental related factors), signifying no subsequent related factors. If two or three factors apply, code accordingly in ascending numerical order. If more than three codes apply, choose the three that seem the most significant. If no other environmental related factors apply, code "00" for all three variables.

Codes "01" through "08" are to be used when the driver's vision is obscured by an element of the environment.

Codes "20" through "28" should be used if the driver swerves or loses control of his vehicle as a result of these environmental factors.

Code "22" (Slippery surface) includes snow, ice, oil, etc.

Code "26" (Avoiding Vehicle in Roadway) includes both attended and unattended vehicles. Only code this for "phantom" vehicles if the investigating police officer specifically indicates it.

Codes "30" through "35" are to be used whenever roadway features are indicated by the investigating officer as related factors in the accident.

Code "35" (Vehicle unattended in roadway) should be used only when an unattended vehicle in the roadway is struck (as the first harmful event).

Code "99" (Unknown) in all three spaces only when the PAR specifically states "unknown contributing factors."

For hit and run vehicles, code "00" (No other environmental related factors) for all three variables unless the PAR indicates the presence of a factor.

Variable Name: Investigator I.D. Number

Format: 1 column - numeric

Beginning  
Column 10

Element Values:

Level 1 Range: 0 through 9

Source: Zone Center.

Remarks:

The person who was primarily responsible for the completion of this Occupant Form shall enter his/her unique number.

Each investigator's unique number is assigned by the PSU's Zone Center.

This variable is a mandatory variable and cannot be changed.

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning  
Column 11

Element Values:

Level 1 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:

Level 1 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.

Occupants sharing a seating position should be assigned numbers using the guidelines stated in the first paragraph above.

This variable is a mandatory variable and cannot be changed.

Variable Name: Occupant's Age

Format: 2 columns - numeric

Beginning  
Column 15

Element Values:

Level 1 Range: 00-97, 99  
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.

Variable Name: Occupant's Height

Format: 2 columns - numeric

Beginning  
Column 18

Element Values:

Level 2 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:

Level 2 Range: 005 through 300 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.



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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.)

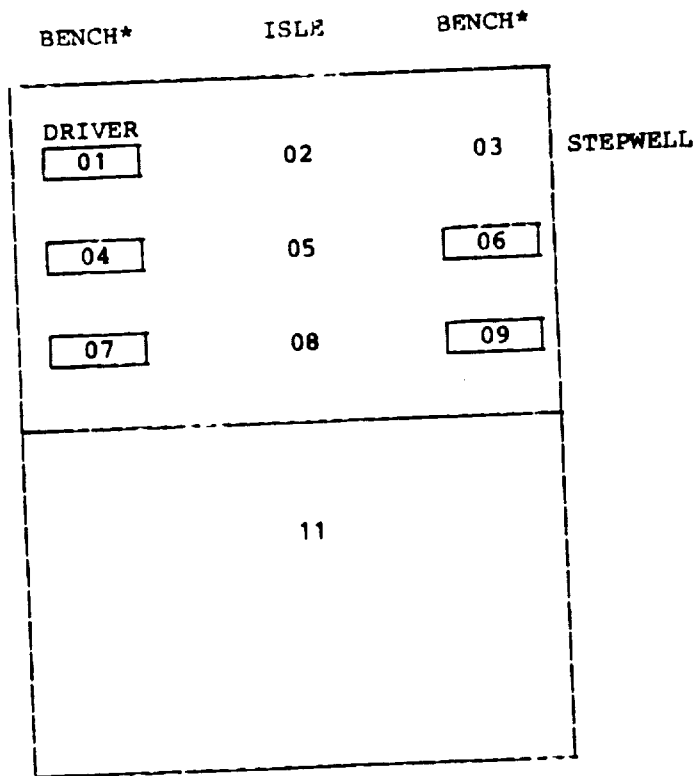
Codes "11" (Second seat or beyond - additional passenger) and "13" [Other enclosed area (specify)] are differentiated as follows:

Use Code "11" - for occupants in designated seating positions beyond the third seat as well as occupants additional to the second and third seats.

Use Code "13" - for occupants located in the enclosed area where no defined seating exists. Use this code for an occupant using a fold-down type seat in its folded down position.

Code "14" [In or on unenclosed area (specify)] 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 nonmotorists.

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 the applicable code or 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 an "other vehicle" (V14, "80" through "89") 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 the applicable code or 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 23

Element Values:

- 0 No ejection
- 1 Windshield
- 2 Left front
- 3 Right front
- 4 Left rear
- 5 Right rear
- 6 Rear
- 7 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 "7" (Roof) applies to all hardtops, convertibles, sun roofs, t-bar roofs, and detachable hardtops (such as fiberglass tops) that are used to cover areas designed for passenger protection..

Examples of how variables 018 (Ejection Medium) and 019 (Medium Status) should be coded when 017 = 7 follows.

016	Roof Type	Roof Status	017	018	019
No ejection 0	Any roof	Open or closed	0	0	0
Ejection 1-3	Hardtop	Ripped open	7	8	4
Ejection 1-3	Hardtop	Detached	7	2	1
Ejection 1-3	Convertible	In down or open position	7	2	1
Ejection 1-3	Convertible	In closed position	7	8	3
Ejection 1-3	Sun or t-bar	Ripped open	7	8	4
Ejection 1-3	Sun or t-bar	Open/removed	7	2	1
Ejection 1-3	Sun or t-bar	Closed	7	8	3
Unknown 9	Any roof	Open or closed	9	9	9

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Variable Name: Ejection Area (cont'd.)

Code "8" (Other area) also applies to persons riding on open tailgates. Persons ejected from other 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 the applicable code or 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, other vehicle with only waist down protection, etc.

Codes "4"- "7" all refer to windows.

Code "2" (Open roof structure) applies only to convertible, sun roofs, and t-bar roofs.

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 the applicable code or 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
- 4 Integral structure ripped open
- 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, t-bar 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, other 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, or to a convertible, sun, or t-bar roof that is closed when damaged. Sun and t-bar roofs are coded here if the ejection occurred through the designed opening in the sun or t-bar roof. However, if the roof was of a sun or t-bar type but the ejection occurred because a sizeable opening was torn in the roof structure, then code "4" (Integral structure ripped open) should be used.

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 "4" (Integral structure ripped open) should be used when any vehicle structure, not designed to be opened (e.g., standard roof), is torn open during the accident 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 the applicable code or 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
- 2 Fatal - ruled disease
- Nonfatal
- 3 Hospitalization
- 4 Transported and released
- 5 Treatment - other (specify)
- 6 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" (Fatal - ruled disease) is used in two situations. The first is when the effects of a disease can be deemed as a cause of the accident. Cause means that the on-set of the disease occurred prior to the first harmful event. When determining the time of on-set (relative to the first harmful event), the investigator can use any information source available. The investigator makes his/her determination after weighing all the evidence. (NOTE: The use of all available information sources is restricted to the determination of when the on-set occurred.) Additionally, code "2" (Fatal - ruled disease) is used when a medical examiner (or other official vested by the state to verify the cause of death) or an official medical report verifies that the death resulted from either (1) a diseased condition, or (2) not from accident related injuries.

Code "3" (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 "4" (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.

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Variable Name: Treatment - Mortality (cont'd.)

Code "5" (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 "6" (No treatment) includes persons transported to a hospital but who refuse treatment. As long as there was transportation directly from the scene, a refusal of treatment will not, on its own, affect the Final Stratification (A09) of the case.

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 "4" or "5", 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.

Injury Data From Interviewee

This page is separated into four body diagrams: front and back soft tissue injuries and front and back skeletal injuries. These diagrams allow the documentation of all injuries sustained by an occupant in the accident, as stated by the interviewee.

The nature, location, and injury source should be documented as follows:

- Nature** - As stated by the interviewee document, the lesion sustained (e.g., laceration, fracture, concussion, etc.). The terms used by the interviewee may not necessarily coincide with the terms found in the OIC, but the injury should be documented as stated by the interviewee for ease of completion of this form during the interview. Length of unconsciousness, or state of consciousness on first observation by medical authorities, and whether unconsciousness was a result of a head contact, should be noted.
- Location** - The location of the injury, as stated by the interviewee, should be documented in two ways:
- By arrows, shading, bracketing (for large areas) on the body diagram; or
  - By written description (e.g., left lower arm, right third rib, etc.). The written description may be abbreviated to aid in completion of the page during the interview. Refer to the Injury Coding Manual for standard abbreviations and symbols.
- Source** - The interviewee should be queried as to the source of the injury. This information gained from the interviewee may aid in the final coding of injury source in variables 033, 040, 047, 054, 061 and 068 and in the vehicle inspection (if not done previous to interview), and accident reconstruction. The injury source should be written immediately below the nature and written location of the injury and delineated by a horizontal line. If the interviewee does not know the source of the injury, unknown should be documented on the form.

Variable Name: Hospital Stay

Format: 2 columns - numeric

Beginning  
Column 32

Element Values:

Level 1 Range: 00-61, 99

00 Not hospitalized

Code number of days hospitalized up through 60

61 61 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, lived four days in the hospital, then expired, code "04".

Variable Name: Working Days Lost

Format: 2 columns - numeric

Beginning  
Column 34

Element Values:

Level 1 Range: 00-62, 99  
 00 No working days lost  
 Code number of days for which work was lost up through 60  
 61 61 days or more  
 62 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, and 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 (except fatals) who do not qualify to lose working days.

If a person is fatal - ruled disease, fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room, then code "62" (Fatally injured) is used.

If a person expires within thirty days following the accident, code "62" regardless of whether or not the person missed any working days.

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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 unless the person is fatally injured [codes "1" (Fatal) or "2" (Fatal - ruled disease) for O20, Treatment - Mortality].

Variable Name: Manual (Active) Restraint System Availability

Format: 1 column - numeric

Beginning  
Column 36

**Element Values:**

- 0 None available
- 1 Shoulder belt
- 2 Lap belt
- 3 Lap belt and shoulder belt
- 4 Motorcycle helmet
- 5 Child safety seat (designed without tether or unknown design)
- 6 Child safety seat (designed with tether - properly installed)
- 7 Child safety seat (designed with tether - improperly installed)
- 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.

A motorcycle helmet (code "4") 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.

Codes "5", "6", and "7" (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.

Code "5" [Child safety seat (designed without tether or unknown design)] should be used when a child safety seat is designed to be restrained by means other (e.g., lap belt) than a tether or when an unknown design is available.



Variable Name: Manual (Active) Restraint System Availability [cont'd.]

Code "6" [Child safety seat (designed with tether - properly installed) should be used when a child safety seat equipped with a tether--designed to be attached to a rear seat lap belt or to a special attachment mounted on the backlight package shelf--is available and is properly installed in the vehicle. This type of child safety seat must also, in most cases, be further restrained by a lap belt to be considered properly installed.

Code "6" may be used only when the tether-designed child seat is available and properly installed. If a child safety seat which is designed with a tether is improperly or incompletely installed (i.e., tether not used), then use code "7" [Child safety seat (designed with tether - improperly installed)].

If the child seat is designed with tether but the properness of the installation is unknown and available information does not support improper installation, then code the restraint system availability as code "6" [Child safety seat (designed with tether - properly installed)].

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. If the PAR indicates the type of belts available and there was no vehicle inspection or interview, then the appropriate code "1", "2", "3", "4", or "5" may be used; however, codes "6" and "7" may not be strictly from the PAR since proper installation must be assessed.

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 Use

Format: 1 column - numeric

Beginning  
Column 37

Element Values:

- 0 None used
- 1 Shoulder belt
- 2 Lap belt
- 3 Lap belt and shoulder belt
- 4 Motorcycle helmet
- 5 Child safety seat - used properly
- 6 Child safety seat - used improperly
- 7 Child safety seat - unknown if used properly
- 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" (Motorcycle helmet) is to be used if the helmet is worn; it is not necessary for the chin strap to be used.

Code "5" (Child safety seat - used properly) 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 it is occupied by the child.

Code "6" (Child Safety Seat - used improperly) is to be indicated when a child safety seat is not installed according to the manufacturer's directions, and it is occupied by the child.

Code "7" (Child safety seat - unknown if used properly) is to be indicated when a child safety seat is occupied by a child, but it is unknown if the seat was installed according to the manufacturer's directions.

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Variable Name: Manual (Active) Restraint System Use [cont'd.]

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) if the PAR indicates "belts were not used".

The PAR is a legitimate source for belt usage only if no interview was conducted, no vehicle inspection was completed, and the PAR indicates both restraint availability and restraint usage. In most states these code(s) are collapsed and while they may be used for coding of restraint availability, they are too vague to actually indicate restraint usage. The team should consult their Zone Center for proper coding of restraint usage with the PAR as the sole source of data. A field response column is provided on the form for the investigator to indicate the assessment of restraint usage on the PAR.

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 38

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.)

Code "3" (Airbag not reinstalled) refers to a situation where the bag is not repositioned, the gas canister 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 Nondeployed 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 fill in the actual crosscheck prior to adding 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.

It should be noted that acceptable Occupant Form surrogates may not be acceptable for all portions of the Driver Form; refer to the introduction section of this manual for proper surrogates for the Occupant and Driver data forms.

## NASS Injury Coding Conventions

1. 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
2. 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
3. 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 unknown system/organ
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. 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
6. 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 below). Aspect code W (whole region) is used only if 50% or more of the body region is affected. 50% rule
7. If a lesion involves more than one aspect of a body region:
  - a. Try to determine if one of the aspects is predominant. If so, code that aspect.
  - b. If not, use the aspect code W (whole).Aspect Whole (W) Code
8. Burn injuries should be coded using the following guidelines:
  - a. If only one body region is burned, use that body region code (e.g., ARB1-1, burned right upper arm 1°).
  - b. 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°).
  - c. 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.
  - d. The Rule of Nines is used in the AIS severity level for (a), (b), and (c) above. See the Rule of Nines diagram.Burn Injuries and the rule of nines
9. The following definitions have been used traditionally to differentiate "sprain" and "strain" injuries:
  - sprain - a joint injury which causes pain and disability depending on the degree of injury to ligaments and muscle tendons near the joint.Strain versus sprain

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, use \_\_\_ SJ for sprains and \_\_\_ TM-1 for strains.

Neck injuries may sometimes be described as "strains" and sometimes as "sprains". For NASS purposes, neck injuries should be coded as "strains" (see above definitions).

No sprains to neck

10. Integumentary lesions to the forehead are coded "face superior", or FS\_\_ - \_\_ in the NASS Injury Coding Manual. Fractures to the frontal bone are coded Head Anterior (HAFS-\_\_).

Coding the forehead

11. Coding of substantiated anatomic lesions to the brain:

Anatomic Brain Lesions

- a. If there are no substantiated anatomic lesions to the brain, the OIC and AIS will be coded as they appear in the Non-Anatomic Injuries section (see HEAD, Part C, Non-Anatomic Injuries).
- b. 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 injury as it is specified in the "Anatomic Injuries" section (see HEAD, Part B, Anatomic Injuries). The AIS assigned will be determined by comparing: (1) the AIS which accompanies the specified injury in the "Anatomic Injuries" section, with (2) the AIS of the comparable injury in the "Non-Anatomic Injuries" section. The higher of the two AIS scores will be the one coded.
- c. If there are two or more substantiated anatomic lesions to the brain, the OIC and the AIS will be coded as they appear in the "Anatomic Injuries" section.

12. "Friction Burns" are to be coded as abrasions. The same criteria for assigning AIS applies (see definitions of abrasion - major and superficial, in the Glossary). If there is information as to the degree (e.g., 1°, 2° or 3°) code: AIS = 1 for 1°, 2° or unspecified, AIS = 2 for 3°.

Friction Burns

13. When an injury is described as a "\_\_\_\_\_ type of laceration" (e.g., avulsion type laceration, flap laceration) use the "L" (laceration) lesion code. For all ambiguous situations use "laceration" over puncture, perforation, or avulsion.

Laceration Type Injuries

14. A single compression fracture of the spine involving > 1 vertebra and overlapping adjacent regions of the spine is to be coded as one injury (i.e., one line of code). Choose the more superior of the two regions for the aspect code.

Compression Fractures

15. For axilla (armpit) injuries code the Body Region for whatever can be determined to be nearest; A (arm), C (chest) or if in between S (shoulder). If unknown or unspecified use A (arm).

Axilla Injuries

16. When "closed head injury," "head trauma," or other ambiguous phrase is the only information available, code HUUU-7.

Closed Head Injury



17. The AIS codes individual injuries only. Injuries to body parts which are present on both sides of the body (bilateral) are coded as two separate injuries. It should be remembered that within the OIC "Aspect" measures the location of the injury being reported. Therefore, bilateral is not used to code the occurrence of hemo- or pneumothorax (results) present bilaterally. Instead, an upgraded AIS will account for the presence of bilateral results. Bilateral Not  
Used
18. The distinction in coding individual skull fractures versus subsuming them under the crush classification lies in the displacement of brain tissue. If it can be determined that brain matter is forcibly extracted or moved from the cranium in conjunction with extensive fracturing, then the term "crushed skull" is applicable. Lack of specificity regarding the displacement of brain tissue tells the coder not to use the crush code and to code the fracturing as individual injuries. An HUUU-7 may be added if brain injuries are present but not specifically described. Crushed Skull
19. In the absence of other medical information, code broken neck as cervical spine, fracture, unspecified (NPPS-2). Broken Neck

## NASS Injury Coding Procedures

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 rule concerning known injury sources below. Maximize ISS within that source
  - d. If you cannot increase the number of different ISS body regions or if you can choose between two or more injuries of the same source and AIS severity any of which constitute the 3rd ISS region, then choose the injury that has a known injury source. Maximize by contact points
  - e. 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 (e.g., no injuries requires one row). In the additional row "not injured" will be coded for all variables including AIS severity. If < 6 rows, close out next row with zeros
2. 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
3. Try to associate contact points with individual injuries. List individual injured areas (i.e., body regions) 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
4. 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
5. Pain, asphyxia, and hemorrhage represent results of injuries and are not injuries, per se; therefore, they 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
6. 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
7. Definitions and procedures for the NASS for coding injury source for direct, induced, and noncontact injuries are:  
Injury Sources

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 initiates 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 code ("90") is to be used only for the following specific types of injuries:

Non-contact Injury Sources

- (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.

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

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
Example 1		
Neck dislocation PDV-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> <li>e. neck forced into lateral flexion by impact forces</li> <li>f. torso restrained by belt, head and neck inertia causes neck injury</li> <li>g. back hits seat back, head hits head restraint, neck is injured</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> <li>e. (90) noncontact injury source</li> <li>f. (90) noncontact injury source</li> <li>g. (23) head restraint</li> </ul>
Example 2		
Knee dislocation P.DJ-3	Knee strikes dash, forces transmitted along femur forcing femoral head out of the acetabulum	(05) instrument panel

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
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
--	--	----------------------------------

8. 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"--9UUUU79709.
- b. No interview; no medical; PAR injury severity rating: "U"; code: "unknown if injured"--999999999.
- c. No interview; no medical; PAR injury severity rating: "0"; code: "not injured"--000000000.
- d. No interview; no medical; PAR injury severity rating: "C", in addition "laceration to forehead" is reported; code: 6FSL11 \_\_ 09.
- e. No interview; no medical; no PAR mention of injury; hit & run vehicle/driver reported; code: "unknown if injured"--999999999.

9. 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 "un-  
known if injured"  
from PAR

10. NASS does not code possible injuries, but injuries whose existence is considered to be probable are coded. If the words "possible" or "probable" are used, code accordingly (i.e., code the probable injuries only). If it is difficult to determine if an injury is probable or possible (i.e., use of other indistinct language such as "suspected," "appears to be," etc.), judge whether "possible" or "probable" based on the specific situation.

Code "Probable"  
injuries

Official Injury Data  
Specific Medical Record Data Used in Coding OIC/AIS

The official injury data page contains the four body diagrams previously seen on page 3 (Injury Data from Interviewee). The same guidelines should be used to document the nature and the locations of all injuries, but medical records will be used as the only source of information. At times, the medical records will also aid in the determination of source of injuries (e.g., glass in wound) and should be documented on this page as stated in the description of source of injury for page 3.

On the official injury data page the injuries should be clearly and precisely located on the diagrams and the medical record classification of the injury and its extent should be completely annotated. All data used to code the OIC/AIS of injuries [e.g., size of lacerations, level of consciousness on first observation by a medical authority, length of unconsciousness, loss of consciousness, size of hematoma or hemothorax (in cc of blood), etc.], should be written with the diagram or, if the description is too long, written on the additional medical record data used in coding OIC/AIS (reverse of page 5).

## OCCUPANT FORM

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:

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

Source: Variables 034, 041, 048, 055, 062, and 069 respectively.

## Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, 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:	$\frac{0}{41}$	$\frac{0}{42}$	$\frac{0}{43}$	$\frac{0}{44}$	$\frac{0}{45}$	$\frac{0}{46}$	$\frac{0}{47}$	$\frac{0}{48}$	$\frac{0}{49}$	
Injured, severity unknown:	$\frac{U}{41}$	$\frac{U}{42}$	$\frac{U}{43}$	$\frac{U}{44}$	$\frac{7}{45}$	$\frac{9}{46}$	$\frac{7}{47}$	$\frac{0 \text{ or } 9}{48}$	$\frac{1,2,3,4,5,6,7,8 \text{ or } 9}{49}$	
	$\frac{0}{50}$	$\frac{0}{51}$	$\frac{0}{52}$	$\frac{0}{53}$	$\frac{0}{54}$	$\frac{0}{55}$	$\frac{0}{56}$	$\frac{0}{57}$	$\frac{0}{58}$	
Unknown if injured:	$\frac{9}{41}$	$\frac{9}{42}$	$\frac{9}{43}$	$\frac{9}{44}$	$\frac{9}{45}$	$\frac{9}{46}$	$\frac{9}{47}$	$\frac{9}{38}$	$\frac{9}{49}$	
	$\frac{0}{50}$	$\frac{0}{51}$	$\frac{0}{52}$	$\frac{0}{53}$	$\frac{0}{54}$	$\frac{0}{55}$	$\frac{0}{56}$	$\frac{0}{57}$	$\frac{0}{58}$	

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.

## OCCUPANT FORM

029  
036  
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:

A	Anterior - front	P	Posterior - back
*B	Bilateral	R	Right
C	Central	S	Superior - upper
I	Inferior - lower	W	Whole region
U	Injured, unknown aspect	Ø	Not injured
L	Left	9	Unknown if injured

Source: Variables 034, 041, 048, 055, 062, and 069 respectively.

## Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, the aspect of the injury and record it on the form.

\* Bilateral (B) is not to be used in coding Aspect of Injury in 1983.



## OCCUPANT 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	U Injured, unknown lesion
M Amputation	L Laceration
V Avulsion	O Other
B Burn	P Perforation, puncture
K Concussion	R Rupture
C Contusion	S Sprain
N Crushing	T Strain
G Detachment, separation	E Total severence
D Dislocation	∅ Not injured
F Fracture	9 Unknown if injured
Z Fracture and dislocation	

Source: Variables 034, 041, 048, 055, 062, and 069 respectively.

## Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, its lesion and record it on the form.

## OCCUPANT FORM

031  
038  
045  
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:

W All systems in region	M Muscles
A Arteries - veins	N Nervous system
B Brain	P Pulmonary - lungs
D Digestive	R Respiratory
E Ears	S Skeletal
O Eye	C Spinal cord
H Heart	Q Spleen
U Injured, unknown system	T Thyroid, other endocrine gland
I Integumentary	G Urogenital
J Joints	V Vertebrae
K Kidneys	Ø Not injured
L Liver	9 Unknown if injured

Source: Variables 034, 041, 048, 055, 062, and 069 respectively.

## Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, its system/organ and record it on the form.

OCCUPANT 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: Variables 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

The NASS Injury Coding Manual 1983 contains a listing of most injuries. Use the manual to code, for each injury, its A.I.S. value and record it on the form.

## OCCUPANT 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  
64  
73  
82  
91

## 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

06 Sunvisor

\*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

45 Backlight (rear window)  
 46 Backlight storage rack, door, etc.  
 \*49 Other rear objects

## Exterior of Occupant's Vehicle

51 Hood  
 52 Outside hardware (e.g., outside mirror, antenna)  
 \*53 Other exterior surface or tires  
 59 Unknown exterior objects

## Cycle

61 Handle bars or attachments  
 62 Frame or suspension component or fender  
 63 Seat  
 64 Foot pedal, foot rest, foot pegs  
 65 Wheel or tire  
 66 Engine or transmission  
 67 Gas tank, gas tank filling cap or neck  
 \*69 Other cycle part

## 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 Tires and wheels  
 \*83 Other exterior of other motor vehicle  
 84 Unknown exterior of other motor vehicle

033  
040  
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.)

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

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.

The element values encoded can be based on physical evidence, occupant kinematics, and interviewee information. Although physical evidence is preferred, it does not have to be present to support a contact mechanism.

If a parked (not in transport) vehicle is impacted by an occupant of a vehicle in transport, use the "87" (other vehicle or object) code.

\*NOTE: Whenever an "other" code (i.e., "09", "15", "19", "29", "49", "53", "69", "73", "79", "83", or "87") is coded as injury source, clearly identify, in the space provided at the top of page 8 of the form, each description by value and injury number.

## OCCUPANT FORM

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. A non-invasive external exam by a physician though, should be coded "02" (Hospital medical records other than emergency room) or "04" (Private physician) since it is generally a superficial listing of external injuries and possible internal injuries; therefore, injuries from this source should not be grouped with those from a thorough autopsy report.

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 was also listed on a facility's associated emergency room records, then this code takes precedence. 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. However, this code includes non-invasive (external) examinations conducted by a physician or medical examiner on a deceased victim and documented as a hospital or medical examiner's record.

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). Also included in this code are non-invasive (external) examinations conducted by a private physician or similarly qualified life scientist on a deceased victim and documented as other than a hospital record (e.g., coroner's report).

In summary, examinations of deceased persons are distinguished first by qualifications of examiner [official (codes "01", "02", and "04) versus unofficial (code "05")], second by the type of examination [autopsy (code "01") versus non-invasive (codes "02" or "04")], and third by type of examination record [hospital (code "02") versus other than hospital (code "04")].

Code "05" (Lay coroner report) is used if the injury data is contained in a report where a non-invasive 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 027.



OCCUPANT FORM

034  
041  
048  
055  
062  
069  
(3)

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 "08" (Other) is used when data are obtained from an unofficial source different from those explicitly listed above (e.g., chiropractors).

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 No injury (O)
- 1 Possible injury (C)
- 2 Nonincapacitating injury (B)
- 3 Incapacitating injury (A)
- 4 Killed (K)
- 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.

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: 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	O - 0
	blank = Occupant not present	- 9
Colorado*	5 = Fatal	K - 4
	4 = Evident - incapacitating	A - 3
	3 = Evident - nonincapacitating	B - 2
	2 = Possible injury	C - 1
	1 = No injury	O - 0
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

\*There is a box at the top of the PAR indicating number of persons injured. If this box is marked 0 and the injury code is left "blank", assume "No injury". If the box is marked 1 (or more) pertaining to the vehicle occupants in question and the injury code is "blank", assume "Injured, severity unknown". If "blanks" are present in both the persons injured box and the injury code box, assume "Unknown".

Variable Name: Injury Severity (Police Rating) (cont'd.)

State	PAR Code/Definition			NASS Scheme/Code
Indiana	Nature of Most Severe Injury	Location of Most Severe Injury	Victim's Injury Status	
	1-11 Any Entry	1-12 Any Entry	6 Dead	K - 4
	1-11 Any Entry	1-12 Any Entry	2 Semiconscious 3 Incoherent 4 Unconscious	A - 3
	1 Severed 2 Internal 4 Severe Burn 7 Severe Bleed (Arterial) 8 Fracture/dislocation	1-12 Any Entry	1 Conscious 5 Shock 7 Refused Med	A - 3
	3 Minor Burn 6 Minor Bleed 10 Complaint of Pain 11 None Visible	3 Eye	1 Conscious 5 Shock 7 Refused Med	A - 3
	3 Minor Burn 6 Minor Bleed	1-2, 4-12 (Any EXCEPT Eye)	1 Conscious 5 Shock 7 Refused Med	B - 2
	5 Abrasion 9 Contusion/Bruise	1-12 Any Entry	1 Conscious 5 Shock 7 Refused Med	B - 2
	10 Complaint of Pain 11 None Visible	1-2, 4-12 (Any EXCEPT Eye)	1 Conscious 5 Shock 7 Refused Med	C - 1
	11 None Visible	Blank or Slashed	1 Conscious	O - 0
	Blank or Slashed	Blank or Slashed	Blank or Slashed	O - 0
	Unknown	Unknown	Unknown	U - 9

Iowa

1 = Fatal	K - 4
2 = Major (incapacitating)	A - 3
3 = Minor (bruises and abrasions)	B - 2
4 = Possible (complaint of pain)	C - 1
Ø = Unknown	U - 9
Blank = No documentation of driver or occupants on back of PAR	O - 0

Louisiana

1 = Fatal	K - 4
2 = Severe	A - 3
3 = Noticeable	B - 2
4 = Complaint of pain or momentary unconsciousness	C - 1
5 = None	O = 0

Variable Name: Injury Severity (Police Rating) (cont'd.)

State	PAR Code/Definition	NASS Scheme/Code		
Maryland	5 = Fatal	K - 4		
	4 = Incapacitating	A - 3		
	3 = Nonincapacitating	B - 2		
	2 = Possible injury	C - 1		
	1 = No injury/Damage only	O = 0		
	Blank = No documentation of driver or occupants on front of PAR			
Massachusetts	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 front of PAR	O - 0		
	= No set unknown code	- 9		
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	A - 3
	Eye	burn, bleeding, complaint of pain	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

Variable Name: Injury Severity (Police Rating) (cont'd.)

State	PAR Code/Definition			NASS Scheme/Code
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
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				
Rhode Island	1 = Fatal injury at scene			K - 4
	2 = Visible signs of injury - bleeding or broken bones			A - 3
	3 = Other visible injury - bruises or abrasions			B - 2
	4 = No visible injury, but complaints of pain			C - 1
	Blank = No injury			O - 0

Variable Name: Injury Severity (Police Rating) (cont'd.)

<u>State</u>	<u>PAR Code/Definition</u>	<u>NASS Scheme/Code</u>
Tennessee	4 = Dead at time of report	K - 4
	3 = Bleeding wound, distorted member	A - 3
	2 = Bruises, abrasions, swelling, limping, etc.	B - 2
	1 = Complaint of pain, no visible injury	C - 1
	Blank = No documentation of driver or occupants on front of PAR or on supplement	O - 0
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	

Variable Name: Time of Death

Format: 2 columns - numeric

Beginning  
Column 96

Element Values:

Level 1 Range: 00 through 24, 31 through 60, 96, 99  
00 Not fatal  
96 Fatal - ruled disease  
99 Unknown

Source: Police report, hospital/medical records, autopsy report, or other official records for actual time of death for fatally injured occupants.

Remarks:

Code "00" should identify (from any source) all occupants who are not fatally injured (i.e., death does not occur, or death does not occur within thirty days of the accident).

All occupants who die within thirty days of the accident should have their time-of-death recorded unless their death meets the criteria of the fatal - ruled disease code "96".

Code "96" (Fatal - ruled disease) is used in two situations. The first is when the effects of a disease can be deemed as a cause of the accident. Cause means that the onset of the disease occurred prior to the first harmful event. When determining the time of on-set (relative to the first harmful event), the investigator can use any information source available. The investigator makes his/her determination after weighing all the evidence. (NOTE: The use of all available information sources is restricted to the determination of when the on-set occurred.) Additionally, code "96" (Fatal - ruled disease) is used when a medical examiner (or other official vested by the state to verify the cause of death) or an official medical report verifies that the death resulted from either (1) a diseased condition, or (2) not from accident related injuries.

Code "01" should identify occupants who die within (less than) one and a half hours of the time of the accident.

Codes "02" through "24" should identify occupants who die in the period of time between one and a half hours from the time of the accident to twenty-four hours after the accident. The variable should be coded to the nearest hour except for code "24" which is used only for the period between twenty-three and a half hours after the accident and twenty-four hours after the accident.



OCCUPANT FORM

071

(2)

Variable Name: Time of Death (con't.)

days = "59", and thirty days = "60".) The number of days should be rounded off to the nearest whole day except for code "60" which is used for the period between twenty-nine days and twelve hours and thirty days after the accident.

The exact time period which applies to each code is shown in the table below.

Variable Name: Time of Death (cont'd.)

Code	Time period in hours
01	0 - < 1 1/2
02	1 1/2 - < 2 1/2
03	2 1/2 - < 3 1/2
04	3 1/2 - < 4 1/2
05	4 1/2 - < 5 1/2
06	5 1/2 - < 6 1/2
07	6 1/2 - < 7 1/2
08	7 1/2 - < 8 1/2
09	8 1/2 - < 9 1/2
10	9 1/2 - < 10 1/2
11	10 1/2 - < 11 1/2
12	11 1/2 - < 12 1/2
13	12 1/2 - < 13 1/2
14	13 1/2 - < 14 1/2
15	14 1/2 - < 15 1/2
16	15 1/2 - < 16 1/2
17	16 1/2 - < 17 1/2
18	17 1/2 - < 18 1/2
19	18 1/2 - < 19 1/2
20	19 1/2 - < 20 1/2
21	20 1/2 - < 21 1/2
22	21 1/2 - < 22 1/2
23	22 1/2 - < 23 1/2
24	23 1/2 - 24

Code	Time period in days
31	> 1 - < 1 1/2
32	1 1/2 - < 2 1/2
33	2 1/2 - < 3 1/2
34	3 1/2 - < 4 1/2
35	4 1/2 - < 5 1/2
36	5 1/2 - < 6 1/2
37	6 1/2 - < 7 1/2
38	7 1/2 - < 8 1/2
39	8 1/2 - < 9 1/2
40	9 1/2 - < 10 1/2
41	10 1/2 - < 11 1/2
42	11 1/2 - < 12 1/2
43	12 1/2 - < 13 1/2
44	13 1/2 - < 14 1/2
45	14 1/2 - < 15 1/2
46	15 1/2 - < 16 1/2
47	16 1/2 - < 17 1/2
48	17 1/2 - < 18 1/2
49	18 1/2 - < 19 1/2
50	19 1/2 - < 20 1/2
51	20 1/2 - < 21 1/2
52	21 1/2 - < 22 1/2
53	22 1/2 - < 23 1/2
54	23 1/2 - < 24 1/2
55	24 1/2 - < 25 1/2
56	25 1/2 - < 26 1/2
57	26 1/2 - < 27 1/2
58	27 1/2 - < 28 1/2
59	28 1/2 - < 29 1/2
60	29 1/2 - 30

# UNIFORM SYMBOLS FOR SCENE MARKING

ROAD



- MARK TO SHOW BEGINNING OF REAR SKIDMARKS. ARROW SHOWS DIRECTION OF TRAVEL. NUMBER INDICATES IDENTITY OF VEHICLE INVOLVED



- MARK TO SHOW BEGINNING OF FRONT SKIDMARKS. ARROW SHOWS DIRECTION OF TRAVEL. NUMBER INDICATES IDENTITY OF VEHICLE INVOLVED



- POSITION OF REAR WHEELS AT IMPACT | NOTES END OF POST-IMPACT SKID



- POSITION OF FRONT WHEELS AT IMPACT | NOTES END OF POST-IMPACT SKID

RTR

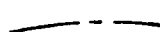
- REAR WHEEL AT FINAL POSITION

RTF

- FRONT WHEEL AT FINAL POSITION



- POSITION OF IMPACT POINT  
1 - FIRST IMPACT  
2 - SECOND IMPACT



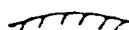
- INDICATIVE MARK FOR SCRATCHES



- INDICATIVE MARK FOR GOUGES



- INDICATIVE MARK FOR SCUFFS



- INDICATIVE MARK FOR CENTRIPETAL CURVE SCUFFS



- INDICATIVE MARK FOR ROTATING TIRE PRINT



- INDICATIVE MARK FOR PUDDLE (LIQUIDS)



- INDICATIVE MARK FOR PUDDLE WITH RUN-OFF

(INITIALS - G FOR GASOLINE, M FOR MOTOR OIL, R FOR RADIATOR COOLANT, T FOR TRANSMISSION OIL, B FOR BATTERY ACID, F FOR BRAKE FLUID, W FOR WATER, AND H FOR BLOOD TO BE INSERTED INSIDE THE CIRCLES FOR FURTHER IDENTIFICATION).



- INDICATIVE MARK FOR DEBRIS. ARROW TO SHOW DIRECTION OF FORCE



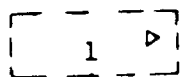
- MALE BODY (ARROW POINTING TOWARD FEET)



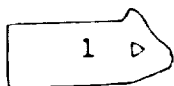
- FEMALE BODY (CROSS INDICATING DIRECTION OF FEET)

# UNIFORM SYMBOLS FOR ACCIDENT DIAGRAMMING

## Vehicle and Pedestrian Symbols



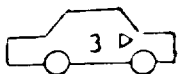
Automobile (pre-impact or at-impact position) Exception: draw solid outline if stopped at-impact.



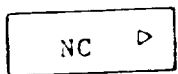
Automobile (final rest position-showing damaged area)



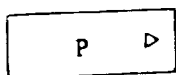
Automobile (final position on its top)



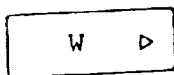
Automobile (final position on its right side) (reverse for left side)



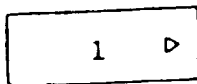
Automobile involved in the accident as as a temporary environmental factor, but not physically involved in the collision. (Non-Contact Unit)



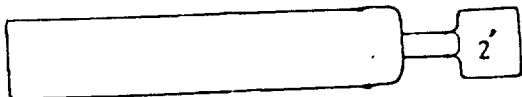
Parked automobile not struck (give it a number if it was struck)



Vehicle in which a witness was an occupant



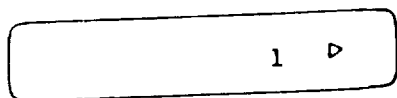
Truck (Panel, Van, Dump, etc.)



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



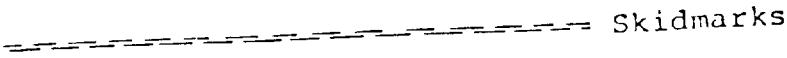
Pedestrian who witnessed accident

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.

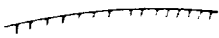
SCENE ROAD MARKINGS



Point of impact



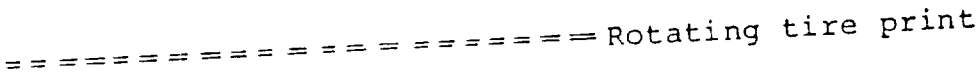
Skidmarks



Centripetal curve scuffs



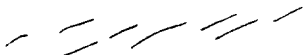
Tire scuff marks



Rotating tire print



Gouges



Scratches









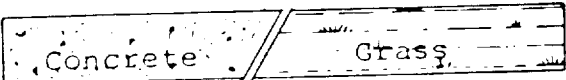







Liquids (puddle and run-off)

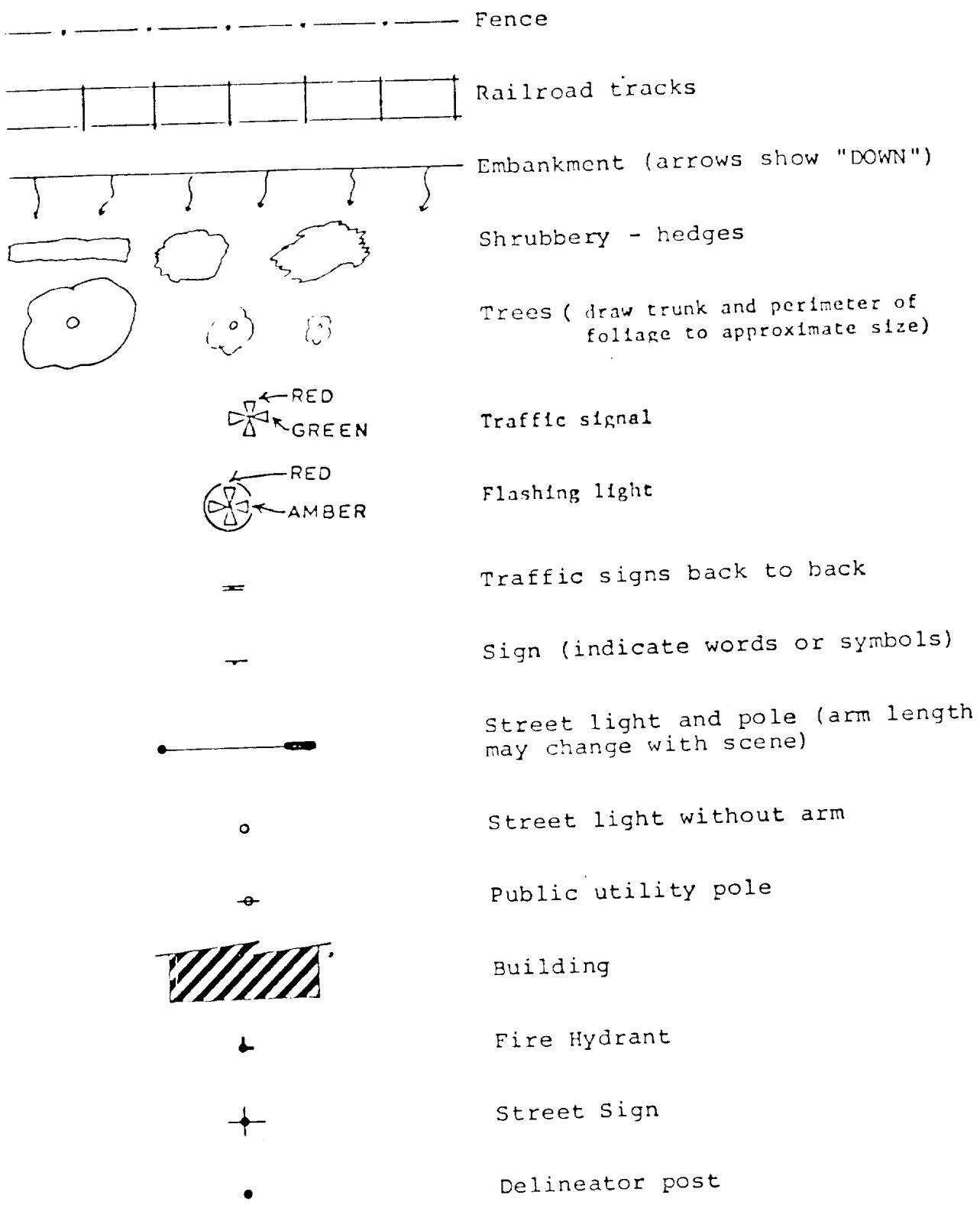


Debris (funnel out away from point of impact to show direction of force)

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 NASS 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, and (4) they provide a verification of encoded data.

### Equipment

Preferred equipment for this type of program is a 35 mm camera with a wide angle lens (35mm) and 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.

Relative size of objects in slides is sometimes difficult to determine. To alleviate this problem, a scale should be used in all close-up view photographs. The scale should have alternating solid (dark colored) and blank (white) coloring at one-inch increments, and each foot should be clearly noted by a visible target and foot number given (see Figure 1). A four foot long scale is suggested. The scale should be placed immediately adjacent to the principal item of interest in a given photograph in such a way as to avoid hiding significant features of interest of the object struck. Align the scale so as to minimize distortion of the scale in the resulting photograph (that is: if camera is aimed near horizontal, place the scale in a vertical position; if

All close-up photographs  
must include this scale.



4"

Figure 1

the camera is essentially looking down on top of a structure, place the scale horizontally.

#### Photographic Coverage

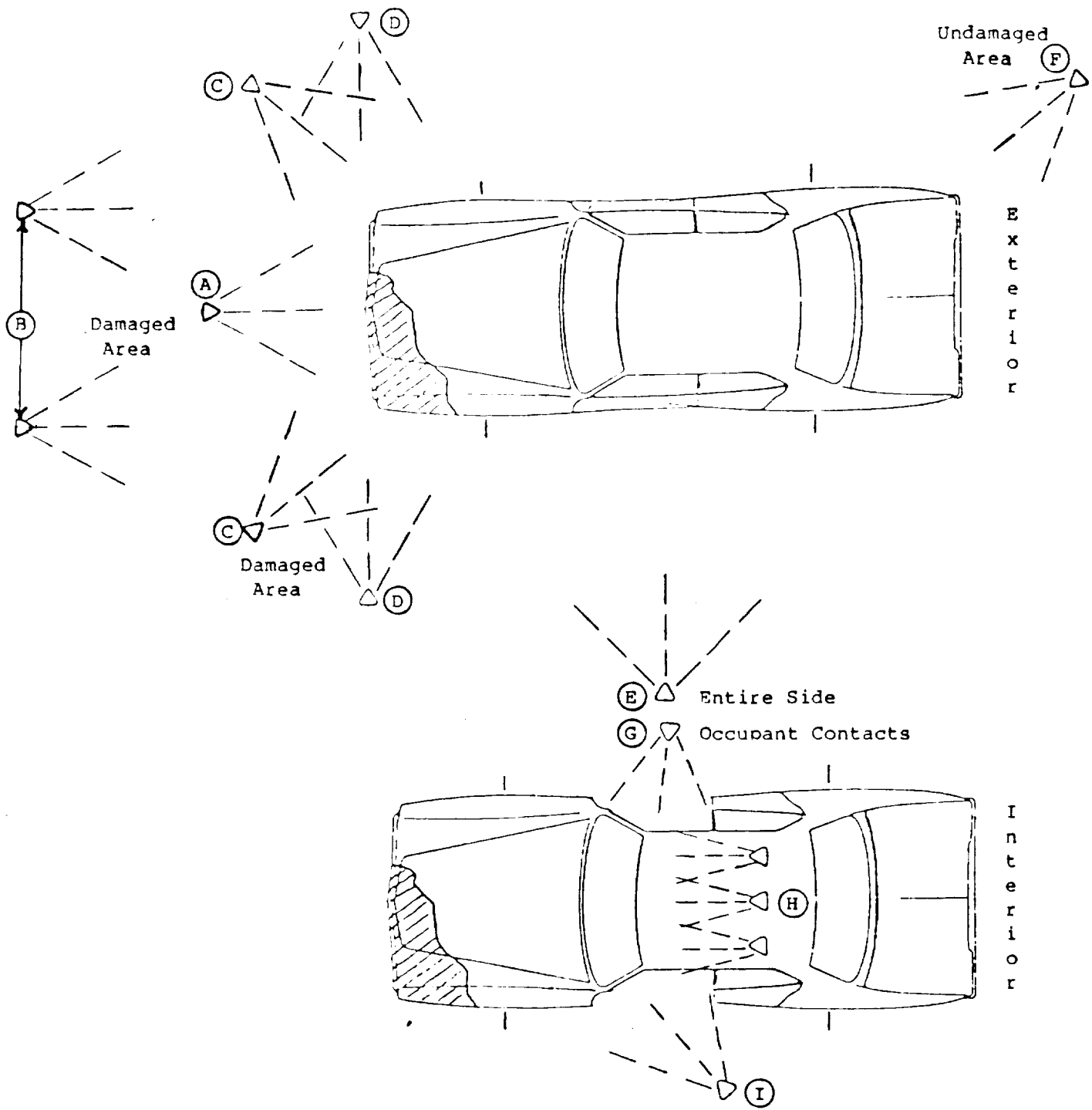
Photographs in this study are taken for the specific purpose of documenting the condition of the vehicle interior and exterior (with emphasis on vehicle damage and occupant contact points) and the accident scene and scene evidence. The coverage indicated in the sketches in this section represents the minimum number of photographs required. At least 9 exterior and 5 interior photographs should be taken for each vehicle. Four scene photographs are also required as a minimum. However, in most cases, it will be clear that additional photographs will be needed to document the damage and occupant contacts properly. The cost of a roll of film is far less than that of the data lost if a sufficient number of photographs is not 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 end impacts, one photograph should be taken directly in front of the damaged end (A), one directly along each side of the vehicle (B) to illustrate any body distortion, and one at 45 degrees to each corner to show the damaged end and sides (C).

A sixth and seventh photograph (D) should be taken at right angle to the end damage photographs. These photographs should provide right angle views along the foremost part of the car. Photograph (E) is a centered side view of the entire car, and (F) is a three-quarter view of the two undamaged sides of the vehicle. Take additional shots as needed.

Interior photographs should include one from the right front door (G) (or left front, if necessary or appropriate and three from the rear seat (H) to show



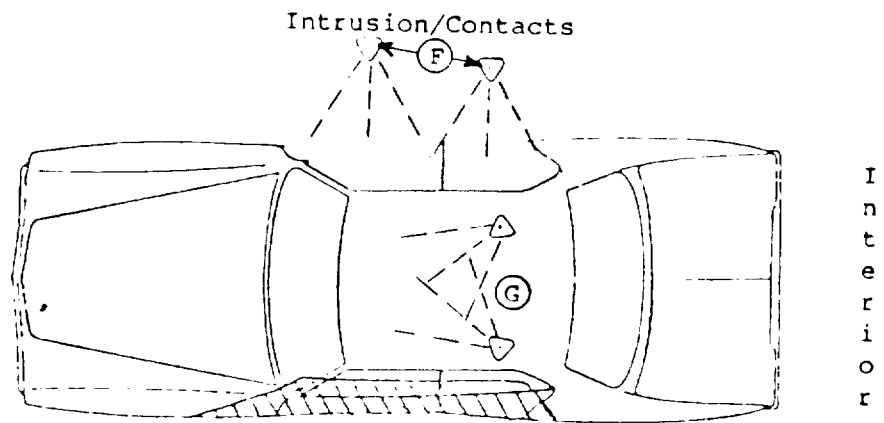
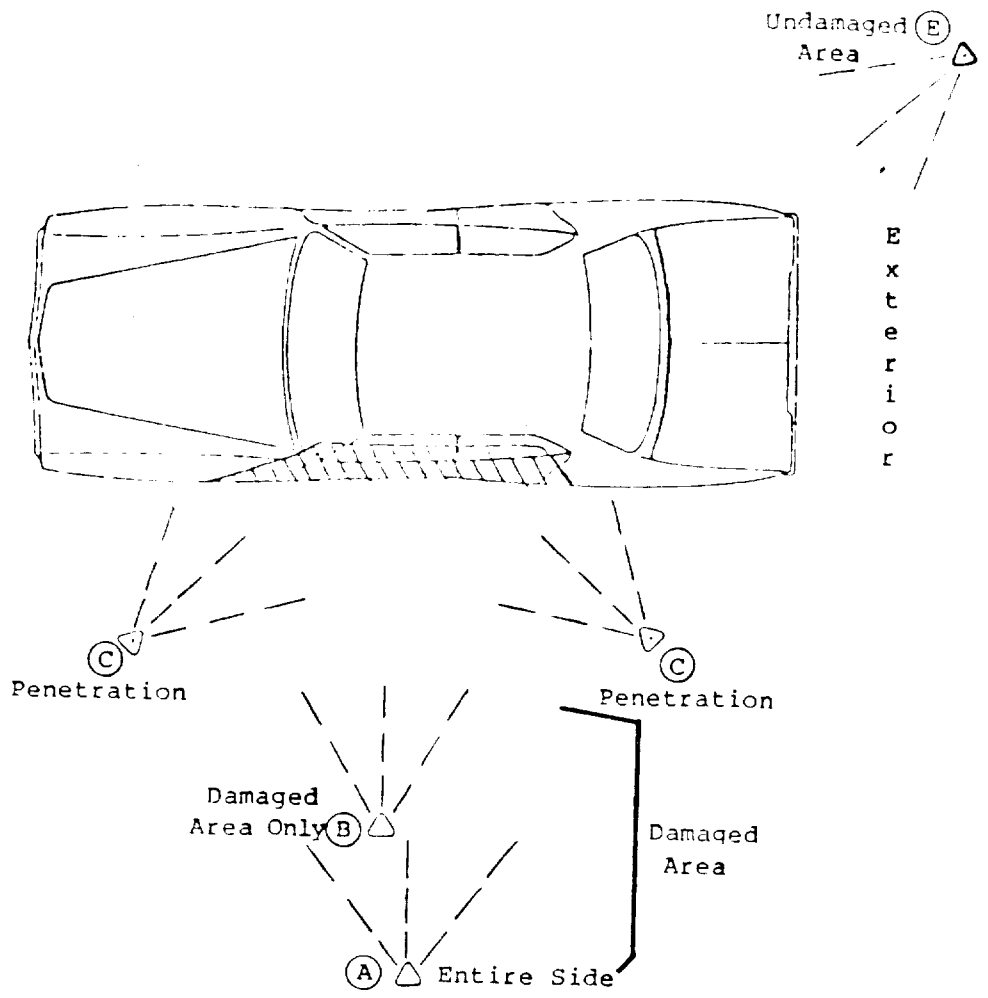
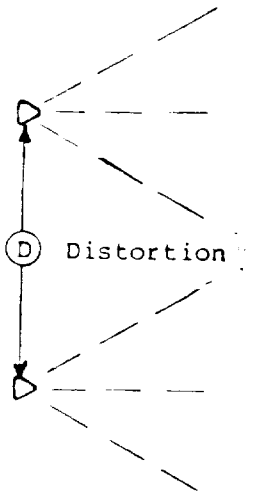
occupant contacts. The latter should be taken of the left, center, and right front interior, as illustrated. These views should overlap somewhat and include the area from the header to the lower instrument panel (for a normal size vehicle you will need to turn the camera 90 degrees). An additional photograph ① is needed to document driver contacts. This should be taken in a crouched position through the open door and should include the lower instrument panel. Close-ups of all other possible interior contact areas are also required.

In side impacts a side photograph of the damaged area only ②, a centered side view of the entire vehicle ③, and two angled photographs to show depth of penetration ④ --one taken from forward and the other taken from the rear of the damaged area, are needed. Two photographs should be taken from either front or rear (as best illustrates distortion or bowing of the vehicle) along the body line ⑤. A final three-quarter view should be taken of the undamaged side of the vehicle ⑥ (from the rear if the ⑤ photographs are from the front, and from the front if ⑤ 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 damaged ⑦. These photographs are to show intrusion (or lack thereof) as well as occupant contacts. Take two photographs from the rear seat into both A-pillar and door areas ⑧ to show occupant contacts. Be sure that photographs document all possible areas of intrusion and occupant contacts (including rear-seated occupants) and restraint system availability and usage.

#### 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) at point of unstabilized event or first harmful event - whichever occurs first. All photographs should be taken at increments of twenty-five feet. 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.

Roadway delineation, signs, and markings may have played a role in the accident. In order to provide information on these aspects of the event, photographic documentation of the approach roadway upstream from the accident location is required. Photographs of the road and adjacent terrain beginning at approximately 1000 ft. upstream and approximately 200 ft. intervals should document this need. In general, one photograph looking in the direction of the road at each location should suffice. Be sure that lane lines, edge lines, highway signs and signals are visible in the photographs.

#### Roadside

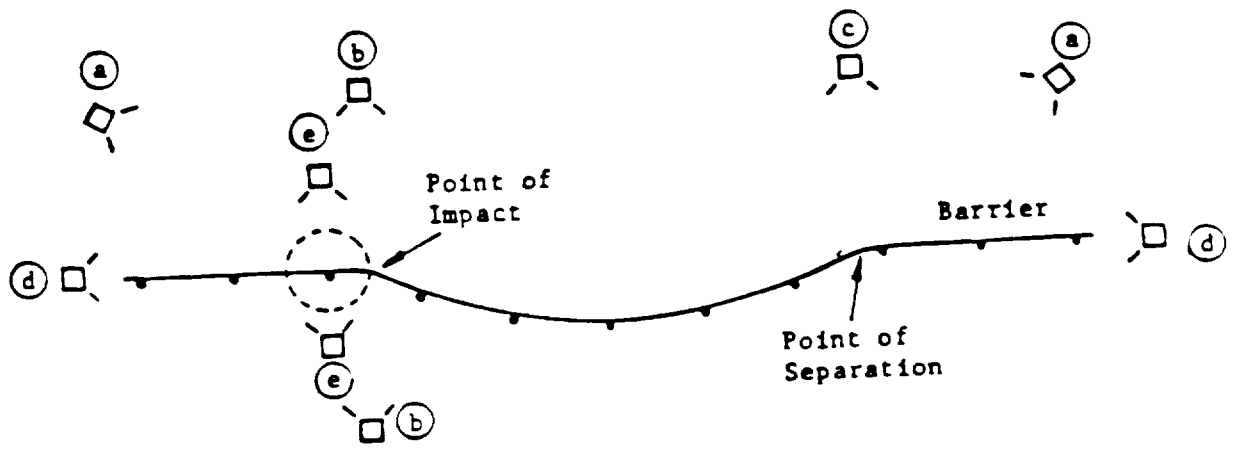
In collisions in which a case vehicle ran-off-the road, additional photographs of the roadside are required to provide information on the role of the roadside in the event. Photographs of the road and adjacent terrains as requested above will be helpful in this regard. In addition, photographs at approximately 50-100 foot intervals along the likely path of the vehicle(s) after the vehicles(s) left the road will be useful.

For impacts involving a roadside fixed-object, more extensive photographic coverage is required to adequately document the event. It is possible that additional data may be desired at a later date on certain data items and photographs become the only available source of information. In general, the following photographs will be required in fixed-object collisions in addition to 1) the vehicle and scene photographs requested for all CSS cases and (2) the above mentioned vehicle path photographs for all roadside collisions:

1. For each impact, two photographs should be taken showing general views of the accident site in the direction of vehicle travel. These photographs should be taken at different distances (e.g., 50-100 feet apart) from the point of impact.
2. For each impact, two photographs should be taken showing general views of the accident site opposite the direction of vehicle travel. These photographs should be taken at different distances from the point of final rest or separation from the struck object.
3. One or more photographs should be taken along the path of the vehicle travel between impacts so as to provide a complete coverage of the accident sequence from the point of departure from the roadway to the point of final rest.
4. For each roadside structure/object struck, at least two photographs should be taken. One photograph should show a general view of the roadside structure/object contacted while the second photograph should be a close-up view which includes the scale in Figure 1 to illustrate the damage sustained by the roadside structure/object.

Usually, the damages sustained by the roadside structure/object cannot reasonably be described in one close-up photograph, thus several close-up photographs of damage and vehicle marks will be required. For example, the following photographs should be taken for guardrail, median barrier and bridge rail collisions:





If the distance between the point of impact and the point of separation is greater than twenty-five (25) feet, additional frontal photographs should be taken.