![NASS logo]

NATIONAL ACCIDENT SAMPLING SYSTEM

Data Collection, Coding and Editing Manual
1981 Continuous Sampling System
Version Number 4

![Department of Transportation logo]

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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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, a National Accident Sampling System is being developed. Part of the final system will consist of 60-75 small teams of accident investigators situated throughout the 48 contiguous states. At each site (Primary Sampling Unit - PSU), the accident research team will investigate a probability sample of police reported accidents on a continuous basis (Continuous Sampling System - CSS). In addition, provision has been made for short term special studies (Special Studies Subsystem - SSS), ancillary studies and the study of minor and non-police reported accidents.

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

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

1.2 Overview

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

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

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

Section **4.0 Overview of Information to be Collected on Sampled Accidents** describes the forms which are to be filled out on each accident, the different records (e.g., injury records), photographs and other information (e.g., crash runs), which mak 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.

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

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

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

Other references to be used in NASS not contained in this manual include: (1) the Third Edition of ANSI D16.1-1976; (2) the CRASH User's Manual; (3) SAE J224b; (4) Truck Deformation Classification (TDC) - SAE; (5) the NASS Injury Coding Manual; (6) NATB books (see section 6.3, variable V33); (7) Passenger Car and Truck Investigators Manual (see section 6.3, variable V33); (8) the Branham Automobile Reference Book; (9) Diesel and Gasoline Truck Indices; (10) the Branham Motorcycle and Snowmobile Booklet, and (11) the MVMA - Passenger Car Specifications (see section 6.3, variable V46).

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 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.

Suggestions for changes to the manual should be logged at the Indiana Zone Center via the communication network and will be incorporated into the manual on a periodic basis. Document all suggested changes or problems by beginning the message with "Coding Manual Change".

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 result in a police report being filled out by an investigating officer, are to be considered for study. If a police report has been filled out by a private person or anyone other than an investigating officer, then it does not qualify for inclusion.

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

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

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

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

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

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FIGURE 2-1

INCIDENT

↓

POLICE ACCIDENT REPORT

↓

WAS THERE A HARMFUL EVENT (2.3.3)
(property damage or personal injury)

Factors:
Injury (2.3.1)
Damage (2.3.2)

(rebuttable presumption)

Yes   No   → Out

↓

WAS THIS EVENT AN ACCIDENT ─────→ Out
(2.3.6)

Factor: (2.3.4)   Yes   No   Intervening
Unstabilized   Circumstances:
  Situation   Diseases   (2.3.1)
                                         Deliberate (2.3.4)
                                           Intent
                                         Legal Inter-
                                           vention
                                         Cataclysm   (2.3.5)

↓

DID THIS ACCIDENT INVOLVE A
MOTOR VEHICLE (2.2.7)

Yes   No   → Out

↓

Factors: WAS AT LEAST ONE OF THE INVOLVED
In Motion or On   MOTOR VEHICLES IN TRANSPORT
  a Roadway (2.2.17)   (2.2.20) ────────→ Out
                  Yes   No

↓

Factors: (2.3.16)   DID THIS ACCIDENT OCCUR ON A
Control Lost on   TRAFFICWAY (2.2.1)
  Trafficway   ────────→ Out
Harm Occur on   Yes   No
  Trafficway

↓

MOTOR VEHICLE TRAFFIC ACCIDENT
(2.3.20)

↓

STABILIZATION (2.3.4)

A motor vehicle traffic accident (MVTA) originates on a police accident report
(PAR). It involves (a) a harmful event not directly resulting from a cata-
clysm, (b) produced by an unstabilized situation, (c) involving at least ne
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 originat-
ed on a trafficway.

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

A person, having announced intent in some manner, causes death, injury, or damage by driving a motor vehicle against persons, motor or other road vehicles, or other property, with <u>homicidal</u>, <u>injury</u>, or <u>damage inflicting intent</u>; 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.

<u>Legal Intervention</u>: 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 c ntrol of his vehicle and crashes into another vehicle.

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(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 acti n 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 sh uld 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 uns:abilized situation which lead to the harm, then the event(s) is(are) not considered an accident. The key phrase is "on-going". Consider the following example: A motor vehicle in transport was overwhelmed by a landslide or an avalanche which was a direct result of a cataclysm, such as an earthquake, torrential rain, etc. This circumstance would 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.

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

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

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

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

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

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

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

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

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

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

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

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

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

FIGURE 2-2

Example of a Rural Trafficway

Trafficway

Right-of-Way

Shoulder

Travel Lane

Travel Lane

Shoulder

Right-of-Way

Roadside

Roadway

Roadside

Road
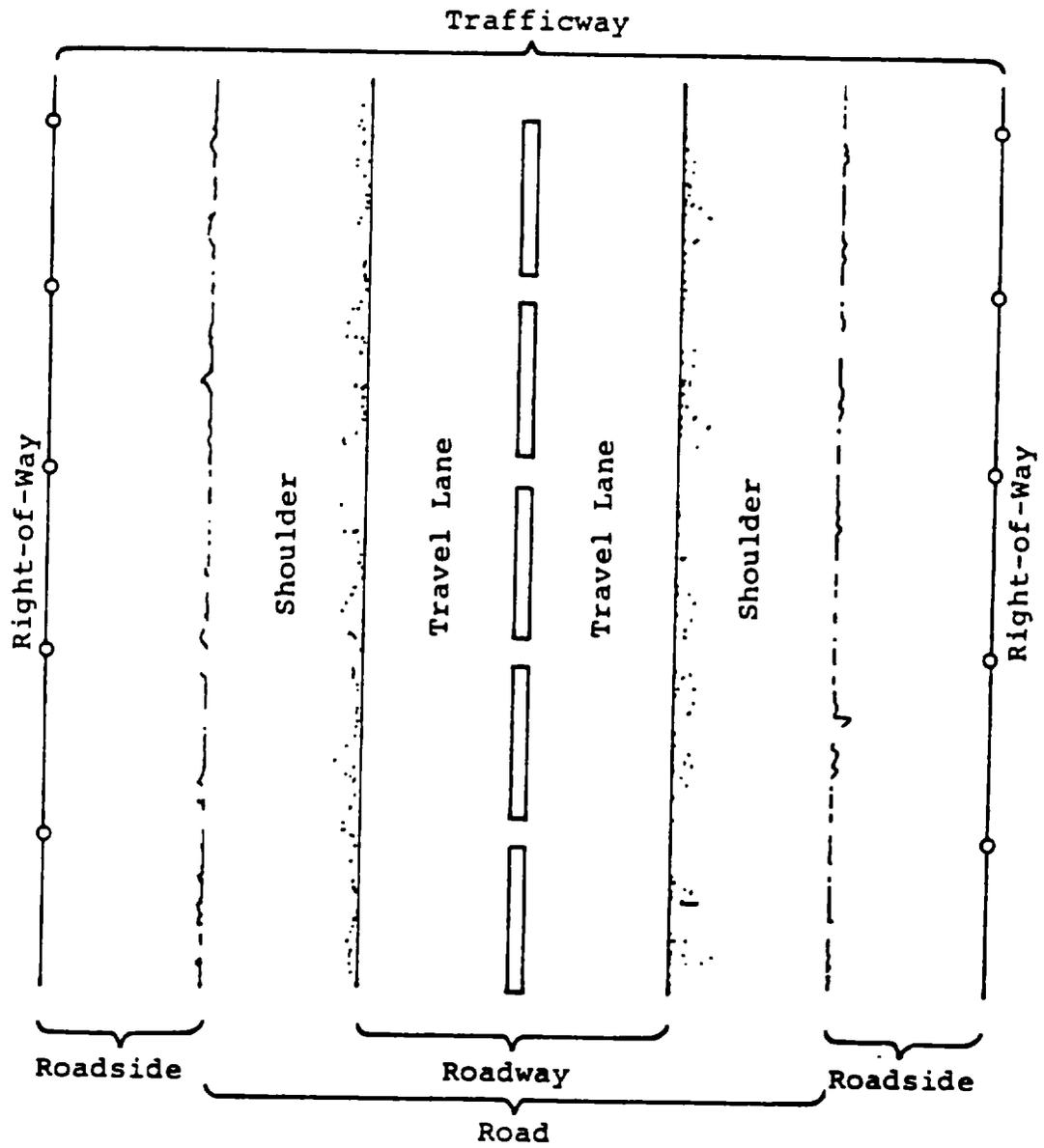
FIGURE 2-3

Example of an Urban Trafficway

Trafficway

0 to x feet**

Right-of-Way

Curb

Parking Lane

Travel Lane

Travel Lane

Parking Lane

Curb

Sidewalk

Right-of-Way

Roadway: 12am - 6am, 9am - 3pm, 6pm - 12am

Roadway: 6am - 9am, 3pm - 6pm

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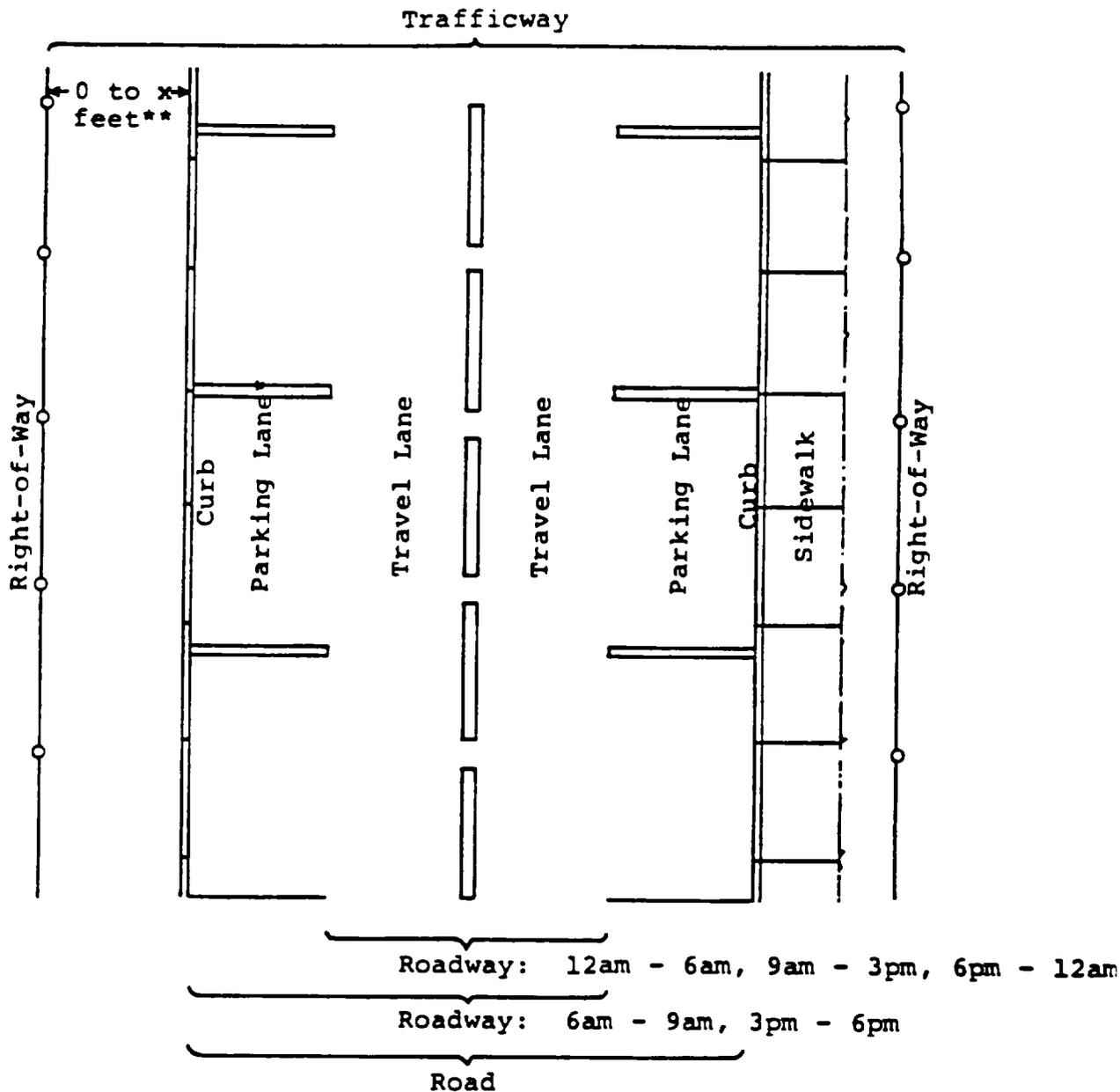
* No parking allowed 6 to 9 a.m. or 3 to 6 p.m.

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

FIGURE 2-4

Example of a Divided Trafficway

Trafficway

Right-of-Way | Shoulder | Travel Lane | Travel Lane | Shoulder | Shoulder | Travel Lane | Travel Lane | Shoulder | Right-of-Way

Roadside   Median   Roadside

Roadway   Roadway

Road   Road
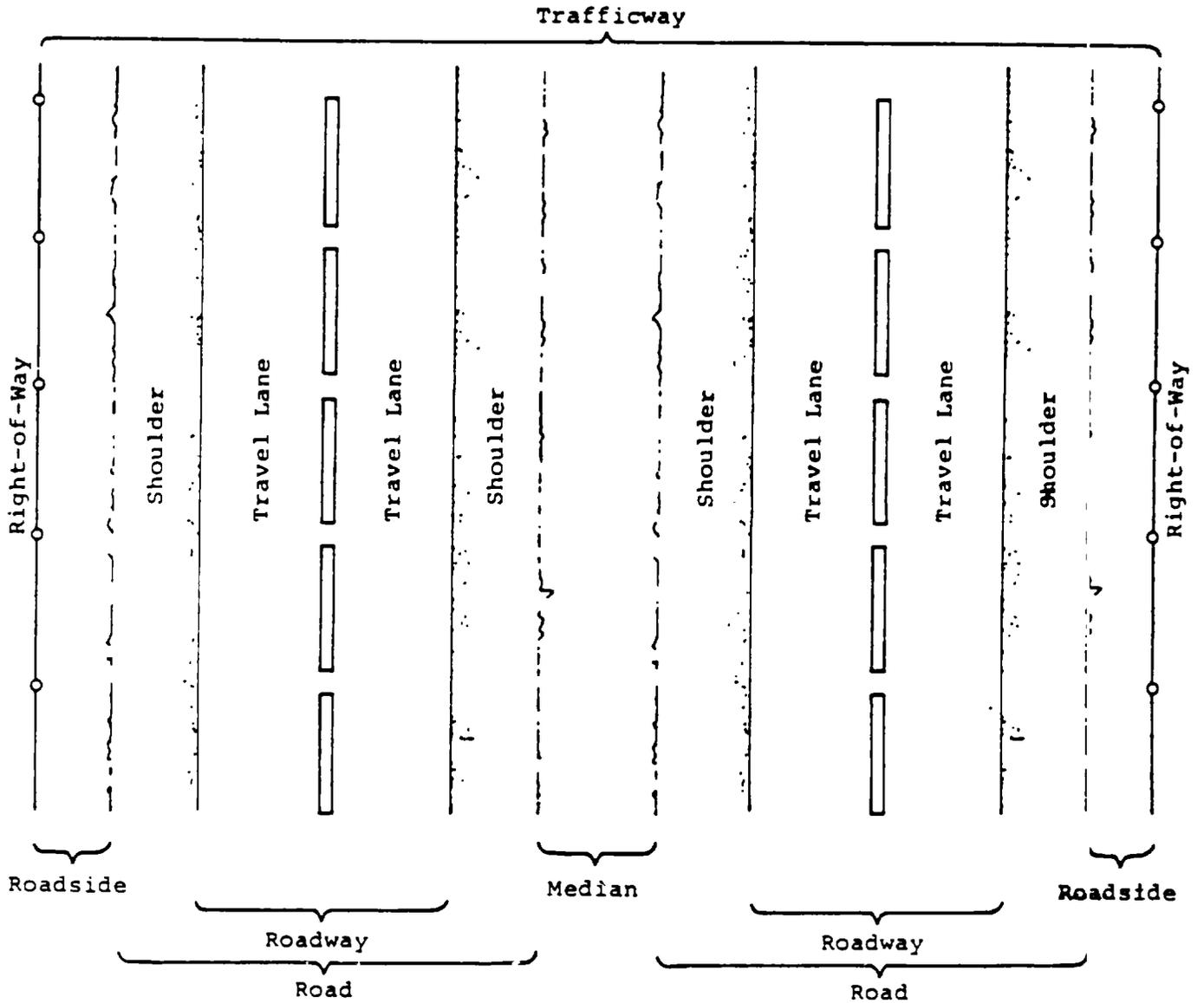
FIGURE 2-5

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

or

Traffic Accident	2.3.16
	2.3.18
Nontraffic accident.	2.3.17
	2.3.19

Motor Vehicle Traffic Accident

	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 trans-
port 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 con-
fines 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 is considered 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 carry-
ing 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 ve-
hicle 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 op-
eration 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 cus-
tom 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 emer-
gency use, for accommodation of stopped road vehicles, and for lateral support of the roadway
structure.

ROADWAY: (2.2.17) A roadway is that part of a trafficway designed, improved, and ordinarily used
for motor vehicle travel or, where various classes of motor vehicles travel or motor vehicles
are segregated, that part of a trafficway used by a particular class. Separate roadways, may
be provided for northbound and southbound traffic or for trucks and automobiles.

HARMFUL EVENT: (2.3.3) A harmful event is an occurrence of injury or damage.

INJURY: (2.3.1) An injury is bodily harm to a person. Exclusions: effects of diseases, such as
cerebral hemorrhage, heart attack, diabetic coma, epileptic seizure.

FIGURE 2-5 (Definitions - continued)

DAMAGE: (2.3.2) Damage is harm to property that reduces the monetary value of that property. Inclusions: harm to wild animals, or birds, which have monetary value. Exclusions: harm to wild animals, or birds, which have no monetary value. Harm to a snowbank unless, for example, additional snow-removal costs are incurred because of the harm. Mechanical failure during normal operation (e.g., tire blowout, broken fan belt, or broken axle).

UNSTABILIZED SITUATION: (2.3.4) An unstabilized situation is a set of events not under human control. It originates when control is lost and terminates when control is regained or, in the absence of persons who are able to regain control, when all persons and property are at rest. Exclusions: (1) Deliberate intent—suicide, homicide, and other harmful events under human control do not imply the existence of an unstabilized situation. A set of unintended consequences of such acts might be an unstabilized situation. (2) Legal intervention—legal intervention is a type of deliberate intent involving intentional acts by a law-enforcing agent or other official.

CATACLYSM: (2.3.5) A cataclysm is a cloudburst, cyclone, earthquake, flood, hurricane, lightning, tidal wave, torrential rain, tornado, or volcanic eruption.

ACCIDENT: (2.3.6) An accident is an unstabilized situation which includes at least one harmful event not directly resulting from a cataclysm.

TRANSPORT ACCIDENT: (2.3.7) A transport accident is an accident (1) that involves a transport vehicle in transport and (2) in which the first harmful event is not produced by the discharge of a firearm or explosive device.

ROAD VEHICLE ACCIDENT: (2.3.15) A road vehicle accident is a transport accident that is either a motor vehicle accident or an other road vehicle accident.

MOTOR VEHICLE ACCIDENT: (2.3.10) A motor vehicle accident is a transport accident that (1) involves a motor vehicle in transport, (2) is not an aircraft accident or watercraft accident, and (3) does not include any harmful event involving a railway train in transport prior to involvement of a motor vehicle in transport.

OTHER ROAD VEHICLE ACCIDENT: (2.3.12) An other road vehicle accident is a transport accident that (1) involves an other road vehicle in transport and (2) is not an aircraft accident, watercraft accident, motor vehicle accident, or railway accident.

TRAFFIC ACCIDENT: (2.3.16) A traffic accident is a road vehicle accident in which (1) the unstabilized situation originates on a trafficway or (2) a harmful event occurs on a trafficway.

NONTRAFFIC ACCIDENT: (2.3.17) A nontraffic accident is a road vehicle accident which is not a traffic accident.

MOTOR VEHICLE TRAFFIC ACCIDENT: (2.3.20) A motor vehicle traffic accident is a motor vehicle accident which is a traffic accident.

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

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

2.1.1 Common Questions and Answers About Incidents Which Qualify for Study

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

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

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

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

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

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

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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 damag 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 (secti n 2.3.6, page 9), harmful events resulting from a cataclysm. To furth r define this exclusion, the cataclysm must have been on-going at the time the accident happened. Cataclysms are defined in ANSI D16.1-1976 (section 2.3.5, page 8). Therefore, to exclude the situation of an object (power line, rock, etc.) falling on a motor vehicle in transport, the cataclysm which caused the object to fall must have been on-going at the time of the accident. In terms of the specific questions, they are NASS accidents.

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

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

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

Answer: Yes it is. A motor vehicle in transport loses part of its cargo (axle of pickup--a harmful event in itself), which strikes (harmful event) a vehicle not in transport. This would be an example of an other non-collision (A11, 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 f 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 rem¹.

2.2 Classifying the Accident by Type, Severity and Tow Status

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

Accident Type Classification--Accidents will be classified into four categories: pedestrians & nonmotorists, motorcycle, truck, or other motor vehicle. For the purpose of this study, pedestrians, pedalcyclists, occupants of nonmotor vehicles, and occupants of motor vehicles not in transport or not in transport on a trafficway, are considered as pedestrians & nonmotorists. To classify the accident by type, first classify each unit in the accident as a pedestrian & nonmotorist, motorcycle, truck, or other motor vehicle. these classifications are defined as follows:
Pedestrian or Nonmotorist - pedestrian; bicyclist; other cyclist; animal related; occupant of vehicle not in transport; other nonmotorist.
Motorcycle - motorcycle; moped (motorized bicycle); other motorcycle (e.g., minibikes, motor scooters, sidecar cycle).
Truck - pickup; van (passenger, cargo, van-based station wagon); truck-based station wagon (e.g., Travelall, etc.); single unit truck (10,000 lbs. < G.V.W. < 19,501 lbs.); single unit truck (19,500 lbs. < G.V.W. < 26,001 lbs.); single unit truck (G.V.W. > 26,000 lbs.); single unit truck (G.V.W. unknown); two unit truck-tractor with semi-trailer or truck with cargo trailer; multi-unit truck or truck-tractor with two or more trailers; truck-tractor pulling no trailer.
Other Motor Vehicle - (SPECIAL VEHICLES) snowmobiles; farm vehicles, except trucks; dune or swamp buggies; construction equipment other than trucks; ambulance, hearse type only; large limousine, more than four doors; self-propelled campers and motor homes; fire trucks; on or off road vehicles (e.g., Jeep CJ5, Bronco, Blazer, Scout, etc.); (BUSSES) school bus; cross country; transit bus; other bus; (AUTOMOBILES) convertible; 2-door sedan, hardtop, coupe; 4-door sedan, hardtop; 3 or 5-door hatchback coupe; auto with pickup body (e.g., El Camino, Ranchero, etc.); stationwagon (excluding van-based or truck-based station wagon); other automobile.

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

1. If a motorcycle strikes a pedestrian, classify the accident as a pedestrian & nonmotorist accident. The two units involved are a motorcycle and a pedestrian; of the units involved, the one with the highest priority is the pedestrian.

2. If a motorcycle strikes a truck, classify the accident as a motorcycl accident.

3. If a truck strikes a passenger vehicle, classify the accident as a truck accident.

4. If two passenger cars collide, call the accident an other motor vehicle accident.

5. If a truck strikes a motor vehicle not in transport (i.e., parked), with occupants (i.e., nonmotorists), classify the accident as a pedestrian & nonmotorist accident.

6. If a truck strikes a stationary vehicle on a road shoulder with occupants, classify the occupants of the vehicle as nonmotorists and classify the accident as a pedestrian & nonmotorist accident. If the same stationary vehicle above does not have occupants and is struck, the accident would be classified as a truck accident.

Most Severe Police Reported Injury—Classify the accident according to its most severe police reported injury. Locate the injury in one of three classes: (1) fatal injury (K); (2) incapacitating injury (A); or (3) one of the following—non-incapacitating evident injury (B), possible injury (C), no injury (0), or unknown injury (U) [see ANSI D16.1-1976, section 3.1, page 21].

Towaway vs. Non-towaway Accidents—Classify B, C, 0, U severity accidents as towaway or non-towaway. If the police report indicates any of the involved vehicles were towed from the accident scene, classify the accident as towaway; otherwise, classify as non-towaway. In areas where the police report does not identify vehicle disposition (i.e., towaway or non-towaway), the final classification (A09, Final Stratification) is determined through preliminary investigation.

2.2.1 Common Questions and Answers Regarding Stratification

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

Question: A vehicle ran off the road, struck a small tree, and continued on, eventually striking a pedestrian. Would this be coded as an other mot r 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, and injury severity are the three independent measures used in deriving the stratification.

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

Answer: Trains, on their tracks, which strike or are struck by motor vehicles, are considered as stationary or non-stationary objects for the purposes f 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 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 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 ven rural areas, this, of c urse, is not always going to be possible. First, look at the scene diagram provided by the police (if available). If parking lanes are indicat-

ed, then you know the vehicle was not in transp rt. 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 trans-
port. 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 viola-
tion, 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 fa-
miliar with the area, then you must presume that, for stratification.pur-
poses (only), that the vehicle was not in transport.

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

Answer: The persons riding on the roof do not fit the appended-to-the-vehicl -
    for-motion exclusion (e.g., person on a bicycle or skateboard who is hold-
    ing 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 only the injured
    person as an occupant at the time of the harmful event.

3.0 OVERVIEW OF SAMPLING ACTIVITIES

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

Task 1: Contact specified police jurisdictions on specified days to process the police accident reports (PARs);

Task 2: Review PARs at the jurisdiction, listing and classifying them into accident categories (strata) using the NASS Stratification Record form;

Task 3: Enter the listed PARs into the NASS Automated Case Selection System and identify, from the output, the applicable accidents to be investigated; and,

Task 4: If the NASS Automated Case Selection System is not accessible, complete a Sampling Worksheet, identifying from the list the accidents that are to be investigated for NASS. Note: in all circumstances, the listed PARs must be entered into the Automated Case Selection System sequentially by sampling date when it again becomes accessible.

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

3.1 General Procedures

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

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

For most teams, the jurisdictions are given in two different visitation patterns on the CLAS (and also on the Sampling Worksheet). Thus, some jurisdictions are to be contacted on Monday and Thursday, others are to be contacted n 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 jurisdicti n will be contacted; once the decision is made, the jurisdiction should continue to be contacted on that day each week. If it should become necessary to change the day of contact for any jurisdiction, your Zone Center should be notified before the change is implemented.

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

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3.1.2 Stratification Record (See Section 3.2)

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

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

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

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

a. If a fatality occurred, a "1" should be placed in the column indicating the appropriate accident type fatality stratum: A, D, G, or K.

b. If no fatality occurred but an "A" injury occurred, place a "1" in the appropriate column: B, E, H or L.

c. If neither a fatality nor an "A" injury occurred, a "1" should be placed in one of the six "B, C, O, or U" columns: C, F, I, J, M, or N.

d. For pedestrian & nonmotorist or motorcycle accident types, the column codes are C or F.

e. If a truck or other motor vehicle accident occurred and the severity is "B, C, O or U", determine if any in transport vehicle was towed away:
   (1) If so, place a "1" in column I or M,
   (2) If not, place a "1" in column J or N.

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

After classifying all applicable PARs and entering 1, 2, 3, etc., in the appropriate column, draw a line across the sheet just below the last PAR for ach 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 do s not, recheck your work.

3.1.3   The NASS Automated Sampling Selection System

The Automated Sampling Selection System is executed on the days given by the CLAS. Most teams are to execute the Automated Sampling Selection System on two occasions each week: Monday, after contacts at all jurisdictions schedul d 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 Seletion System is not accessible for a 24 hour period, cases may be selected for investigation by completion of the Accident Sampling Worksheet. In these instances, the same PARs must be entered in the Automated Case Selection System sequentially by sampling date when the system again becomes available. The cases which were selected manually are to be checked against those selected by the automated system.

3.1.4   Accident Sampling Worksheet (See Section 3.2)

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

1. Column (6): N_i: Transcribe the counts from the rows labeled "Total" on the Stratification Record into Column (6) of the Sampling Worksheets. Ensure that counts are placed in the proper stratum for the correct jurisdiction.

2. Column (7): N_iW_i: Multiply the column (6) entries by the preprinted column (5) entries, recording the results of each multiplication in column (7). Add the column (7) entries and record the total sum for the worksheet at the foot of column (7) in the row labeled "Total".

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

1. Enter on row 3 (in the column of the CLAS for the contact day) the total of column (7) of the SW;

2. Enter on row 4 of the CLAS the ratio of the entry on row 3 to the entry on row 1; show the quotient to two decimals. This quotient is called the "first sampling interval";

3. Enter on row 5 of the CLAS the product of row 4 times the constant 0.75, show the product to two decimals. This entry is called the "Trial Interval";

4. Now examine the entries in column (5) of the SW, count the number of accidents listed on the SW that have values of W_i equal to or greater than the Trial Interval given on row 5 of the CLAS. Enter this count on row 6 of the CLAS.

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a. If the entry on row 6 is zero, or greater than or equal to the entry on row 1, then transcribe the entry on row 4 to row 10 of the CLAS and go to row 11 of the CLAS for the next operation.

b. If the entry on row 6 of the CLAS is not zero, and less than row 1, all accidents that made up the count are to be in the sample. These are identified as "Certainty Cases". Continue at row 7 of the CLAS.

5. Enter on row 7 of the CLAS, the total weighted accident count for the certainty cases identified in step 6 of the CLAS; this is the total of the column (7) entries on the SW for the certainty accidents. After determining this total, delete (cross out) all column (7) entries on the SW for the certainty cases and determine a new total of the remaining column (7) entries on the SW; enter this total on the SW at the foot of column (7).

6. Enter on row 8 of the CLAS the remaining number of accidents to be selected. This is the difference between the row 1 and row 6 entries on the CLAS.

7. Enter on row 9 the remaining weighted accident count. This is the difference between the row 3 and the row 7 entries on the CLAS. This result must equal the new total of the column (7) entries that you have just entered at the foot of column (7) of the SW; if it does not, recheck your work.

8. Enter on row 10 of the CLAS the second sampling interval; this is the quotient of the entry on row (9) to row (8) of the CLAS. Show the quotient to two decimals.

The following step involves the Sampling Worksheet (SW).

1. Complete column (8) $N_i W_i$: 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 CLAS form:

1. Multiply row (10), second sampling interval, by the row (2) random number. Record this product (to two decimals) in row (11), first random cumulant; and,

2. Repeatedly add the row (10) interval to the row (11) first cumulant and obtain the remaining cumulants, recording them in rows (12) through (18) on the CLAS.

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

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

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

2. Column (10): Number of Accidents Sampled—Record the number of cumulants (1 or more) appearing in colunn (9) for the row.

3. Column (11): Selected Cases—Examine the column (6) entry for all rows now having an entry in column (10) (i.e., for which accidents are to be sampled).

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

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

         (a) Write the date of contact in the heading of the SSSJ. Transcribe column (6) of the SW row 2 of SSSJ and column (10) of the SW to row 3 of SSSJ for the appropriate contact date.

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

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

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

      (2) Round the random cumulants up (e.g., 3.1 and 3.8 both are rounded up to 4), and transcribe the numbers onto the Sampling Worksheet, column (11). To identify the selected accidents, examine the stratum entries for the jurisdiction given on the Stratificati n Record, Table 3-2. These numbers run from one up to the number which occurred and uniquely identify a PAR number, date and time.

3.2 Listing and Sampling Instructions

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

3.2.1 Case Load Assignment Sheet

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

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

3.2.2 Stratification Record

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

3.2.3 Accident Sampling Worksheet

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

3.2.4 Sample Selection Within Stratum/Jurisdiction

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

3.3 Sampling in Unusual Circumstances

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

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

1. Postpone completion of the Sampling Worksheet until the following day. Inform your Zone Center of the circumstances;

2. Complete the required contacts and Stratification Records on the following day and immediately designate the sample (complete the Sampling Worksheet) as instructed by the CLAS for the day scheduled;

3. If scheduled contacts and necessary Stratification Records are not completed by the end of the day following the scheduled day:

    a. Designate the sample as instructed by the CLAS for the sch duled day using the accidents listed on the Stratification Records that are available; and,

TABLE 3-1
CASE LOAD ASSIGNMENT SHEET

PSU: <u>ARKANSAS</u>   Period: <u>January 1 - January 18</u>

Computations to designate sample strata and jurisdictions	Contact Days*					
	Monday 1	Thursday 4	Monday 8	Thursday 11	Monday 15	Thursday 18
1. Number of sample accident to be selected	5	2	4	3	5	2
2. Random Number	.016	.737	.641	.884	.941	.114
3. 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 trail 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 (14) below, and skip to step (11). b. If the number of cases is greater than zero and less than row (1), these accidents are in sample with certainty; assign them case numbers, and continue with step (7).						
7. Total weighted accident count for accidents identified in step (6b). (Delete the entry for these cases in Col. 7 of the SW, retotal Col. 7 and complete Col. 8 with remaining cases).						
8. Remaining number of accidents to be selected: (1) - (6)						
9. Remaining weighted accident count: (3) - (7) (This must equal the new total of Col. 7 on the SW.)						
10. Second sampling interval: (9)/(8) (Use 2 decimals)						

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TABLE 3-1 (cont'd.)

CASE LOAD ASSIGNMENT SHEET (CONTINUED)

PSU: __ARKANSAS__   Period: __January 1 - January 18__

Computations to designate sample strata and jurisdictions	Contact Days					
	Monday 1	Thursday 4	Monday 8	Thursday 11	Monday 15	Thursd.. 18
TRANSCRIBE TO COLUMN (9) OF SAMPLING WORKSHEET						
11. First random cumulant: (2) x (10)						
12. Second random cumulant: (11) + (10)						
13. Third random cumulant: (12) + (10)						
14. Fourth random cumulant: (13) + (10)						
15. Fifth random cumulant: (14) + (10)						
16. Sixth random cumulant: (15) + (10)						
17. Seventh random cumulant: (16) + (10)						
18. Eighth random cumulant: (17) + (10)						

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

Contact on Monday __and__ Thursday - State Patrol Dumas, Monticello, Dumas, Crossett, McGehee.

Contact on Monday - Hamburg, Lake Village, Ashley Sheriff, Star City, Drew Sheriff, Gould

Table 3-2

NASS Stratification Record

PSU _____ Jurisdiction _____ Contact Date _____ Listed by _____

		FAR		Pedestrian/ Non-Motorist			Motorcycle			Truck				Other Vehicle			
Jurisdiction (1)	Date (2)	Time (3)	Number (4)	K (A)	A (B)	B,C, O,U (C)	K (D)	A (E)	B,C, O,U (F)	K (G)	A (H)	Tow (I)	B,C,O,U Non-tow (J)	K (K)	A (L)	Tow (M)	B,C,O,U Non-tow (N)
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Total NASS accidents stratified on this page: _____

Page _____ of _____

Subtotal: _____

Table 3-3 deleted this version.

TABLE 3-4

NASS Sample Selection Within Stratum/Jurisdiction

PSU: _____

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

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

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

4.0 OVERVIEW OF INFORMATION TO BE COLLECTED ON CASES SAMPLED

For each case sampled, please include in the case report a copy of the police report, newspaper photos and articles, correspondence, collision diagram with diagram log, slides (including index), the applicable continuous sampling 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 seven distinct groupings which may exist with each case, and while the number of groupings may vary with each accident, it is important for the case reviewer (team or Zone Center) that the composition of the six groups be maintained.

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

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

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

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

The fifth group contains forms for a vehicle, its driver, the state driver record for that driver, all the occupants contained in the vehicle, and any fficial injury documents for those occupants. The first form in this group is the Vehicle Form (with log). 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 official injury documents stapled to the back of it. All additional Occupant Forms (with log) will follow in chronological order (Occupant 02 (V1), Occupant 03 (V1), etc.). At least one group of this type will app ar in every NASS case. All the forms associated with this group should be bound together with a paper clip. Additional vehicles, their drivers, state driver records, occupants, and official

FIGURE 4-1

SEQUENCE OF CASE MATERIALS

Group I
- Police Report
- Newspaper photos, articles, misc. other photos, etc.

staple or paper clip

Group II
- Collision Diagram (with log)
- Slides
- Slide Index

paper clip

Group III
- Accident Form (with log)

Group IV
- Ped. & Nonmotorist 1 (with log) / Official Injury Documents — staple
- Ped. & Nonmotorist 2 (with log) / Official Injury Documents — staple
- Subsequent Ped. & nonmotorists

paper clip

Group V
- Vehicle 1 (with log)
- Driver (1) / State Driver Record — staple
- Occupant 01, (V1) (with log) / Official Injury Documents — staple
- Occupant 02, (V1) (with log) / Official Injury Documents — staple
- Subsequent Occupants, this vehicle

paper clip

Group V
- Subsequent Vehicles, Drivers, and Occupants

paper clip

Group VI
- CRASH Program Summary / CRASH Output (Hard Copy)

staple or paper clip

Group VII
- RDE Output (Hard Copy)

injury documents should be grouped in a similar manner. Thus, each group may be thought to repesent a vehicle and its occupants; and each such group physically distinguishes one vehicle and its occupants from any other.

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

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

4.2 Information Required on Field Forms (Mandatory Variables)

Case Identification Variables—When using the remote data entry system to enter the field data, certain information is required on each field form (log data are not entered) before it will be accepted. Every field form and log submitted must have a Primary Sampling Unit Number, a Case 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, Transaction Code Number, and the Investigator I.D. Number.

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

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

Vehicle Form—For each accident investigated, at least one Vehicle Form must be submitted. The 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 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 or non-occupants 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 accidnts 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 subs - quently develop). For those occupants where no information exists, no Occupant Form is required. Once again, this exception is for busses only.

4.3 Update Procedures for Hard Copy Field Forms

Data elements which may be updated in the hard copy case report are restricted to certain variables which appear on either the Driver, Pedestrian & Nonmotorist, or Occupant Forms. No other data will be updated if it is acquired after the initial submission of the case. Note that for RDE, any variable except for the mandatory variables may be updated before the case is forwarded to the Zone Center. Update records have been developed for the variables which are allowable hard copy update candidates. Update records which have been specially designed to accommodate these variables are not to be included with the initial submission of the case; instead, they are retained at the PSU and filled out when the update information arrives.

Driver Record Update--This form is to be used if Alcohol Test Results (D24), License Status This Class of Vehicle (D25), License Restrictions (D26, D27), or convictions/suspensions/accidents (D28-D32) are not known at the time of initial submission. The investigator is to complete the required sections prior to initial case submission so that the subsequently acquired information may be associated with the right case and vehicle number. In addition, make sure the question numbers on the Driver Form which are to be updated are circled. The newly acquired information should be entered on the front of the update form and any supporting documents attached to the back. The driver's name is to be sanitized as well as any attached records before they are forwarded to the Zone Center.

Pedestrian & Nonmotorist Update Record--This form is to be used when the investigator expects to receive official medical data regarding injuries or treatment received by any pedestrian/nonmotorist, and the official medical data were not obtained from the hospital, treating physician, etc., before the initial submission. The investigator is to complete the appropriate sections prior to initial case submission so that the subsequently acquired official medical data may be associated with the right case and pedestrian or nonmotorist number. The additional information required on this form allows the investigator to update variables P09, P10, P15, P16, P29 through P60, and P64 based on subsequent receipt of official medical or other official data where necessary. These data would be difficult to update without recorded knowledge regarding the initial coding of Treatment - Mortality, Hospital Stay, and injury data. The data on the specific injuries coded on the initial submission (variables P19-P60) may be combined with the new injury data using the NASS injury coding rules t revise the injury coding on the updated version.

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

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

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

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

Update records should be accumulated, packaged in an individual 9 1/2 x 12 inch manilla envelope (but not one envelope for each update) which identifies the PSU and is boldly marked: UPDATES, and sent to the Zone Center on a periodic basis according to the schedule in Section 5.2.

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

4.4 Form Logs

The field forms (Accident, Pedestrian & Nonmotorist, Vehicle, Driver, and Occupant) and the Collision Diagram have a unique log printed on the back of the last page. These logs will provide information with respect to the acquisition and processing of accident data in the NASS system. This information will ultimately serve to establish reasonable acquisition expectations, to identify and evaluate Zone Center quality control effectiveness, and to provide more timely feedback to team members. Careful examination of the logs will reveal that minimal effort from the investigator is required 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. The majority f the elements on the form logs are self-explanatory; therefore, only certain sections will be discussed.

Accident Log--The sections to be completed by the PSU are identified, and include the one which accounts for the number of forms which are required and included with the case. The information in this section is transcribed later to the front of the case envelope. Many of the forms which are needed under the required component of this section may be identified early in the investigation; thus, this will serve to aid the inv stigator as to his/her status while the case is in progress. Also, at the time of the initial submission, or final submission if there are to be no updates for the case, the investigator should

check to see that the number of forms included equals the number of forms r - quired, with the exception of the 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 required, therefore, represents the number of accident-involved people who received medical treatment. The number f medicals included will reflect the number of medicals on a per person basis which are included in the case at the time of initial submission, or final submission if there are to be no updates for the case.

Pedestrian & Nonmotorist Log--The interview contact record is to be completed using the responses to "manner" and "result" components of the record which appear on the back of page 7 of the form. The "other" response for "result" is to be used, for example, when the investigator finds the address or phone number on the police report was fabricated. If multiple interviews are accomplished as a result of a single successful contact, document the number of attempts for one person and a single success for all other persons (e.g., f ur attempts to contact a number of people at a single location or phone, the first three are unsuccessful but, on the fourth, all four interviews required ar obtained--surrogate or same person--document four contacts for one person and only one for the other three).

If the official medical injury data is requested but not received at the time of the case submission, the investigator should complete a pedestrian & nonmotorist update form.

Vehicle Log--The Vehicle Log must be completed for all vehicles.

Driver Log--Vehicles where the driver was not present and no interview was applicable are to be indicated by coding "1" in column 22 of the Driver Log. This entry, along with those in columns 13-21, and column 33 (reason driver records were not obtainable) will complete the Driver Log in this specific situation.

If official driver records are requested but not received at the time of th case submission, the investigator should complete a Driver Form Update Record.

Occupant Log--The interview contact record is to be completed using the r sponses to the "manner" and "result" components of the record which appear on the back of page 7 of the Occupant Form. The "other" response for "result" is to be used, for example, when the investigator finds the address or phone number on the police report was fabricated. If multiple interviews are accomplished, as a result of a single successful contact, document the number of attempts for one person and a single success for all other persons (e.g., four attempts to contact a number of people at a single location or phone, the first three are unsuccessful but, on the fourth, all four interviews required are obtained--surrogate or same person--document four contacts for one person and only one for the other three).

If the official medical injury data is requested but not received at the time of the case submission, the investigator should complete an Occupant Form Update Record for this occupant.

Collision Diagram Log--A collisi n diagram log should be filled out for each accident investigated.

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 investiga-
tor 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 investiga-
tor is to be informed (preferably in writing) of any problems detected during
this review and that investigator is to assume the responsibility for their re-
solution. Some suggested areas where problems may occur are as follows:

- Make sure version #3 of the forms has been used.

- Are all official records and slides present?

- Check slides and official records to make sure they correspond to the
  case submitted (slides and police report shouldn't be placed next t
  each other because the photocopied police report tends to "bleed" on
  the slide folders).

- Have portions of update forms been filled out where needed?

- Do the control charts properly reflect how much of the case report has
  been completed?

- Make sure case reports are properly sanitized.

- Are all data collection forms present?

- Include forms for all persons and vehicles, even if they have not been
  interviewed or inspected.

- Are the logs properly completed on the forms?

- Make sure case materials are sequenced properly and the case report en-
  velope is stamped and properly identified.

- Make sure 0s and 00s are coded after last reported injury (applies to
  variables P19-P60 on the Pedestrian & Nonmotorist Form and 028-069 n
  the Occupant Form) or in the first row if the person was uninjured.

- Check the police report to make sure drivers and other occupants are
  paired with the proper vehicles.

- Check to make sure that the coded data are properly and legibly entered
  in the data collection forms.

  Make sure the object contacted and CDC/TDCs on the Vehicle Forms (V18-
  V31) are filled in with actual valu s or left blank when no object was
  contacted or no CDC/TDC applies.

- Make sure vehicle contact points are highlighted with yellow tape in photographs.

- Have "+"s or "-"s been circled for V51 and V52 on the Vehicle Form?

5.1.2 Quality Control Checks Resulting from Remote Data Entry

Inconsistencies, out-of-range values, and other error diagnostics encountered during the RDE are explained in Section 3 and Appendix B of the Remote Data Entry System User's Manual.

5.1.3 Check to Make Sure Administrative Procedures are Being Followed

- Are control charts and activity logs (when used) updated weekly?

- Are monthly reports sent in to both the Zone Center and NHTSA?

- Are manuals up-to-date and properly displayed?

- Are needed supplies in stock (e.g., film, etc.)?

5.1.4 Check Sampling Procedures

- Periodically review sampling procedures in team meetings.

- Document any problems in the monthly report.

5.1.5 Check Data Collection Procedures

- Periodically review procedures. Document when meetings are held and any problems discovered with the data collection procedures or forms. Indicate problems in the monthly report or over informatics to your Zone Center.

5.1.6 Check to Make Sure Updates Are Being Processed Properly

- Are the driver record and medical update records filed by case number and cross-indexed alphabetically?

- Do Zone Center and PSU records agree (see Zone Center list of outstanding updates)?

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

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

5.2 Case Submission

The final date for the remaining submission of December 1979 cases (exclusive of updates) is 1 February 1980. All remaining updates for 1979 cases are to be

submitted by 18 April. This will allow the Zone Centers approximately two weeks to review and enter this new information (updates) on the 1979 version of RDE before it becomes inaccessible to them, as well as the PSUs, on 5 May 1980.

Cases acquired during 1980 shall be submitted to the Zone Centers on an approximate bi-weekly basis, beginning 18 January 1980. The materials for each cas are to be in order in the recommended format discussed above, and 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 batch receipt of cases over longer intervals which tend to make the review process less efficient.

Submission Schedule--Cases shall be submitted on an approximate bi-weekly basis beginning 18 January 1980, according to the schedule (Table 5-1). Essentially, there will be one month following the month in which the case is sampled to make the initial submission of any cases in that month. All outstanding cases are to be submitted by the first Friday of the second month following the one in which they were sampled. This means the time available to initially submit a case will range from approximately one to two months, with an average of some 45 days. Interviews, vehicle inspections, and scenes not completed in the allowed time period will not be updated.

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

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

Case Envelope--Each case is to be submitted in a medium weight manilla envelope, approximately 9 1/2 x 12 inches ni size. The PSU number, case number, account of case materials, and the status of the case at the time f submission, as shown below, are to be entered in the upper right hand corner f th 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 _____

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

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

Format: 2 column - numeric   Beginning
                                                        Column   01

Element Values:

See the NASS Analytical User's Manual, Appendix B.

Source: Defined by NCSA.

Remarks:

   This variable is a mandatory variable and cannot be changed.

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Variable Name: Case Number-Stratification

Format: 4 column alphanumeric   Beginning
                                                                   Column   3

Element Values:

   Range: 001A-N through 999A-N

Source: Assigned by team according to sampling procedures.

Remarks:

   *Once a case is selected, the alphabetic character representing this acci-
   dent's stratum cannot be changed.*

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

   No consecutive numbers should be skipped. If a case must be delet d, the
   number should not be reused. The letter need not correspond to the letter
   coded in the Final Stratification (A09).

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

   Case numbers 501-999 are reserved for those cases selected because f spe-
   cial study requirements.

   This variable is a mandatory variable and cannot be changed.

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Variable Name: Date (Month, Day, Year)

Format: 6 column - 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
    See the NASS Analytical User's Manual, p. 3-1.

    Year
    80   1980 (precoded value)

Source: Police report.

Remarks:

    This variable is a mandatory variable and cannot be changed.

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Variable Name: First Harmful Event

Format: 2 columns - numeric   Beginning
                                                       Column   25

Element Values:

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

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

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

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

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

Remarks:

   This variable is a mandatory variable and cannot be changed.

   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 situa-
   tion, 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 inspec-
   tion, interview, etc.) during the NASS investigation.   Police reports may
   prove helpful in selecting the appropriate code, but are not the sole deter-
   minant for code selection (i.e., the investigator may select a code which is
   different from the one indicated by the police report, given the discovery
   of additional data).

   Code "01" (Overturned) includes uncontrolled motorcycles which first contact
   the ground or pavement surface.   Motorcycles which first impact pedestrians,
   nonmotorists, vehicles, animals, trains, or other objects, are coded "08"
   through "33".   Although a motorcycle can overturn, it cannot be coded (as
   defined in NASS) as a rollover.   For a motorcycle whose First Harmful Event
   is overturn (A11 equals 01), V43, 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 ob-
   ject in motion that strikes or is struck by a vehicle.   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 r on a
   sidewalk or path contiguous with a trafficway, and who is not in r 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 non-
   motorist 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 junc-
   tion, or (2) not in a junction but on the same roadway.   In the latter in-
   stance, 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 on a trafficway.

Code "15" (Other nonmotorist) refers to a person who is not a pedestrian or a pedalcyclist. See variable P08 (Pedestrian or Nonmotorist's Type), attributes "4", "5", and "8".

Code "16" [Other object (not fixed)] refers to an initial impact between a motor vehicle in transport and any other nonfixed object. 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.

Divider ("21") is to be coded when the initial contact is with any barrier type fixed object that is used to separate roadways, with the exception of any supporting bridge structure. This includes all guard rails or other median support structures (except on a bridge). Where the median is paved, gravel, or grass only (i.e., no fixed objects), then do not use this code. If the median is depressed and the impact occurs with the ground, then code "22" (Embankment). If the initial harmful event is with a raised, paved area (concrete or bituminous), the code "20" (Curb or wall), should be used. This is true even if a barrier is anchored in the raised, paved area. In order to use this code ("21"), the barrier type fixed object must have been the cause of the initial harm. Commonly encountered types are illustrated following the impact attenuation illlustrations. Other median barriers may be encountered; therefore, the investigator should be sure to photograph them for verification when uncertain.

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

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

Code "29" (Other poles or support) should <u>not</u> be used when the initial im-
pact was with any supporting structure of a bridge (see codes "32" and "33"
below).

Code "31" (Other fixed object) refers to any fixed object not specifically
mentioned above. This includes ground; however, ground is not to be coded
when the first event is an overturning ("01"). All motor vehicles (includ-
ing motorcycles) may overturn. For Object Contact (V18, V25), ground (V18,
V25 = 46) would be coded for an overturned vehicle, but not on this varia-
ble (A11). Collisions which may be classified using this code include (but
are not limited to):   (1) vehicles which sustain undercarriage damage by
straddling the pavement and shoulder and impacting a prominent pavement lip,
or (2) free falls or vaults from the road surface to the ground without ex-
cessive roll action prior to impact.

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

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

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.
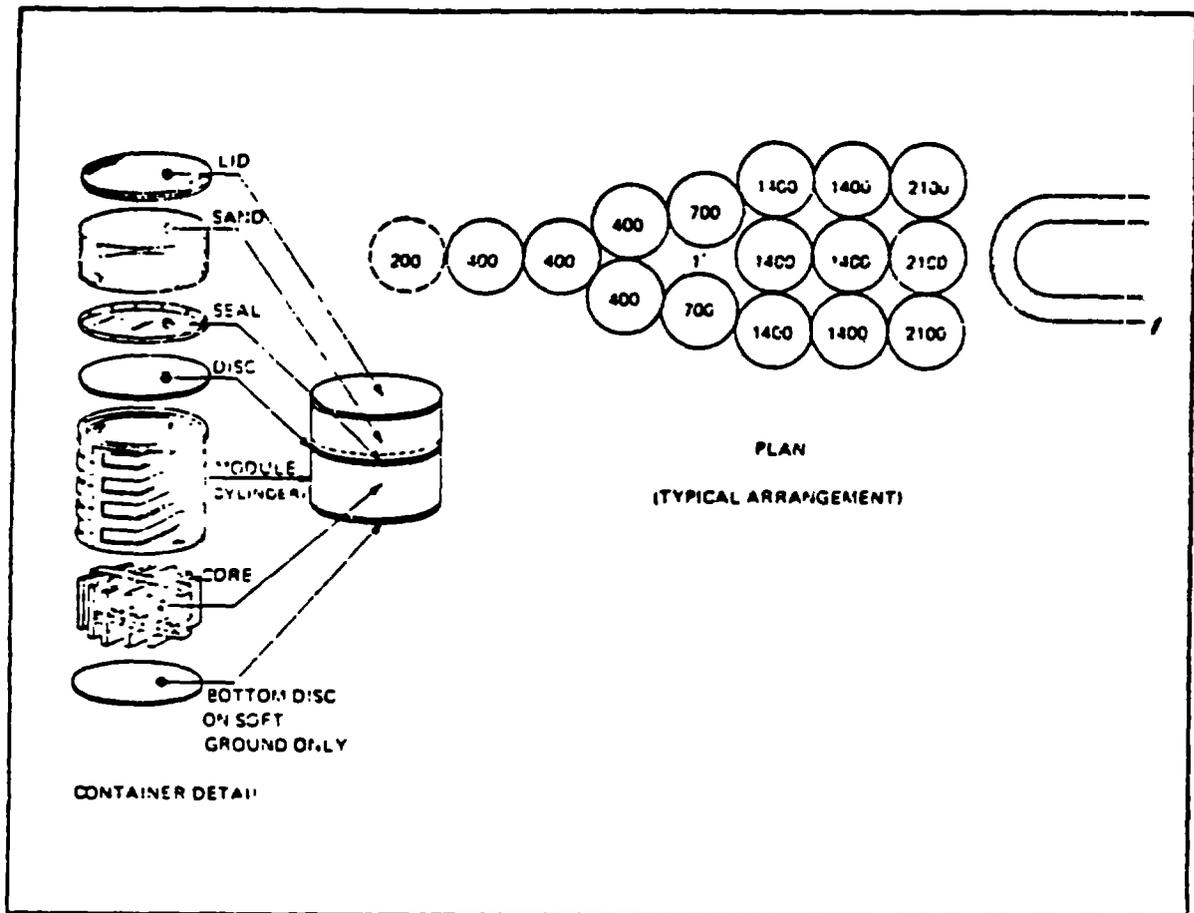
FIGURE 1

<u>Torshok Barrier</u> - 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).
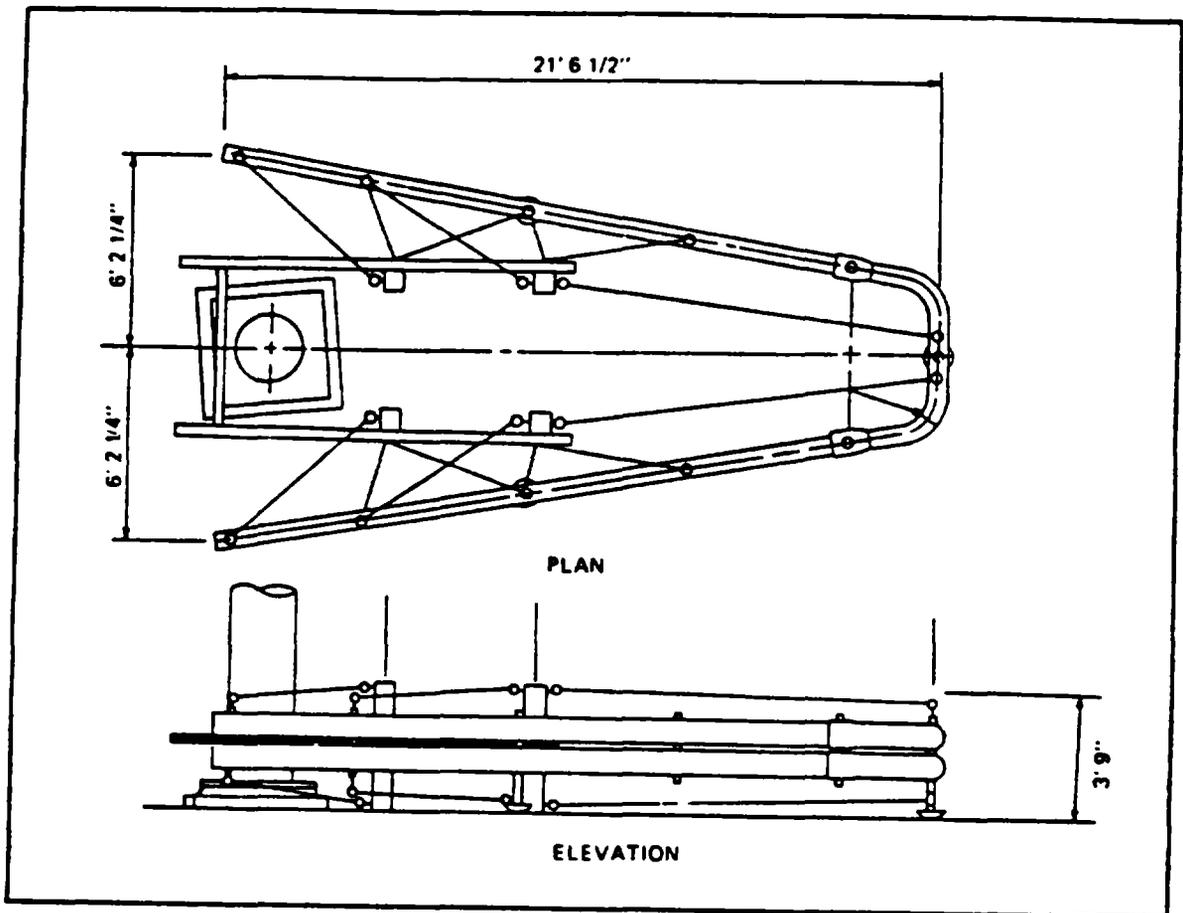
FIGURE 2

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.
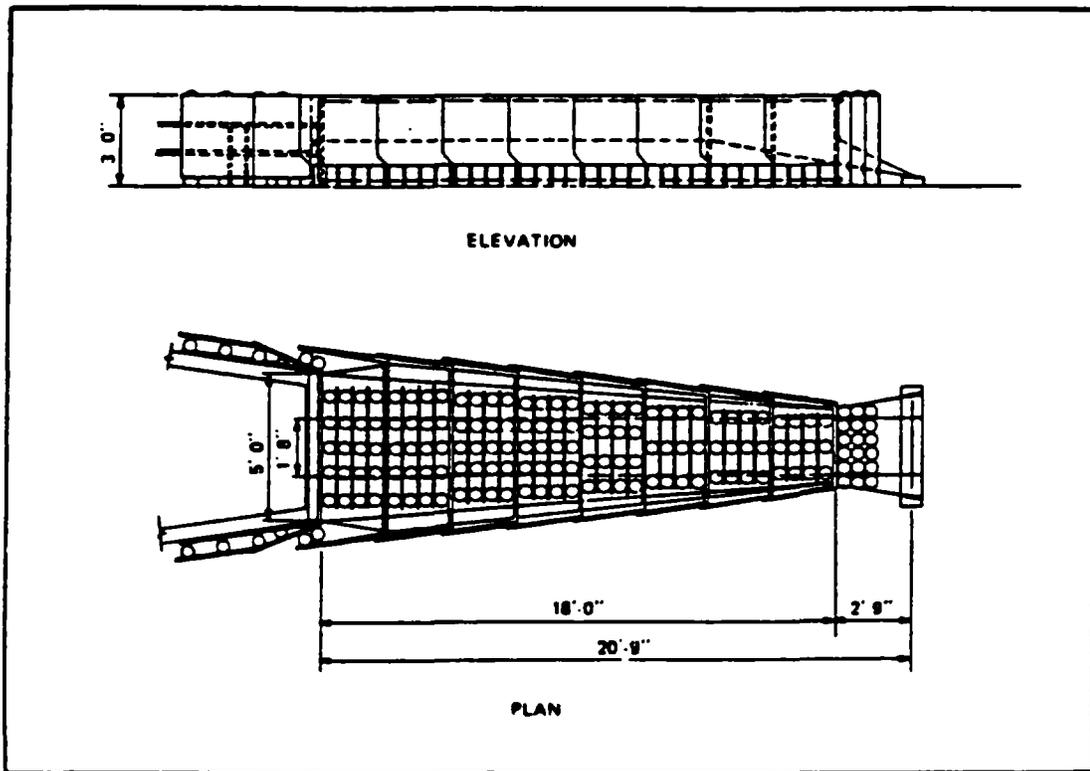
FIGURE 3

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).
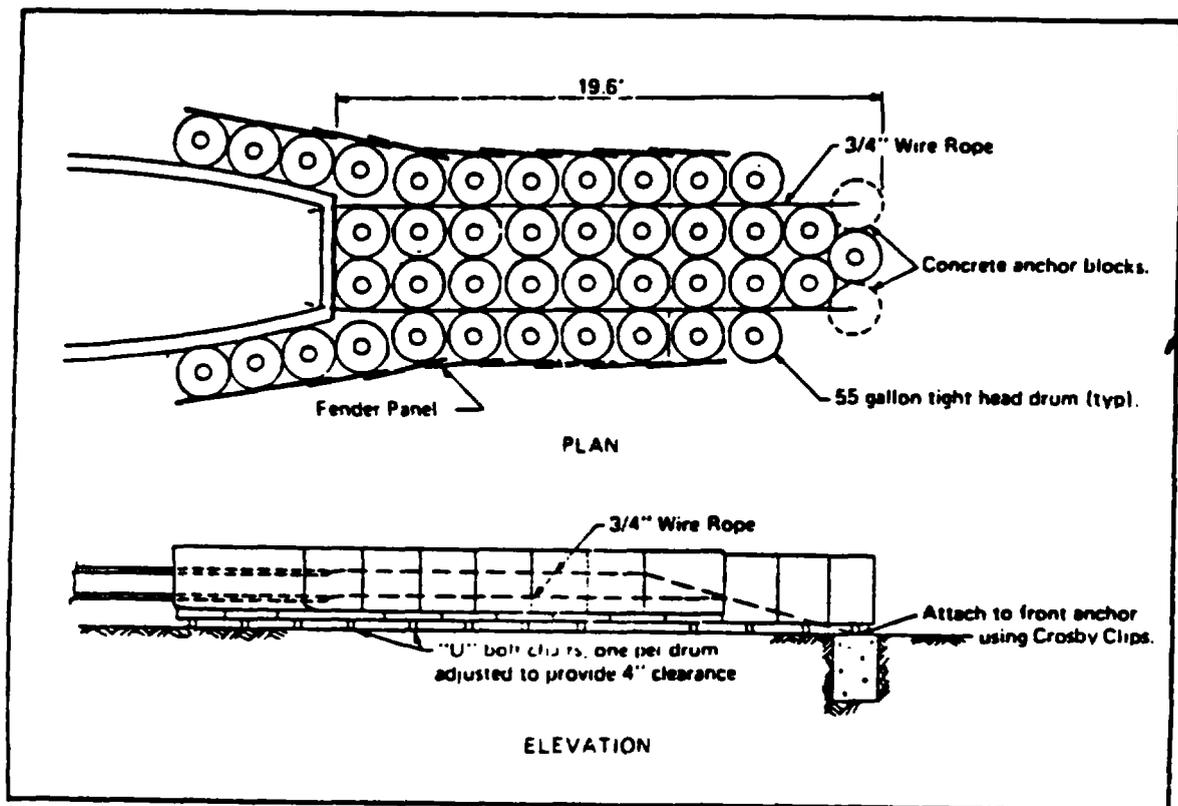
FIGURE 4

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).

PLAN

VERMICULITE CONCRETE
(30 LBS CF 50 psi)

CABLE
ANCHORAGE

ELEVATION
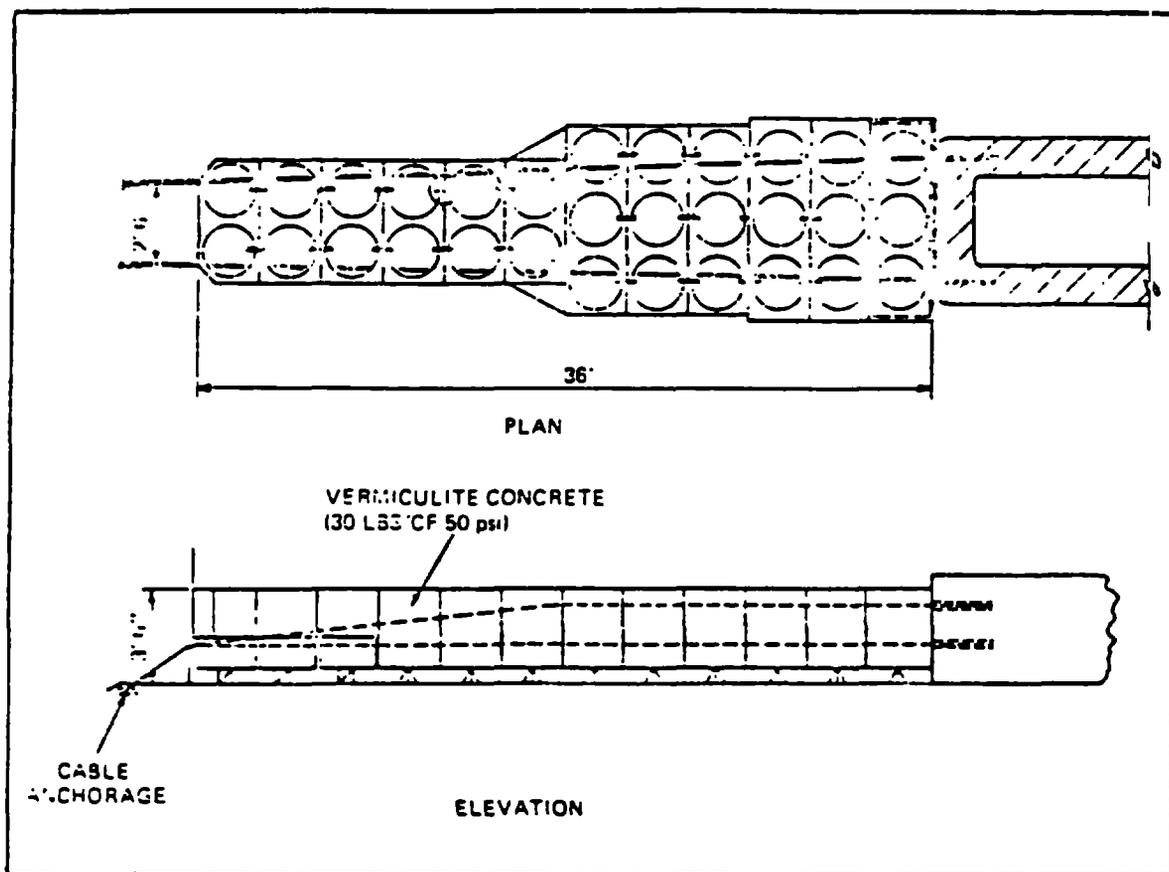
FIGURE 5

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).
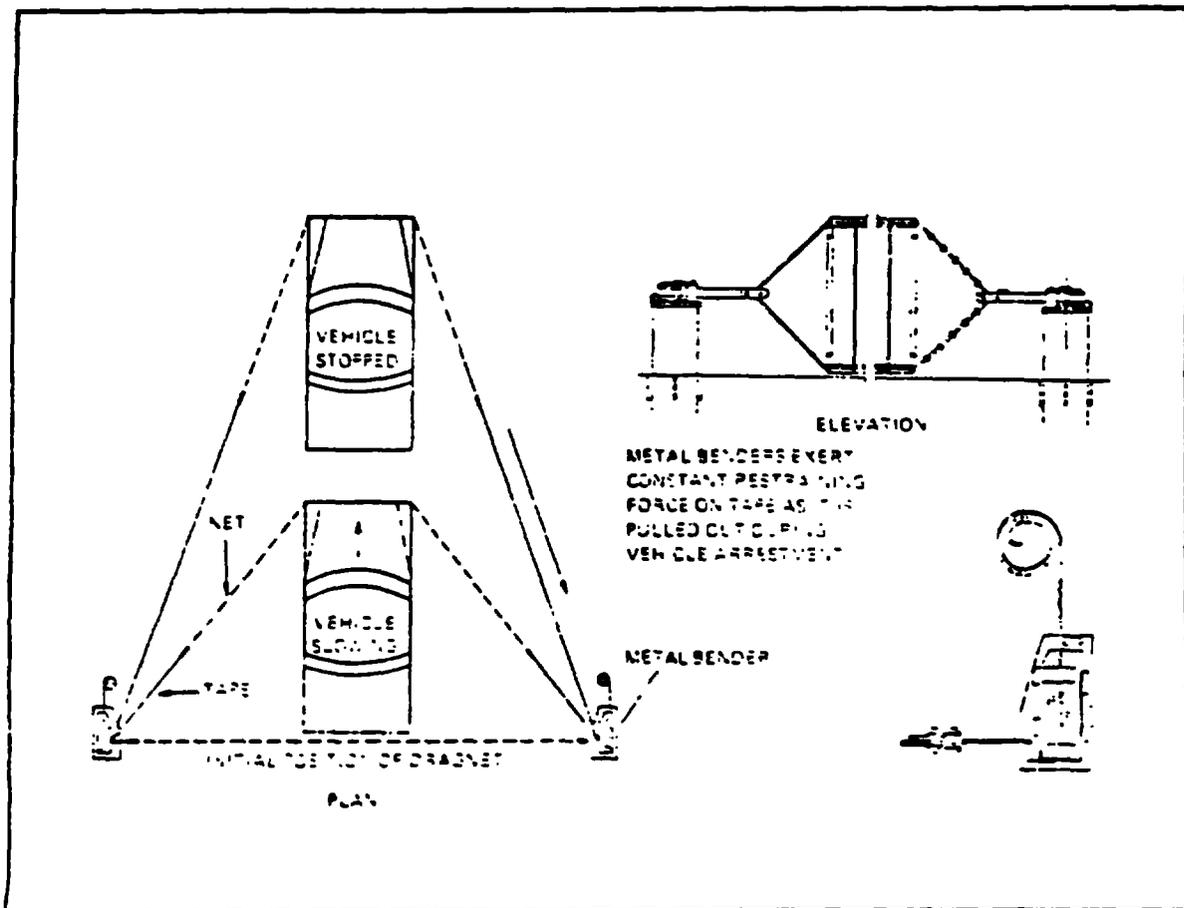
FIGURE 6

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).

PLAN
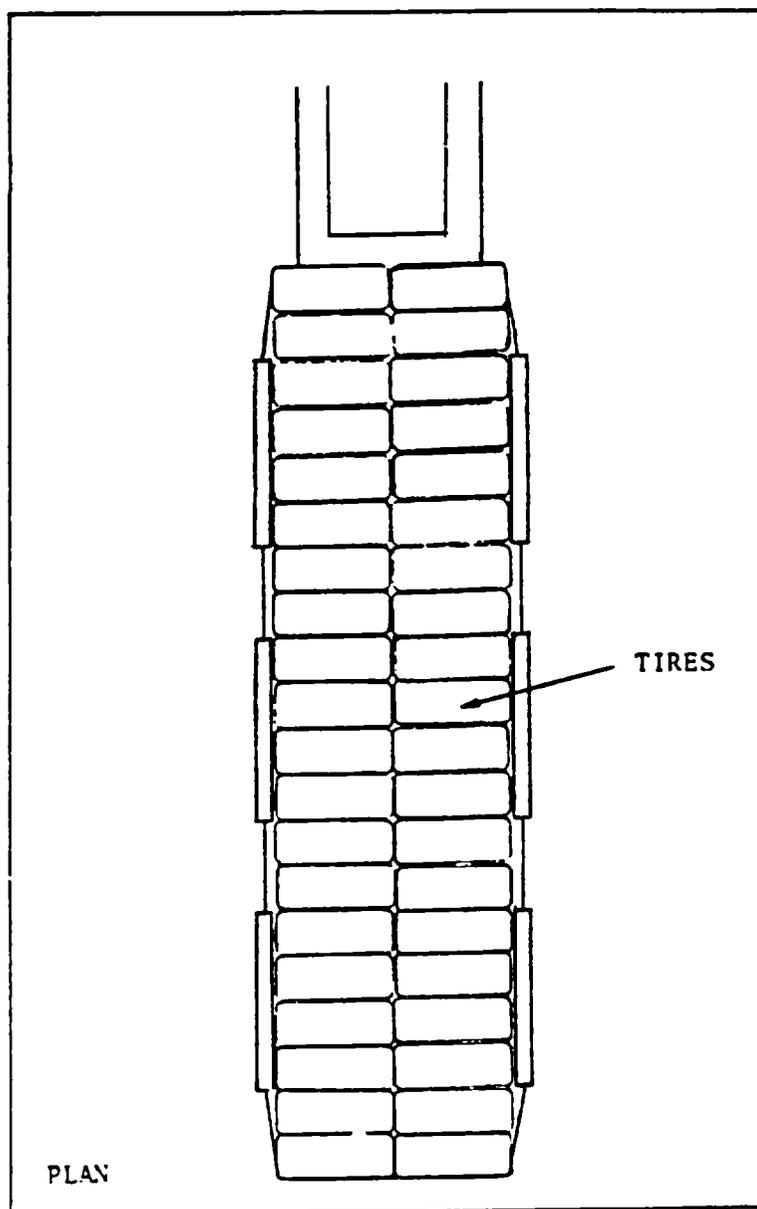
FIGURE 7

COMMON TYPES OF MEDIAN BARRIERS

MB1 CABLE **1**	MB2 "W" BEAM **2**	MB3 BOX BEAM **3**	MB4W BLOCKED-OUT "W" BEAM (Wood P st) **4**
MB4S BLOCKED-OUT "W" BEAM (Steel Post) **5**	CONCRETE BARRIER **6**	CONCRETE BARRIER **7**	
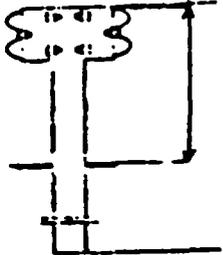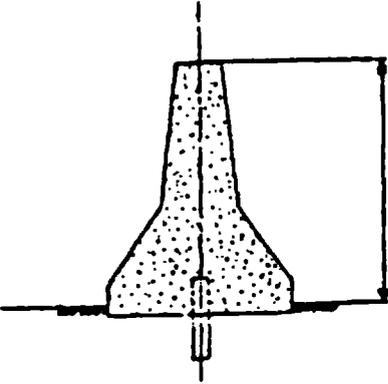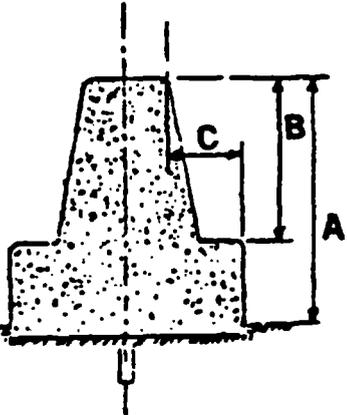
Variable Name: Manner of Collision (Based on First Harmful Event)

Format: 1 column - numeric   Beginning
                                                             Column   27

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

S urce: 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
    (A11) 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 cann t be
    classified with any other code. Included here, also, are endswipes.

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

    Code "6" (Sideswipe, opposite direction) refers to collisions where the pri-
    mary 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
    ngagement which halts the sideswipe). The initial engagement between the
    two vehicles must not be with the two end planes.

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

Format: 1 column - numeric   Beginning
                                                                     Column   28

Element Values:

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

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

Remarks:

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

    Code "1" (On roadway) if a vehicle strikes a curb which is not contiguous
    with a parking lane at the location of the impact. Also, it may be used
    when a vehicle in transport is almost entirely in the roadway when it im-
    pacts another vehicle or object located in a parking lane (e.g., the roadway
    side of a parked vehicle is in a designated, implicit or explicit, parallel
    parking lane and is struck).

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

    Code "4" (On roadside) refers to a location off the road, but inside the
    right-of-way (Definition: ANSI D16.1-1976, section 2.2.19, page 7).

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

    Code "7" (In parking lane) may be used when a vehicle strikes a curb which
    is contiguous with a parking lane at the location of the impact. Also, it
    is used when the vehicle in transport enters a designated parking lane area
    on the road prior to impacting another vehicle or object in that same area
    (e.g., rear-end collision with parked vehicle in designated, implicit or ex-
    plicit, parallel parking lane). If the collision occurs on the road in a
    designat d parking area but nonparallel (e.g., angular parking), then this
    code should be us d.

Variable Name: Number of Vehicle Forms Submitted

Format: 2 columns - numeric   Beginning
                                                       Column   29

Element Values:

   Range: 01 through 30

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

Remarks:

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

   This variable is a mandatory variable and cannot be changed.

Variable Name: Number of Pedestrian & Nonmotorist Forms Submitted

Format: 2 columns - numeric   Beginning
                                                       Column   31

Element Values:

   Range: 00 through 26

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 acci-
   dent (Final Stratification, A09) must be classified as a pedestrian and non-
   motorist 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   33

Element Values:

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

Source: Police report.

Remarks:

    Select the numeric code which represents the most severely injured pers n on
    the police report: occupant, pedestrian, or nonmotorist.

    If the police report contains a detailed description of the injuri s but
    does not translate the injuries into the KABCO codes, use the polic method
    for doing so. For example, injuries which are considered to be of an inca-
    pacitating nature are classified as "A" (code "3"); nonincapacitating vi-
    dent 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 polic
    explicitly so indicate that one of the persons died prior to the accident,
    and (2) no other persons involved in the accident received an injury.

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

Variable Name: Hit and Run

Format: 1 column - numeric   Beginning
                                                      Column   34

Element Values:

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

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

Remarks:

   A hit-and-run may occur when a motor vehicle in transport has contact with:
   (a) another motor vehicle in transport, (b) a motor vehicle not in trans-
   port, (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 inves-
   tigation by the police, or that vehicle which is abandoned at the scen when
   its occupant(s) fled from the area. The police report indicates that the
   vehicle was involved in a collision which was investigated, but there is
   little or no information on that vehicle because of its departure prior to
   police arrival on-scene.

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

   For sampling purposes (A02, Case Number-Stratification and A09, Final Strat-
   ification), if the type of vehicle is unknown (V14, Body Type, equals 99),
   then assume that the hit-and-run vehicle was an "other motor vehicle". If
   it is known from the police report that the vehicle is a "truck" or "motor-
   cycle", then treat it accordingly for sampling.

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

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

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

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

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

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

To help distinguish between codes "1" and "3", consider the following exam-
ples. For either code to apply, at least two "in transport" motor vehicl s
must have been involved in the accident.
Situation A: The last contacted vehicle in a rear-end collision sustains
minor damage and departs, and it was determined that the driver was not at-
fault--code "left scene".
Situation B: Vehicle 1 strikes vehicle 2, causing vehicle 2 to cross the
center line and be struck by vehicle 3.   Vehicle 3 departs (it was deter-
mined not to be at-fault)--code "left scene".
Situation C: Vehicle 2 crosses the path of vehicle 1 and is struck.   Vehi-
cle 2 departs; it was determined that vehicle 2 was at-fault--code "hit
motor vehicle".
Situation D: Same as Situation B except that vehicle 1 departs; it was de-
termined to have been at-fault--code "hit motor vehicle".

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

When the presence of a hit-and-run vehicle is indicated (A17 equals codes
"1"-"4"), the NASS investigator should include Vehicle and Driver Forms for
each such vehicle.   If the vehicle was known or assumed to have been in
transport at the time of the accident, at least one Occupant Form should be
completed.   If it can be determined from a reliable source that a vehicle
contained "x" number of occupants or nonmotorists (departed scene but was
not in transport at time of impact) at the time of its involvement, then
submit the appropriate number of forms (Occupant or Pedestrian & Nonmotor-
ist).   Although most of the variables on the forms will have element valu s
which are unknown, the forms are necessary to document the presence of the
vehicle(s) and its person(s).

Hit-and-run (codes "1" through "4") can also be used if it is alleged by one
of the involved parties that another vehicle, not reported by the police,
was involved in the accident.   However, the allegation must be supported by
statements to this effect from an unbiased witness or from the existing phy-
sical 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 in-
vestigator learns during the investigation that the allegation of the in-
volvement 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 in-
terviewee's admission or upon reliable evidence collected.   Suspicion of
falsehood is not an acceptable justificati n.

Variable Name: Time

Format: 4 columns - numeric   Beginning
                                                           Column   35

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).

Variable Name: Light Condition

Format: 1 column - numeric   Beginning
                                                  Column   39

Element Values:

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

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

Remarks:

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

    If the police report indicates that it was <u>dark</u> only (the PAR having no res-
    ponse to indicate that it was <u>dark, but lighted</u>), the investigator may se-
    lect the latter value if it is known that the scene was lighted.

    If the police report does not indicate the light conditions (i.e., a failure
    to check any category), the investigator should select the most representa-
    tive value when reasonably certain of what it might have been. However, th
    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 res-
    ponse for light conditions (e.g., "dark" <u>and</u> "dusk"), the investigator
    should 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   40

Element Values:

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

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

Remarks:

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

    If the police report does not indicate the atmospheric condition (i.e., a
    failure to check any category), the investigator should select the most rep-
    resentative value when reasonably certain of what it may have been. The in-
    vestigator 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 re-
    solve 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 res-
    ponse for atmospheric condition, the investigator should 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 precipita-
    tion, particle dispersion, or severe crosswinds which may affect the driv-
    er's visual ability or the vehicle's controllability.

Variable Name: Land Use

Format: 1 column - numeric   Beginning
                                                                Column   41

Element Values:

   1   Urban
   2   Rural
   9   Unknown

Source: FHWA required state maps.

Remarks:

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

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

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

Roadway Type
(Land Use, Road TA-1 Classification, Class Trafficway)

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

The coders should write or call the respective State contact before arriving at the State office.

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

HOW: The easiest, and quickest, way to determine the exact location f 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 see the TA-1 maps.

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

Lee Franklin
(202)426-4820

Contacts for Determining Roadway Type
Using TA-1 Classifications

U.S. DOT
Federal Highway Administration

State	Planning & Research Engineer	State Contact
Alabama	Mr. C. D. Reagan Planning & Research Engineer Federal Highway Administration 441 High Street Montgomery, Alabama 36104 FTS No. 534-7377	Mr. David Truett Planning & Program Engin er Alabama Highway Department 11 South Union Street, Room 313 Montgomery, Alabama 36104 Tel. 205-832-5354
Arizona	Mr. Norman Arthur Planning & Research Engineer Federal Highway Administration 3500 N. Central Ave., Suite 201 Phoenix, Arizona 85012 FTS No. 261-6675	Mr. Louie Hopkins Facilities Branch Supervisor Arizona Dept. of Transportation 206 South 17th Avenue Phoenix, Arizona 85007 Tel. 602-261-7893
Arkansas	Mr. William Perry Planning & Research Program Manager Room 3128, Federal Office Building 700 West Capitol Avenue Little Rock, Arkansas 72201 FTS No. 740-5625	Mr. Dan Morgan Arkansas Highway & Transit Highway Building Department Planning & Research Division I-30 South (9600 New Benton Hwy) Little Rock, Arkansas 72203 Tel. 501-569-2401 Mailing Address: P.O. Box 2261 Little Rock, Arkansas 72203
California	Mr. Michael A. Cook, Chief Planning & Research Engineer Federal Highway Administration Federal Building P.O. Box 1915 Sacramento, California 95809 FTS No. 448-3246 or 448-3247	Mr. Chuck Pivitti California Dept. of Trans. Division of Highways 1120 N. Street P.O. Box 1499 Sacramento, California 95807 Tel. 916-445-8047
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. Tom Monchak or Mr. Chuck Gibson Department of Highways 4201 East Arkansas Avenue Denver, Colorado 80222 Tel. 303-757-9523
Florida	Mr. David VanLeuven Planning & Research Federal Highway Administration 223 W. College Avenue P.O. Box 1079 Tallahassee, Florida 32302 FTS No. 946-4326	Mr. Steven Freggar Florida DOT Burns Building Tallahassee, Florida 32304 Tel. 904-488-4111

U.S. DOT
Federal Highway Administration

State	Planning & Research Engineer	State Contact
Illinois	Mr. H. Richards McLane Planning & Research Engineer Federal Highway Administration 3035 East Stevenson Drive P.O. Box 3307 Springfield, Illinois 62703 FTS No. 955-4637	Mr. Bill Barrows Illinois DOT Bureau of Planning 2300 S. Dirkson Parkway Springfield, Illinois 62764 Tel. 217-785-2998
Michigan	Mr. Harry Drashen Planning & Research Engineer Federal Highway Administration Room 211, Federal Building P.O. Box 147 Lansing, Michigan 48901 FTS No. 374-1209	Mr. Dick Angevine Dept. of State Highway & Trans. Highway Building, 3rd Floor Ottawa & Walnut Streets P.O. Box 3050 Lansing, Michigan 48909 Tel. 517-373-9192
Missouri	Mr. Donald A. Sinclair Community Planner Federal Highway Administration 209 Adam Street, P.O. Box 148 Jefferson City, Missouri 65101 FTS No. 276-5541	Mr. Carl Klamm, Chief Division of Planning Missouri State Highway Comm. State Highway Building 119 West Capitol Jefferson City, Missouri 65101 Tel. 314-751-3758
Nebraska	Mr. James J. Pipan Community Planner Federal Highway Administration 100 Centennial Mall North Lincoln, Nebraska 68508 FTS No. 541-5521	Mr. Jerry Miller Department of Roads P.O. Box 94759 Lincoln, Nebraska 68509 Tel. 402-473-4670
New Jersey	Mr. William Schmitt, Jr. Transportation Planner Federal Highway Administration Suburban Square Building 25 Scotch Road, 2nd Floor Trenton, New Jersey 08628 FTS No. 483-2285	Mr. Rubert Kraml or Mr. James Newcomb N.J. State Dept. of Trans. 1035 Parkway Avenue Trenton, New Jersey 08625 Tel. 609-292-3233
New York	Mr. Joseph Gardner, Jr. Transportation Planner Federal Highway Administration Leo W. O'Brien Federal Building 9th Floor Albany, New York 12207 FTS No. 562-7515	Mr. Jonathan Newman Program Planning Bureau New York DOT Building 5 State Office Campus Washington Avenue Albany, New York 12232 Tel. 518-457-2935

U.S. DOT
Federal Highway Administration

State	Planning & Research Engineer	State Contact
North Carolina	Mr. John E. Tidwell, Jr. Planning & Research Engineer Federal Highway Administration 4th Floor, Federal Building 310 New Bern Avenue P.O. Box 26806 Raleigh, North Carolina 27611 FTS No. 672-4272	Mr. Charles Adkins Assistant Branch, Management Planning and Research N.C. DOT Division of Highways State Highway Building Raleigh, North Carolina 27602 Tel. 919-733-3141
Pennsylvania	Mr. Robert Hall Supervisor Community Planner Federal Highway Administration 228 Walnut Street P.O. Box 1086 Harrisburg, Pennsylvania 17108 FTS No. 590-3472	Mr. Tom Boyd Pennsylvania DOT Transportation & Safety Bldg. 909D Foster & Commonwealth Avenue Harrisburg, Pennsylvania 17120 Tel. 717-787-5796
Texas	Mr. Dennis W. Jones Planning & Research Program Manager Federal Highway Administration Room 826, Federal Office Building 300 East Eighth Street Austin, Texas 78701 FTS No. 734-5917	Mr. Everett Keesee State Department of Highway & Public Transportation Planning Division Room 512, Motor Vehicle Building Camp Hubbard Complex Austin, Texas 78703 Tel. 512-475-7216
Washington	Mr. Lyle P. Renz Planning Engineer Federal Highway Administration 711 South Capitol Way P.O. Box 29 Olympia, Washington 98501 FTS No. 434-9485	Mr. Orvis Lauritzen Washington DOT Planning - Traffic Safety Div. Highway Administration Building Room 1B3 Olympia, Washington 98501 FTS No. 434-6167

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, r 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 up n 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 f l-low the "in-a-junction" rules.

2. <u>The location of the first harmful event is known</u>. The investigator either f llows 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) <u>In-a-junction</u>. 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' TA-1 classification can be subsequently determined from a map in-office. Collection of each roadway's classification is required so that the accident level comparison (below) can be accomplished. Next, follow the guidelines presented for variable D33 (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 (D34-D43) the values f r 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 <u>multiple</u> roadways were involved in the accident's first harmful event, select, according to the following rules, one of the roadways on which a vehicle involved in the first harmful event was travelling just prior to its entrance into the junction:

(1) Choose the roadway with the higher (lower numerically) TA-1 classification. If the values are the same, then proceed to rule (2). In either case, record the value in variable A22, TA-1 class.

(2) Choose the roadway with the greater number of lanes (variable D33). If the number of lanes are the same, then proceed to rule (3).

(3) Choose the roadway on which the most at-fault driver was travelling, except for the alleys and driveways where the street used by the other vehicle is always chosen.

If all of the in transport vehicles involved in the accident's first harmful event came from the same roadway, then select that roadway. Once you have chosen the roadway, complete the accident level environmental variables (A26-A29, A31-A38) based on the values recorded for that roadway's traffic unit level environmental variables (D33-D43). The values will be nearly identical.

(b) <u>Not-in-a-junction</u>. [NOTE: An accident whose Relation to Junction (A24) was listed as "intersection related" (code "05") is an example of an accident not in a junction.] Determine the traffic unit level environmental variables for each in transport vehicle before attempting to determine the accident level environmental variables. Since the location of the first harmful event is not in a junction, the investigator must proceed, in ac-

cordance with the guidance which f llows, 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 n 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 f the roadway. In any of these cases, return to roadway X to record the vehicle's traffic unit level environmental variables. (Situation B) Vehicle leaves roadway X to short-cut traffic ahead. Vehicle, while attempting to merge longitudinally on roadway Y, impacts (a) an object--on or off the roadway, but on the trafficway, or (b) another motor vehicle. In either of these cases, consider the vehicle to be associated with roadway Y.

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

(2) On roadway: Go to the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Determine the number of lanes (D33) 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 environm n-tal determinations (D34-D43), by looking back along the vehicle's pa.h 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 th se points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables, use a generalized cross-section of the roadway at the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Record TA-1 Class (A22) for the roadway at this location. In addition, determine the appropriate values for each of the remaining accident level environmental variables (A26-A29, A31-A38).

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 r presenative 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 it it were not for the "throat" rule (see Variable A24, Relation to Junction, third 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.

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.

TRAFFIC UNIT LEVEL
ENVIRONMENTAL
VARIABLES

ACCIDENT LEVEL
ENVIRONMENTAL VARIABLES

POINT F DEPARTURE
FROM ROADWAY

ACCIDENT LEVEL
ENVIRONMENTAL VARIABLES

TRAFFIC UNIT LEVEL
ENVIRONMENTAL VARIABLES
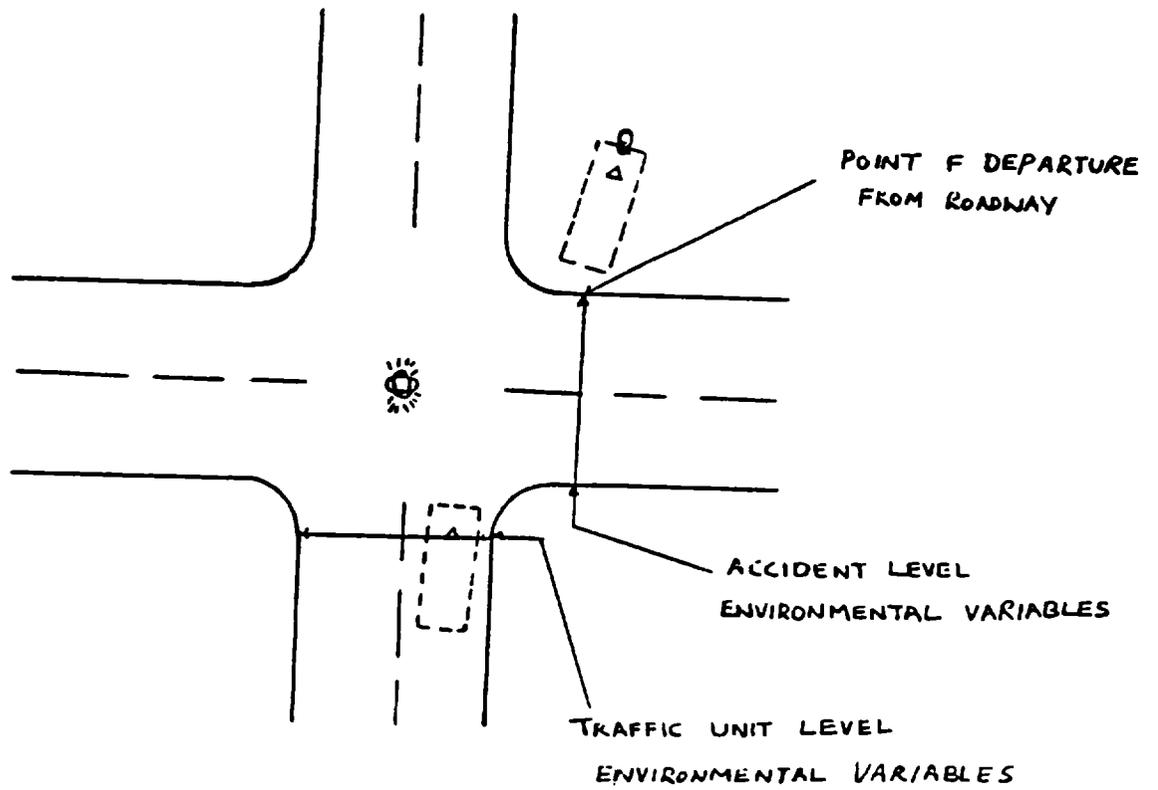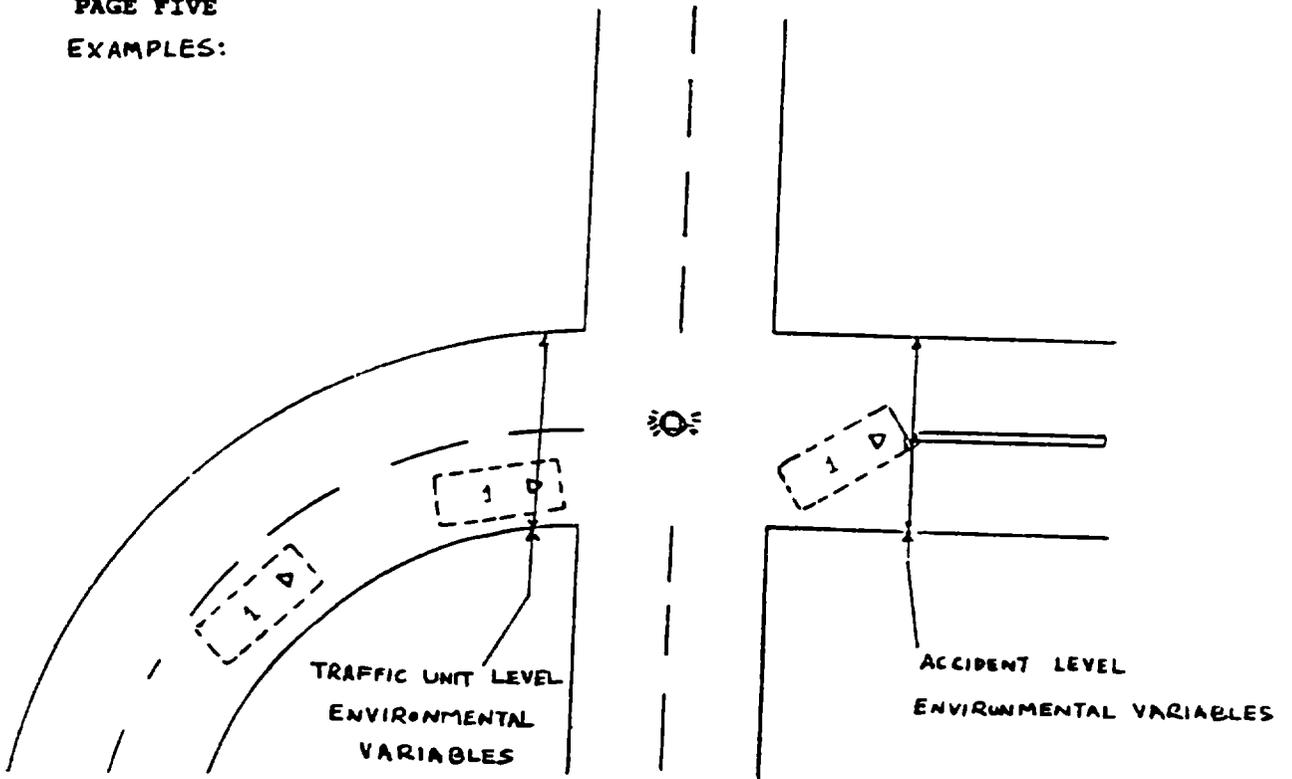
Variable Name: TA-1 Class

Format: 1 column - numeric   Beginning
                                                                     Column   42

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 avail-
    able.

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

    When the road classification cannot be determined from the TA-1 Classifica-
    tion map, contact the nearest FHWA office for their assistance. If FHWA is
    unable to assist, contact the nearest FARS representative, since NASS is de-
    signed to be compatible with FARS on this issue. Refer problems in obtain-
    ing 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, sec-
    tions 2.5.18 and 2.5.19, page 14) are coded as classified on the maps.

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

Variable Name: Class Trafficway

Format: 1 column - numeric   Beginning
                                                      Column   43

Element Values:

    1 Interstate
    2 Other limited access
    3 Other U.S. route
    4 Other state route
    5 Other major artery
    6 County road
    7 Local road
    8 Other road (specify)
    9 Unknown

Source: Investigator determined—based on definitions and scene inspection.

Remarks:

    Road signage is one of the primary inputs in the assignment of the correct
    attribute. If an accident occurs in association with a roadway that is
    being built (e.g., unopened lanes or side), then 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 th ac-
    cident) as an interstate, other U.S. or other state route, then code it ac-
    cordingly. 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.

Definitions:

    Interstate system ("1") is any trafficway within the national system f r in-
    terstate and defense trafficways.

    Other limited access ("2") is any trafficway (e.g., a freeway, expressway,
    or parkway) with full control of access which may or may not be within the
    U.S.- or state route-numbered trafficway system, but not in the Interstate
    system. In essence, code "2" takes precedence over codes "3" and "4".

    Other U.S. route ("3"), numbered highway, is any trafficway within the U.S.
    trafficway system, excluding interstate and other limited access traffic-
    ways.

    Other state route ("4"), numbered highway, is any trafficway within the
    state trafficway system, excluding other limited access trafficways.

Variable Name: Class Trafficway (con+'d.)

Other major arterial ("5") is any trafficway, usually city streets and county highways, for which cross-traffic is required to stop.

County road ("6") is any trafficway within a county trafficway system that does not fall within the interstate, other limited access, U.S. route, state route, or other major arterial system.

Local street ("7") is any trafficway within a city trafficway system that does not fall within the interstate, other limited access, U.S. route, state route, or other major arterial system.

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

Variable Name: Relation to Junction

Format: 2 columns - numeric   Beginning
                                                          Column   44

Element Values:

    01 Non-junction
    02 Three leg intersection
    03 Four leg intersection
    04 More than four leg intersection
    05 Intersection related
    06 Interchange area
    07 Driveway, alley access, etc.
    08 Entrance or exit ramp
    09 Railroad grade crossing
    10 Crossover
    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 sec-
    tion at the point of departure to code this variable. In those off-roadway
    instances where the departure occurs from within a junction, then cod either
    "01" (Non-junction) or "05" (Intersection related). The latter code can only
    be used if: (1) the junction was also an intersection (see definiti n below)
    and (2) the criteria for intersection related are satisfied (see 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) con-
    tains 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 lin s 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 con-
    necting them are considered to be parts of a single intersection. The mea-
    surement is made from inside-to-inside of the lateral curb/boundary lines.

    Should the first harmful event occur within the area formed by the prol nga-
    tion of curb or edge lines of the approach legs of the intersection, it is to
    be classified as an intersection accident wheth r or n t the collision which
    occurred was in any way related to the fact of being within an intersection.

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

Rotary intersections are to be classified by the number of legs which lead to
the inner circle; "Rotary" is defined in variable A30, Interchange Geometry.
Below are some examples.
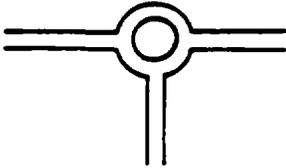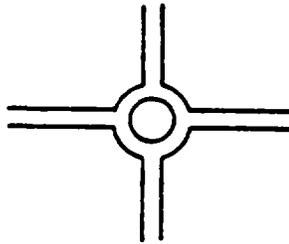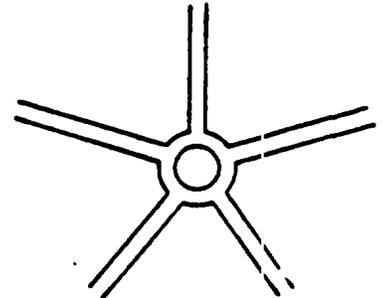
        3-leg   4-leg   >4-leg

Intersection related (code "05") means that the first harmful event (A11,
First Harmful Event):   (1) occurs on an approach to or exit from an intersec-
tion; and (2) results from an activity, behavior, or control related t the
movement of traffic units through the intersection (for "traffic unit" see
ANSI D16.1-1976, sections 2.2.26, 2.2.6, 2.1.8, and 2.1.4)

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

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

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

An interchange area ("06") is the area around a grade separation (ANSI D16.1-
1976, section 2.5.14, page 14) which involves at least two trafficways. In-
cluded 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 intersec-
tions, driveway accesses, and, of course, roadway sections which are non-
junction.

If the location of the First Harmful Event (A11) is in an interchange area
and also is in either an intersection (codes "02" thr ugh "04") or on an en-
trance or exit ramp ("08"), then the intersection (codes "02" through "04")
or the ramp ("08") takes precedence.

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

<u>Driveway access</u> (code "07") is a roadway providing access to property adja-
cent to a traffic way.

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

Code "07" (Driveway, alley access, etc.) is used when the first harmful event
occurs in the prolongation of the lines forming the junction and at least one
involved pedestrian (see variable P08, Pedestrian or Nonmotorist's Type) or
road vehicle (ANSI D16.1-1976, section 2.2.6, page 5) was entering or exiting
from the driveway or alley.

Where a 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.

Most driveways (but not all) are not roadways in NASS. Examples of non-NASS
driveways are: driveways to service stations, residential dwellings, and
most apartment complexes, hotels, motels, and other commercial establish-
ments.   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 enter-
ing or exiting the driveway and the location of the First Harmful Event (A11)
is in either of the following two areas. The most obvious is the area within
the junction itself formed with the driveway access (code "07"). The second
area considered is the "<u>throat</u>" of the driveway. The accident is considered
to have occurred in the throat if, at the junction of a trafficway and a pri-
vate way (ANSI D16.1-1976, section 2.2.2, page 5), a motor vehicle in trans-
port is either entering or exiting the private way such that any part of the
vehicle is in contact (on or over) with the road (ANSI D16.1-1976, section
2.2.19, page 7) at the location of the first harmful event. If the accident
occurred in the throat, then code "07" (Driveway, alley access, etc.) should
be used.

In the above paragraph, it is stated that many driveways are not roadways in
NASS (e.g., driveways to service stations, residential areas, etc.) unless
either the in a junction or "<u>throat</u>" rule condition is satisfied. There are
driveways, however, which constitute roadways in NASS without having to
satisfy either condition. These are certain driveways within parking or
shopping lots which 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 area of this problem centers around shopping centers. It has
been stated many times that private ownership does not automatically disqual-
ify 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 l ts three criteria have been
suggested:

Main

C
A

Store

Store

Burger Heaven

Main

Main

Stores

Stores

Stores

* Indicates STOP or YIELD sign

Main

E
l
m

E
l
m

M
a
p
l
e

D
B

Main

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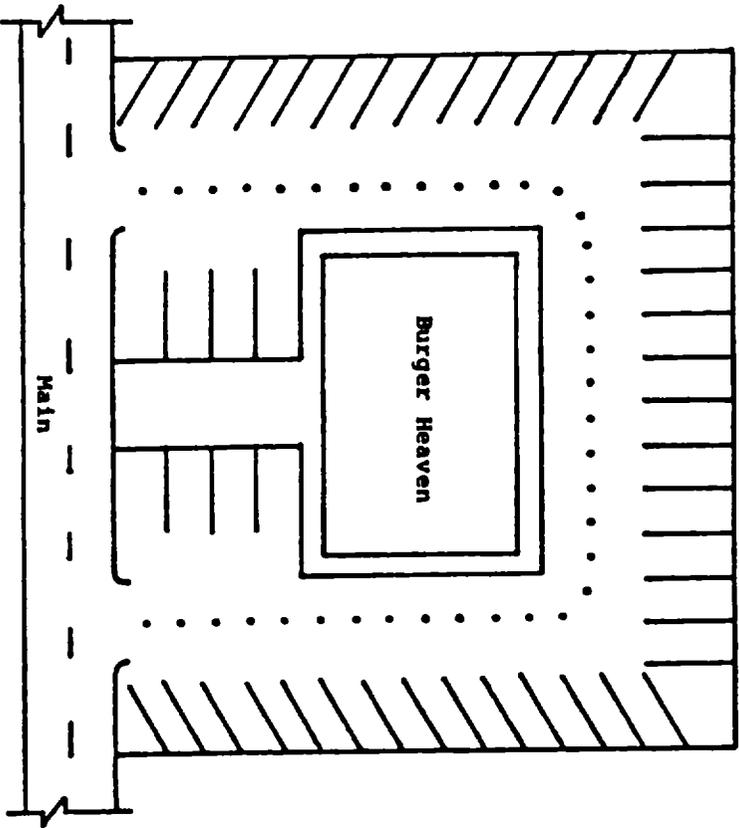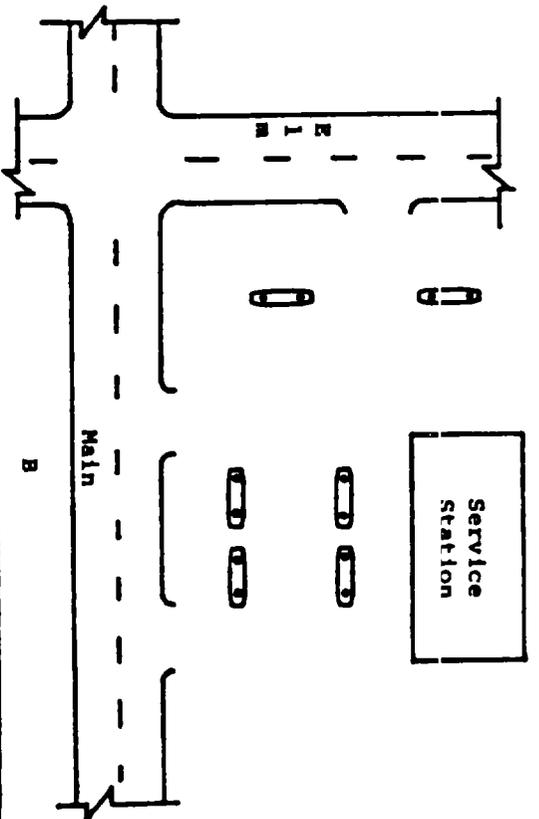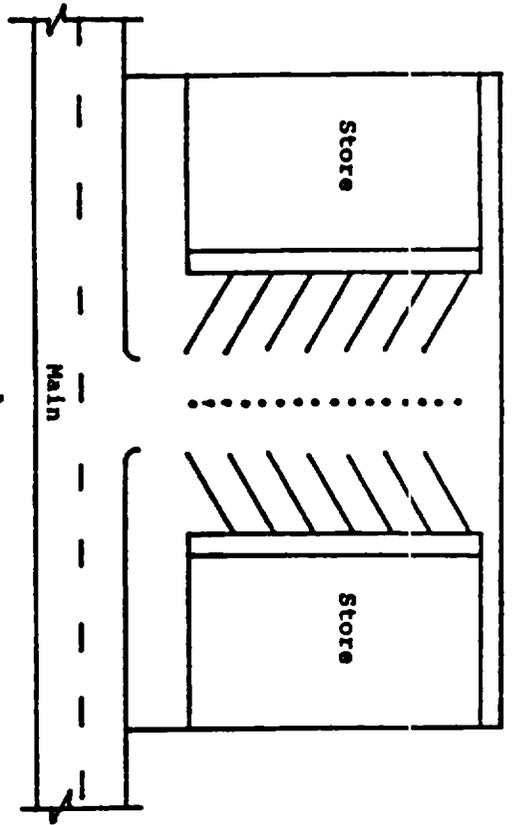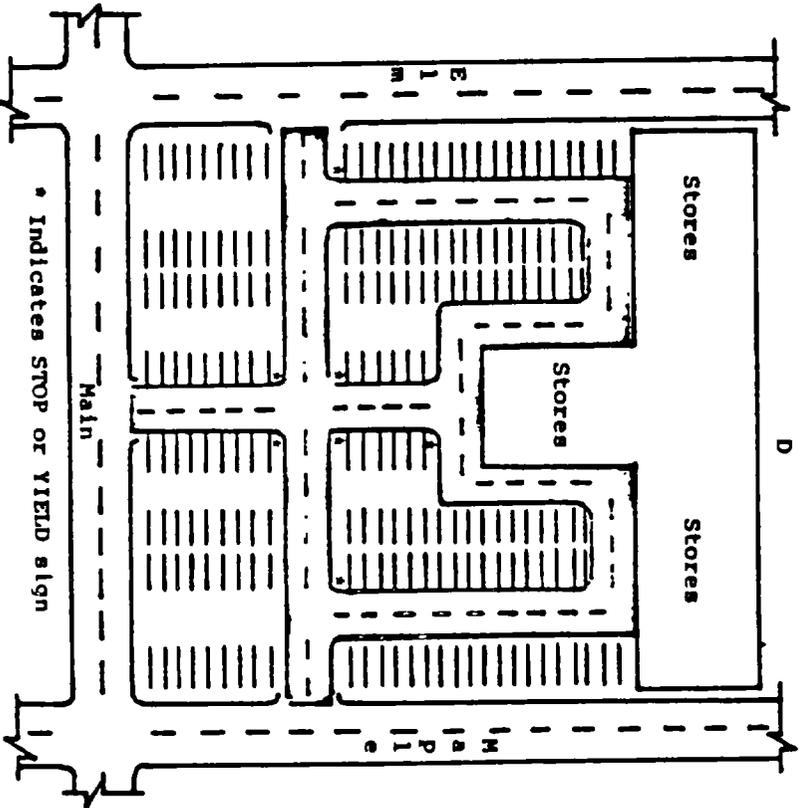
Variable Name: Relation to Junction (cont'd.)

   ● There must exist two or more contiguous lanes of travel that are clearly
     marked;
   ● The land way must intersect another land way inside the lot or center; and
   ● 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 al-
lowed immediately adjacent to the land way does not disqualify it from con-
sideration.   The diagram on the preceding page (containing four schematics)
does not attempt to cover the entire spectrum of possibilities but only t
illustrate some common examples. For situations A, B, and C none of the land
ways should be considered as trafficways, since the criteria are not met.
However, a NASS accident could occur at each of these if it satisfied the
"throat rule" above. In situation D the screened in areas are roadways since
they meet the criteria.

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

A railroad grade crossing (code "09") is the area formed by the at-grade con-
nection 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 "09" (Railroad grade crossing) should
be used.

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

Code "10" (Crossover) should be used if the first harmful event occurred (1)
in the junction of a crossover and a roadway or (2) in the crossover itself.

Some at-grade intersections are channelized; some at-grade intersections have
ramps. A channel can be distinguished fr m a ramp (for an at-grade intersec-
tion) according to the following criteria (see accompanying figure). Measure

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

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

◯ Indicates location of first harmful event.
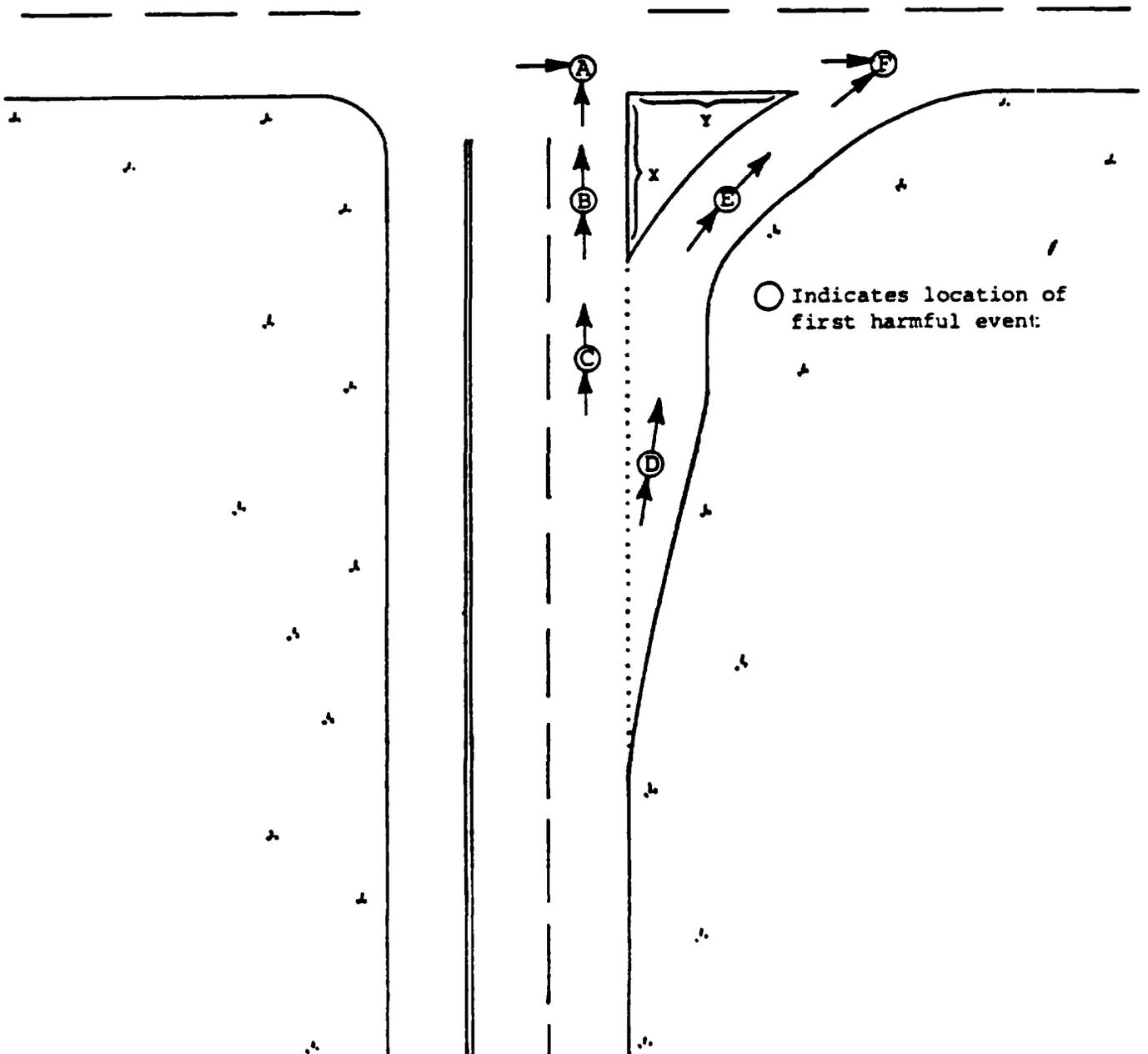
Variable Name: Relation to Junction (cont'd.)

the X and Y distances at the island. To be a ramp (code "08") the larger of
X or Y must be greater than 16 meters (50 feet) and the smaller of X or Y
must not be less than or equal to 10 meters (33 feet). Otherwise, the con-
figuration constitutes a channel. A careful review of the table which accom-
panies the figure is in order.

An island is defined as a raised, paved surface.

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

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

The following examples, although not intended to be inclusive, are presented
for the purpose of helping to clarify the meaning of "prolongation" as it is
used with respect to junctions.
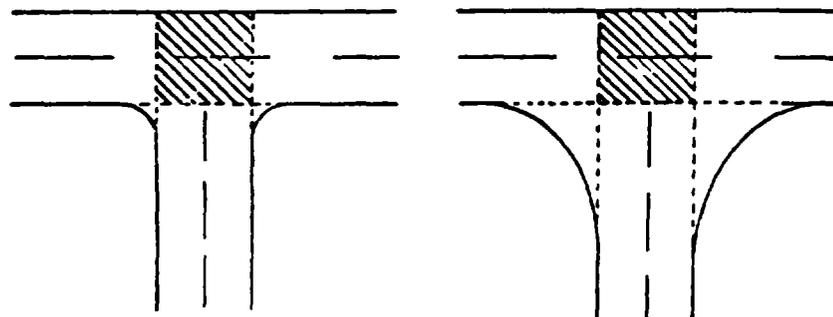
Variable Name: Relation to Junction (cont'd.)
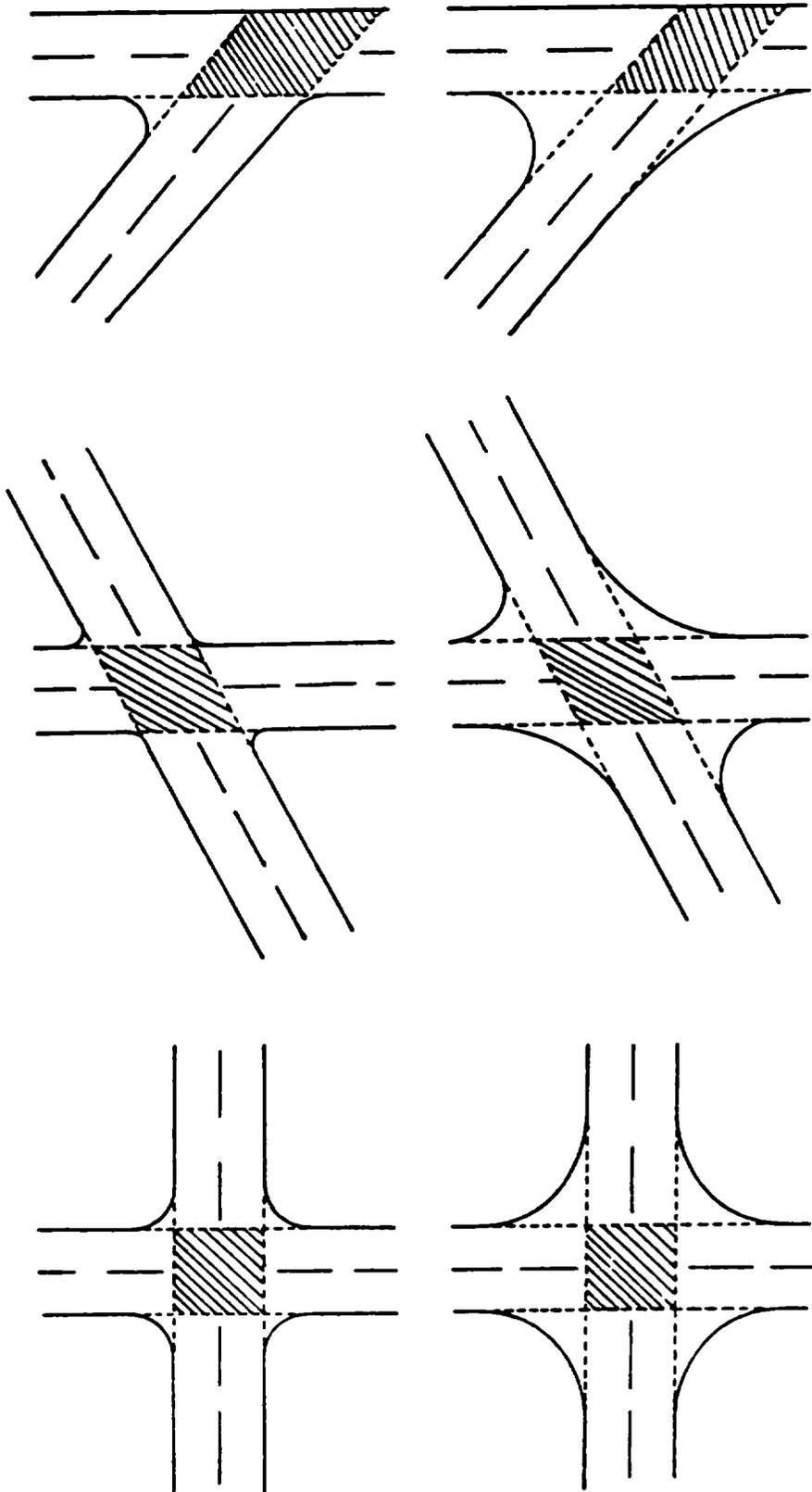
Variabl Name: Relation to Junction (cont'd.)
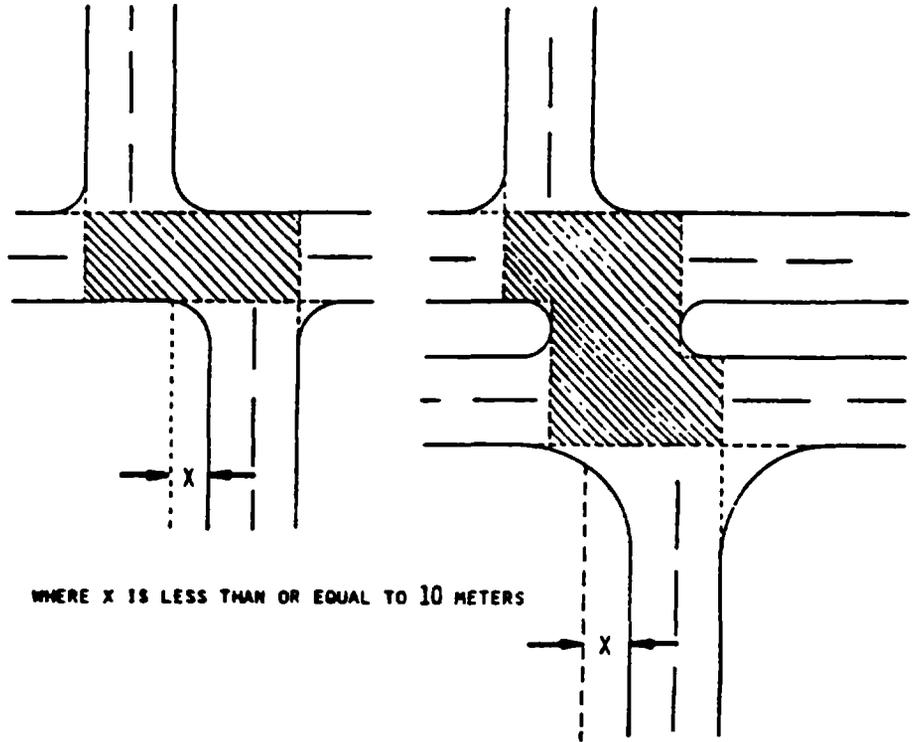
WHERE X IS LESS THAN OR EQUAL TO 10 METERS
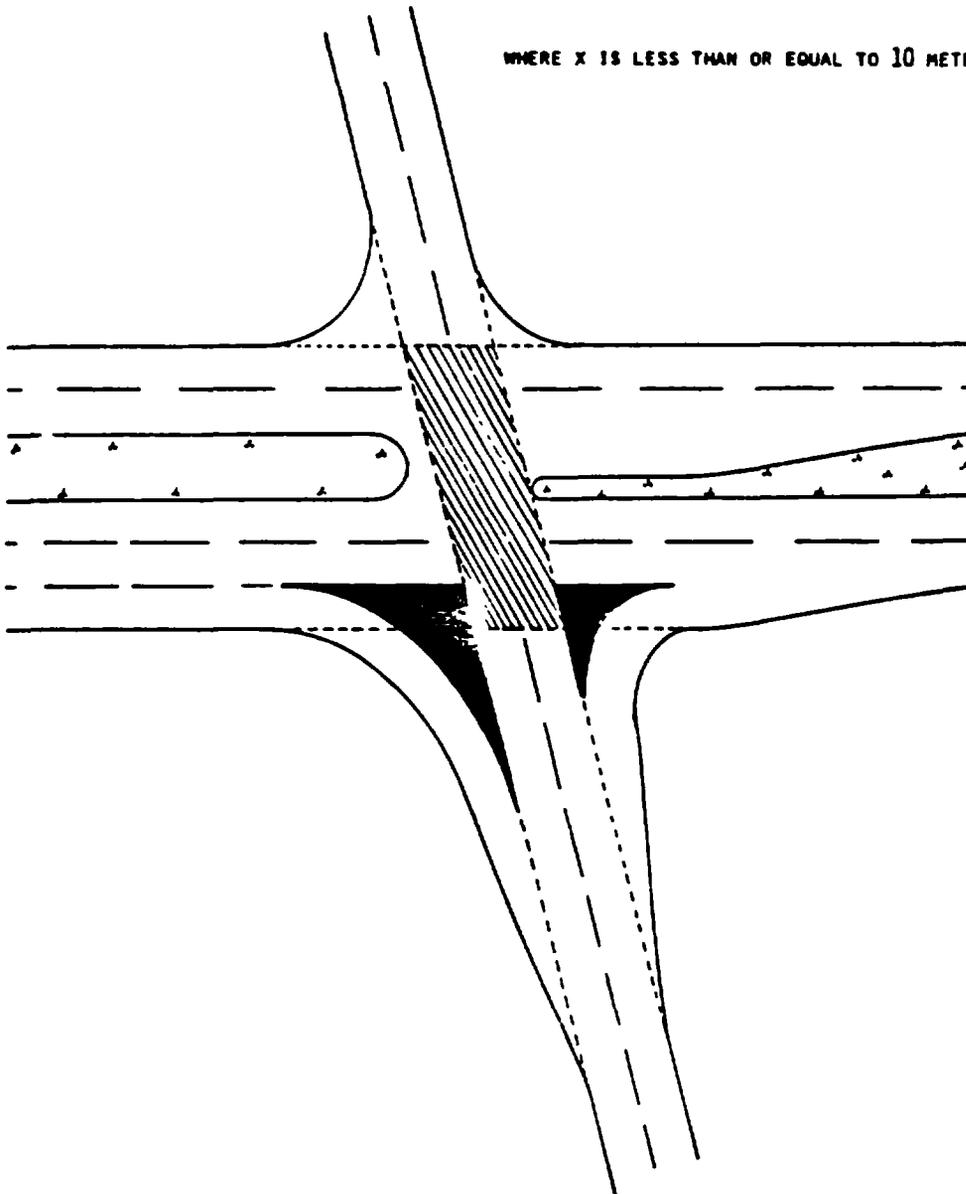
Variable Name: Relation to Junction (cont'd.)

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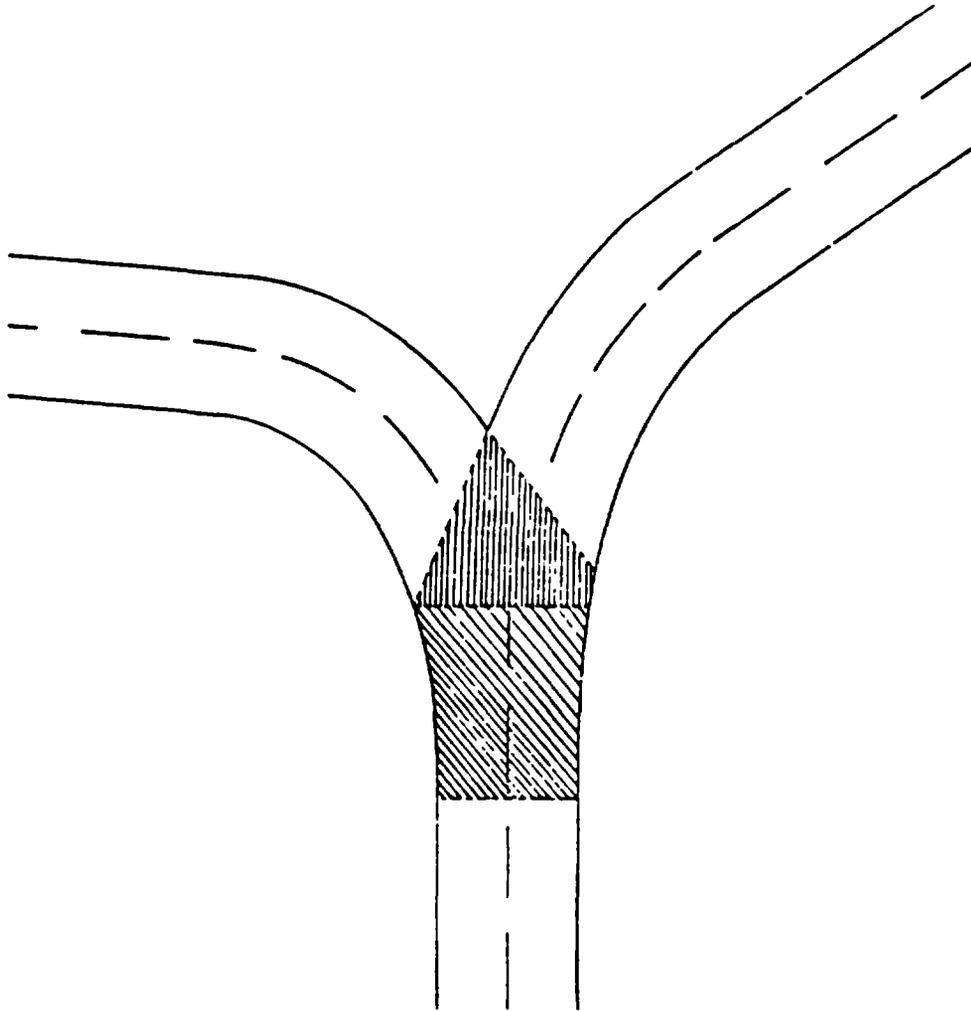
Variable Name: Relation to Junction (cont'd.)

   Sketched below are examples of the prolongation associated with the three
   leg intersection ("02") which results from the junction of a roadway and an
   at-grade ramp. The examples illustrate both the absence and presence of an
   acceleration/deceleration lane.
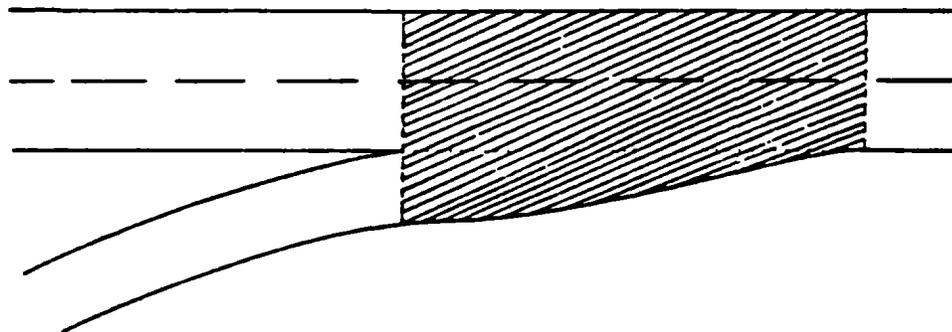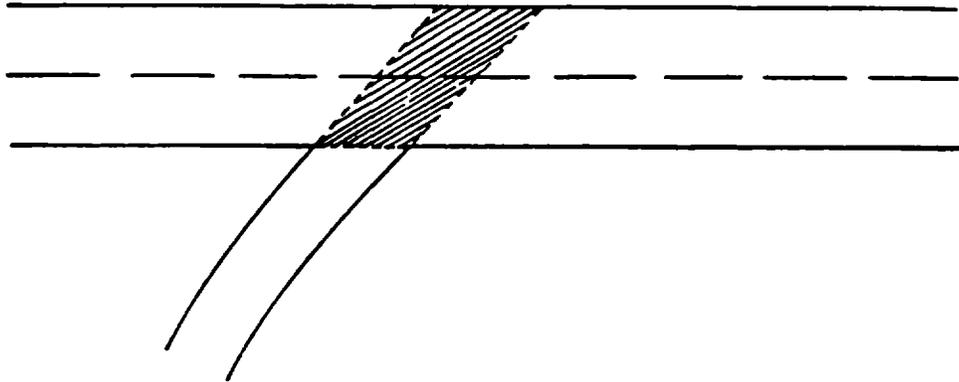
The table on the next page and the two pages of diagrams which follow depict a number of exemplary accidents along with the appropriate codes for five accident variables.

Situation	A22 TA-1 Class Fed	Non Fed	A24 Relation to Junction Non-junction	Three leg	Four leg	Inter-change access	Driveway alley access	Entrance/ exit ramp	Railroad Crossing	A26 Number of Lanes Number	A27 Trafficway Division Divided	Undivided	A36 Traffic Controls Yes	No	Maybe
A	✓				✓					6		✓		✓	
B	✓									6		✓		✓	
C	✓	✓	✓*				✓			6		✓		✓	
D	✓						✓			6		✓		✓	
E					N O T A N A S S A C C I D E N T										
F	✓		✓*							6		✓		✓	
G		✓			✓					2		✓		✓	
H	✓				✓					6		✓	✓		
I		✓	✓*							6		✓		✓	
J		✓	✓*							3		✓		✓	
K		✓	✓							1		✓		✓	
L		✓	✓*				✓			2		✓		✓	
M		✓	✓*				✓			2		✓			✓
N		✓	✓*							1		✓		✓	
O		✓	✓*							2		✓			✓
P		✓		✓					✓	2		✓	✓		
Q		✓	✓*					✓		2		✓	✓		
R		✓	✓*							2		✓			✓
S		✓	✓*							4		✓			✓
T	✓	✓								2		✓		✓	
U	✓	✓				✓				2		✓		✓	
V	✓			✓						1		✓	✓		
W	✓									2		✓		✓	
X	✓					✓				2		✓		✓	
Y	✓					✓				2	✓			✓	
Z	✓					✓				3	✓			✓	

*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 t Junction) would be coded as "05" (Intersection related) rather than "01" (Non-juncti n), and A36 (Junction Traffic C ntrols) would be coded, given their existence, on the basis of the applicable code rather than "00" (No controls).

Yield Channel

Stop

Federal Undivided

Shopping Center

Gas Station

Zone Center

Federal Undivided

(Railroad Crossing)

(Railroad Crossing)

Pedestrian

Stop

Stop

Stop

Stop

One Way Federal

One Way Federal

Alley

Alley

Alley

8' 8'

A B C D E F G H I J K L M N O P Q R S

T   U

W   X

V

Y

Z

30 Meters

Stop

Yield

Yield

Ramp

Federal Divided
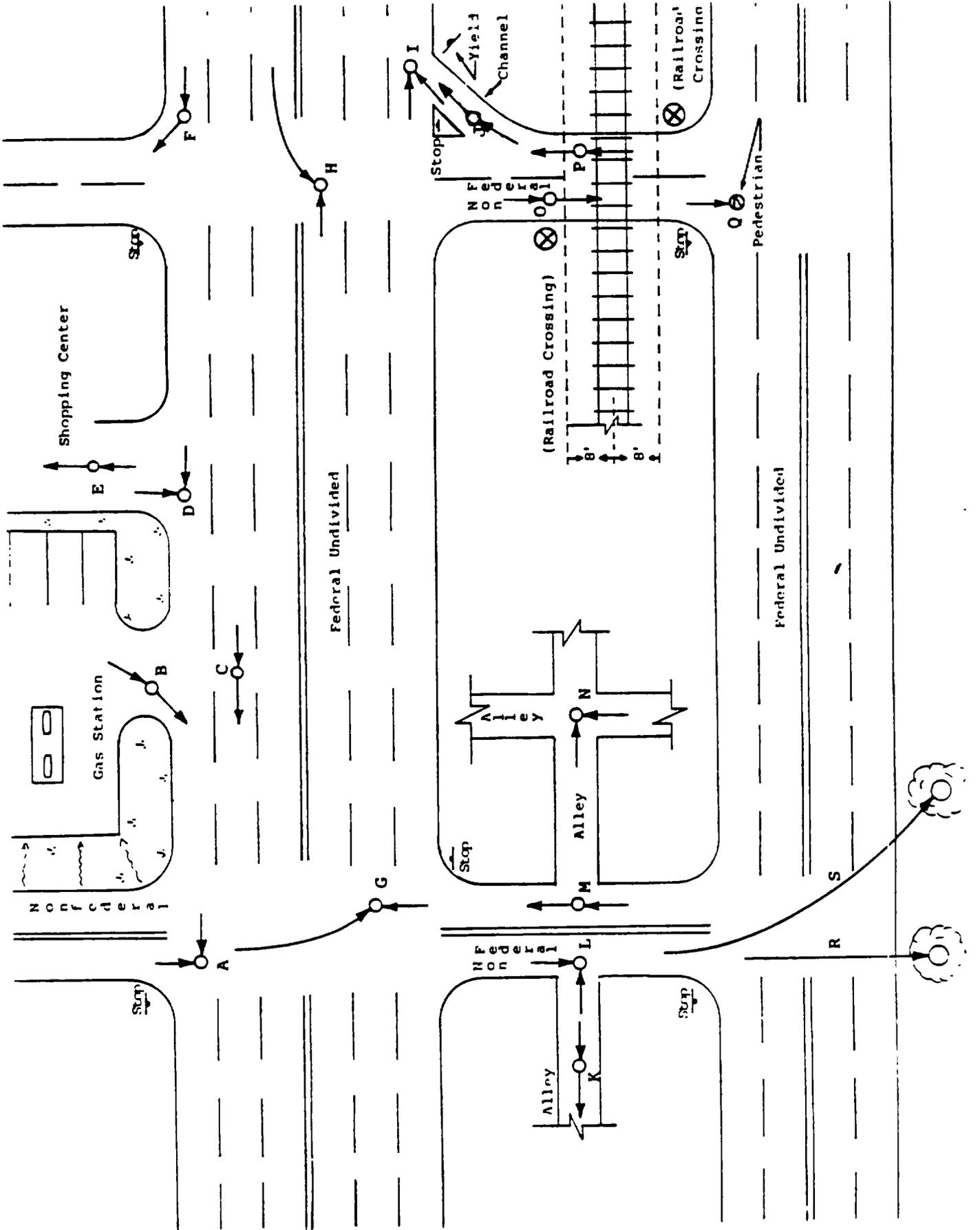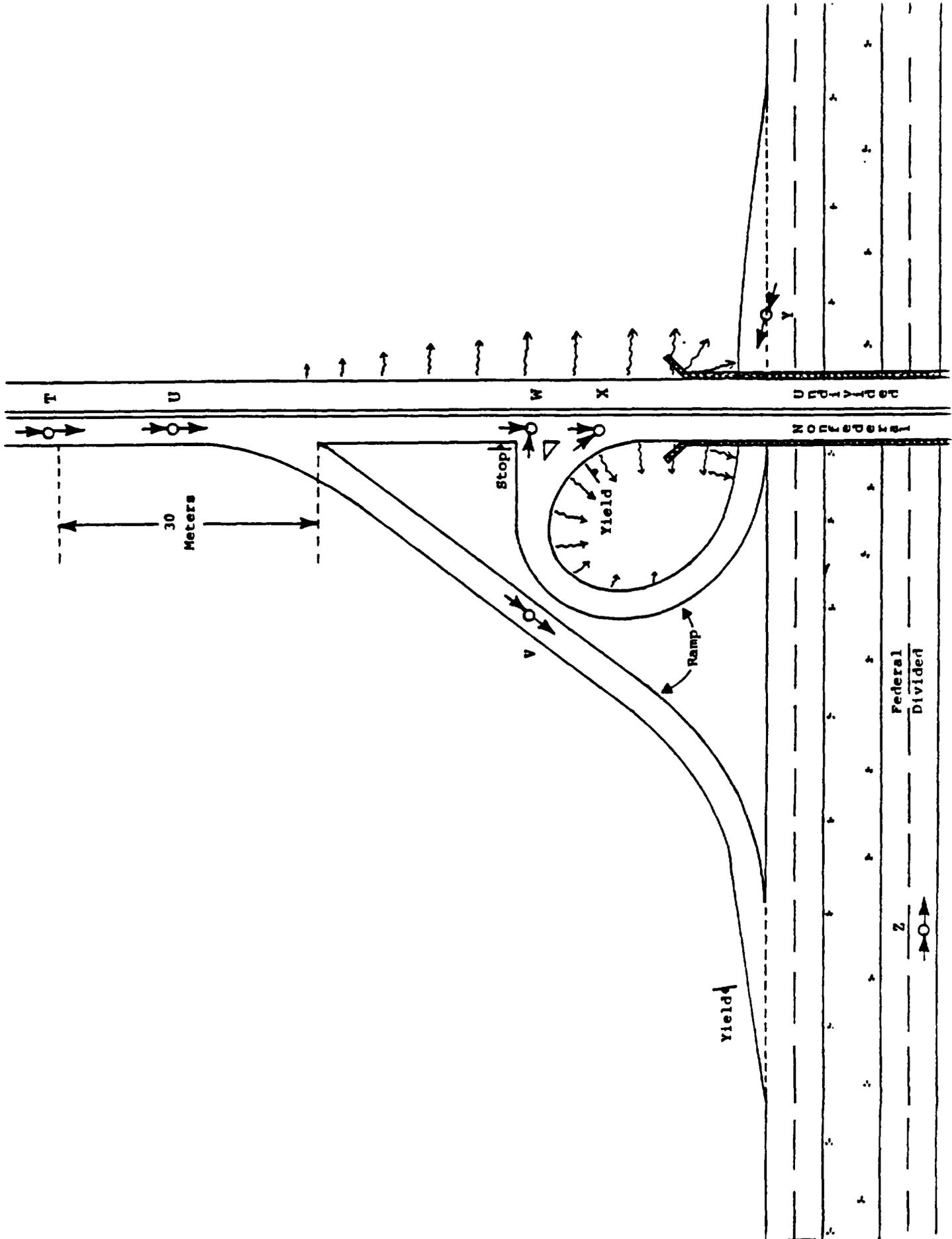
Variable Name: School Bus Related

Format: 1 column - numeric   Beginning
                                                      Column   46

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

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

Variable Name: Number of Travel Lanes

Format: 1 column - numeric   Beginning
                                                     Column   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 road-
    ways, report the number of lanes in accordance with the accident level versus
    traffic unit level environmental data discussion which preceded variabl A22,
    TA-1 Class.

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

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

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

    The number of lanes counted includes any which are narrowed or rendered unus-
    able by restrictions of the right-of-way cited in variables A39 (Restriction
    of Roadway at Scene) or A40 (Additional Restriction of Roadway at Scene).

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

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

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

If the vehicle was on an entrance or exit ramp (A24, Relation to Junction, code "08"), code the number of lanes for that roadway section (also see A27, Trafficway Division and Median Type, remarks).

If crossover ("10") 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 the junction of a crossover and a roadway, code the number of roadway lanes; (2) in the crossover, code the highest number of lanes associated with a roadway from which a motor vehicle involved in the first harmful event entered the crossover.

Variable Name: Trafficway Division and Median Type

Format: 1 column - numeric   Beginning
                                                               Column   48

Element Values:

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

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

Remarks:

   The attribute is determined from the same roadway which was used to determine
   the Number of Travel Lanes (A26). 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 locati n f the
   first harmful event, refer to point "1" in the accident level versus traffic
   unit level environmental data discussion, following A21, Land Use.)

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

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

   Entrance and exit ramps separated from the primary roadway [i.e., the one
   used for TA-1 Class (A22) purposes] are not considered divided. These are
   unique roadways; however, two ramps existing together but separated by a bar-
   rier, should be coded as divided.

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

Variable Name: Access Control

Format: 1 column - numeric   Beginning
                                                                    Column   49

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 (A26). It is associated with the location of the
     first harmful event. However, if the roadway is an entrance or exit ramp,
     ANSI (D16.1-1976, section 3.7.4.3, page 27) requires that the ramp be coded
     in accordance with the roadway of the higher (lower numerically) TA-1 Class
     (A22) which it connects. Therefore, determine the value for this variable at
     the general area where the ramp connects with the trafficway of highest TA-1
     classification.

     The investigator selects the descriptor which identifies the environment at
     the crash site. (NOTE: If uncertainty exists concerning the location of the
     first harmful event, refer to point "1" in the accident level versus traffic
     unit level environmental data discussion, following A21, Land Use.)

     Code "1" (Full) refers to those situations where the authority to control ac-
     cess 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, A26. 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 ac-
     cess limiting can be found, then code "3". If a decision cannot be made,
     code "9".

Variable Name: Direction of Travel Flow

Format: 1 column -; numeric   Beginning
                                                               Column   50

Element Values:

   1   One way
   2   Two way
   9   Unknown

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

Remarks:

   The attribute is determined from the same roadway which was used to determine
   the Number of Travel Lanes (A26). It is associated with the location f the
   first harmful event.

   The investigator selects the descriptor which identifies the environment at
   the crash site. (NOTE: If uncertainty exists concerning the location f the
   first harmful event, refer to point "1" in the accident level versus traffic
   unit level environmental data discussion following A21, Land Use.)

Variable Name: Interchange Geometry

Format: 1 column - numeric   Beginning
                                                 Column   51

Element Values:

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

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

Remarks:

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

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

    Definitions for codes "1" through "7" were taken from the Transportation and
    Traffic Engineering Handbook (1976), written by the Institute of Transporta-
    tion 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 high-
    way. Shown below are regular diamond, diamond with "slip" ramps to frontage
    road, and "split diamond" interchanges.
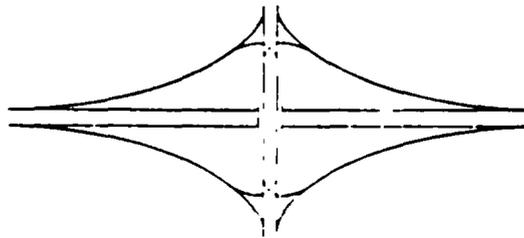
                                                 Regular
                                                 Diamond
                                                 interchange

(a)

Variable Name: Interchange Geometry (cont'd.)

Diamond with
slip ramp

(b)

Split Diamond

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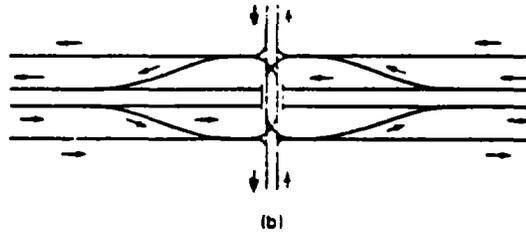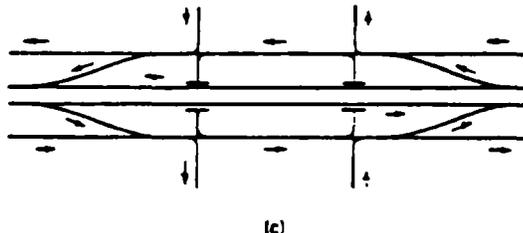
A partial diamond (code "2") is a four-leg interchange that basically fits the diamond configuration but lacks the existence of a single, one-way ramp in at least one quadrant.

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.

(a)

(b)

(c)
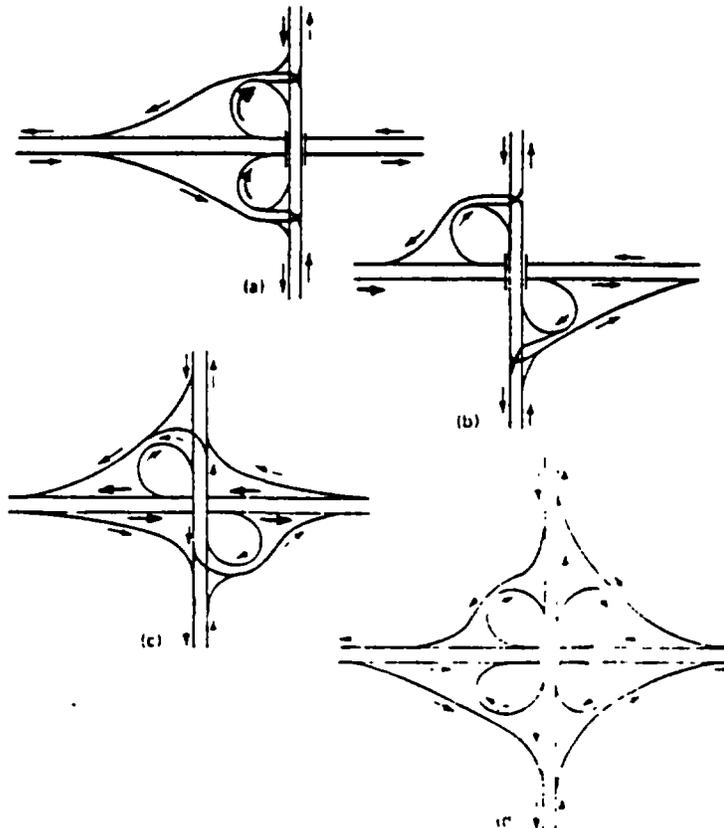
Variable Name: Interchange Geometry (cont'd.)

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

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.)

T

(e)

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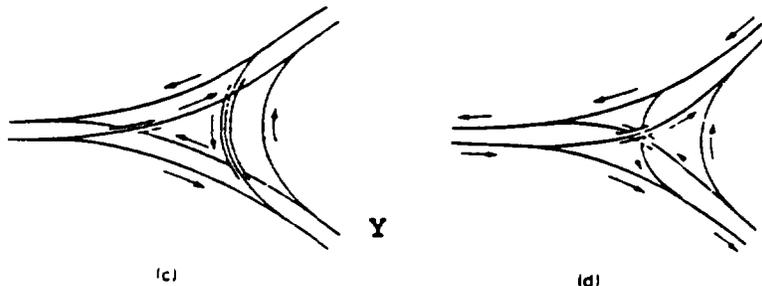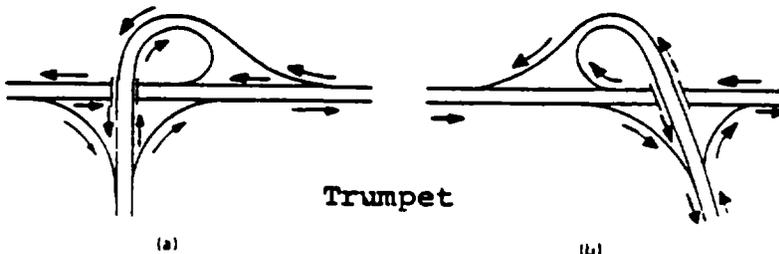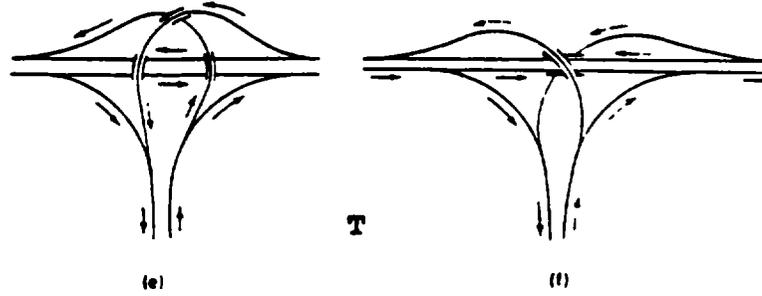
A directional (code "6") interchange is one having more than on highway grade separation with direct or semidirect connections for the major left turning movements. Four of the most common types are shown below. Patterns (a), (b), and (d) show complete directional patterns. Example (c) is a partial directional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

4 level structure

(a)

(b)

(c)

3 level structure

3 level structure

(d)
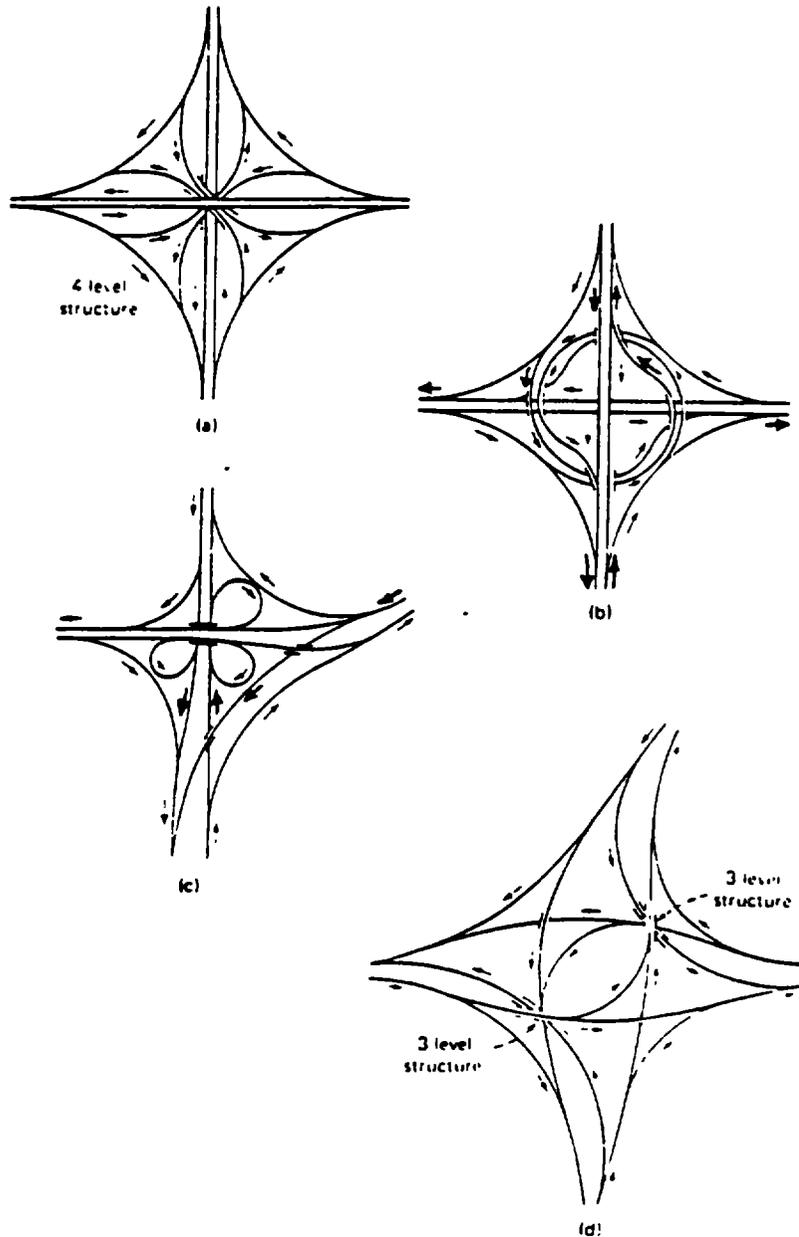
Variable Name: Interchange Geometry (cont'd.)

A rotary (code "7") intersection is a specialized form of at-grade intersection. It is one through which traffic passes by entering and leaving a on - way roadway connecting all intersection approach legs and running continuously around a central island. Rotary intersections are commonly called traffic circles, but proper design can result in central islands of various rounded shapes. An example of a rotary intersection is shown below.
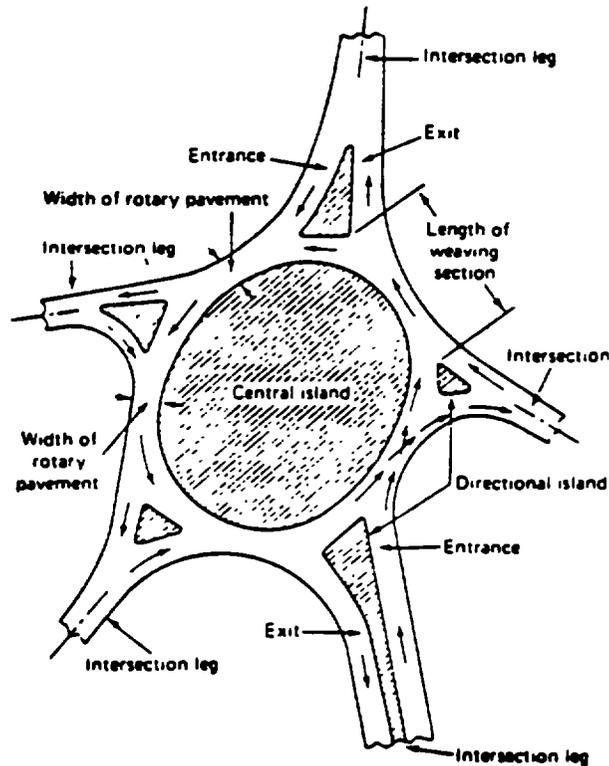
Use other (code "8") for any interchange design that does not fit in codes "1" through "6" above.

Variable Name: Shoulder Presence

Format: 1 column - numeric   Beginning
                                                      Column   52

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 determin
    the Number of Travel Lanes (A26). 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 A21, Land Use.)

    Consider the same lanes which were used to determine the Number of Travel
    Lanes (A26), and report the presence of shoulders for those same lan s at,
    and lateral to, the location of the first harmful event, unless at a junc-
    tion. In the case of a first harmful event located within a junction, iden-
    tify the appropriate roadway using the criteria under A26, 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).

    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 en-
    tire width of the vehicle under consideration does not have to fit n the
    contiguous area to qualify the area as a shoulder. The area is a shoulder if
    it is contiguous to the roadway, provides lateral support to the roadway, and
    is two feet or greater in width. [Note: A separation of opposing lanes
    which does not constitute a median cannot constitute a shoulder. If the
    location of the First Harmful Event (A11) occurs in this separation, th n for
    A13, Relation to Roadway, code "1" (On roadway).]

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

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

Variable Name: Roadway Alignment

Format: 1 column - numeric   Beginning
                                                          Column   53

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 (A26). It is associated with the location f 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 A21, 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:
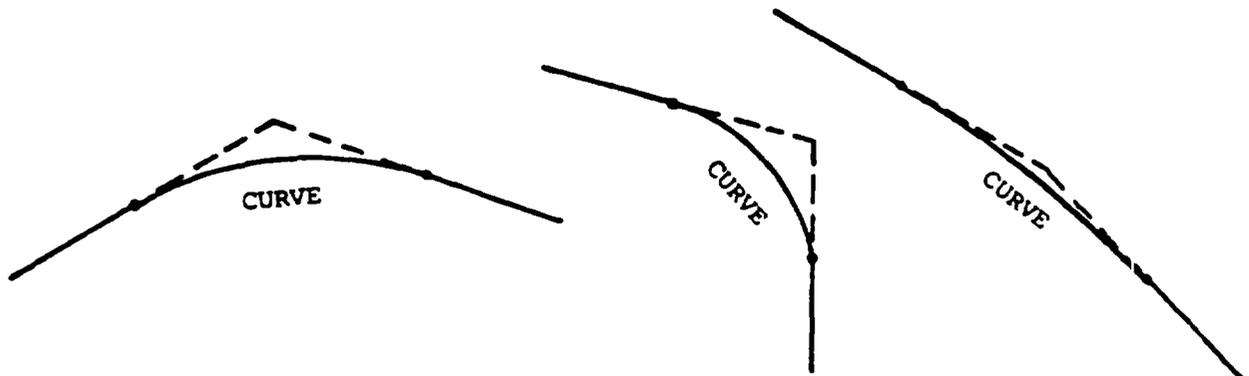
     Any perceptually-determined curvature between two tangent sections of a road-
     way constitutes a curve. It is not necessary to quantify the degree of curv-
     ature.

Variable Name: Roadway Profile

Format: 1 column - numeric

Beginning
Column   54

Element Values:

   1   Level
   2   Grade
   3   Hillcrest
   4   Sag
   9   Unknown

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

Remarks:

The attribute is determined from the same roadway which was used to determine
the Number of Travel Lanes (A26). 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 A21, Land Use.)

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

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

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

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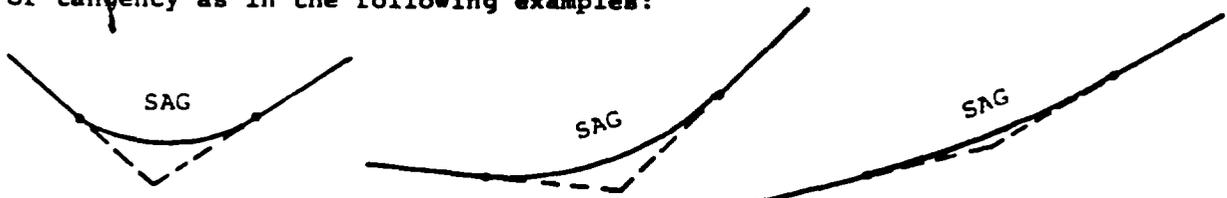
Variable Name: Roadway Surface Type

Format: 1 column - numeric   Beginning
                                                             Column   55

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 (A26). 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 A21, Land Use.)

.

Variable Name: Roadway Surface Condition

Format: 1 column - numeric   Beginning
                                                      Column   56

Element Values:

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

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

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 (A26) and report the surface condition for those same lanes.

    It is possible for different surface conditions to exist when multiple road-
    ways are involved.   Furthermore, different surface conditions may exist on
    the same roadway (e.g., intermittent wet and dry sections on the same road-
    way).   The investigator should consider, but not necessarily be restrict d
    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 representa-
    tive of the surface condition for those lanes.

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

Variable Name: Traffic Controls

Format: 2 columns - numeric

Beginning
Column   57

Element Values:

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

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

Remarks:

    The attribute is determined from the same roadway which was used to determine
    the Number of Travel Lanes (A26). It is associated with the locati n 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 A21, Land Use.)

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

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

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

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

    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 tim of
    the accident should be coded "00" (No controls). A traffic control that has

Variable Name: Traffic Controls (cont'd.)

just been installed and not yet activated should also be coded "00". However, a traffic control that is out (e.g., due to a power failure) should be coded "09", unless a temporary control [e.g., stop sign ("03"), police fficer ("98"), etc.] has been inserted, in which case the temporary control should be coded.

The investigator should consider the intent of this question. If at the time of the accident there was no intent to control vehicle traffic, then code "00" (No controls); otherwise, code the appropriate value.

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

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

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

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

Codes "05" through "07" should only be used when the first harmful event occurs in the junction of a roadway and a railroad bed [i.e., A24, Relati n to Junction, equals "09" (Railroad grade crossing)]. If A24 equals "09", then codes "00", "05", "06", "07", or "09" must be used.

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

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

If a school guard, police officer, or other officially-designated person controls both pedestrian and vehicular traffic, code "98" [Other (traffic control)]. This includes statutory controls at junctions which are otherwise not physically controlled. For example, state law requires that when two drivers meet at an uncontrolled intersecti n, the one on the right has the right- f- way.

Variable Name: Traffic Controls (cont'd.)

If variable A24, Relation to Junction, is coded "05" (Intersection related), then code the traffic control that was applicable for the roadway chosen under variable A26, Number of Travel Lanes. The reported relation to the intersection need not have been due to the presence of a control (see A24, code "05").

Remember, there are no attributes on variable A24, Relation to Junction, entitled "driveway, alley access-related", "railroad grade crossing-related", or "crossover-related". If non-junction ("01") is coded for variable A24, Relation to Junction, then no controls ("00") should be coded on this variable unless: (1) the school zone sign (code "08") criteria are met, (2) the pedestrian signal (code "10") is used, or (3) an applicable other (code "98") traffic control is available.

If the lanes which were used to determine the Number of Travel Lanes (A26) have two or more controls, select one of the values as follows:

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

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

If the intersection is channelized and not divided, and controlled differently on the channel than on the through lanes (e.g., signal and yield sign), report the traffic controls depending on whether the roadway (A26, Number of Travel Lanes) was chosen based on its through lanes or its channelized lanes.

Variable Name: Accident Occurrence in School Zone

Format: 1 column - numeric   Beginning
                                                          Column   59

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 (A26). It is associated with the location f the
   first harmful event.

   The investigator selects the descriptor which identifies the environment at
   the crash site. (NOTE: If uncertainty exists concerning the locati n of the
   first harmful event, refer to point "1" in the accident level versus traffic
   unit level environmental data discussion, following A21, 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   60

Element Values:

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

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

Remarks:

    The attribute is determined from the same roadway which was used to determine
    the Number of Travel Lanes (A26). 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 A21, Land Use.)

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

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

    If no speed limit sign is posted within a "reasonable" distance from the loca-
    tion of the first harmful event along the approach leg of the vehicle for
    which A26 (Number of Travel Lanes) was selected, the investigator should ref-
    erence 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 sp ed
    within or near a construction zone, then code the indicated reduced limit.

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

Variable Name: Restriction of Roadway at Scene

Format: 1 column - numeric   Beginning
                                                         Column   62

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 <u>not</u> restricted to the location of the first
   harmful event. The intent of this variable is to identify pre-crash condi-
   tions 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 fr m
   the police report, driver interviews, witnesses, or scene investigati n.
   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 (A40, Additional Restriction of Roadway at Scene).

   Code "1" (Narrow bridge) refers to a bridge which satisfies <u>any</u> part f 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 f 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, re-
   pair, or construction activity that has temporarily closed one of the road-
   ways. The segment begins where the roadway associat d with the first harm-
   ful 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 re-
duces 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 ve-
hicles in the routine process of pulling into or out of parking lanes which
very temporarily narrow or restrict the roadway.

These variables (A39 and A40) 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   63

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
   A39, Restriction of Roadway at Scene; therefore, code "0" for this variable
   (A40).

   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 (A39, 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 ini-
   tial restriction will have been coded under variable A39 (Restriction of Road-
   way at Scene), while the remaining ones will be coded as "5" for this variable
   (A40).

   If A39, Restriction of Roadway at Scene, is unknown ("9"), then unknown ("9")
   should be coded for this variable as well.

Variable Name: SS1 - Side Intrusion

Format: 1 column - numeric   Beginning
                                                          Column   64

Element Values:

    Blank - not in effect
    0   No
    1   Yes

Source: Special study procedures.

Remarks:

    Code "1" (Yes) means there is one or more side intrusion special study forms
    associated with this accident (Note: This does not mean there has to be side
    intrusion).

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

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

Variable Name: SS2 - Steering Column

Format: 1 column - numeric   Beginning
                                                      Column   65

Element Values:

   Blank - not in effect
   0 No
   1 Yes

Source: Special study procedures.

Remarks:

   Code "1" (Yes) means there is one or more steering column special study f rms
   associated with this accident.

   Code "0" (No) means there are no steering column special study forms associ-
   ated with this accident.

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

Variable Name: SS3 - Roof Intrusion

Format: 1 column - numeric   Beginning
                                                         Column   66

Element Values:

   Blank - not in effect
   0 No
   1 Yes

Source: Special study procedures.

Remarks:

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

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

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

Variable Name: SS4 - Motorcycle

Format: 1 column - numeric   Beginning
                                                      Column   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 motorcycle special study forms asso-
    ciated with this accident.

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

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

Variable Name: SS5 - Truck Underride

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 truck underride special study forms
   associated with this accident.

   Code "0" (No) means there are no truck underride special study forms associ-
   ated with this accident.

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

Variable Name: SS6

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 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.

Variable Name: SS7

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 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.

Variable Name: SS8

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 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.

Variable Name: SS9

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 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.

Variable Name: SS10

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.

Variable Name: Investigator I.D. Number

Format: 1 column - numeric

Beginning
Column   10

Element Values:

   Range: 1 through 9

Source: Zone center

Remarks:

   The person who was primarily responsible for the completion of this Pedestrian & 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:

   Range: 01 through 26

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 r non-
   motorists 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 con-
   trol and therefore is the driver with Pedestrian or Nonmotorist's Number
   (P07) "01"; the other pedalcyclist in the rear is the passenger with P des-
   trian or Nonmotorist's Number (P07) "02".

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

   This variable is a mandatory variable and cannot be changed.

Variable Name: Pedestrian or Nonmotorist's Type

Format: 1 column - numeric   Beginning
                                                      Column   13

Element Values:

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

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

Remarks:

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

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

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

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

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

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

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

Variable Name: Pedestrian or Nonmotorist's Age

Format: 2 columns - numeric   Beginning
                                                     Column   14

Element Values:

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

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

Remarks:

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

Variable Name: Pedestrian 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:

    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.

Variable Name: Pedestrian or Nonmotorist's Weight

Format: 3 columns - numeric   Beginning
                                                      Column   19

Element Values:

   Range: 005 through 400 Pounds
   999 Unknown

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

Remarks:

   Code actual weight to the nearest pound.

Variable Name: Months Cycling Experience

Format: 2 columns - numeric   Beginning
                                                       Column   22

Element Values:

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

Source: Interviewee

Remarks:

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

Variable Name: Pedestrian or Nonmotorist's Location

Format: 2 columns - numeric   Beginning
                                                           Column   24

Element Values:

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

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

Remarks:

    Intersection (codes "01" through "04") is defined for the purpose f this
    variable as the area formed by the junction of two trafficways. This defin-
    ition is broader than the definition used for Relation to Junction (A24)
    which defines an intersection as that area formed by the prolongation of the
    lateral curb lines or lateral boundary lines of the roadways. Intersection
    as used in this variable includes the crosswalks ("01") and sidewalks or
    median islands ("02") which are within the trafficway but outside the road
    or roadway.

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

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

    Code "07" (Nonintersection - bike path) refers to any officially designated
    path or lane (on or off the road but not within an intersection) on which
    pedalcyclists have preference.

    Code "09" (Nonintersection - outside trafficway) should be interpreted as
    m aning "off road" since the pedestrian or nonmotorist could have been
    struck on the "roadside". R all t .at the road encompasses the roadway and
    that the trafficway encompa   us the road and the roadside.

Variable Name: Treatment - Mortality

Format: 1 column - numeric   Beginning
                                                     Column 26

Element Values:

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

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

Remarks:

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

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

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

   Code "3" (Transported and released) when the person went directly from the
   accident scene to a treatment facility (hospital, clinic, doctor's ffice,
   etc.). The means of transportation is not a consideration.

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

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

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

Variable Name: Hospital Stay

Format: 2 columns - numeric   Beginning
                                                         Column   27

Element Values:

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

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

Remarks:

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

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

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

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

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

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

Variable Name: Working Days Lost

Format: 2 columns - numeric   Beginning
                                                       Column   29

Element Values:

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

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

Remarks:

    Report the actual number of "work" days lost due to the accident by an em-
    ployed person or a full-time college student. Children, adolescents, reti-
    rees, 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 th 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 s
    scheduled. Do not count double shifts or days at time and one-half pay,
    etc., as more than one day.

    If a person's not employed, not a full-time college student, or works less
    than four hours per day, then code "00" (No working days lost).

    If a person is fatal at scene, pronounced dead on arrival, or survival does
    not extend beyond the emergency room code "32" (Fatally injured).

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

    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 assist-
    ance).

    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"
    should be used.

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 "02"-"06"), will have
    sufficient familiarity with the pedestrian or nonmotorist to answer m st
    questions relative to this person's demographic characteristics, treatment-
    mortality, hospitalization, working days lost, and extent of injuries. Con-
    versely, individuals whose association with this person is limited to and a
    result of the accident, are presumed to have an insufficient basis for
    answering the preceding questions.

NASS Injury Coding Conventions for the Occupant Injury Classification

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

1. The first four rules below are given in the NASS field forms on how to select injuries for coding and are included here for the convenience of the coder.

   a. If there are six or less injuries listed in the O.I.C. reduction section, code all of the injuries ordered by Source of Data (1st—autopsy, 2nd—hospital/medical, 3rd—treating physician, or 4th—interviewee and other sources) and by AIS severity within source.

   Order by source

   b. If there are more than six injuries, order the injuries by source and by AIS severity within source. Code this ordering, injury-by-injury. If a group of ordered injuries has the same source, the same AIS, and the group includes at least the sixth and seventh injuries in the ordering, then a choice must be made as to which injury or injuries to code.

   Then by severity within source

   c. Choose the injury or injuries that will enable the maximum number of different ISS body regions to be represented in the coded data. If no new ISS body region can be added then simply code in accordance with the original ordering.

   Maximize ISS within that source

   d. If the occupant has less than six injuries, then the number of rows required to be completed is equal to the number of injuries plus one [i.e., no injuries requires one row (e.g., columns 41 to 48, Occupant Form)]. In the additional row "not injured" will be coded for all variables including AIS severity.

   If < 6 rows, close out next row with zeros

   e. Other points to consider if you must make a choice: try to associate contact points with individual injuries. List individual injured areas if possible, instead of lumping them together into a code of X, Y, or O. For instance, if there are lacerations to both thigh and shin, code both TLLI-1 and LLLI-1 instead of YLLI-1.

   Individualize injuries

2. If an AIS is determined to be one of two consecutive numbers, but a clear indication cannot be made after reviewing all the information provided, assign the lower AIS.

   Uncertainty Rule #1—code lower

3. The coder should take care not to code the same injury twice simply because information concerning it is available from two different sources. For example, if the interview is used in gathering data, only the injuries not already coded based upon medical records should be coded.

   Don't double count

4. Cervical spine strain may, in some cases, still be referred to as "whiplash". "Whiplash" is not a medical term and is not used in AIS-80. If an injury is described as "whiplash", it should be coded as cervical spine acute strain, no fracture or dislocation, NPTM-1.

   "Whiplash" NPTM-1

5. Neck injuries may sometimes be described as "strains" and sometimes as "sprains". For NASS purposes, neck injuries should be coded as "strains" (see Rule #16 below).

   No sprains to neck

6. All internal structures of the mouth, with the exception of the teeth, are coded as part of the digestive system (D). Teeth are coded as skeletal (S).

   Mouth - teeth = D

7. Body region code 0 (wh le body) sh uld be used only if 50% or more of the wh le body surface (0) is affected. An exception is made for burns affecting more than one body region (see Rule #13 below). Aspect code W (whole region) is used only if 50% or more of the body region is affected.

50% rules

8. When there is uncertainty about the location of minor multiple abrasions, contusions and lacerations to the body surface, they should be aggregated, regardless of their location(s), and the code OW__-1 should be used.

Uncertainty Rule #2—whole body

9. An AIS-6 should be used only for injuries specifically coded AIS-6 in the Abbreviated Injury Scale and not because the victim died.

Watch your "6"s

10. Burn, flying glass, and inertial force injuries are assigned a noncontact (90) code for injury source (see Rule #18 for further explanation of non-contact injuries).

Code 90 injuries

11. The AIS codes individual injuries only. Injuries to bilateral body parts are now coded as two separate injuries (e.g., fractured left tibia and fractured right femur). When the term, bilateral is used to describe hemothorax or pneumothorax with certain chest injuries, it should be emphasized that the results, which are not coded, are present bilaterally, but that the injury per se is still a single injury.

Bilateral limited

12. If the medical or interview information indicates a contused knee, elbow, wrist, ankle, etc., and does not specifically state whether the contusion is to the bone or joint, code the injury as integumentary, __CI-1. If the contusion is known to be to the bone, use __CS-_; if to the joint, use __CJ-_. Example: contused knee, K.CI-1.

Uncertainty Rule #3—most superficial system if lesion unknown

13. Burn injuries should be coded using the following guidelines:

   a. If only one body region is burned, use that body region code (e.g., ARBI-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., XRBI-2, burned right whole arm 2°).

Burn injuries and the rule of nines

   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 on page III-4 of your NASS Injury Coding Manual.

14. The lesion codes P (pain), X (asphyxia), and H (hemorrhage) are NO LONGER VALID. They represent results of injuries and not injuries, per se, and therefore, are not coded. The AIS-80 revision is designed to code the injury itself (e.g., MIUW-3, retroperitoneum injury involving hemorrhage).

Pain, asphyxia and hemorrhage not valid

15. In NASS, "not injured" is defined as AIS=0. Code "0" for all OIC variables, including AIS severity, for cases in which there are no injuries, or as the last injury listing for occupants sustaining less than six injuries.

Closeout or no injury = 0

16. The following definitions have been used traditionally to differentiate "sprain" and "strain" injuries:

Strain versus sprain

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

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

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

17. Lesions to the forehead are coded "face superior," or FS_ _-_ in the NASS Injury Coding Manual.

Coding the fore-head

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

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

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

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

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

(1) twisting or stretching of muscles in the arm, leg, back, etc. with no associated contact identifiable (most often these injuries will be minor muscle strain injuries);

Injury sources

(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 defintions.

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
Example 1		
Neck dislocation NPDV-3	a. head strikes windshield	a. (01) windshield
	b. forehead hits roof or convertible top	b. (34) roof or convertible top
	c. head strikes steering assembly	c. (03) steering assembly
	d. back hits seatback, no head restraint, head rolls back over seat	d. (90) noncontact injury source

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

Example 2

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

Example 3

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

Example 4

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

Example 5

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

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

Single substantiated brain lesion

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P26
P33
P40
P47
P54

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

Format: 1 column - alphanumeric   Beginning
                                                               Column   32
                                                                         40
                                                                         48
                                                                         56
                                                                         64
                                                                         72

Element Values:

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

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

Remarks:

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

For coding the following situations, the correct procedure is:

Not injured: 0   0   0   0   0   0   0   0
                   ─── ─── ─── ─── ─── ─── ─── ───
                   32 33 34 35 36 37 38 39

P19
P26
P33
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P47
P54

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.)

Injured, severity $\underline{U}$ $\underline{U}$ $\underline{U}$ $\underline{U}$ $\underline{7}$ $\underline{9}$ $\underline{7}$ $\underline{1,2,3,4,5,6, \text{ or } 7}$
unknown: 32 33 34 35 36 37 38   39

                     $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$
                     40 41 42 43 44 45 46 47

Unknown if injured: $\underline{9}$ $\underline{9}$ $\underline{9}$ $\underline{9}$ $\underline{9}$ $\underline{9}$ $\underline{9}$ $\underline{9}$
                     32 33 34 35 36 37 38 39

                     $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$ $\underline{0}$
                     40 41 42 43 44 45 46 47

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

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

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P34
P41
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P55

Variable Name: 1st O.I.C. - Aspect of Injury
                 2nd O.I.C. - Aspect of Injury
                 3rd O.I.C. - Aspect of Injury
                 4th O.I.C. - Aspect of Injury
                 5th O.I.C. - Aspect of Injury
                 6th O.I.C. - Aspect of Injury

Format: 1 column - alphanumeric   Beginning
                                                           Column   33
                                                                      41
                                                                      49
                                                                      57
                                                                      55
                                                                      73

Element Values:

    R   Right   S   Superior - upper
    L   Left   I   Inferior - lower
    B   Bilateral   W   Whole region
    C   Central   U   Injured, unknown aspect
    A   Anterior - front   0   Not injured
    P   Posterior - back   9   Unknown if injured

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

Remarks:

    The NASS Injury Coding Manual contains a listing of most injuries. Deter-
    mine from the manual, for each injury, the aspect of the injury and record
    it on the form.

                                                                                    P21
                                                                                    P28
                                                                                    P35
                                                                                    P42
                                                                                    P49
                                                                                    P56

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

Format: 1 column - alphanumeric   Beginning
                                                           Column   34
                                                                      42
                                                                      50
                                                                      58
                                                                      66
                                                                      74

Element Values:

     A   Abrasion   P   Perforation, puncture
     B   Burn   R   Rupture
     C   Contusion   S   Sprain
     D   Dislocation   T   Strain
     E   Total severence   V   Avulsion
     F   Fracture   Z   Fracture and dislocation
     G   Detachment, separation   O   Other
     X   Concussion   U   Injured, unknown lesion
     L   Laceration   0   Not injured
     M   Amputation   9   Unknown if injured
     N   Crushing

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

Remarks:

    The NASS Injury Coding Manual contains a listing of most injuries. Deter-
    mine from the manual, for each injury, its lesion and record it on the
    form.

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
                                                                   43
                                                                   51
                                                                   59
                                                                   67
                                                                   75

Element Values:

A Arteries - veins   N Nervous system
B Brain   O Eye
C Spinal cord   P Pulmonary - lungs
D Digestive   Q Spleen
E Ears   R Respiratory
G Urogenital   S Skeletal
H Heart   T Thyroid, other endocrine gland
I Integumentary   V Vertebrae
J Joints   W All systems in region
K Kidneys   U Injured, unknown system
L Liver   0 Not injured
M Muscles   9 Unknown if injured

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

Remarks:

  The NASS Injury Coding Manual contains a listing of most injuries. Deter-
mine from the manual, for each injury, its system/organ and record it on
the form.

P23
P30
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P44
P51
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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
                                                                    44
                                                                    52
                                                                    60
                                                                    68
                                                                    76

Element Values:

    0 Not injured
    1 Minor injury
    2 Moderate injury
    3 Severe injury
    4 Serious injury
    5 Critical injury
    6 Maximum (untreatable)
    7 Injured, unknown severity
    9 Unknown if injured

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

Remarks:

    The NASS Injury Coding Manual contains a listing of most injuries. Deter-
    mine from the manual, for each injury, its A.I.S. value and record it on the
    form.

                                                                                    P24
                                                                                    P31
                                                                                    P38
                                                                                    P45
                                                                                    P52
                                                                                    P59

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

Format: 2 columns- numeric   Beginning
                                                                    Column   37
                                                                              45
                                                                              53
                                                                              61
                                                                              69
                                                                              77

Element Values:

    00 Not injured
    Front
    01 Windshield
    02 Mirror
    03 Steering assembly, including transmission selector lever when column
        mounted
    04 Add-on equipment (e.g., CB, tape deck, air conditioner)
    05 Instrument panel and below, excluding foot controls and parking brake
    09 Other front object

    Side
    11 Side interior surface, excluding hardware or armrests
    12 Side hardware or armrests
    13 Roof pillar supports
    14 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

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

Floor
41　Floor
42　Floor or console mounted transmission lever, including console
43　Parking brake handle
44　Foot controls including parking brake

Rear
51　Backlight (rear window)
52　Backlight storage rack, door, etc.
59　Other rear objects

Exterior of Nonmotorist's Vehicle
61　Hood
62　Outside hardware (e.g., outside mirror, antenna)
63　Other exterior surface or tires
69　Unknown exterior objects

Exterior of Other Motor Vehicle
71　Bumper
72　Hood edge
73　Other front of vehicle
74　Hood
75　Hood ornament
76　Windshield, roof rail, A-pillar
77　Side surface
78　Side mirrors
79　Other side protrusions
80　Rear surface
81　Undercarriage

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 vehicl　inspection and
　　　　　interviewee.

                                                                            P24
                                                                            P31
                                                                            P38
                                                                            P45
                                                                            P52
                                                                            P59

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.)

Remarks:

    Interior flying glass refers to the person being struck by glass which has
    already fractured and is airborne. This is coded as "26" (Interior loose ob-
    jects). This does not refer to a person causing glass to shatter upon their
    impacting it.

    Investigator should record only those contact mechanisms which can be docu-
    mented by some physical evidence (e.g., scuffs, hair, smudges, dents, cracks,
    etc.). Use page 3 of the Pedestrian & Nonmotorist Form to record the injury
    source evidence. For those nonmotorists who are occupants of a motor vehicle
    not in transport (P08, Pedestrian or Nonmotorist's Type equal to "05"), at-
    tach page 7 of a Vehicle Form to the Pedestrian and Nonmotorist Form and doc-
    ument any potential contact points.

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P32
P39
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P53
P60

Variable Name: 1st O.I.C. - Source of Data
                 2nd O.I.C. - Source of Data
                 3rd O.I.C. - Source of Data
                 4th O.I.C. - Source of Data
                 5th O.I.C. - Source of Data
                 6th O.I.C. - Source of Data

Format: 1 column - numeric   Beginning
                                                   Column   39
                                                            47
                                                            55
                                                            63
                                                            71
                                                            79

Element Values:

   Official   Unofficial
   1 Autopsy records with or   4 Interviewee
      without hospital/medical   5 E.M.S. personnel
      records   6 Police
   2 Hospital/medical records   7 Other source (specify)
      without autopsy records   0 Not injured
   3 Treating physician   9 Unknown if injured

Source: Element chosen

Remarks:

   Code "1" (Autopsy records with or without hospital/medical records) excludes
   records from lay, nonmedical personnel; they must be the result of an aut p-
   sy by a physician or other similarly qualified life scientist.

   Code "3" (Treating physician) refers to any physician who saw the injured
   person and who has records of that treatment.

   Code "4" (Interviewee) refers to the person who was interviewed to get the
   information on this form (not necessarily the person described on this
   form). The interviewee is defined in variable P18.

   Code "5" (E.M.S. personnel) refers to a person certified by the state as
   trained in emergency medical service techniques. Code "5" should not be
   used for ambulance attendants, police, r other personnel not trained in
   E.M.S. t chniques.

   Code "6" (Police) can be used, but only when no other source of injury in-
   formation is available. See last sentence of first paragraph on page 6,
   Pedestrian & Nonmotorist F rm.

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P32
P39
P46
P53
P60

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 "7" (Other) is used, for example, with data obtained from lay coroners.

   Code "0" (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   80

Element Values:

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

Source: Police report

Remarks:

    Code the police-reported injury severity for this pedestrian or nonmotor-
    ist.

    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 inca-
    pacitating nature are classified as "A" (code "3"), nonincapacitating-evi-
    dent 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 th ir
    severity is unknown.

    Code "6" (Died prior to accident) should only be coded if the police expli-
    citly so indicate.

Variable Name: Traffic Violation Charged Against This Pedestrian or
                 Nonmotorist

Format: 1 column - numeric   Beginning
                                                         Column   81

Element Values:

    0   No
    1   Yes (specify)
    9   Unknown

Source: Police report

Remarks:

    If the police charged this pedestrian or nonmotorist with any violation,
    then code yes ("1"). Specify the violation in the space provided, if known.

Variable Name: Alcohol Involvement

Format: 1 column - numeric   Beginning
                                                      Column   82

Element Values:

   0 No
   1 Yes (specify)

Source: Police report

Remarks:

   Find the location on the police report that indicates the investigating of-
   ficer's assessment with respect to whether or not alcohol was involved in
   this accident.

   If the police report explicitly states or implies that alcohol was involved
   then code "1" (Yes).

   Code "0" (No) in all other instances. This includes those instances where
   alcohol involvement was unknown (e.g., hit-and-run vehicle).

   Caution should be exercised by analysts. This variable allows one to subs t
   the data so as to select out pedestrians or nonmotorists who the police said
   were alcohol involved. It does not allow one the opportunity to report the
   proportion of alcohol-involved pedestrians or nonmotorists.

   The various PSUs should discuss their individual, unique police reports with
   the Zone Centers to distinguish involvement from presence of alcohol.

Variable Name: Alcohol Test Result

Format: 2 columns – numeric   Beginning
                                                      Column   83

Element Values:

   Range: 00 through 30

   Code actual reported number representing fraction of alcohol present
   (decimal implied before first digit 0.xx).
   95 Test refused
   96 None given
   97 AC test performed, results unknown
   99 Unknown

S urce: Police report, medical reports, or other official sources.

Remarks:

   A 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 un-
   known).

   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 sub-
   mitted, leave blank, circle the variable number, and update this variable
   when the results are obtained.

   If the blood alcohol concentration (BAC) was given on the police report or
   subsequently added after the case was initiated, code the reported valu .
   If the BAC was obtained from a medical report or any other official rec rd,
   code the reported value. In essence, if any BAC is obtained, code the re-
   ported value.

Variable Name: Investigator I.D. Number

Format: 1 column - numeric   Beginning
                                                             Column   10

Element Values:

   Range: 01 through 09

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:

   Range: 01 through 30

Source: Investigator determined.

Remarks:

   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. If there
   is only one vehicle in the accident, the vehicle has to be coded as vehicle
   number one. Note,. however, that if there is only one vehicle and that/ v -
   hicle was struck by a pedestrian, then vehicle number one can be a struck
   vehicle. Furthermore, in a two vehicle collision, vehicle one is the vehi-
   cle which strikes another vehicle with its front or, in a head-on collision,
   it is the vehicle on the wrong side of the road. If a third vehicle is im-
   pacted by either vehicle, it is designated vehicle three. Additional vehi-
   cles are numbered in sequence as they become involved in the accident.

   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.

   A vehicle that sets an object in motion which strikes or is struck by an-
   other motor vehicle, prior to stabilization of the object, is vehicle number
   one (even if it sustains no damage or its occupants are not injured). The
   other motor vehicle is number two.

   This variable is a mandatory variable and cannot be changed.

Variable Name: Number of Occupant Forms Submitted

Format: 2 columns - numeric   Beginning
                                                                 Column   13

Element Values:

   Range: 00 through 50

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

Remarks:

   Code only the number of occupants in this vehicle for which an Occupant Form
   was submitted.

   The value coded here should agree with the value coded on variable D08, Num-
   ber of Occupants This Motor Vehicle, unless: (1) the actual number of occu-
   pants in this vehicle is unknown (D08 equal "99"), or (2) this vehicle qual-
   ifies under the special bus rule cited in section 4.2, page 39.

   This variable is a mandatory variable and cannot be changed.

Variable Name: Vehicle Role

Format: 1 column - numeric   Beginning
                                                         Column   15

Element Values:

     0 Non-collision
     1 Striking unit
     2 Struck unit
     3 Both striking and struck
     9 Unknown

Source: Investigator determined from all available information.

Remarks:

     Code "0" (Non-collision) only when the non-collision occurred first, even
     if subsequent impacts occurred. Non-collision includes overturned (which
     includes overturning motorcycles), fire/explosion, jackknifed, or immer-
     sion. 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 stabi-
     lization 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") depend-
     ing 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 nonmotor-
     ist 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 non-
     motorist 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 vehi-
     cle which is striking and struck is located within the chain.

     A vehicle that impacts an object and sends that object into another vehi-
     cle, or another vehicle's path, is coded as "1", striking unit.

VEHICLE ROLE (V09)

OTHER VEHICLE/ OBJECT/ Pedestrian or Nonmotorist	MOTOR VEHICLE UNDER CONSIDERATION (BEING INSPECTED)					
		TRACKING (Includes Controlled Turn)			NOT TRACKING (Significant yaw and/or Rotation)	
	STATIONARY	Contacts Its Leading End[1] (Back or Front)	Contact is to Other Than its Leading End[1]	Side/End Swiping Type Contact[1]	Contacts Its Leading End and/or Side[2]	Other than its Leading End and/or Side[2] is Contacted
VEHICLE IN MOTION	STRUCK	STRIKING	STRUCK³	STRIKING	STRIKING	STRUCK
OBJECT IN MOTION	STRUCK	STRIKING	STRUCK³	STRIKING	STRIKING	STRUCK
STATIONARY VEHICLE OR OBJECT	Should Not Occur	STRIKING	STRIKING	STRIKING	STRIKING	Should Not Occur
PEDESTRIAN OR NON-MOTORIST	STRUCK	STRIKING	STRUCK³	STRIKING	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.

   EG:

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

   EG:
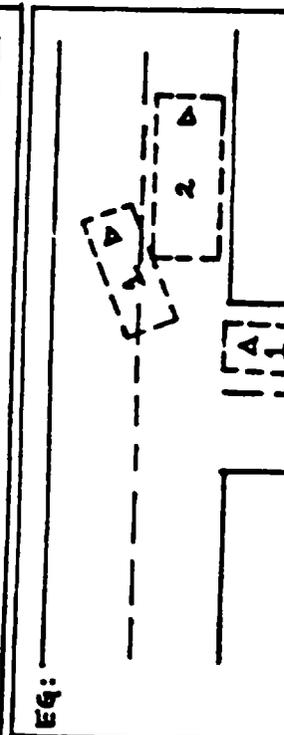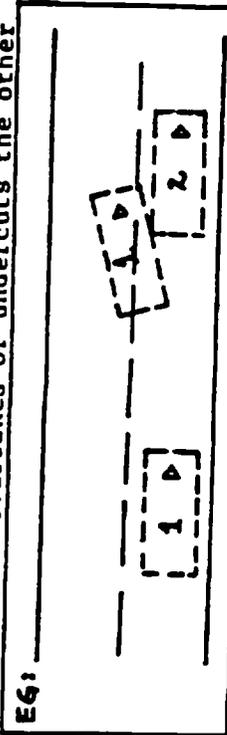
Variable Name: Manner of Leaving Scene

Format: 1 column - numeric   Beginning
                                                          Column   16

Element Values:

    1 Driven
    2 Towed - due to vehicle damage
    3 Towed - not due to vehicle damage
    4 Abandoned
    9 Unknown

Source: Investigator determined--inputs include vehicle inspection,
          interviewees, wrecker operators, police report.

Remarks:

    This refers to the disposition òf the vehicle or power unit of an art:.cu⁻
    lated combination at the accident scene.

    The source of information for selecting an element value is the investi-
    gator, based on his/her final information which may be different from the
    police report. The investigator is reminded to determine if any differ-
    ence here from the police report will affect the Final Stratification
    (A09). Strata I, J, M, and N are possibly affected as shown in the exam-
    ples as follows:

    ● Accident is stratified as "N" in the Case Number-Stratification (A02)
      and subsequent investigation revealed that a vehicle was in fact towed;
      therefore, Final Stratification (A09) is coded as "M".

    ● Accident is stratified as "I" in the Case Number-Stratification (A02)
      and subsequent investigation revealed that a vehicle was in fact not
      towed; therefore, Final Stratification (A09) is coded as "J".

    In terms of its effect on Final Stratification (A09), it makes no differ-
    ence 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 which prohibits vehicle movement under its own power.

    Code "3" (Towed - not due to vehicle damage) refers to those cases where
    the towing results from other than damage (e.g., mired vehicles, driver
    arrested, etc.).

    For J and N cases, vehicles which are disc vered later t 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 (cont'd.)

If the investigator determines that the vehicle was left at the scene and
that no arrangements were made for its removal by the police when they
departed, then code "4" (Abandoned).

Remember, if a case was originally stratified under Case Number-Stratifi-
cation (A02) as either "J" or "N", then the form entitled "Vehicle Form
For Non-Towaway Accident", is required for all vehicles in the case. This
form requires no inspection and must be used even if it is subsequently
learned that one of the involved vehicles was towed. Conversely, cases
originally stratified as other than "J" or "N" (specifically "I" or "M"
cases) require that all vehicles be inspected using the Vehicle Form.
This is true even if it is subsequently learned that none of the involved
vehicles were towed.

Variable Name: Vehicle Model Year

Format: 2 columns - numeric   Beginning
                                                                 Column   17

Element Values:

   Range: 50 through 81

   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 1981 model is to be coded as "81".

Variable Name: Vehicle Make

Format: 2 columns - numeric   Beginning
                                                        Column   19

Element Values:

01	Chevrolet	19	Volvo	63	Harley-Davidson
02	Ford	20	Audi	64	Kawasaki
03	Pontiac	21	Honda	65	Norton
04	Buick	22	Porsche	66	Suzuki
05	Plymouth	23	MG	68	Yamaha
06	Oldsmobile	24	Subaru	80	Brockway
07	Dodge	25	Jeep	81	Diamond Reo
08	Volkswagen	26	Mercedes-Benz	82	Freightliner
09	Mercury	27	Alfa Romeo	83	FWD
10	Cadillac	28	Austin	84	GMC
11	American	29	Jaguar	85	International Harvester
12	Chrysler	30	Lancia	86	Kenworth
13	Lincoln	31	Triumph	87	Mack
14	Opel	32	Saab	88	Peterbilt
15	Datsun	33	Peugeot	89	White
16	Toyota	34	Renault	97	Other
17	Mazda	35	BMW	99	Unknown
18	Fiat	62	BSA		

Alphabetical Listing of Makes

27	Alfa Romeo	83	FWD	06	Oldsmobile
11	American	84	GMC	14	Opel
20	Audi	63	Harley-Davidson	88	Peterbilt
28	Austin	21	Honda	05	Plymouth
35	BMW	85	International Harvester	33	Peugeot
80	Brockway	29	Jaguar	03	Pontiac
62	BSA	25	Jeep	22	Porsche
04	Buick	64	Kawasaki	34	Renault
10	Cadillac	86	Kenworth	32	Saab
01	Chevrolet	30	Lancia	24	Subaru
12	Chrysler	13	Lincoln	66	Suzuki
15	Datsun	87	Mack	31	Triumph
82	Diamond Reo	17	Mazda	16	Toyota
07	Dodge	26	Mercedes-Benz	08	Volkswagen
18	Fiat	09	Mercury	19	Volvo
02	Ford	23	MG	89	White
82	Freightliner	65	Norton	68	Yamaha

Variable Name: Vehicle Make (cont'd.)

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

Remarks:

     Please write the Vehicle Make of the vehicle in the available space for
     ready visual reference, even though the information is incorporated in the
     Make code.

     If the make of the vehicle is known (i.e., codes "01"-"35", "62"-"66", "68",
     or "80"-"89") but it is unknown whether or not the vehicle was a passenger
     car, or a truck or motorcycle, then code Vehicle Model (V13) as "00" (Not
     applicable).

     If the make of the vehicle is not one of the explicitly stated attributes
     (e.g., Caterpillar, Bluebird, Motobecane, etc.), then code "97" (Other), and
     code Vehicle Model (V13) as "00" (Not applicable).

     If the make of the vehicle is not known (e.g., hit-and-run vehicle), then
     code "99" (Unknown), and code Vehicle Model (V13) as "00" (Not applicable).

Variable Name: Vehicle Model

F rmat: 2 columns - numeric   Beginning
                                                 Column   21

Element Values:

Chevrolet (01)

01	Chevy II Nova	20	Camaro	39	Chevelle SS-396
02	Nova	21	Camaro LT	40	Chevelle 300
03	Chevy II 100	22	Camaro Berlinetta	41	Chevelle 300 Deluxe
04	Nova Custom	23	Camaro Sport	42	Chevelle
05	Nova Concours	24	Camaro SS	43	Chevelle Deluxe
06	Monte Carlo	25	Corvette	44	Chevelle Nomad
07	Impala	26	Corvette Sport	45	Chevelle Greenbrier
08	Impala Sport	27	Corvair 500	46	Chevelle Coucours
09	Impala Super Sport	28	Corvair Monza	47	Chevelle Concours Estate
10	Impala Custom	29	Biscayne	48	Chevelle Nomad Custom
11	Kingswood	30	Brookwood	49	Chevette
12	Caprice	31	Vega	50	Citation
13	Caprice Classic	32	Vega Cosworth	51	Citation Club
14	Caprice Estate	33	Monza	52	Laguna
15	Kingswood Estate	34	Monza 2 + 2	53	Laguna Estate
16	Caprice Custom	35	Chevelle Malibu	54	Blazer
17	Caprice Sport	36	Malibu	55	Z28
18	Bel Air	37	Malibu Classic	97	Other (automobile)
19	Townsman	38	Malibu Estate SW	99	Unknown (automobile)

Ford (02)

01	Falcon	21	LTD Brougham	41	Torino Squire SW
02	Falcon Futura	22	LTD Landau	42	Gran Torino Squire SW
03	Mustang	23	LTD S	43	LTD II Squire SW
04	Mustang II	24	LTD II	44	Fairlane GT
05	Mustang Grande	25	LTD II Brougham	45	Torino GT
06	Mustang II Ghia	26	LTD II S	46	Gran Torino
07	Mustang Mach I	27	Country Squire SW	47	Torino Brougham
08	Mustang II Mach I	28	LTD II Squire SW	48	Gran Torino Elite
09	Mustang II 2 + 2	29	Thunderbird	49	Elite
10	Custom	30	Fairlane Cobra	50	Gran Torino Sport
11	Custom 500	31	Cobra	51	Fairlane 500 XL
12	Ranchwagon	32	Maverick	52	Torino
13	Custom Ranch SW	33	Maverick Grabber	53	Gran Torino Brougham
14	Galaxie	34	Pinto	54	Fiesta
15	Galaxie 500	35	Granada	55	Fairmont
16	Galaxie 500 XL	36	Granada Ghia	56	Fairmont Futura
17	XL	37	Fairlane	57	Bronco
18	Country Sedan	38	Fairlane 500	58	LTD Crown Victoria
19	Galaxie 500 LTD	39	Torino 500	97	Other (aut mobile)
20	LTD	40	Fairlane Squire SW	99	Unknown (autom bile)

Variable Name: Vehicle Model (cont'd.)

Pontiac (03)   **Buick (04)**

01 Lemans		01 LeSabre
02 Lemans Safari		02 LeSabre Custom
03 Luxury Lemans		03 LeSabre Luxus
04 Luxury Lemans Safari		04 LeSabre Sport
05 Lemans Sport		05 Custom Sport Wagon
06 Lemans T37		06 LeSabre Custom Limited
07 Tempest Lemans		07 LeSabre Custom 455
08 Tempest		08 Estate Wagon
09 Tempest GTO		09 Wildcat
10 Tempest Safari		10 Wildcat Custom
11 Tempest Custom		11 Electra
12 Catalina		12 Electra 225
13 Catalina Safari		13 Electra Limited
14 Catalina Brougham		14 Electra 225 Limited
15 Executive		15 Electra Custom
16 Executive Safari		16 Electra 225 Custom
17 Starchief Executive		17 Electra Park Avenue
18 Bonneville		18 Riviera
19 Bonneville Brougham		19 Riviera "S" Type
20 Bonneville Safari		20 Regal
21 Bonneville Grand Safari		21 Regal Limited
22 Grand Prix		22 Regal Sport Coupe
23 Grand Prix LJ		23 Century
24 Grand Prix SJ		24 Century 350
25 Firebird		25 Century Special
26 Firebird Esprit		26 Century Regal
27 Firebird Formula		27 Century Custom
28 Firebird Trans Am		28 Century Luxus
29 Firebird Formula 400		29 Century Limited
30 Firebird Limited Edition		30 Century Sport Coupe
31 Grandville		31 Century Sportwagon
32 Grandville Brougham		32 Century Sportwagon Custom
33 Sunbird		33 Century 350 Sportwagon
34 Sunbird Safari		34 Skylark
35 Sunbird SJ		35 Skylark S
36 Sunbird Sport Safari		36 Skylark Sport
37 Ventura		37 Skylark Custom
38 Ventura SJ		38 Skylark SR
39 Ventura S		39 Skylark 350
40 Ventura Custom		40 Skylark Limited
41 Ventura II		41 Skylark Sportwagon
42 Grand Am		42 Apollo
43 Astre		43 Apollo SR
44 Astre Safari		44 Apollo Skylark
45 Astre Custom		45 Apollo Skylark S
46 Astre Custom Safari		46 Apollo Skylark SR
47 Astre S		47 Sportwagon
48 Astre S Safari		48 GS
49 Astre SJ		49 GS 340
50 Astre SJ Safari		50 GS 350
51 Grand Lemans		51 GS 400
52 Grand Lemans Safari		52 GS 455
53 Phoenix		53 Special
54 Phoenix LJ		54 Special Deluxe
55 Grand Safari		55 Skyhawk
56 2 + 2		56 Skyhawk S
57 GTO		57 Centurion
58 Lemans GTO		97 Other (automobile)
97 Other (automobile)		99 Unknown (automobile)
99 Unknown (automobile)		

Variable Name: Vehicle Model (cont'd.)

Plymouth (05)

01	Valiant	36	Fury II
02	Valiant 100	37	Fury Custom Suburban SW
03	Valiant Signet	38	Fury III
04	Valiant Brougham	39	Fury Sport Suburban
05	Valiant Custom	40	Fury Salon
06	Valiant Taxi	41	Fury Custom
07	Duster	42	Fury VIP
08	Duster Custom	43	Gran Fury
09	Duster 340	44	Grand Coupe
10	Duster 360	45	Grand Sedan
11	Scamp	46	Gran Fury Suburban
12	Scamp Special	47	Gran Fury Brougham
13	Barracuda	48	Gran Fury Sport Suburban
14	Barracuda Gran Coupe	49	Gran Fury Custom
15	Cuda	50	Gran Fury Custom Suburban
16	AAR Cuda	51	Sport Fury
17	Cuda 340	52	Sport Fury GT
18	Belvedere 1	53	Sport Fury S-23
19	Belvedere 2	54	Roadrunner
20	Belvedere	55	Caravelle
21	Belvedere GTX	56	Caravelle Salon
22	Belvedere Satellite	57	Cricket
23	Satellite	58	Sapporo
24	Satellite Custom	59	Champ
25	Satellite Regent	60	Champ Custom
26	Satellite Brougham	61	Arrow
27	Satellite Sebring	62	Arrow GT
28	Satellite Sebring Plus	63	Arrow GS
29	Satellite GTX	64	Volare
30	Sport Satellite	65	Volare Custom
31	Satellite Superbird	66	Volare Premier
32	Fury	67	Volare Police
33	Fury I	68	Horizon
34	Fury Suburban SW	69	Horizon TC-3
35	Fury Sport	97	Other (automobile)
		99	Unknown (automobile)

Oldsmobile (06)

01	Starfire	24	F-85 442
02	Starfire SX	25	F-85 Vista Cruiser
03	Omega	26	Vista Cruiser
04	Omega Brougham	27	Cutlass Cruiser
05	Omega Salon	28	Cutlass Cruiser Brougham
06	Omega F-85	29	Cutlass Salon
07	Omega F-87	30	Cutlass Salon Brougham
08	Toronado	31	Cutlass Brougham
09	Toronado Custom	32	Cutlass Brougham LS
10	Toronado Brougham	33	Cutlass LS
11	Toronado XSR	34	Supreme Cruiser
12	F-85 Deluxe	35	Delta 88
13	F-85	36	Delta 88 Custom
14	F-85 Cutlass	37	Delta 88 Custom Cruiser SW
15	Cutlass	38	Custom Cruiser
16	F-85 Standard	39	Delta 88 Royale
17	Cutlass Standard	40	Delta 88 Royale Brougham
18	F-85 Cutlass Supreme	41	98
19	Cutlass Supreme	42	98 Luxury
20	F-95 Cutlass S	43	98 Regency
21	Cutlass S	44	Delmont-88
22	Cutlass Supreme Brougham	97	Other (automobile)
23	Cutlass Calais	99	Unknown (automobile)

Variabl Name: Vehicle Model (c nt'd.)

Do__ge (07)

01	Dart	38	Polara Custom
02	Dart 170	39	Polara Brougham
03	Dart 270	40	Polara 318
04	Dart Custom	41	Polara 500
05	Dart GT	42	Polara Special
06	Dart GTS	43	Polara Police
07	Dart Swinger	44	Polara Taxi
08	Dart Swinger Special	45	Monaco
09	Dart Swinger 340	46	Monaco 500
10	Dart Swinger 360	47	Monaco Brougham
11	Dart Sport	48	Monaco Custom
12	Dart Sport 340	49	Monaco Crestwood
13	Dart Sport 360	50	Royal Monaco
14	Dart Demon	51	Royal Monaco Brougham
15	Dart Demon 340	52	Monaco Special
16	Dart Special SW	53	Challenger
17	Dart Special Addition	54	Challenger R/T
18	Coronet	55	Challenger T/A
19	Coronet Brougham	56	Challenger Rallye
20	Coronet Custom	57	Diplomat
21	Coronet Super Bee	58	Diplomat Medallion
22	Coronet Crestwood	59	Diplomat S
23	Coronet Deluxe	60	Diplomat Salon
24	Coronet R/T	61	Magnum XE
25	Coronet 400	62	Aspen
26	Coronet 440	63	Aspen Custom
27	Coronet 500	64	Aspen Special Edition
28	Charger	65	Aspen Police
29	Charger R/T	66	St. Regis
30	Charger 500	67	Mirada
31	Charger Sport	68	Colt
32	Charger Special Edition	69	Colt GT
33	Charger SE	70	Colt Carousel
34	Charger Super Bee	71	Colt Custom
35	Omni	97	Other (automobile)
36	Omni 024	99	Unknown (automobile)
37	Polara		

Volkswagen (08)

01	Karmann Ghia	13	411 Fastback
02	Karmann Ghia 1300	14	411 Squareback
03	Karmann Ghia 1500	15	412
04	Beetle	16	412 Fastback
05	Beetle 1300	17	412 Squareback
06	Beetle 1500	18	The Thing
07	Rabbit	19	Scirocco
08	Super Beetle	20	Fastback
09	Dasher	21	Squareback
10	Dasher Fastback	97	Oth r (automobile)
11	Dasher Squareback	99	Unknown (automobile)
12	411		

Variable Name: Vehicle Model (cont'd.)

Mercury (09)

01 Montego	19 Marauder	37 Monarch Ghia
02 Montego GT	20 Marauder X-100	38 Bobcat
03 Montego Villager	21 Marquis	39 Zephyr
04 Montego MX	22 Marquis Brougham	40 Zephyr Z7
05 Montego MX Brougham	23 Grand Marquis	41 Cougar
06 Montego Brougham	24 Parklane	42 Cougar XR-7
07 Comet Cyclone	25 Parklane Breezeway	43 Cougar Brougham
08 Montego Cyclone	26 Colony Park	44 Cougar Villager SW
09 Montego Cyclone GT	27 Montclair	45 Brougham
10 Montego Cyclone Spoiler	28 Meteor	46 Lemoyne
11 Montego Cyclone CJ	29 Rideau	47 Lemoyne Montclair
12 Comet Villager	30 Rideau 500	48 Capri
13 Comet	31 Montcalm	49 Capri II
14 Comet 202	32 Monterey	50 Capri Ghia
15 Comet Capri	33 Monterey Custom	51 Capri II Ghia
16 Comet Caliente	34 Monterey S-55	97 Other (automobile)
17 Comet GT	35 Commuter SW	99 Unknown (automobile)
18 Comet Voyager	36 Monarch	

Cadillac (10)

01 Calais	09 Seville
02 Deville	10 Commercial Chassis
03 Fleetwood Sixty Special	11 Brougham
04 Fleetwood Seventy Five	12 Sixty Special Brougham
05 Fleetwood Limousine	13 Fleetwood Brougham
06 Fleetwood Formal	14 Fleetwood
07 Fleetwood Eldorado	97 Other (automobile)
08 Eldorado	99 Unknown (automobile)

American (11)

01 Rambler	17 Ambassador	33 Eagle
02 Rambler 440	18 Ambassador 880	34 Eagle Limited
03 Rambler Roque	19 Ambassador 990	35 Marlin
04 American	20 Ambassador SST	36 Hornet
05 American 220	21 Ambassador DPL	37 Hornet SST
06 American 440	22 Ambassador Brougham	38 Hornet SC 360
07 American Roque	23 Javelin	39 Hornet Sportabout
08 Rebel	24 Javelin SST	40 Pacer
09 Rebel 550	25 AMX	41 Pacer DL
10 Rebel 770	26 Javelin AMX	42 Pacer Limited
11 Rebel SST	27 Concord	43 Spirit
12 Rebel Matador	28 Concord AMX	44 Spirit DL
13 Matador	29 Concord Limited	45 Spirit Limited
14 Matador X	30 Concord DL	97 Other (automobile)
15 Matador Brougham	31 Gremlin	99 Unknown (automobile)
16 Matador Police	32 Gremlin Custom	

Variable Name: Vehicle Model (cont'd.)

<u>Chrysler</u> (12)

01 Newport
02 Newport Custom
03 Town & Country
04 Newport Royal
05 New Yorker
06 New Yorker Brougham
07 300
08 Cordoba
09 Cordoba Crown
10 LeBaron
11 LeBaron Medallion
12 LeBaron S
13 LeBaron Salon
14 Imperial Crown
15 Imperial LeBaron
97 Other (automobile)
99 Unknown (automobile)

<u>Opel</u> (14)

01 Opel Coupe
02 Opel 4-door Sedan
03 Opel Deluxe
04 Opel GT
05 Isuzu
06 Manta
07 1900
08 1900 Rallye
09 Kadett 1900
10 31 Kadett
11 39 Kadett Deluxe
12 91 Kadett Deluxe
13 99 Kadett LS
14 Kadett S DLX/CM Rallye
15 Kadett Deluxe
16 31 Deluxe
17 36 Deluxe
18 39 Deluxe
97 Other (automobile)
99 Unknown (automobile)

<u>Lincoln</u> (13)

01 Continental
02 Mark III
03 Mark IV
04 Mark V
05 Mark VI
06 Versailles
97 Other (automobile)
99 Unknown (automobile)

<u>Datsun</u> (15)

01 240Z
02 260Z
03 260Z 2 + 2
04 280Z
05 280Z 2 + 2
06 280 ZX
07 280 ZX 2 + 2
08 LB110
09 B210/B210 Honeybee
10 210
11 B210 Plus
12 310
13 PL 311
14 RL 311
15 411
16 PL 510
17 510
18 610
19 710
20 F10
21 200 SX
22 810
97 Other (automobile)
99 Unknown (automobile)

Variable Name: Vehicle Model (cont'd.)

<u>Toyota</u> (16)

01   Land Cruiser 3900
02   Corolla
03   Corolla 1100
04   Corolla 1200
05   Corolla 1600
06   Corolla Deluxe
07   Corola SR5
08   Corolla Custom
09   Corona
10   Corona Custom
11   Corona Deluxe
12   Corona SR5
13   Corona Mark II
14   Corona 1900
15   Corona 2000
16   MX Mark II
17   MX Mark II 1900
18   MX Mark II 2000
19   Celica
20   Celica 1900
21   Celica 2000
22   Celica Supra
23   Tercel
24   Carina
25   Carina 2000
26   Cressida
27   Crown
28   Crown 2300
29   Crown 2600
97   Other (automobile)
99   Unknown (automobile)

<u>Fiat</u> (18)

01   124
02   124 Sport
03   124 Spider
04   131
05   850
06   850 Spider
07   850 Racer
08   X-1/9
09   Strada
10   128
11   128 Sport L
12   Brava
13   2000 SP Spider
97   Other (automobile)
99   Unknown (automobile)

<u>Mazda</u> (17)

01   RX2
02   RX3
03   RX4
04   RX7
05   Cosmo
06   GLC
07   808
08   616
09   618
10   626
11   Mizer
12   Mizer 808
13   R100
14   1200
15   1300
16   1600
97   Other (automobile)
99   Unknown (automobile)

<u>Volvo</u> (19)

01   122
02   122 S
03   142
04   142 S
05   142 Deluxe
06   142 GL
07   142 GLS
08   142 E
09   144
10   144 S
11   144 Deluxe
12   144 GL
13   144 GLS
14   145
15   145 Deluxe
16   145 S
17   164
18   164 S
19   164 E
20   242
21   242 GL
22   242 Deluxe
23   244
24   244 GL
25   244 Deluxe
26   245
27   245 Deluxe
28   245 GL
29   262
30   262 GL
31   264
32   264 GL
33   265
34   265 GL
35   1800
36   1800 E
37   1800 ES
38   1800 S
97   Other (automobile)
99   Unknown (automobile)

Variable Name: Vehicle Model (cont'd.)

Audi (20)

01   100 LS
02   Fox
03   100
04   100 GL
05   Super 90
06   4000
07   5000
97   Other (automobile)
99   Unknown (automobile)

Porsche (22)

01   911
02   911 E
03   911 S
04   911 T
05   912
06   912 E
07   914
08   914/6
09   924
10   928
11   930
12   Carrera
13   Turbo Carrera
14   Other (automobile)
97   Unknkown (automobile)

Subaru (24)

01   G
02   GL
03   GLF
04   GL Shooting Star
05   GL 4WD
06   GF
07   GF Evening Star
08   GSR
09   DL
10   DL All-Star
11   DL Super-Star
12   DL 4WD
13   DL Star Clipper
14   DL Star Cruiser
15   Deluxe
16   Star
17   Standard
18   1100
19   360
20   FE
21   BT 710
97   Other (automobile)
99   Unknown (automobile)

Honda (21)

01   Civic
02   Civic CVCC
03   Accord
04   Accord LX
05   600
06   Prelude
07   600 Deluxe
97   Other (automobile)
99   Unknown (automobile)

MG (23)

01   MG Midget
02   MGB GT
03   MGB
97   Other (automobile)
99   Unknown (automobile)

Jeep (25)

01   Cherokee
02   Commando
03   CJ5
04   CJ6
05   CJ7
06   DJ3A
07   DJ5
08   J100
09   Jeepster
10   Wagoneer
97   Other (automobile)
99   Unknown (automobile)

Mercedes Benz (26)

01   200
02   220
03   230
04   230 SL
05   240
06   250 SL
07   250
08   250 C
09   280
10   280 SL
11   280 C
12   300
13   350
14   350 SL
15   350 SLC
16   4.5
17   450
18   450 SEL
19   450 SL
20   450 SLC
21   600
97   Other (automobile)
99   Unknown (automobile)

Variable Name: Vehicle Model (cont'd.)

<u>Alfa Romeo</u> (27)   <u>Austin</u> (28)

01 Alfetta Berlina   01 Marina
02 Alfetta GT   02 Marina GT
03 Alfetta Sport   03 America
04 Spider Veloce   04 Healey Sprite MKIV
05 Sprint Veloce   05 Healey Sprint MKII (1098)
06 GT Veloce   06 Healey Sprint MKIII
07 2000 Spider Veloce   07 Healey 3000 MKII
08 Sport   08 Healey 3000 BJ8
97 Other (automobile)   97 Other (automobile)
99 Unknown (automobile)   99 Unknown (automobile)

<u>Jaguar</u> (29)   <u>Lancia</u> (30)

01 XJ   01 Beta
02 XJ12   02 Beta CPE
03 XJ12C   03 Beta HPE
04 XJ12L   04 Beta HPF
05 XJ6   05 Beta Scorpion
06 XJ6C   06 Scorpion
07 XJ6L   07 828
08 XJS   08 828 Spider
09 XKE   09 828 HPE
10 V12   10 Flavia
11 420   11 Fulvia
12 420G   97 Other (automobile)
13 SJ   99 Unknown (automobile)
14 J6
97 Other (automobile)
99 Unknown (automobile)

<u>Triumph</u> (31)

01 Spitfire   15 Herald Convert
02 1500 Spitfire   16 Vitesse
03 Spitfire I   17 Vitesse Convert
04 Spitfire II   18 Stag
05 Spitfire III   19 GT6I
06 Spitfire IV   20 GT6II
07 TR2   21 GT6III
08 TR3   22 250
09 TR4   23 1250
10 TR4A   24 1300
11 TR6   25 2000
12 TR7   97 Other (automobile)
13 TR8   99 Unknown (automobile)
14 Herald

Variable Name: Vehicle Model (cont'd.)

<u>Saab</u> (32)   <u>BMW</u> (35)

01 Sonnet   01 320i
02 Sonnet 97   02 320iA
03 95   03 528i
04 96   04 528iA
05 97   05 530i
06 99   06 530iA
07 99E   07 630i
08 900   08 630iA
97 Other (automobile)   09 630CSi
99 Unknown (automobile)   10 630CSiA
                                              11 633i
<u>Peugeot</u> (33)   12 633iA
                                              13 633CSi
01 504   14 633CSiA
02 604   15 733i
97 Other (automobile)   16 733iA
99 Unknown (automobile   17 1600
                                              18 1602
<u>Renault</u> (34)   19 2000
01 Caravelle   20 2000A
02 Dauphine   21 2002
03 Lecar   22 2002tii
04 Lecar GTL   23 2500
05 R17 Gordini   24 2500A
06 Gordini   25 2800
07 R10   26 2800A
08 R12   27 2800CS
09 R12SW   28 2800CSA
10 R15   29 3.0S
11 R15TL   30 3.0SA
12 R16   31 3.0Si
13 R17   32 3.0SiA
14 R17GTL   33 3.0CS
15 R17TL   34 3.0CSA
97 Other (automobile)   35 2.8 Bavaria
99 Unknown (automobile)   36 2.8 Bavaria A
                                              37 3.0 Bavaria
                                              38 3.0 Bavaria A
                                              39 Bavaria 30L
                                              97 Other (automobile)
                                              99 Unknown (automobile)

Variable Name: Vehicle Model (cont'd.)

All trucks and motorcycle models are to be coded "00". Below is an alpha-
betical list of most truck and motorcycle makes.

Model	Make	Model	Make
00	BMW	00	Mack
00	Brockway	00	Mazda
00	BSA	00	Mercedes-Benz
00	Chevrolet	00	Norton
00	Datsun	00	Opel
00	Diamond Reo	00	Peterbilt
00	Dodge	00	Subaru
00	Ford	00	Suzuki
00	Freightliner	00	Toyota
00	FWD	00	Triumph
00	GMC	00	Volkswagen
00	Harley-Davidson	00	White
00	Honda	00	Yamaha
00	International Harvester		
00	Jeep	00	Not Applicable
00	Kawasaki	00	Other
00	Kenworth	00	Unknown

Remarks:

In many instances incomplete information will exist regarding the exact pas-
senger car model (e.g., the basic model is known but the specific body
style, including trim package, engine, supsension, etc., is not known). The
following two rules are intended to allow the investigator to optimize the
known information.

● If the basic model is known (e.g., Chevelle, Mustang, Century, Fury,
  Cutlass, Dart, Comet, etc.) but the body style, or trim package, r en-
  gine, or suspension are not known, then code the model of least specifi-
  city.

● Where knowledge of the basic model is still insufficient (e.g., Lincoln)
  or the basic models have a sequential order (e.g., Lincoln Mark ?), then
  use of the vehicle's year (V11, Vehicle Model Year) may enable resolu-
  tion.

Variable Name: Body Type

Format: 2 columns - numeric   Beginning
                                                  Column   23

Element Values:

Automobiles

01 Convertible
02 2-door sedan, hardtop, coupe
03 4-door sedan, hartop
04 3 or 5-door hatchback coupe
05 Auto with pickup body (e.g., El Camino, Ranchero, etc.)
06 Station wagon excluding van-based or truck-based station wagons
08 Other automobile
09 Unknown type automobile

Motorcycles

15 Motorcycle
16 Mopeds (motorized bicycles)
17 Other motorcycle (minibikes, motorscooters)
18 Unknown type motorcycle

Busses

25 School bus
26 Cross country (commercial service)
27 Transit bus (public service)
28 Other bus
29 Unknown type bus

Special Vehicles

35 Snowmobile
36 Farm equipment other than trucks
37 Dune buggy, swamp buggy, etc.
38 Construction equipment other than trucks
39 Ambulance, hearse type only
40 Large limousine - more than four doors
41 Self propelled campers and motor homes
42 Fire truck
43 On or off road vehicle - Jeep CJ-5, Bronco, Blazer, Scout, etc.
44 Other special vehicle

Variable Name: Body Type (cont'd.)

Trucks

50   Pickup including those with stake and small dump bodies and campers
51   Van (VW Bus, small Dodge Van, van-based station wagon, not moving van
     or horse van)
52   Truck based station wagon (Chevrolet Suburban, International
     Travelall)
53   Single unit truck (10,000 < GVW < 19,501)
54   Single unit truck (19,500 < GVW < 26,001)
55   Single unit truck (GVW > 26,000)
56   Single unit truck (GVW unknown)
57   Two unit truck-tractor with semi-trailer or truck with cargo trailer
58   Multi-unit: truck or truck-tractor with two or more trailers
59   Truck-tractor pulling no trailer
60   Unknown type truck
99   Unknown body type

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

Remarks:

    Note the selection of any code is based solely on its body type rather than
    usage or ownership (i.e., code the vehicle as it was born).

    Code "01" (Convertible) refers to automobiles with soft or removabl hard
    shells which are considered to be "convertibles". A removable hardtop is
    one that can be removed without tools. Removable solid roof sections that
    were bolted on at the factory are considered standard roofs. Cars with sun
    roofs should be considered as having a standard roof. The position f the
    top at the time of the collision is not considered when coding the Body
    Type.

    Code "04" (3 or 5-door hatchback coupe) includes those automobiles with
    hinged rear "doors" which include large glass cargo portals as found on
    fastbacks or hatchbacks. Station wagons with hinged doors which open verti-
    cally are excluded from this category since they are coded "06" (Station
    wagon excluding van-based or truck-based station wagon).

    Code "08" (Other automobile) refers to other automobiles such as the one-
    door I Setta, street rods without doors, etc.

    A motorcycle (motored cycle) is defined as any motor vehicle having a seat
    or saddle for the use of the rider and designed to travel on not more than 3
    wheels in contact with the ground, but excluding a tractor (Source: Uniform
    Vehicle Code and Model Traffic Ordinance - revised 1968, secti n 1-135)..

    Code "15" (Motorcycle) is restricted to "standard" motorcycles [i.e., it ex-
    cludes minibikes, motorscooters, or any motorcycles with sidecars attached--
    thes are coded under "17" (Oth r motorcycle)].

Variable Name: Body Type (cont'd.)

Code "16" [Moped (motorized bicycle)] refers to a motor driven cycle with
mechanical linkage to permit muscular propulsion (pedals) and a power source
which provides a maximum of 2 brake horsepower. The power source will not
be capable of propelling the vehicle unassisted at a speed greater than 30
m.p.h. on a level road.

Codes "25" through "29" refer to vehicles (excluding vans, truck-based sta-
tion wagons, etc.) which are designed to transport more than ten persons.

Code "25" (School bus) refers to vehicles which are specifically designed
for usage by a school corporation for the purpose of transporting children
independent of usage and ownership at the time of the accident. Body type
alone, independent of color (e.g., yellow), is the determining criterion.

Code "26" (Cross country) refers to busses having adjustable seat backs and
only one normal entry-exit door. This bus is of the type most commonly used
for commercial cross country service; however, recall that body type alone
(independent of usage and ownership) is sufficient by itself to use this
code.

Code "27" (Transit bus) refers to busses having fixed seatbacks and two nor-
mal entry-exit door systems. This bus is of the type most commonly used for
intra-city commuter service; however, recall that body type alone (indepen-
dent of usage and ownership) is sufficient by itself to use this code.

Code "28" (Other bus) is used for busses which are exclusive of the above
bus codes or in cases where the investigator has identified and photographed
the vehicle but is uncertain as to which of the above bus codes is t be
used.

Code "29" (Unknown type bus) is used when the investigator has no informa-
tion which would allow more specific classification in one of the bus codes.

Code "37" (Dune buggy, swamp buggy, etc.) also can be used if an amphibious
vehicle is encountered.

Code "38" excludes passenger vehicles which are owned/leased and operated by
construction related firms. These should be assigned codes "01" through
"06" unless the vehicle has been modified, in which case, it should be coded
"08". Construction related includes state or municipally owned road clean-
ing equipment, or utility related equipment where the model is essentially a
special vehicle ("38"). However, some of these vehicles are single unit
trucks modified with the cleaning or repair equipment attached fr nt or
rear. In the latter case, code single unit truck ("53", "54", "55", or
"56").

Variable Name: Body Type (cont'd.)

Code "39" (Ambulance, hearse type only) refers to hearse body vehicles which
may be used for ambulance, funeral, or other purposes (including private
usage). Note that only ambulances with a hearse body style are coded here.
Ambulances other than hearse types are coded according to their particular
body type.   These vehicles will subsequently be identified as ambulances
under V34, Vehicle Special Use.

Code "42" (Fire truck) refers only to those vehicles which have a body type
which is uniquely designed to fight fires. It excludes ancillary fire de-
partment vehicles such as station wagons, etc.

Code "44" (Other special vehicle) is used for special vehicles which are ex-
clusive of the above special vehicle codes (e.g., go-cart).

Code "50" (Pickup) includes all trucks based on a pickup chassis, even if
greater than 10,000 lbs. GVW (e.g., Chevrolet C10, Ford F350, Dodge D300,
etc.).

Code "51" (Van) includes VW bus, Econoline, Chevy Van, Dodge Tradesman, and
station wagons based on these models; also included are van-based light
trucks (> 10,000 lbs. GVW).

Codes "51" and "52" (Van; truck-based station wagon) are to be used in in-
stances where these trucks are used as busses, although not specifically de-
signed 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.

Variable Name: Cab Configuration (Trucks Greater than 10,000 lbs. GVW)

Format: 1 column - numeric   Beginning
                                               Column   25

Element Values:

   0 Not truck over 10,000 lbs. GVW
   1 Cab over engine (COE)
   2 Conventional (CBE - cab behind engine)
   3 Cab alongside engine (CAE)
   8 Other
   9 Unknown

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

Remarks:

Code   Description

1   Cab over engine (COE)
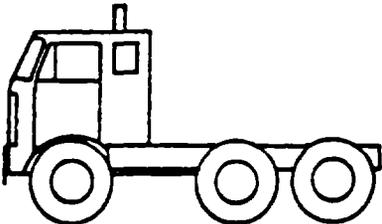
2   Conventional (CBE - cab behind engine)
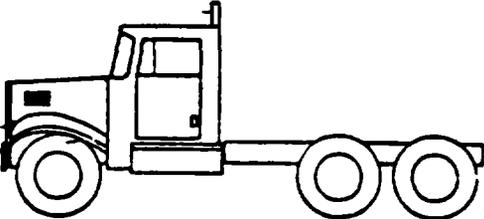
3   Cab alongside engine (CAE)
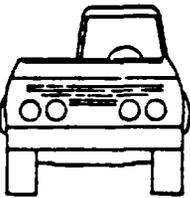
Variable Name: Body/Trailer Configuration (Trucks Greater than 10,000 lbs.
                 GVW)

Format: 2 columns - numeric   Beginning
                                                       Column   26

Element Values:

00	Not truck over 10,000 lbs.	11	Pole or logging
01	Van (closed top)	12	Auto carrier
02	Van (open top)	13	Mobile home
03	Platform (flatbed)	14	Garbage/refuse
04	Platform with added device	15	Cement mixer
	(e.g., crane or cherry picker)	16	Package delivery
05	Stake body		(multi-stop or walk-in)
06	Refrigerated (insulated)	17	Beverage
07	Drop frame or low bed	18	Wrecker
08	Tank (liquids)	19	Chassis/tractor only (no body)
09	Tank (dry bulk)	20	Other
10	Dump	99	Unknown

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

Remarks:

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Code   Description

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

Example:

V14 = 53, 54, 55, or 56
V15 = 02
V16 = 01
V17 = 0
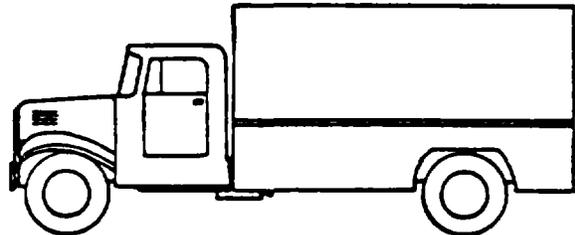
V14 = 57 or 58
V15 = 02
V16 = 01
V17 = 0
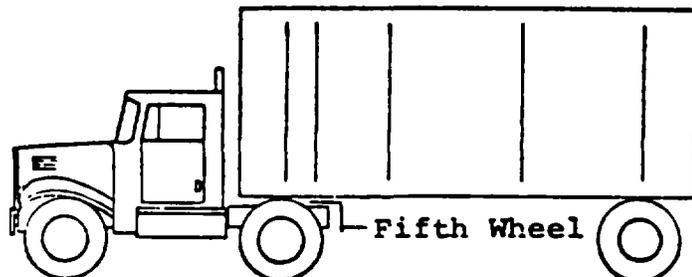
Variable Name: Body/Trailer Configuration (Trucks greater than 10,000 lbs.
                 GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Code   Description

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

Example:

V14 = 53, 54, 55, or 56
V15 = 02
V16 = 02
V17 = 0
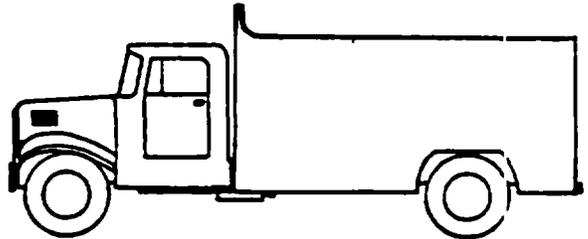
V14 = 57 or 58
V15 = 02
V16 = 02
V17 = 0
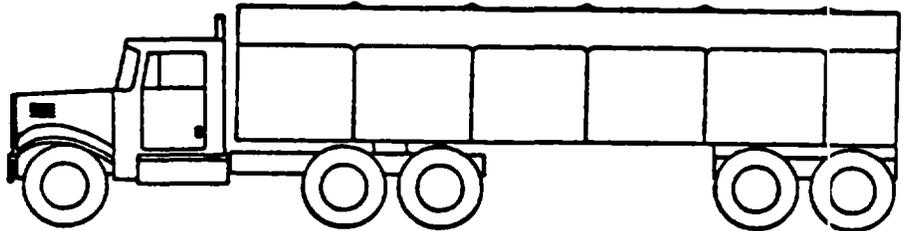
03   Platform (flatbed) - A body having a floor without sides or roof, with
        or without readily removable stakes which may be tied together with
        chains, slats or panels.

Example:

V14 = 53, 54, 55, or 56
V15 = 02
V16 = 03
V17 = 0
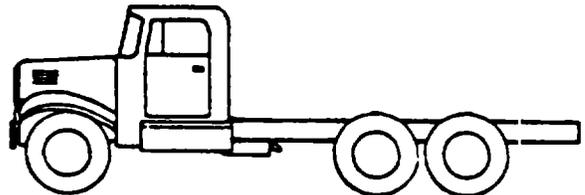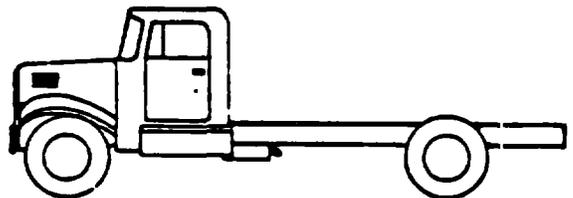
Variable Name: Body/Trailer Configuration (Trucks Greater Than 10,000 lbs.
                 GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Code   Description

V14 = 57 or 58
V15 = 2
V16 = 03
V17 = 0
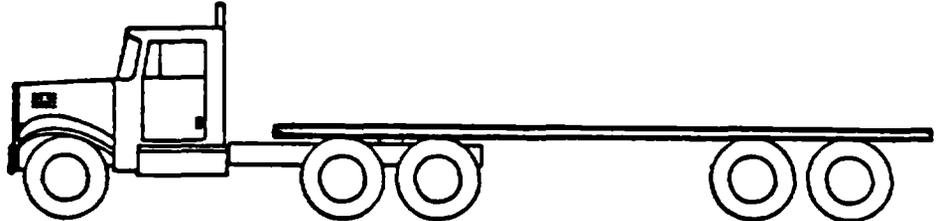
04   Platform with added device (example: crane or "cherry picker") - A body
        having a floor without sides or roof on which additional machinery is
        securely mounted for work or other purposes.

Example:

V14 = 53, 54, 55, or 56
V15 = 02
V16 = 04
V17 = 0
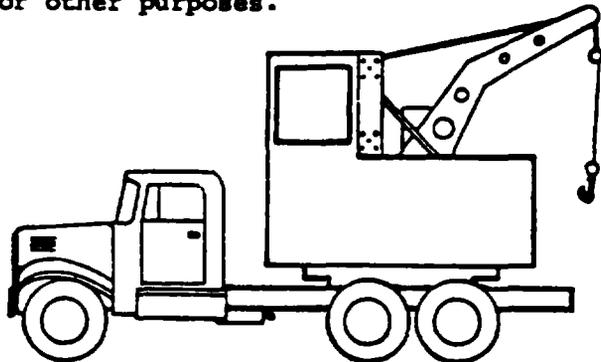
05   Stake body - A body having a floor without sides or roof with stakes
        securely mounted around the perimeter to confine the commodity to the
        cargo area.

Example:

V14 = 53, 54, 55, or 56
V15 = 02
V16 = 05
V17 = 0
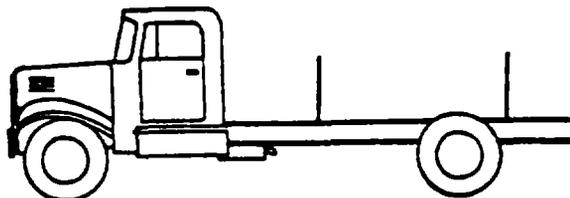
Variable Name: Body/Trailer Configuration (Trucks Greater Than 10,000 lbs.
                 GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

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

V14 = 57 or 58
V15 = 02
V16 = 05
V17 = 0
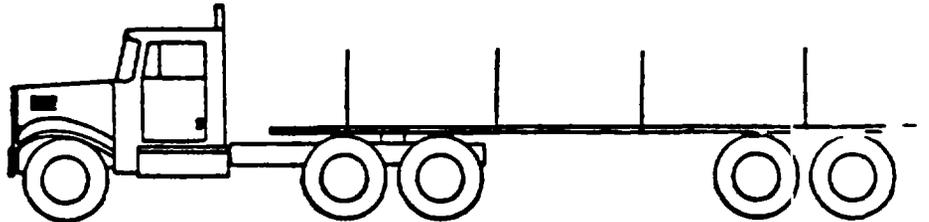
06   <u>Refrigerated (insulated)</u> - A van body designed primarily for the trans-
      portation of commodities or the vending of food, beverage, or confec-
      tions at controlled temperatures. It may be provided with equipment for
      refrigeration or heating.

Example:

V14 = 53, 54, 55, or 56
V15 = 02
V16 = 06
V17 = 0
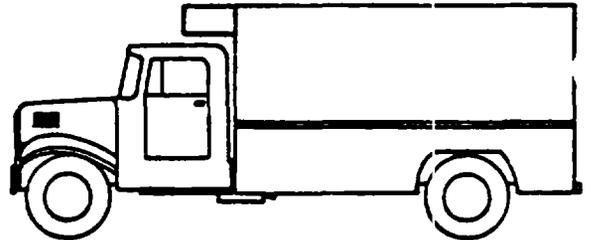
V14 = 53, 54, 55 or 56
V15 = 02
V16 = 06
V17 = 0
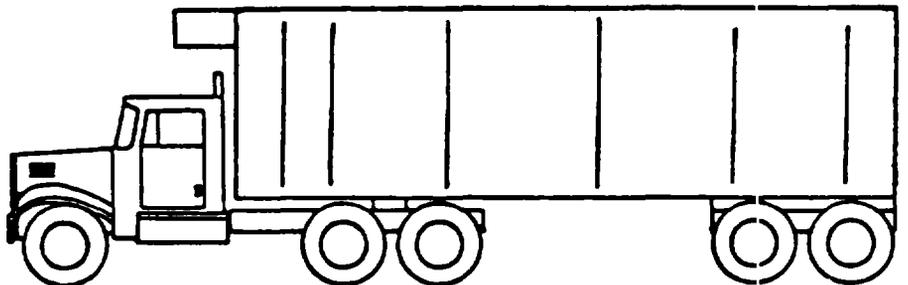
07   <u>Drop frame or low bed</u> - A trailer with a platform body constructed to
      provide a low loading height and designed for the transportation of
      extremely heavy or bulky property.

Example:

V14 = 57 or 58
V15 = 02
V16 = 07
V17 = 0
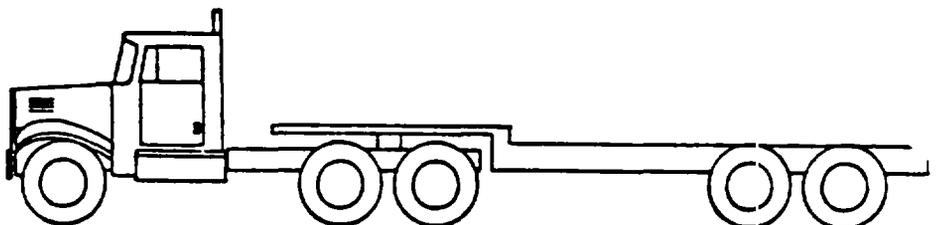
Variable Name: Body/Trailer Configuration (Trucks Greater Than 10,000 lbs.
                 GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Code   Description

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

Example:

V14 = 53, 54, 55, or 56
V15 = 02
V16 = 08
V17 = 0
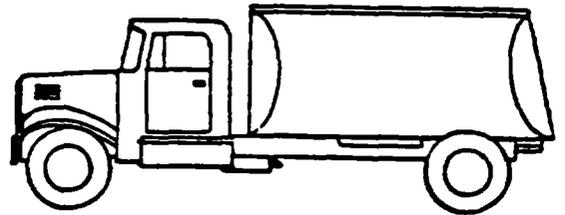
V14 = 57 or 58
V15 = 02
V16 = 08
V17 = 0
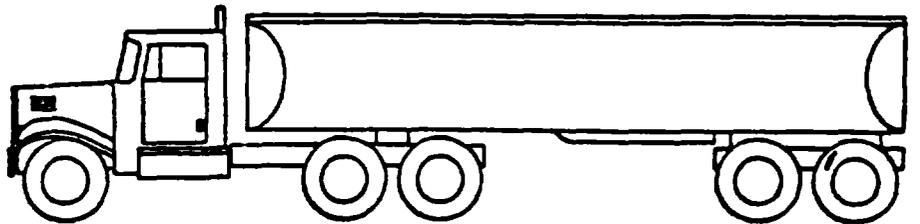
09   Tank (dry bulk) - A body designed for the transport of bulk dry
        commodities (i.e., grain or dry chemicals).

Example:

V14 = 57 or 58
V15 = 02
V16 = 09
V17 = 0
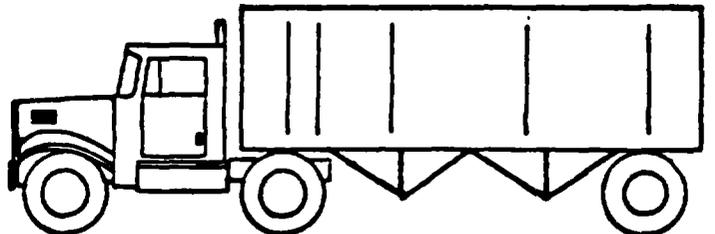
10   Dump - A low side open box body, designed primarily to transport dry
        fluid commodities in bulk, which can be tilted or otherwise manipulated
        to discharge its load by gravity.

Example:

V14 = 53, 54, 55 or 56
V15 = 02
V16 = 10
V17 = 0
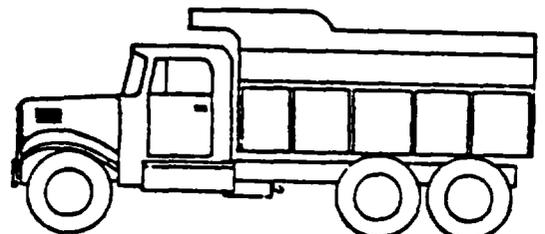
Variable Name: Body/Trailer Configuration (Trucks Greater than 10,000 lbs.
GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Code   Description

V14 = 57 or 58
V15 = 02
V16 = 10
V17 = 0
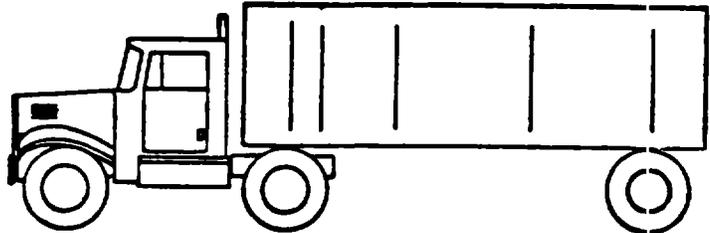
11   Pole or logging - A body comprised of sill, bolsters, with or without
headboard, with provision for uprights, and designed primarily for the
transportation of logs, poles, pipes or other loads which may be boomed.

Example:

V14 = 57 or 58
V15 = 02
V16 = 11
V17 = 0
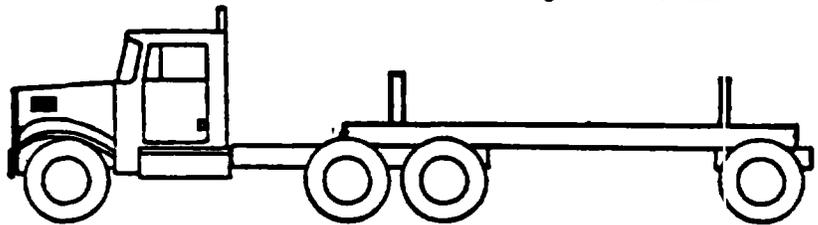
12   Auto carrier - A body designed primarily for the transportation of other
vehicles.

Example:

V14 = 57 or 58
V15 = 02
V16 = 12
V17 = 0
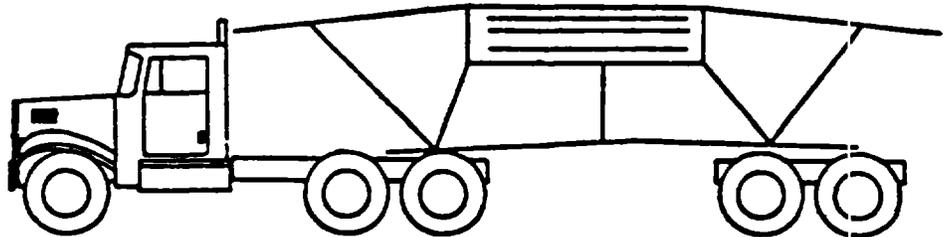
V14 = 57 or 58
V15 = 02
V16 = 12
V17 = 0
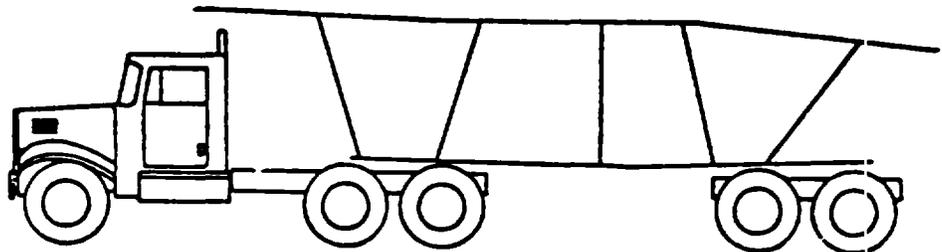
Variable Name: Body/Trailer Configuration (Trucks Greater Than 10,000 lbs.
                GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Code   Description

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

Example:

V14 = 57 or 58
V15 = 02
V16 = 13
V17 = 0
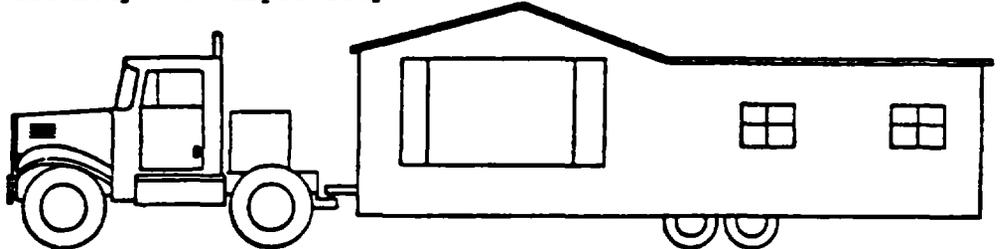
14   Garbage/Refuse - A body designed primarily for the collection of garbage
        and refuse. It is frequently equipped within the body.

Example:

V14 = 53, 54, 55 or 56
V15 = 02
V16 = 14
V17 = 0
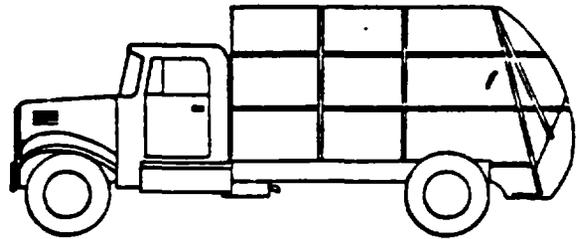
15   Cement mixer - A body designed and equipped to mix or agitate concrete.

Example:

V14 = 53, 54, 55 or 56
V15 = 02
V16 = 15
V17 = 0
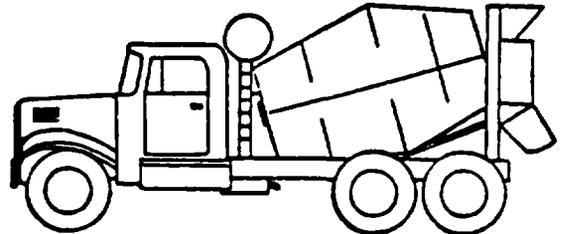
16   Package delivery (multi-stop or walk-in) - A fully enclosed body with
        driver's compartment integral and designed for easy access.

Example:

V14 = 53, 54, 55 or 56
V15 = 02
V16 = 16
V17 = 0
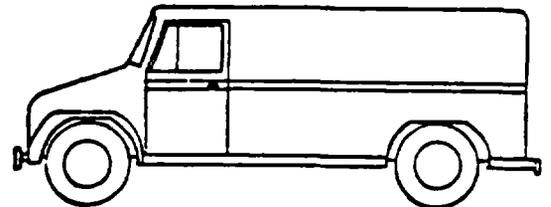
V14 = 53, 54, 55 or 56
V15 = 02
V16 = 16
V17 = 0
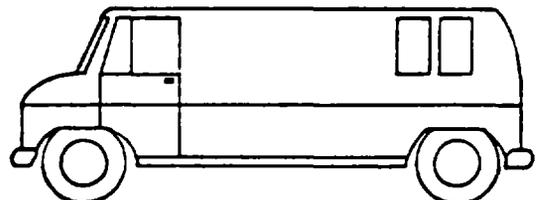
Variable Name: Body/Trailer Configuration (Trucks Greater Than 10,000 lbs.
                 GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Code   Description

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

Example:

V14 = 53, 54, 55 or 56
V15 = 02
V16 = 17
V17 = 0
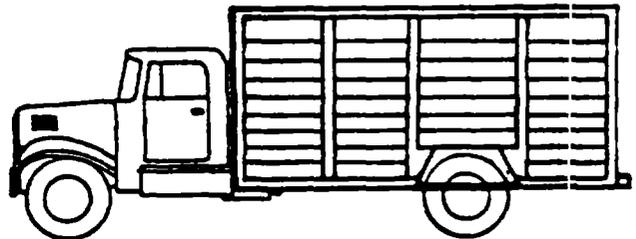
18   Wrecker - A body designed primarily for the transportation of equipment
        for salvaging disabled vehicles and equipped with means for hoisting and
        towing such vehicles.

Example:

V14 = 53, 54, 55 or 56
V15 = 02
V16 = 18
V17 = 0
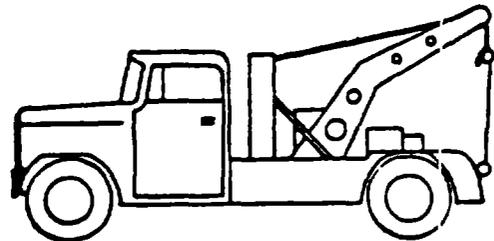
19   Chassis/tractor only (no body) - Any vehicle constructed primarily to
        pull a semi-trailer, full trailer, pole trailer, house trailer or
        equipment.

Example:

V14 = 59
V15 = 2
V16 = 19
V17 = 0
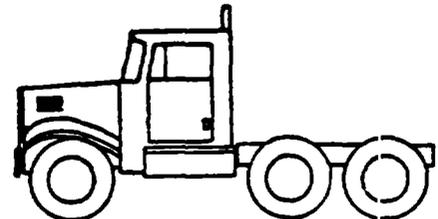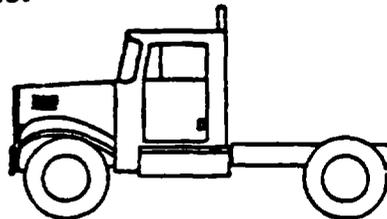
            Cab over engine (COE) configuration

V14 = 59
V15 = 1
V16 = 19
V17 = 0
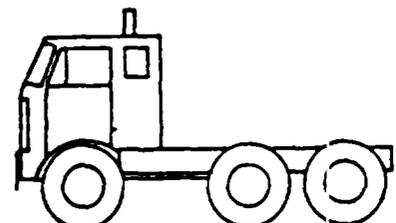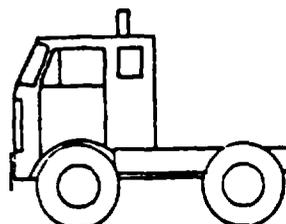
Variable Name: Body/Trailer Configuration (Trucks Greater Than 10,000 lbs.
                 GVW) [cont'd.]

Body Trailer Configurations for Trucks with GVW >10,000 pounds

Cab behind engine (CBE) configuration

V14 = 59
V15 = 2
V16 = 19
V17 = 0

Fifth Wheel
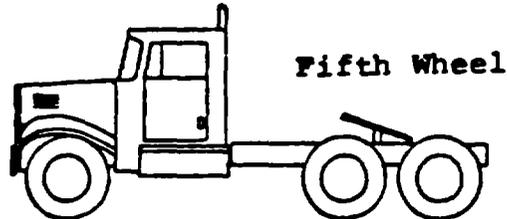
Cab alongside engine (CAE) configuration

V14 = 59
V15 = 3
V16 = 19
V17 = 0
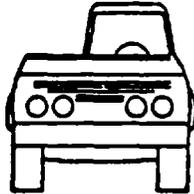
V14 = 59
V15 = 2
V16 = 19
V17 = 1
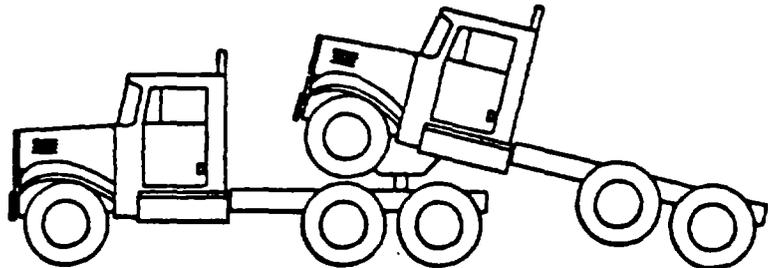
V14 = 59
V15 = 2
V16 = 19
V17 = 1
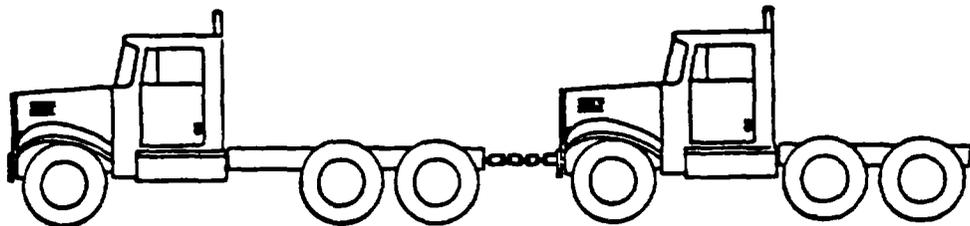
20   Other - Includes any body type that cannot be coded as one of the above
      attributes (01-19). This is determined by the investigator from infor-
      mation on the PAR for vehicles that are not inspected or by inspection
      of the vehicle.

99   Unknown - Includes hit and run vehicles which are not identifiable by
      body type in the police accident report. This also includes any other
      vehicle which is not inspected and the informtion on the PAR is not suf-
      ficient to identify the body typ .

Variable Name: Towed Trailing Unit

Format: 1 column - numeric   Beginning
                                                               Column   28

Element Values:

   0 No
   1 Yes

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

Remarks:

   If V14 (Body Type) is coded "57" (Two unit truck-tractor with semi-trailer
   or truck with cargo trailer) or "58" (Multi-unit: truck or truck-tractor
   with two or more trailers), then code "0" (No) for V17.

   Code "0" (No) if no wheeled unit was being towed by the vehicle.

   Code "1" (Yes) includes horse trailers, fifth wheel trailers, travel trail-
   ers, camper trailers, boat trailers, truck trailers or any other trailer
   (except as excluded above).

   If it is unknown whether or not a trailer was being towed, code "0" (No).

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 n apparent value at the time of the inspection, may be of great value in explaining vehicle or occupant phenomena in the subsequent reconstruction. For this reason, all scrapes, scratches, transfers, buckling and indications of engagement or relative motion must be annotated on this form. If there is insufficient room for this purpose, use a numerical coding scheme in which the numerals on the form (page 3) are keyed to the investigator's descriptive statements on the back of page 3.

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 t 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 examinati n f 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 oth r 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.

CDC/TDC RELATED REMARKS

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.

PDOF
+010°

−15°   +15°

12
(0°)

11
(−030°)
[330°]

01
(030°)

10
(−060°)
[300°]

02
(060°)

09
(−090°)
[270°]

03
(090°)

08
(−120°)
[240°]

04
(120°)

07
(−150°)
[210°]

05
(150°)

06
(+180°)
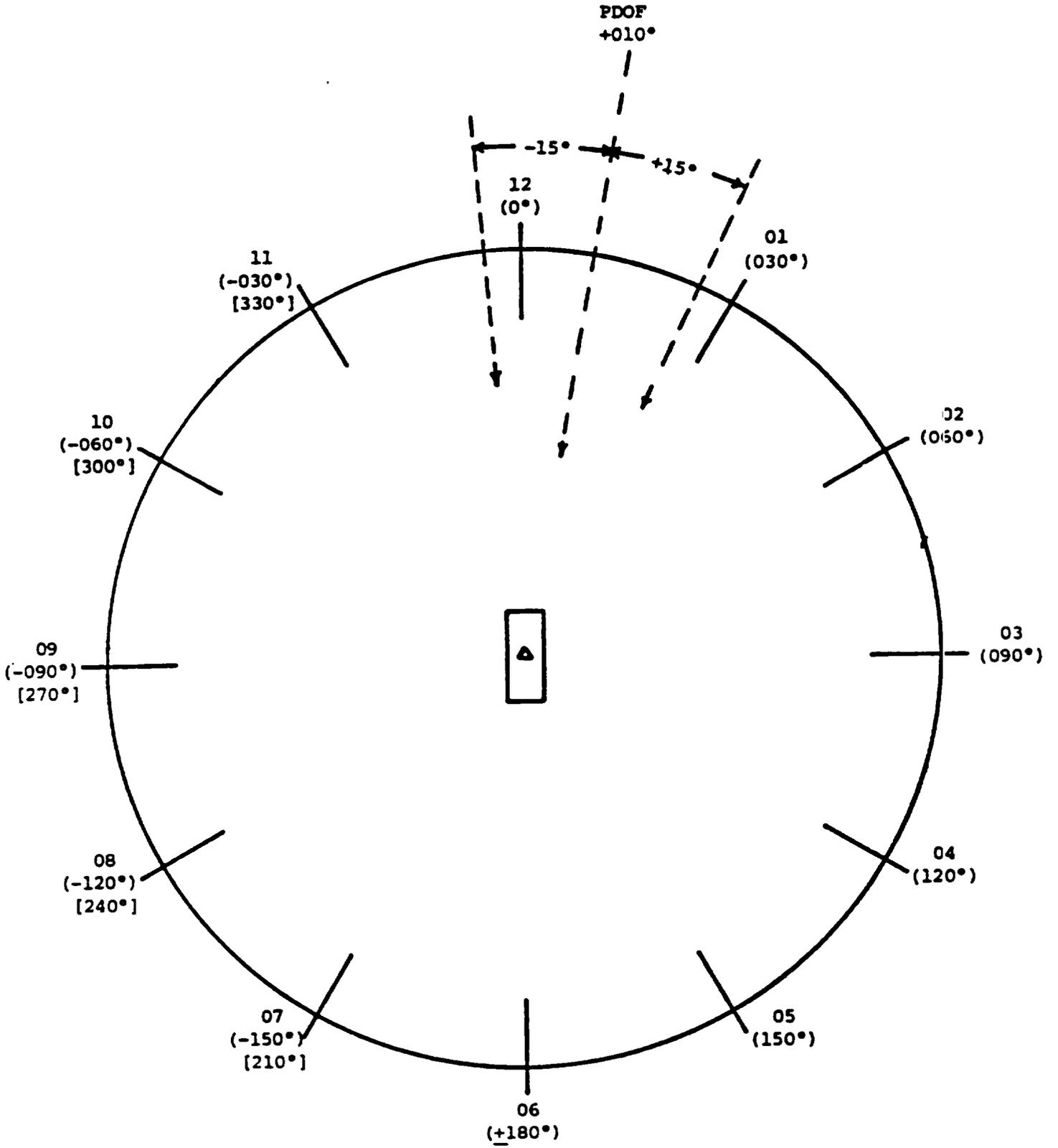
Variable Name: 1st C.D.C./T.D.C.-Object Contacted
                 2nd C.D.C./T.D.C.-Object Contacted

Format: 2 columns - numeric   Beginning
                                                       Column   29
                                                                 39

Element Values:

   00 Non-collision
   01 through 30 If the object contacted by the vehicle under consider-
       ation was another motor vehicle in transport, code the Vehicle Number
       assigned to that vehicle.

Collision with Stationary   Collision with Nonstationary
   Object   Object
31 Motor vehicle not in transport   51 Animal
32 Tree (up to 50 cm circum.)   52 Trailer, disconnected in
33 Tree (over 50 cm circum.)   transport
34 Pole - fixed   53 Train
35 Pole - breakaway--did break   59 Other nonstationary objects
    away   71 through 96
36 Pole - breakaway--did not   If the object contacted by
    break away   the vehicle under consider-
37 Movable objects (post, fence,   ation was a pedestrian or
    mail box, delineator, etc.)   nonmotorist, add seventy
38 Culvert, railroad tracks,   (70) to the Pedestrian or
    curb   Nonmotorist number, and c de
39 Abutment, retaining wall,   the resultant sum (e.g,
    bridge support   5 + 70 = 75)
40 Embankment   97 Other object
41 Building, rigid   99 Unknown
42 Building, nonrigid
43 Bridge rail
44 Guard rail
45 Impact attenuator
46 Ground
47 Median barrier
48 Train
49 Ditch
50 Other stationary objects

Source: Primary sources are the scene and vehicle inspections; secondary
         sources include the police report and interviewees.

Remarks:

   Code the appropriate object contact d for each impact even if there is no
   CDC/TDC.

Variable Name: 1st C.D.C./T.D.C.-Object Contacted (cont'd.)
                 2nd C.D.C./T.D.C.-Object Contacted (cont'd.)

This section is not to be completed until after the CRASH program is exer-
cised 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 direc-
tions, or (3) the vehicle is outside the scope of CDC-SAE, J224b.

Code "00" (Non-collision) 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 A11, 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 A11 (First Harmful Event) equals
"02" through "07" does not mean that the vehicle involved was not subse-
quently involved in an impact for which the object contacted is coded h re.
For example, when A11 = 05 (Fell from vehicle), there is a good chance, par-
ticularly if the person was the driver, that the vehicle was subsequently
involved in an impact. Further, in some instances of A11 = 07 [Other non-
collision (e.g., jackknife)] code "00" (Non-collision) ought not be used.
In the jackknife situation, this occurs when the power unit of the articu-
lated vehicle impacts the trailer unit in which case you should code th .ve-
hicle's own number.

Code "00" (Non-collision) may also be used when a vehicle sets an obj ct in
motion that strikes or is struck by a vehicle. Examples include dislodged
cargo, spewed gravel, etc. It may also be used in other situations subject
to consultation with the Zone Centers.

Code "31" (Motor vehicle not in transport) refers to a motor vehicle which
is not on the roadway and not in motion (e.g., vehicle located in parking
lane).

For codes "32" and "33", measure the circumference of the tree on the hori-
zontal plane at the point of impact. (Note: a circumference of 50 cm is
approximately equivalent to 19 inches).

Code "34" (Pole - fixed) refers to poles which are not designed to "break
away" and reduce the decelerative forces experienced by the vehicle.

Codes "35" (Pole - breakaway—did break away) and "36" (Pole - breakaway—
did not breakaway) refer to poles which are designed to "break away" and re-
duce the deceleration force experienced by the vehicle. Common types in-
clude: slip base (steel); frangible base (cast aluminum); and progressive
shear (galvanized steel or stainless steel).

Code "45" (Impact Attenuator) refers to impact attenuators which are barri-
ers 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 A11 (First Harm-
ful Event) in this manual. Other impact attenuating devices may be encount-
ered; therefore, the investigator should be sure to photograph them for ver-
ification when uncertain.

Variable Name: 1st C.D.C./T.D.C.-Object Contacted (cont'd.)
                 2nd C.D.C./T.D.C.-Object Contacted (cont'd.)

Code "46" (Ground) refers to an impact with the ground. Collisions which
may be classified using this code include (but are not limited to) vehicles
which overturn/rollover as well as those which sustain undercarriage damage
by (1) straddling the pavement and shoulder and impacting a prominent
pavement lip, or (2) free falls or vaults from the road surface to the
ground. This includes uncontrolled motorcycles which contact the ground
first.

Code "47" (Median Barrier) refers to physical barriers which divide traffic-
ways. Commonly encountered types are illustrated following the impact at-
tenuation illustrations found under A11 (First Harmful Event) in this man-
ual.

Codes "71" through "96" are used to identify contacted pedestrians or n n-
motorists where the code is derived by adding seventy (70) to that person's
unique number and coding the resultant sum (e.g., 5 + 70 = 75). Pedestrian
refers to any person who is on a trafficway or on a sidewalk or path con-
tiguous 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 an-
other nonmotorist, other than by pedaling. A nonmotorist conveyance in-
cludes 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). Other nonmotorist re-
fers to a person who is not a pedestrian or a pedalcyclist.

Variable Name: 1st C.D.C./T.D.C. - Direction of Force
                 2nd C.D.C./T.D.C. - Direction of Force

Format: 2 columns - numeric   Beginning
                                                                 Column   31
                                                                           41

Element Values:

    Range: 00-13; 20-32, 40-52
             60-72; 80-92; 98-99

                    C.D.C. or T.D.C.

    Blank - No CDC/TDC
    00   Non-horizontal force   08   8 o'clock
    01   1 o'clock   09   9 o'clock
    02   2 o'clock   10   10 o'clock
    03   3 o'clock   11   11 o'clock
    04   4 o'clock   12   12 o'clock
    05   5 o'clock   13   Intra-unit force (T.D.C. only)
    06   6 o'clock   99   Unknown

    Incremental Values for Above Force Directions

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

Source: Restricted to vehicle inspection or photographs.

Remarks:

    Code variables 18 and/or 25 [1st (2nd) C.D.C./T.D.C. - Object Contacted]
    with the appropriate code(s) when the object contacted is known regardless
    of how the CDC/TDCs, variables 19-24 or 26-31,. are coded.

    Any time a vehicle becomes inverted and impacts any object or vehicle whil
    inverted, the clock direction is coded as "00" (plus any incremental value).
    Also use "00" (Non-horizontal force) with any other circumstance which is
    consistent with the directions contained in SAE, J224b, or the T.D.C.

    If there is only one CDC, it should be entered in variables 19-24, wh ther
    or not CRASH was exercised. Variables 25-31 should then be left "Blank".

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.)

If it is unknown whether the vehicle sustained a second impact, code varia-
bles 25-31 unknown ("99" or "9").

$$\frac{9}{39} \quad \frac{9}{40} \quad \frac{9}{41} \quad \frac{9}{42} \quad \frac{9}{43} \quad \frac{9}{44} \quad \frac{9}{45} \quad \frac{9}{46} \quad \frac{9}{47} \quad \frac{9}{48}$$

Rank order any CDCs on the basis of the CRASH program results, if used.

If CRASH is exercised on none, or on no more than one CDC (where two or more
exist), subjectively order the two most severe impacts (in terms of assumed
change in velocity, delta "V").

If CRASH can be exercised on only one CDC where two or more exist the CDC
used in CRASH should be coded in variables 19-24 if it is felt to represent
the highest change in velocity (delta "V"); it should be coded in variables
26-31 if it is felt to represent the second highest delta "V", and it sh uld
not be coded if it is felt to represent the third highest or lesser delta
"V".

If no CDC/TDC has been recorded for a vehicle which has sustained but/one
impact, row variables 19-24 are coded as unknown ("99" or "9") and 26-31 are
left "Blank". If no CDC/TDCs are recorded for a vehicle which has sustained
more than one impact or an unknown number of impacts, row variables 19-24
and 26-31 are coded as unknown ("99" or "9"). If a vehicle has sustained
two or more impacts and the only CDC/TDC which can be generated (due to con-
tamination from repair process which was underway at time of inspecti n,
etc.) is for the second most severe impact, row variables 19-24 are coded as
unknown ("99" or "9") and the generated CDC/TDC is coded in row variables
26-31.

No CDC/TDCs may be entered in row variables 19-24 or 26-31 unless th se CDC/
TDCs are known in their entirety [i.e., do not use "9" (unknown) for any
missing character when that character is unknown]. Conversely, any time a
"9" is coded in any column for row variables 19-24 or 26-31, all other
columns in that row must be coded "9" (unknown); however, variables 24 and
31 may be coded "09".

Verbal descriptions by themselves by drivers, occupants, or owners may not
form the basis for a CDC/TDC except in pedestrian accidents or very minor
accidents where the other vehicle or object associated with the vehicle has
been inspected and the investigator feels confident in generating the CDC
for the vehicle with very minor damage. (NOTE: Do not formulate "C" mea-
surements for this vehicle.)

In some instances where the vehicle is undergoing repair (parts removed) or
has been repaired (parts available) a CDC/TDC may be determined from those
parts and a description of the damage from t stimony of a repairman judged
to be reliable. (NOTE: D not formulate "C" measurements for these vehi-
cles unless there is only min r alternation which does not detract from the
investigator's confidence in th se measurements.)

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.)

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 J224b, or the T.D.C.

Leave row variables 19-24 and 26-31 "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 V18 or V25 [1st (2nd) C.D.C./T.D.C. - Object Contacted] even though row variables 19-24 and 26-31 are left "Blank" because they are not in scope for classification.

Variable Name: 1st C.D.C./T.D.C. - Deformation Location
                 2nd C.D.C./T.D.C. - Deformation Location

Format: 1 column - alphanumeric   Beginning
                                                         Column   33
                                                                  43

Element Value:

C.D.C.	T.D.C.
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
T Top	near of trailer or straight
U Undercarriage	truck)
9 Unknown	D Back (rear of tractor)
	C Rear of cab
	V Front of cargo area
	T Top
	U Undercarriage
	9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

   See remarks section for variables V19 and V26.

Variable Name: 1st C.D.C./T.D.C. - Specific Longitudinal or Lateral
                                    Location
                 2nd C.D.C./T.D.C. - Specific Longitudinal or Lateral
                                    Location

Format: 1 column - alphanumeric   Beginning
                                                           Column   34
                                                                     44

Element Value:

C.D.C.	T.D.C.

C.D.C.	T.D.C.
Blank - no C.D.C./T.D.C.	Blank - no C.D.C./T.D.C.
D Distributed--side or end	D Distributed--side or end
L Left--front or rear	L Left--front or rear
C Center--front or rear	C Center--front or rear
R Right--front or rear	R Right--front or rear
F Side front--left or right	F Side front (forward of windshield)
P Side center section--L or R	P Side cab
B Side rear--left or right	W Side rear of cab to rear of
Y Side (F + P) or end (L + C)	tractor
Z Side (P + B) or end (C + R)	K Side (P + W)
9 Unknown	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 V19 and V26.

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

Format: 1 column - alphanumeric   Beginning
                                                               Column   35
                                                                         45

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 V19 and V26.

Variable Name: 1st C.D.C./T.D.C. - Type of Damage Distribution
                 2nd C.D.C./T.D.C. - Type of Damage Distribution

Format: 1 column - alphanumeric   Beginning
                                                      Column   36
                                                                46

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 V19 and V26.

Variable Name: 1st C.D.C./T.D.C. - Deformation Extent Guide
                 2nd C.D.C./T.D.C. - Deformation Extent Guide

Format: 2 columns - alphanumeric   Beginning
                                                      Column   37

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 V19 and V26.

     When a body panel is torn loose from the vehicle frame due to impact, the
     extent zone should be coded from direct damage only; consider body panels
     torn loose from the frame as not representative of residual crush.

Variable Name: Documentation of More than Two C.D.C./T.D.C.s

Format: 1 column - numeric   Beginning
                                                                Column   49

Element Values:

   0 Zero, one or two C.D.C./T.D.C.s
   1 More than two C.D.C./T.D.C.s

S urce: Restricted to vehicle inspection or photographs.

Remarks:

   Code "0" (Zero, one or two C.D.C./T.D.C.s) if the C.D.C./T.D.C. is unknown,
   or when two or less C.D.C./T.D.C.s are coded in row variables 19-24 and 26-
   31, and no other C.D.C./T.D.C.s are formulated at the top of page 4, Vehicle
   Form.

   Code "1" (More than two C.D.C./T.D.C.s) when two C.D.C./T.D.C.s are coded in
   row variables 19-24 and 26-31; and additional C.D.C./T.D.C.s are reported at
   the top of page 4, Vehicle Form.

Variable Name: Vehicle Identification Number

Format: 17 columns - alphanumeric   Beginning
                                                                 Column   50

Element Values:

   Code the entire VIN, left justify
   ØØØØØØØØØØØØØØØØØ No VIN
   99999999999999999 Unknown

Source: Primary source is vehicle inspection; a secondary source is the police
      report.

Remarks:

   Leave "Blank" any column which does not have a VIN character.

   If part of the VIN is missing or not decipherable, leave the column ary 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 jus-
   tify, as shown in the following example:

        VIN: A 3 A 1 9 7 H 1 1 8 8 1 5 _ _ _ _
        CODE: A 3 A 1 9 7 H 1 1 8 8 1 5 _ _ _ _

   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 alpha-
   numeric 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: F 3 U 6 2 S 1 Ø Ø 9 3 2 F _ _ _ _ _ _
        CODE: 3 U 6 2 S 1 Ø Ø 9 3 2 _ _ _ _ _ _

   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 are contained in the string of alphanumeric
   characters, then they should be ignored as in the example below.

        VIN: S M - E 3 0 7 6 4 2 1
        CODE: S M E 3 Ø 7 6 4 2 1 _ _ _ _ _ _ _

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 (∅) in place of the sequential numbers.

The location of the VIN will vary among, and within, vehicles. Reference sources which may prove helpful in locating the VIN include, but are not limited to:

      (1)   Motor Vehicle Identification Manual
            National Automobile Theft Bureau
            Palmer Publications Company
            Downers Grove Illinois 60515

      (2)   Passenger Car and Truck-Accident
             Investigators Manual
            MVMA of the U.S., Inc.
            320 New Center Building
            Detroit, Michigan 48202

Variable Name: Registration of Vehicle

Format: 1 column - numeric   Beginning
                                                             Column   67

Element Values:

    0 Not Registered
    1 In-state (at least)
    2 Out-of-state (only)
    8 Other registration (e.g., federal, foreign, military)
    9 Unknown

Source: Primary sources are the vehicle inspection and police report.

Remarks

    Code "1" (In-state) means that the vehicle was registered in the state in
    which the accident occurred. The vehicle may or may not have also been
    registered in other states. The vehicle, in the instance of tractor-trailer
    or multi-unit trucks, includes the registration found for both the tractor
    and its trailer(s).

    Code "2" (Out-of-state) means that the vehicle was registered, but not in
    the state in which the accident occurred. State-owned vehicles are coded
    "1" if the accident occurred in the same state in which the vehicle is
    registered.

    Vehicles displaying dealer's tags are not registered ("0"). The assumption
    is that the association between the tag and the vehicle is short-lived.

    Expired registrations are not valid and are to be ignored when selecting the
    proper attribute.

Variable Name: Vehicle Special Use (This Trip)

F rmat: 1 column - numeric   Beginning
                                                      Column   68

Element Values:

    0 No special use
    1 Taxi
    2 Vehicle used as school bus
    3 Vehicle used as other bus
    4 Military
    5 Police
    6 Ambulance
    9 Unknown

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

Remarks:

    Code "0" (No Special Use).

    Code "1" (Taxi) refers to vehicles used during this trip (at the time of the
    accident) on a "fee-for-hire" basis to transport persons. Most of these ve-
    hicles 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
     f 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 satis-
    fies 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 thr ugh
          high school;

        ● whose occupants, if any, are associated with the institution; and,

        ● the vehicle is in operation at the time of the accident to and from
          the school or on a school-sponsored activity or trip.

    Code "3" (Vehicle used as other bus) refers to a motor vehicl which is de-
    signed 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), and "6" (Ambulance) special use
means "in use" and not necessarily emergency use. External identif:.cation
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) ve-
hicle 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. Person-
al 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 mark-
ings) vehicles: (1) whose sole purpose is to provide ambulance servic and
which is always presumed to be in special ambulance use at all times, or (2)
vehicles serving dual purposes such as a hearse used for both funeral and
emergency purposes, which is only coded, when used for the latter purpose.

Military ambulances are coded "4" (Military).

Variable Name: Odometer Reading

Format: 3 columns - numeric   Beginning
                                                      Column   69

Element Values:

   Range: 001 through 500

   Code result 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 supple-
          mented with information from the police report and/or driver inter-
          view.

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 ver
   (i.e., recycled) the coded value represents the total mileage on the vehicle
   rather than the reading on the odometer.

*This value is not listed on the present forms but can be written in if needed.

Variable Name: Passenger Compartment Integrity

Format: 1 column - numeric   Beginning
                                                    Column   72

Element Values:

    0 No passenger compartment
    1 No intregity loss
    Yes, integrity was lost through:
    2 Windshield
    3 Door
    4 Roof
    5 Windshield + door
    6 Windshield + roof
    7 Door + roof
    8 Windshield, door + roof
    9 Unknown

Source: Restricted to vehicle inspection or photographs.

Remarks:

    Consider the passenger compartment as a "package" which is designed to con-
    tain 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 diffi-
    cult to define the magnitude of the opening in a universal manner, the mini-
    mum size of the opening would be equivalent to the head of most adults.
    Components which may lose their integrity are restricted to the windshield,
    door or roof (individually or in combination).

    The question of integrity loss is assessed with respect to impact-related
    damage. The damage can be either direct or induced. Damage which is not
    impact-related (e.g., fire) is not considered.

    Doors which open prior to an impact do not constitute loss of integrity, but
    those which open upon impact or from occupant or cargo loading due to the
    impact constitute loss of integrity.

    Passenger cars which are "convertibles", having soft or removable hard tops,
    should not be coded as having lost the integrity of their roof if it is re-
    moved or in the down position.

    Code "0" (No passenger compartment) if the vehicle has no passenger compart-
    ment (e.g., motorcycle).

    NOTE: Side or rear windows, whether fixed or movabl , are excluded, ven if
    shattered.

Variable Name: Passenger Compartment Intrusion

Format: 1 column - numeric

Beginning
Column   73

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 posi-
    tion more within the compartment. For example, a door which buckles outward
    does not necessarily constitute intrusion. Intrusion cannot occur from dam-
    age 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 compart-
    ment (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 intru-
    sion.

Variable Name: Magnitude of Intrusion

Format: 1 column - numeric   Beginning
                                                          Column   74

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   75

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 hav been
    mentioned, if it occurred, on the police report. It also includes vehicles
    with smoke damage only, but which sustained no fire.

    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 compart-
    ment.

    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 compart-
    ment.

    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 eviden: concerning restraint usage provided only by vehicle inspection.

An indication of restraint usage must be determined for every seating position in the vehicle, regardless of the number of occupants in the vehicle. This "indication of usage" should represent "recent usage" rather than "usage ever" if at all possible. Look for such things as:

- Belt/fittings damaged by occupant loading: deformed anchorages, stretched webbing, latch metal peening (loading impression on metal);

- Placement of belts: on, behind, or under seatbacks or benches; and,

- Condition of belts: dirty, dust covered, mechanically unusable, knotted, size adjustment on fixed length belts, cut for convenience or comfort (out of the way, near housings), or cut for occupant extraction by emergency personnel (usually at an easily accessible position).

Restraint "usage in this accident" is not determined on the Vehicle Form. Vehicle evidence, along with police report information, interviews, relationship of contact points to seat position given the PDOF applied to the vehicle, pr - sence of belt-caused injuries, presence or absence of ejection, etc., are used for the final determination of restraint usage recorded on the Occupant Form.

Where recent usage is indicated, code the type of restraint. Where belts have been used but it cannot be determined whether or not the restraint was used recently (e.g., well worn belts and latches), code the type of restraint and annotate the reason for the code. If usage is not indicated, code none ("0").

Indications of Ejection

If acquired information indicated that an occupant of a vehicle has been ejected but the vehicle cannot be inspected, do not complete the section entitled "Indication of Ejection". The information on this page can only be obtained through a visual inspection of the vehicle.

When a child safety seat exists in other than a normal seating position, such as the floor behind the back seat, use the last column (Other position or unit) to code the presence and any indication of usage for that seat. If the child safety seat is in a normal position, make a diagonal line through each appropriate box and code data for the child safety seat in one half and the normal seat position in the other half. Due to the transient nature of these seats, one should key questions regarding its presence and usage at the time f the accident in the interview before making the final assessments on the Occupant Form.

Variable Name: Type of Most Severe Impact This Vehicle, This Vehicle's Role

Format: 1 column - numeric   Beginning
                                                      Column   76

Element Values:

    0   Non-collision
    1   Front of this vehicle
    2   Left side of this vehicle
    3   Right side of this vehicle
    4   Rear of this vehicle
    5   Other impact aspect
    9   Unknown impact type

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

Remarks:

    This variable measures the general area of deformation of this vehicle's
    most severe impact; consequently, the value coded represents the same plane
    of the vehicle that was coded for V20, 1st C.D.C./T.D.C. - Deformation Loca-
    tion, where V20 is other than "9" or "Blank". This association and unknown
    as well as out of scope damage classifications for V20 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 V20, 1st C.D.C./T.D.C. - Deformation Location, to determine the
    value or range of values for V41, Type of Most Severe Impact This Vehicle,
    This Vehicle's Role.

IF		THEN
V20 equals:		V41 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 th
scope of the C.D.C./T.D.C. are coded under this variable as "0" (Non-colli-
si n), "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" (Non-collision) is used when the vehicle sustains no impact but is
part of the case due to: fire or explosion, immersion, gas inhalation, an oc-
cupant's fall from the vehicle, an injured occupant without an external impact,
or other non-collisions except most jackknife situations.

If the impact occurred at a corner, follow the corner protocol spelled out in
SAE J224b and the T.D.C. for selection of the proper plane.

Variable Name: Role of Other Contacted Vehicle/Object/Person (For Same
                 Impact as Above)

Format: 1 column - numeric   Beginning
                                                          Column   77

Element Values:

     0 Non-collision
     1 Front of other vehicle
     2 Side of other vehicle
     3 Rear of other vehicle
     4 Sideswiped or endswiped by other vehicle
     5 Other location on other vehicle
     6 Object (stationary and non-stationary)
     7 Pedestrian or nonmotorist
     8 Motorcycle or moped
     9 Unknown impact type

Source: Primary source is the inspection of the other vehicle; secondary
          sources include the inspection of this vehicle, photographs, police
          report, and driver interviews.

Remarks:

     Code "0" (Non-collision) should be used only when V41, Type of Most Severe
     Impact This Vehicle, This Vehicle's Role, equals "0" (Non-collision).

     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 geo-
     graphical location on the other vehicle for the common impact that produced
     the most severe impact on the vehicle under consideration. Row variables
     V19 through V24 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.,
     V19-V24 or V26-V31) 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
     V19-V24), then use the table below to select the appropriate value. Remem-
     ber, this table, as its predecessor (V41), is only interpretable in one
     direction.

IF		THEN
V20 or V27 equals		V42
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/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" (Sideswiped or endswiped by other vehicle) is used whenever the ve-
hicle under consideration was sideswiped or endswiped (with one excepti n--
see code "7" below). If a C.D.C./T.D.C. is coded in the first row for this
vehicle (i.e., V19-V24) and V23, 1st C.D.C./T.D.C. - Type of Damage Distri-
bution, equals "S" (sideswipe), then "4" must be coded for this variable.

Code "4" (Sideswiped or endswiped by other vehicle) takes precedence ver
codes "1"-"3" and "5"-"8".

Code "6" [Object (stationary and nonstationary)] whenever the most severe
impact for the vehicle under consideration was produced by an object. Ob-
ject includes motor vehicles not in transport which do not contain any non-
motorists.

Code "7" (Pedestrian or nonmotorist) whenever the most severe impact f r the
vehicle under consideration occurred with a pedestrian, pedalcyclist, animal
related nonmotorist, nonmotorist inside a motor vehicle not in transport, or
another nonmotorist. This code is used even if the nonmotorist inside the
motor vehicle not in transport was not injured. However, if the motor vehi-
cle under consideration received a side/endswipe from a motor vehicle not in
transport, then code "4" (Sideswiped or endswiped by other motor vehicle)
takes precedence. But, if the side/endswipe received by the vehicle under
consideration was produced by a pedestrian or other nonmotorist not connect-
ed with a motor vehicle, then code "7" (Pedestrian or nonmotorist) is used.

Code "8" (Motorcycle or moped) whenever the most severe impact for the vehi-
cle under consideration was produced by a motorcycle or moped--unless, of
course, the vehicle under consideration was side/endswiped.

Code "9" (Unknown impact type) whenever the most severe impact for the vehi-
cle under consideration resulted from an impact [non-impacts are coded "0"
(Non-collision)] of unknown origin.

Variable Name: Rollover (Excludes Motorcycle)

Format: 1 column - numeric   Beginning
                                                     Column   78

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 it-
    self did not, the variable should be coded "0" (No rollover).

    If First Harmful Event (A11) equals "01" (Overturn) and it was based on this
    vehicle, then Rollover must not equal "0" for this vehicle, unless Body Type
    (V14) equals "15"-"18" (Motorcycles) for this vehicle.

Variable Name: Jackknife

Format: 1 column - numeric   Beginning
                                                          Column   79

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 V17 (Towed Trailing Unit) as "0" (No) are to be
   coded "0" (Not an articulated vehicle) here, unless they were previously
   coded as "57" (Two unit truck-tractor with semi-trailer or truck with cargo
   trailer), or "58" (Multi- unit: truck or truck-tractor with two or more
   trailers), on variable V14 (Body Type). Codes "57" and "58" (for variable
   V14, Body Type) as well as any vehicle for which variable V17, Towed Trail-
   ing Unit, equals "1" (Yes), must be coded, on this variable, either "1" (No)
   or "2" (Yes).

   Code "2" (Yes) when there is either sufficient rotation (articulation) be-
   tween the trailing unit (which includes another vehicle) and the pulling ve-
   hicle to come in contact with each other and leave any visible damage (ir-
   respective of the magnitude of the damage), or the rotation was ninety (90)
   degrees or more.

   Code "2" (Yes) excludes articulation of $\geq$ 90° under controlled situations
   (e.g., backing, parking, etc.).

Variable Name: Submission of Potential Safety Problem Bulletin

Format: 1 column - numeric   Beginning
                                                Column   80

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 request-
   ed that each team be placed on the mailing list for reports of active def ct
   investigations. Teams should become familiar with current investigati ns
   and be on the lookout for accidents which are relevant to these investiga-
   tions; 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.

NASS

POTENTIAL SAFETY PROBLEM BULLETIN

REPORTING DATE

SEND TO: Vernon Roberts, NRD-32, Nassif Building, Room 6211
          400 Seventh Street, S.W., Washington, D.C. 20590

SUBJECT: _____

_____

_____

IDENTIFICATION:

TEAM _____ CASE NO. _____ ACCIDENT DATE _____

ACCIDENT LOCATION _____

INVESTIGATING POLICE AGENCY _____

VEHICLE MODEL YEAR _____ MAKE/MODEL _____

VIN _____ ODOM _____

ACCIDENT DESCRIPTION (include police report)

                                                    (continue   on back)

ITEM DESCRIPTION (include hardware and photographs if possible)

Variable Name: Vehicle Curb Weight

Format: 3 columns - numeric   Beginning
                                                      Column   81

Element Values:

   Range: 001 through 500

   Code recorded weight to the nearest 100 pounds.
   001 Less than 150 Pounds
   997 99,650 Pounds or More
   999 Unknown

Source: Primary sources are listed below; an occasional secondary source is
         the vehicle inspection.

Remarks:

   Code to 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 "001" if the weight is less than 150 lbs.

   Do not confuse the rated Gross Vehicle Weight (GVW) with the curb weight
   since it is likely to be significantly greater than the curb weight.

   The weight of the trailer (exclusive of cargo) is counted with the vehicle
   curb weight if variable V14 (Body Type) is coded as "57" or "58" (tractor-
   trailer combinations). The weight of the cargo contained within or on the
   trailer(s) as well as in the tractor is coded under variable V47 (Vehicle
   Cargo Weight).

   If variable V17 is coded "1" (Yes) and variable V14 (Body Type) is not coded
   as "57" or "58" (tractor-trailer combinations), the weight of the trailer
   and its cargo is not coded here. Instead, it is coded under variabl V47
   (Vehicle Cargo Weight). For example, the weight of a boat trailer and its
   cargo are coded as Vehicle Cargo Weight (V47), distinct from the weight of
   the vehicle.

   When coding a pickup (V14, Body Type, equal 50) or car [e.g., El Camino (V14
   = 05)] with an add-on type camper (i.e., shell or self-contained), do not
   consider the add-on type camper as part of the curb weight. Add-on type
   campers should be coded under Variable V47, Vehicle Cargo Weight. However,
   chassis-mounted campers are to be included in this variable.

Variable Name: Vehicle Curb Weight (cont'd.)

A primary source could be anyone of the reference materials listed below.

Passenger Vehicle Specifications
Motor Vehicle Manufacturers Association
  of the U.S., Inc.
300 New Center Building
Detroit, Michigan 48202

Automotive News
Crain Automotive Group, Inc.
965 East Jefferson Avenue
Detroit, Michigan 48207

Branham Automobile Reference Book
Branham Publishing Company
Post Office Box 1948
Santa Monica, California 90406

Gasoline Truck Index and
  Diesel Truck Index
Truck Index, Inc.
Post Office Box 4221
Anaheim, California 92803

Variable Name: Vehicle Cargo Weight

Format: 3 columns - numeric

Beginning
Column   84

Element Values:

   Range: 000 through 500

   Code recorded weight to the nearest 100 pounds.
   000   Less than 050 pounds
   997   99,650 pounds or more
   999   Unknown

Source: Investigator determined--inputs include vehicle inspection (e.g., GVW, shipping invoice, bill of lading), driver interview, and other interviewees.

Remarks:

   Code to the nearest 100 pounds as in the examples:

        Weight: 180 lbs.
        Code: 002

        Weight: 3,230 lbs.
        Code: 032

        Weight: 16,500 lbs.
        Code: 165

   Code "000" if the weight is less than 050 lbs.

   Do not include the weight of the occupants in the cargo weight. The weight represented by the occupants will be included as a component (along with cargo and vehicle curb weight) of the single value which represents the vehicles combined weight on the CRASH program summary form, if used.

   The weight of the cargo contained within or on the trailer(s) as well as in the tractor for vehicles coded "57" or "58" (tractor-trailer combinations) on variable V14 (Body Type) is coded here. This is exclusive of the weight of the trailer(s) by themselves.

   If variable V17 is coded "1" (Yes) and variable V14 (Body Type) is not coded as "57" or "58" (tractor-trailer combinations) [prohibited combination--see Remarks section for V17, 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 V46, 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   87

Element Values:

    0 No cargo
    1 Measured
    2 Estimated
    3 Rated capacity
    9 Unknown: Source or weight

Source: Investigator determined--inputs include vehicle inspection, driver
         interview, and other interviewees.

Remarks:

    Code "0" (No cargo) only if there was no cargo. If the total cargo weight
    of V47 (Vehicle Cargo Weight) is less than 50 pounds (i.e., if V47 equals
    "000"), then V48 can equal "1" (Measured) or "2" (Estimated).

    If the cargo weight (V47) is known to be greater than or equal to 50 pounds,
    then code this variable as "1" (Measured), "2" (Estimated), or "3" (Rated
    capacity) respectively.

CRASH PROGRAM

Two options or methods for calculating the Delta V are available in the CRASH program.

DAMAGE ALGORITHM

In this method the damage profile and direction of principal force for each vehicle are used to estimate the Delta V. In the absence of an exact profile th 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 f rce direction rather than only relying on the o'clock sector definition for CDC.

TRAJECTORY ALGORITHM

In this method the evidence from the scene as well as vehicle damage data is utilized to estimate Delta V. The scene evidence of trajectory will, in fact, predict impact speed as well as Delta V. The scene data may be uncertain in many cases. For example, the friction coefficient on a wet road may be uncertain. The precise location of final rest and impact positions may be uncertain. The path between impact and final rest may be uncertain. The uncertainty associated with such evidence grows as the time between the accident and the time of scene inspection increases. The investigator should not be dismayed f r even a live scene contains ambiguities concerning impact position and trajectory. Even the final rest position may be confused by action of the police in moving the vehicles to clear traffic congestion. For all these reasons, the trajectory option will be exercised less often than the damage option.

RECONCILIATION OF DIFFERENT RESULTS BETWEEN DAMAGE AND TRAJECTORY

When evidence from the scene and the vehicle is present, the execution of CRASH will produce two independent estimates of Delta V. The two results will seldom be precisely equal. What is a significant difference, and what action sh uld 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 vidence: Review the impact and rest positions and the traject ry path. Review the surface coefficient of friction.

After reviewing these sources, subsequent runs should be made if adjustments to the input are rational. ADJUSTMENTS SHOULD NOT BE MADE WITHOUT BASIS FOR UNCERTAINTY IN THE ADJUSTED VARIABLES. If agreement cannot be reached between the two methods, the case should be flagged for special review by the Z ne Center, who will then complete variables V49 through V53.

Investigators will find it convenient when uncertainty exists in some variables, such as friction coefficient and other scene evidence, to identify the range of rational error that may exist before initiating a CRASH run.

If agreement does not occur, the RERUN execution on the CRASH program can then be initiated at a considerable savings in time devoted to changing the input variables.

In any case, when both options--DAMAGE and TRAJECTORY--have been execut d and agreement has been obtained, the two results for Delta V should be averaged after making the force direction colinear and this averaged value entered in V50 through V53.

Variable Name: Basis for Total Delta V (Highest)

F rmat: 1 column - numeric   Beginning
                                                          Column   88

Element Values:

    0 No impact, no inspection, or no photographic documentation
    1 Damage data only obtained, not used
    2 Damage data only obtained, used
    3 Damage and trajectory data obtained, neither used
    4 Damage and trajectory data obtained, damage only used
    5 Damage and trajectory data obtained, both used as average in calculation

Source: Investigator determined--inputs include CRASH output (if applicable),
          vehicle inspection, scene inspection, police report, and photographs.

Remarks:

    The selected response is based on the data and its usage for the highest
    delta V only. In other words, if, for example, there is damage and trajec-
    tory data used for other than what is concluded to be the impact with the
    highest delta V, then code "5" (Damage and trajectory data obtained, both
    used as average in calculation) may not be used.

    Code "0" (No impact, no inspection, or no photographic documentation) means:
    (1) that there was no energy exchange, or (2) that the vehicle was not in-
    spected and there were no adequate photographs. Even if the vehicle is
    inspected but, due to some reason, damage data cannot be obtained, code "0"
    (e.g., damage contaminated by partial or full repair).

    Code "1" (Damage data only obtained, not used) includes all vehicles for
    which one has damage data including those outside the scope of the CDC (SAE
    J224b).

    Code "3" (Damage and trajectory data obtained, neither used) is similar to
    code "1" except that both vehicle damage and trajectory data were obtained.

    "Damage data obtained" is defined to mean that information regarding this
    vehicle's damage (minimum of CDC/TDC for vehicles for which these pr tocols
    are applicable or relevant damage information for other vehicles like motor-
    cycles, special vehicles, etc.) was documented.

    "Trajectory data obtained" is defined to mean that information regarding
    this vehicle's trajectory (minimum of at-impact and final rest positions and
    headings) were obtained.

    The subsequent use of this information is not a consideration with regard to
    the definition of "obtained".

Variable Name: Basis for Total Delta V (Highest) [cont'd.]

Codes "2" (Damage data only obtained, used), "4" (Damage and trajectory data
obtained, damage only used), and "5" (Damage and trajectory data obtained,
both used as average in calculation) mean that a CRASH output was produced
for the vehicle's highest delta V. In this sense, codes "2", "4", or "5"
should only be used if a CDC was entered in row variables V19 through V24.

The table below provides a mapping between this variable's value and the ap-
propriate value for variables V50 through V53.

V49	V50	V51-V52	V53
0	99	_99	9999
1, 3	96	_96	9999
2, 4, 5	00 - 95	-95 - +95	0000 - 9997

The character "_" means leave the first space "blank".

Variable Name: Total Delta V

Format: 2 columns - numeric   Beginning
                                                           Column   89

Element Values:

   Range: 00 through 95

   Nearest k.p.h.
   00 Less than 0.5 k.p.h.
   95 95 k.p.h and above
   96 Not able to compute (e.g., motorcycle)
   99 Unknown

Source: CRASH program.

Remarks:

   Complete CRASH runs (where applicable) for all impacts in the accident. The
   results may then be used to classify the corresponding CDCs as highest,
   secondary, or neither, for variables V18-V31 of the Vehicle Form. If a CDC
   is entered in row variables V19-V24 and it was used in exercising the CRASH
   program, code the Total Delta V as shown in the results.

   If the CDC asociated with CRASH was only entered in row variables V26-V31
   (secondary), enter the Total Delta V as shown in the results on the space
   available in the secondary column of this variable. In addition, code this
   variable as "96" (Not able to compute) or "99" (Unknown), depending on the
   data obtained for the vehicle's highest delta V.

   If neither the highest nor the secondary CDC entered in row variables V18-
   V24 or row variables V25-V31 was used in exercising the CRASH program, code
   the present variable as either "96" (Not able to compute) or "99" (Unknown).

   To convert miles to kilometers, multiply miles times 1.61. For example, 18
   m.p.h. x 1.61 = 29.0 k.p.h.

Variable Name: Longitudinal Component of Delta V

Format: 3 columns - numeric   Beginning
                                                       Column   91

Element Values:

   Range: -95 k.p.h. through +95 k.p.h.

   Nearest k.p.h.
   ±00   Greater than -0.5 and less than 0.5 k.p.h.
   ±95   95 k.p.h. and above
   _96   Not able to compute (e.g., motorcycle)
   _99   Unknown

Source: CRASH program.

Remarks:

   Complete CRASH runs (where applicable) for all impacts in the accident. Th
   results may then be used to classify the corresponding CDCs as highest,
   secondary, or neither, for variables V18-V31 of the Vehicle Form. If a CDC
   is entered in row variables V19-V24 (highest) and it was used in exercising
   the CRASH program, code the Longitudinal Component of Delta V as shown in
   the results.

   If the CDC associated with CRASH was only entered in row variables V26-V31
   (secondary), enter the Longitudinal Component of Delta V as shown in the re-
   sults on the space available in the secondary column of this variable. In
   addition, code this variable as "96" (Not able to compute) or "99" (Unknown)
   depending on the data obtained for the vehicle's highest delta V.

   If neither the highest nor the secondary CDC entered in row variables V18-
   V24 or row variables V25-V31 was used in exercising the CRASH program, code
   the present variable as either "96" (Not able to compute) or "99" (Unknown).

   The character "_" means leave the first space "blank".

Variable Name: Lateral Component of Delta V

Format: 3 columns - numeric   Beginning
                                                          Column   94

Element Values:

   Range: -95 k.p.h. through +95 k.p.h.

   Nearest k.p.h.
   ±00 Greater than -0.5 and less than 0.5 k.p.h.
   ±95 95 k.p.h. and above
   _96 Not able to compute (e.g., motorcycle)
   _99 Unknown

Source: CRASH program.

Remarks:

   Complete CRASH runs (where applicable) for all impacts in the accident. The
   results may then be used to classify the corresponding CDCs as highest,
   secondary, or neither for row variables V18-V31 of the Vehicle Form. If a
   CDC is entered in row variables V19-V24 (highest) and it was used in exer-
   -cising the CRASH program, code the Lateral Component of Delta V as shown in
   the results.

   If the CDC associated with CRASH was only entered in row variables V26-V31
   (secondary), enter the Lateral Component of Delta V as shown in the results
   on the space available in the secondary column of this variable. In addi-
   tion, code this variable as "96" (Not able to compute) or "99" (Unknown),
   depending on the data obtained for the vehicle's highest delta V.

   If neither the highest nor the secondary CDC entered in row variables V18-
   V24 or row variables V25-V31 was used in exercising the CRASH program, cod
   the present variable as either "96" (Not able to compute) or "99" (Unknown).

   The character "_" means leave the first space "blank".

Variable Name: Energy Absorption

Format: 4 columns - numeric   Beginning
                                                                  Column   97

Element Values:

   Range: 0000 through 5000 newton·meters

   Nearest 100 newton·meters (joules)
   0000   Less than 50 newton·meters
   9997   999,650 newton meters or more
   9999   Unknown

Source: CRASH program.

Remarks:

   Complete CRASH runs (where applicable) for all impacts in the accident. The
   results may then be used to classify the corresponding CDCs as highest,
   secondary, or neither for variables V18-V31 of the Vehicle Form. If a CDC
   is entered in row variables V19-V24 (highest) and it was used in exercising
   the CRASH program, code the Energy Absorbed as shown in the results.

   If the CDC associated with CRASH was only entered in row variables V26-V31
   (secondary), enter the Energy Absorbed as shown in the results on the space
   available in the secondary column of this variable. In addition, code this
   variable as unknown ("9999").

   If neither the highest nor the secondary CDC entered in row variables V18-
   V24 or row variables V25-V31 was used in exercising the CRASH program, code
   the present variable as "9999" (Unknown). This also includes vehicles which
   were not inspected.

   To convert foot-pounds to newton·meters, multiply by 1.356. For example,
   14631.3 ft-lbs. x 1.356 = 19840 nt·m.

   The value is then reported to the nearest 100 newton·meters. In the above
   example it would be "0198".

   If the CRASH program is exercised in the english version and the amount of
   energy absorbed exceeds 737,462 ft-lbs., code "9997".

   If the CRASH program is exercised in the metric version and the amount of
   energy absorbed exceeds 999,999 nt·m, the output will appear as "****",
   code "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: Investigator I.D. Number

Format: 1 column - numeric   Beginning
                                                     Column   10

Element Values:

   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:

   Range: 01 through 30

Source: Investigator determined--inputs include police report and driv r
          interview.

Remarks:

   For each and every Vehicle Form, there must be an accompanying Driver Form.

   The value coded here must be the same as that coded for the vehicle in which
   this driver is associated.

   This variable is a mandatory variable and cannot be changed.

Variable Name: Number of Occupants This Motor Vehicle

Format: 2 columns - numeric   Beginning
                                                     Column   13

Element Values:

    Range: 00 through 50
    99 Unknown

Source: Primary source is driver interview, secondary sources include the
          police report and an occupant interviewee, witnesses other than
          any occupant interviewee.

Remarks:

    This variable tells the system how many occupants (including the driver)
    were present in this driver's vehicle. If the actual number pres nt is
    unknown, then "99" (Unknown) should be coded.

Variable Name: Driver Presence in Vehicle

Format: 2 columns - numeric   Beginning
                                                                Column   15

Element Values:

     1 Driver present
     2 Driver not present

Source: Investigator determined--inputs include the police report and any
         driver interviews or person interviews.

Remarks:

     This variable serves as a flag to identify driverless motor vehicles in
     transport. If no driver was physically in the vehicle at the time it was
     struck, then "2" (Driver not present) should be coded. In addition, vari-
     ables D10 through D32 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 Acci-
     dent Form (A17), then the driver was present ("1").

     This variable is a mandatory variable and cannot be changed.

Variable Name: Months Driving Experience This Class of Vehicle

Format: 2 columns - numeric   Beginning
                                                                Column   16

Element Values:

   Range: 01 through 61

   Code actual months of previous driving experience up to 60.

   Blank - Driver not present (D09)
   61 Greater than five years
   99 Unknown

Source: Driver interview.

Remarks:

   "Blank" indicates that no driver was present.

   This variable is used to report the driver's previous driving experience in
   the class of vehicle the driver was operating at the time of the accident.
   Class of vehicle refers to general vehicle types (i.e., passenger car, light
   truck, straight truck, truck-tractor, bus, motorcycle, or special vehicle).
   These categorizations are not necessarily mutually exclusive. For example,
   a driver employed to operate a large limousine (special vehicle: V14 = 40,
   Body Type) is involved in an accident. This driver normally operates a
   standard size passenger car. In this instance, the investigator must not
   consider the special vehicle as a class differing from the driver's other
   driving experience. A professional truck driver, on the other hand, in-
   volved in an accident while operating the family's personal passenger car
   would certainly require the investigator to separate this driver's profes-
   sional 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.

Variable Name: Estimated Mileage This Vehicle

Format: 3 columns - numeric   Beginning
                                                               Column   18

Element Values:

   Range: 001 through 997
   Miles to the nearest 10C
   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 <u>the</u> vehicle in the accident. The intent is to mea-
sure the driver's cumulative driving experience for the specific vehicle be-
ing driven at the time of the accident. For example, if a person drove var-
ious standard passenger vehicles over a period of five years so as to accum-
ulate approximately 60,000 total miles, but was involved in an accident
while driving another standard passenger vehicle for the first time, the
<u>total estimated mileage this vehicle</u> would equal only that mileage accumu-
lated during the trip in which the accident occurred. Specifically excluded
is any subsequent mileage accumulated in "this vehicle" post-accident.

Variable Name: Type of Operation or Carrier
                 (If in Vehicle 10,000 lbs. GVW or Greater)

Format: 1 column - numeric   Beginning
                                                          Column   21

Element Values:

    Blank - Driver not present (D09)
    0 Noncommercial, or not vehicle 10,000 lbs. GVW or greater
       [or an operator not meeting one of the following descriptions]
    1 For hire common or contract carrier
    2 Private carrier of property
    3 Carrier of ICC exempt commodities
    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 under-
    gone--hence the interest in this question. This is especially true f car-
    riers 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 enter-
    prise.

    Code "1" (For hire common or contract carrier) if the driver satisfies
    either of the following definitions. A common carrier is a person present-
    ing himself/herself to the general public as a provider of motor v hicle
    transportation for compensation over regular or irregular routes, or both.
    A contract carrier is the same as a common carrier except that the driver
    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 "2" (Private carrier of property) means a person other than a common or
    contract carrier that is transporting property by motor vehicle and:

    (1) the person is the owner, l ssee, or baile f the property being trans-
         ported; 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 "3" (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 (Inter-
state Commerce Commission) economic regulation, hence the term exempt haul-
er.   The list of commodities is exhaustive and need not be 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 "8" (Other) for the purposes of NASS shall include contract carriers
for the United States Postal Service, foreign carriers (Mexican, Canadian,
etc.) operating in the United States, carriers of migrant workers, and farm-
ers engaged in farm-to-market operations, or any other type of operati n 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 an-
     other 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: Bureau of Motor Carrier Safety (BMCS) Regulated

Format: 1 column - numeric   Beginning
                                                     Column   22

Element Values:

   Blank - Driver not present (D09)
   0   Not BMCS regulated
   1   BMCS regulated
   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.

   In general, BMCS regulates the operation of carriers who are engaged in
   interstate or foreign commerce. Included are common or contract carriers as
   well as private carriers of property if the operation involves interstate or
   foreign commerce. If a driver drives for one of these carriers but meets
   one of the following conditions, then the driver is not BMCS regulated:

      (1)   drivers used wholly within the commercial zone of a municipality
            or large city (generally these are pickup and delivery drivers);
            or,

      (2)   farmers operating their own vehicles who are transporting agricul-
            ture products or supplies or equipment to or from their farm.

   Investigators should ask the driver if he/she is BMCS regulated. If the
   driver indicates that he/she knows the answer, then code the appropriate re-
   sponse--yes ("1") or no ("0").

   If the driver is uncertain as to whether or not he/she is regulated, inquire
   about where the driver drives and follow the guidance given above. If you
   feel reasonably certain of the appropriate response, then code it; other-
   wise, if the inquiry is not fruitful, code unknown ("9").

Variable Name· Driver's Classification
                [If in Vehicle 10,000 lbs. GVW or Greater]

Format: 1 column - numeric   Beginning
                                                      Column   23

Element Values·

    Blank - Driver not present (D09)
    0 Noncommercial or not in vehicle 10,000 lbs. GVW or greater
    [Commercial]
    1 Full-time employee
    2 Part-time employee
    3 Owner/operator
    4 Leased (from labor contractor)
    8 Other (specify)
    9 Unknown

Source: Primary source is driver interview; secondary sources include th
         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. GVW.

    The key distinction between commercial and noncommercial is whether the ve-
    hicle (or its most immediate operator) is being operated for gain. There-
    fore, 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) con-
    secutive 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. Ex-
    cluded, however, are seasonal employees.

    Code "2" (Part-time employee) if the driver drives for a motor carrier on a
    temporary (short t rm) or seasonal basis; works for a multiple number of
    carriers, but is not an mployee 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 we k for th carrier but
    also has another job with another employer.

Variable Name: Driver's Classification (cont'd.)

Code "3" (Owner/operator) if the driver owns the truck and/or trailer that was involved and either is acting as an independent motor carrier himself/herself or has leased himself/herself and the vehicle to a motor carrier.

Code "4" [Leased (from labor contractor)] if the driver is the employee of a labor contractor, who in turn, leases the services of the driver to a motor carrier. Under these arrangements, the carrier usually exercises dispatch control over the driver, but the driver's pay, vacation, sick leave and other fringe benefits are the responsibility of the labor contractor that employs him.

Code "8" (Other) includes any other category of commercial driver not covered above.

Variable Name: Frequency Driving Road

Format: 1 column - numeric   Beginning
                                               Column   24

Element Values:

   Blank - Driver not present (D09)
   1 Daily
   2 Weekly
   3 Monthly
   4 Less than once a month
   5 First time on road
   9 Unknown

Source: Driver interview.

Remarks:

   "Blank" indicates that no driver was present.

   The following decision rules apply if the driver's response is given in
   units different than those listed.

        Daily = $\geq$ 3 times a week

        Weekly = < 3 times a week but $\geq$ 3 times a month

        Monthly = 1 or 2 times a month

        Less than once a month = less than once a month

        First time on road = first time on road

Variable Name: Driver Education

Format: 1 column - numeric   Beginning
                                                      Column   25

Element Values:

   Blank - Driver not present (D09)
   0   No formal driver training
   1   In training at time of accident
   2   High school driver training
   3   Commercial driver training
   4   Two or more types of formal driver training
   8   Other formal driver training (e.g., college, military, etc.)
       (specify)
   9   Unknown

Source: Driver interview.

Remarks:

   "Blank" indicates that no driver was present.

   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.

   Codes "2" through "4" and "8" mean that the driver had completed the type r
   number of courses indicated.

   Code "3" (Commercial driver training) refers to organizations that p:r vide
   driver training for a profit. It excludes nonprofit organizations, employee
   training programs, and rehabilitative programs. These should be c ded as
   "8" (Other formal driver training).

   Only basic driver training is considered for this variable--refr sher
   courses (i.e., basic skills) are included. Specifically excluded fr m con-
   sideration are special or advanced training type courses (e.g., special
   training for elderly, accident avoidance type training, or any othe:r ad-
   vanced type of training).

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 th 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 t tal 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 ar 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 ther vehicle (vehicle #2) then hit vehicle #4 head- n.

<u>Driver #2</u>:   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 y u that he heard vehicle #1 impacting vehicle #3.

<u>Driver #3</u>;   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.

<u>Driver #4</u>:   This driver tells you that all he knows about the accident is that vehicle #1 hit his vehicle head-on.

Based on "Driver 1"'s narrative

ACCIDENT DIAGRAM

Draw a rough sketch of the accident sequence as described by the driver. Note impact and final rest positions carefully. If possible, relate these to some identifiable object in the area, and record vehicle and non-occupant headings relative to an object, as well.

Indicate North

¹ Object Contacted	² Vehicle Impact Location	³ Vehicle Orientation
(✓) Motor vehicle	(1) Front	(1) Tracking, no skidding
(0) Guardrail	(2) Right side	(2) Tracking, skidding
(1) Ditch	(3) Rear	(3) Rotated clockwise to path
(2) Ground	(4) Left side	of travel
(3) Tree	(5) Top	(4) Rotated counterclockwise to
(4) Pole	(6) Undercarriage	path of travel
(5) Sign	(7) Other:	(5) Rolling over
(6) Pedacyclist	(8) Not applicable	(6) Jackknifed
(7) Pedestrian	(9) Unknown	(7) Other:
(8) Other:		(8) Not applicable
(9) Unknown		(9) Unknown

DRIVER VIEW of TOTAL ACCIDENT CONTACT SEQUENCE

Did More Than Six Impacts Occur? ___ Unknown, ✓ No, ___ Yes: code the six severest impacts.

Accident Sequence Number	Common Impact Number	Object Contacted¹	One Vehicle			Other Vehicle--if applicable		
			Vehicle Number	Impact Location²	Vehicle Orientation³	Vehicle Number	Impact Location²	Vehicle Orientation³
1	—	3	1	1	2	—	—	—
2	—	3	1	4	3	—	—	—
3	—	✓	1	2	3	2	1	1
4	—	✓	1	4	4	3	1	1
5	—	✓	2	1	1	4	1	1
6	—	—	—	—	—	—	—	—

Based on "Driver 2"'s narrative

ACCIDENT DIAGRAM

Draw a rough sketch of the accident sequence as described by the driver. Note impact and final rest positions carefully. If possible, relate these to some identifiable object in the area, and record vehicle and non-occupant headings relative to an object, as well.

Indicate North

¹ Object Contacted	² Vehicle Impact Location	³ Vehicle Orientation
(/) Motor vehicle	(1) Front	(1) Tracking, no skidding
(0) Guardrail	(2) Right side	(2) Tracking, skidding
(1) Ditch	(3) Rear	(3) Rotated clockwise to path
(2) Ground	(4) Left side	of travel
(3) Tree	(5) Top	(4) Rotated counterclockwise to
(4) Pole	(6) Undercarriage	path of travel
(5) Sign	(7) Other: _____	(5) Rolling over
(6) Pedacyclist	(8) Not applicable	(6) Jackknifed
(7) Pedestrian	(9) Unknown	(7) Other: _____
(8) Other: _____		(8) Not applicable
(9) Unknown		(9) Unknown

DRIVER VIEW of TOTAL ACCIDENT CONTACT SEQUENCE

Did More Than Six Impacts Occur? ___ Unknown, ✓ No, ___ Yes: code the six severest impacts.

Accident Sequence Number	Common Impact Number	Object Contacted¹	One Vehicle			Other Vehicle—if applicable		
			Vehicle Number	Impact Location²	Vehicle Orientation³	Vehicle Number	Impact Location²	Vehicle Orientation³
1	—	✓/\	2	1	1	1	2	3
2	—	✓	2	1	1	4	1	1
3	—	✓	1	4	4	3	1	1
4	—	—						
5	—	—						
6	—	—	—	—	—	—	—	—

Based on "Driver 3"'s narrative

ACCIDENT DIAGRAM

Draw a rough sketch of the accident sequence as described by the driver. Note impact and final rest positions carefully. If possible, relate these to some identifiable object in the area, and record vehicle and non-occupant headings relative to an object, as well.

Indicate North

¹ Object Contacted	² Vehicle Impact Location	³ Vehicle Orientation
(/) Motor vehicle	(1) Front	(1) Tracking, no skidding
(0) Guardrail	(2) Right side	(2) Tracking, skidding
(1) Ditch	(3) Rear	(3) Rotated clockwise to path
(2) Ground	(4) Left side	of travel
(3) Tree	(5) Top	(4) Rotated counterclockwise to
(4) Pole	(6) Undercarriage	path of travel
(5) Sign	(7) Other: ___	(5) Rolling over
(6) Pedacyclist	(8) Not applicable	(6) Jackknifed
(7) Pedestrian	(9) Unknown	(7) Other: ___
(8) Other: ___		(8) Not applicable
(9) Unknown		(9) Unknown

DRIVER VIEW of TOTAL ACCIDENT CONTACT SEQUENCE

Did More Than Six Impacts Occur? ___ Unknown, ✓ No, ___ Yes: code the six severest impacts.

Accident Sequence Number	Common Impact Number	Object Contacted¹	One Vehicle			Other Vehicle--if applicable		
			Vehicle Number	Impact Location²	Vehicle Orientation³	Vehicle Number	Impact Location²	Vehicle Orientation³
1	—	✓	2	1	1	1	2	3
2	—	✓	3	1	1	1	4	4
3	—	✓	2	1	1	4	1	1
4	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—

Based on "Driver 4"'s narrative

A C C I D E N T   D I A G R A M

Draw a rough sketch of the accident sequence as described by the driver. Note impact and final rest positions carefully. If possible, relate these to some identifiable object in the area, and record vehicle and non-occupant headings relative to an object, as well.

Indicate North

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¹ Object Contacted	² Vehicle Impact Location	³ Vehicle Orientation
(/) Motor vehicle	(1) Front	(1) Tracking, no skidding
(0) Guardrail	(2) Right side	(2) Tracking, skidding
(1) Ditch	(3) Rear	(3) Rotated clockwise to path
(2) Ground	(4) Left side	of travel
(3) Tree	(5) Top	(4) Rotated counterclockwise t
(4) Pole	(6) Undercarriage	path of travel
(5) Sign	(7) Other:	(5) Rolling over
(6) Pedacyclist	(8) Not applicable	(6) Jackknifed
(7) Pedestrian	(9) Unknown	(7) Other:
(8) Other:		(8) Not applicable
(9) Unknown		(9) Unknown

DRIVER VIEW of TOTAL ACCIDENT CONTACT SEQUENCE

Did More Than Six Impacts Occur? ___ Unknown, ✓ No, ___ Yes: code the six severest impacts.

Accident Sequence Number	Common Impact Number	Object Contacted¹	One Vehicle			Other Vehicle--if applicable		
			Vehicle Number	Impact Location²	Vehicle Orientation³	Vehicle Number	Impact Location²	Vehicle Orientation³
1	—	✓	4	1	1	2	1	1
2	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—

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 inter-
views, the actual impact sequence (common impact number)
is determined as shown above and entered in corresponding
Driver Forms. (See next page.)

PROPER ENTERING OF COMMON IMPACT NUMBER

Driver #1

Accident Sequence Number	Common Impact Number	Object Contacted[1]	One Vehicle			Other Vehicle--if applicable		
			Vehicle Number	Impact Location[2]	Vehicle Orientation[3]	Vehicle Number	Impact Location[2]	Vehicle Orientation[3]
1	1	3	1	1	2	—	—	—
2	2	3	1	4	3	—	—	—
3	3	✓	1	2	3	2	1	1
4	4	✓	1	4	4	3	1	1
5	5	✓	2	1	1	4	1	1

Driver #2

Accident Sequence Number	Common Impact Number	Object Contacted[1]	One Vehicle			Other Vehicle--if applicable		
			Vehicle Number	Impact Location[2]	Vehicle Orientation[3]	Vehicle Number	Impact Location[2]	Vehicle Orientation[3]
1	3	✓	2	1	1	1	2	3
2	5	✓	2	1	1	4	1	1
3	4	✓	1	4	4	3	1	1
4	—	—	—	—	—	—	—	—

Driver #3

Accident Sequence Number	Common Impact Number	Object Contacted[1]	One Vehicle			Other Vehicle--if applicable		
			Vehicle Number	Impact Location[2]	Vehicle Orientation[3]	Vehicle Number	Impact Location[2]	Vehicle Orientation[3]
1	3	✓	2	1	1	1	2	3
2	4	✓	3	1	1	1	4	4
3	5	✓	2	1	1	4	1	1
4	—	—	—	—	—	—	—	—

Driver #4

Accident Sequence Number	Common Impact Number	Object Contacted[1]	One Vehicle			Other Vehicle--if applicable		
			Vehicle Number	Impact Location[2]	Vehicle Orientation[3]	Vehicle Number	Impact Location[2]	Vehicle Orientation[3]
1	5	✓	4	1	1	2	1	1
2	—	—	—	—	—	—	—	—

Variable Name: Traffic Violation Charged--Speeding

Format: 1 column - numeric   Beginning
                                                        Column   26

Element Values:

   Blank - Driver not present (D09)
   0 No
   1 Yes
   9 Unknown

Source: Police report.

Remarks:

   "Blank" indicates that no driver was present.

   If the driver was charged in this accident for speeding, code yes ("1").

   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 investigat r
   should code "0" (No) for variables D17 through D22. However, if the driver
   is charged with speeding but additional charges are "pending", the investi-
   gator should code D17 as "1" (Yes) and D18 through D22 as "0" (No).

Variable Name: Traffic Violation Charged--DWI

Format: 1 column - numeric

Beginning
Column   27

Element Values:

    Blank - Driver not present (D09)
    0 No
    1 Yes
    9 Unknown

Source: Police report.

Remarks:

    "Blank" indicates that no driver was present.

    If this driver was charged in this accident for driving under the influence, or for driving while intoxicated, then code yes ("1"). The nature (either of the influencing agent which includes nonalcoholic drugs or the level f its presence) of the influence or intoxication may vary within jurisdictions. This variable records only that the offense was cited.

    Code "0" (No) if the police report indicates that charges are "pending" or the arrest/summons section is blank or crossed out. For example, the police report has "pending" as the only response in the arrest section; the investigator should code "0" (No) for variables D17 through D22. However, if the driver is charged with DWI but additional charges are "pending", the investigator should code D18 as "1" (Yes) and D17 and D19-D22 as "0" (No).

Variable Name: Traffic Violation Charged--Reckless Driving

Format: 1 column - numeric   Beginning
                                                     Column   28

Element Values:

   Blank - Driver not present (D09)
   0 No
   1 Yes
   9 Unknown

Source: Police report.

Remarks:

   "Blank" indicates that no driver was present.

   If this driver was charged in this accident for reckless driving r/f r
   driving to endanger, then code yes ("1").

   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 inves-
   tigator should code "0" (No) for variables D17 through D22. However, if the
   driver is charged with reckless driving but additional charges are "p nd-
   ing", the investigator should code D19 as "1" (Yes) and D17, D18, and D20-
   D22 as "0" (No).

Variable Name: Traffic Violation Charged--Suspended/Revoked License

Format: 1 column - numeric

Beginning
Column   29

Element Values:

   Blank - Driver not present (D09)
   0 No
   1 Yes
   9 Unknown

Source: Police report.

Remarks:

   "Blank" indicates that no driver was present.

   If this driver was charged in this accident for driving with either a sus-
   pended or a revoked driver's license, then code yes ("1").

   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 inves-
   tigator should code "0" (No) for variables D17 through D22. However, if the
   driver is charged with driving while suspended or revoked but additional
   charges are "pending", the investigator should code D20 as "1" (Yes) and
   D17-D19, D21 and D22 as "0" (No).

Variable Name: Traffic Violation Charged--Other Violation

Format: 1 column - numeric   Beginning
                                               Column   30

Element Values:

    Blank - Driver not present (D09)
    0 No
    1 Yes
    9 Unknown

Source: Police report.

Remarks:

    "Blank" indicates that no driver was present.

    If this driver was charged in this accident with a violation other than
    speeding, driving under the influence, driving while intoxicated, reckless
    driving, driving to endanger, or driving with either a suspended or revoked
    license, then code yes ("1").

    Code "0" (No) if the police report indicates that charges are "pending" r
    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 inves-
    tigator should code "0" (No) for variables D17 through D22. However, if the
    driver is charged with an "other" violation (e.g., disregarding a stop sign)
    but additional charges are "pending", the investigator should code D21 as
    "1" (Yes) and D17-D20 and D22 as "0" (No).

Variable Name: Traffic Violation Charged--Unknown Violation

Format: 1 column - numeric   Beginning
                                                         Column   31

Element Values:

   Blank - Driver not present (D09)
   0 No
   1 Yes
   9 Unknown

Source: Police report.

Remarks:

   "Blank" indicates that no driver was present.

   If this driver was charged in this accident with a violation but no viola-
   tion was specified, then code yes ("1"). A code of yes for this variable
   may imply that the preceding five variables (D17 through D21) should be
   coded no ("0").

   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 inves-
   tigator should code "0" (No) for variables D17 through D22. However, if the
   driver is charged with an unspecified violation but additional charges are
   "pending", the investigator should code D22 as "1" (Yes) and D17-D21 as "0"
   (No).

Variable Name: Alcohol Involvement

Format: 1 column - numeric

Beginning
Column   32

Element Values:

   Blank - Driver not present (D09)
   0 No
   1 Yes

Source: Police report.

Remarks:

   "Blank" indicates that no driver was present.

   Find the location on the police report that indicates the investigating
   officer's assessment with respect to whether or not alcohol was involved in
   this accident. If the police report explicitly states or implies that alco-
   hol was involved, then code "1" (Yes).

   Code "0" (No) in all other instances. This includes those instances where
   alcohol involvement was unknown (e.g., hit-and-run vehicle).

   Caution should be exercised by analysts. This variable allows one to subset
   the data so as to select out drivers who the police said were alcoh l in-
   volved. It does not allow one the opportunity to report the proportion f
   alcohol-involved drivers.

   The various PSUs should discuss their individual, unique police reports with
   the Zone Centers to distinguish involvement from presence of alcohol.

Variable Name: Alcohol Test Results

Format: 2 columns - numeric

Beginning
Column   33

Element Values:

   Range: 00 through 30

   Code actual reported number representing fraction of alcohol present
   (decimal implied before first digit 0.xx).
   Blank - Driver not present (D09)
   95 Test refused
   96 None given
   97 AC test performed, results unknown
   99 Unknown

Source: Police report, medical reports, other official sources.

Remarks:

   "Blank" indicates that no driver was present.

   A 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 1 vel.
   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 un-
   known).

   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 sub-
   mitted, leave blank, circle the variable number, and update this variable
   when the results are obtained.

   If the blood alcohol concentration (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 re-
   ported value.

Variable Name: License Status This Class of Vehicle

Format: 1 column - numeric   Beginning
                                                        Column   35

Element Values:

    Blank - Driver not present (D09)
    0 No license required
    1 No license, license required
    2 Licensed, but not for this type of vehicle
    3 Valid license for this type of vehicle
    4 Suspended license
    5 Revoked license
    6 Expired license
    7 Learners permit
    9 Unknown

Source: Official driver record and police report. Official driver rec rds
         take precedence over police reported information.

Remarks:

    "Blank" indicates that no driver was present.

    No license required ("0") means that a license was not required for the
    vehicle being driven (e.g., mopeds in some states).

    Code "1" (No license, license required) should be used only when it has been
    reasonably established that the driver is not registered (anywhere). Driv-
    ers 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 pos-
    sess 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 f th
    accident, or that the driver is not a registered motor vehicle operat r. 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 li-
    cense or for not having one, then code this information in variable D21,
    Traffic Violation Charged--Other Violation. If the investigator is uncer-
    tain as to whether or not the person possesses a license, then code "9" (Un-
    known) should be used.

    Code "2" (Licensed, but not for this type of vehicle) refers to the class of
    vehicle being driven. Class is discussed under variable D10 (Months Driving
    Experience This Class of Vehicle). As an example, the driver has an "opera-
    tor's license" when a "public passenger" type license is required. For this
    driver, "2" should be coded. Another common situation occurs when a sepa-
    rate license is required for a motorcycle. If the driver possesses a valid
    license for a passenger car but not for the motorcycle, then code "2" should
    be used.

Variable Name: License Status This Class of Vehicle (cont'd.)

Code "3" (Valid license for this type of vehicle) includes those with re-
strictions (e.g., restricted to certain hours). If the driver is in viola-
tion 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 var-
iable D26 (License Restriction) or D27 (Additional License Restricti n) if
applicable. If the police cite the driver for the violation, then the in-
formation would be recorded under variable D21 (Traffic Violation Charged--
Other Violation).

Codes "4" (Suspended license), "5" (Revoked license), or "6" (Expired li-
cense) are used when a driver has some kind of license, and they take prece-
dence over codes "2", "3", or "7".

Code "7" (Learner's permit) includes any type of preliminary lic ns th
driver obtained. It is defined as the state-sanctioned authority to operate
a motor vehicle for a specified period with the requirement that the opera-
tor be accompanied by a person who holds a valid driver's license for the
vehicle type being operated. There may be additional requirements (e.g.,
driving limited to certain time periods) which are also considered within
the definition of a learner's permit.

In distinguishing license requirements from restrictions focus upon whether
or not all drivers possessing the type of license are mandated to obey the
requirement. If they are, then the requirement is not a restriction, but
rather part of the definition of the license. Restrictions, on the other
hand, are requirements specific to individual drivers.

Code "9" (Unknown) should be used when the driver has a license but the type
or validity are uncertain.

Variable Name: License Restriction

Format: 1 column - numeric   Beginning
                                                         Column   36

Element Values:

   Blank - Driver not present (D09)
   0   No restrictions
   1   Glasses and/or contact lenses
   2   Daylight driving only
   3   Handicap related restriction
   4   Activity restriction
   8   Other restriction (specify)
   9   Unknown

Source: Official driver record and police report (if applicable). Official
         driver records take precedence over police reported information.

Remarks:

   "Blank" indicates that no driver was present.

   These restrictions are ascendingly ordered if more than one element is ap-
   plicable. Code the lowest numerically-valued restriction on this variable.

   If a driver had a "learner's permit" (variable D25 = 7, License Status This
   Class of Vehicle) and was caught driving unaccompanied by a person who h lds
   a valid driver's license for the vehicle type being operated, then do n t
   consider this "failure to be accompanied" as a restriction since it is im-
   plied 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 partic-
   ular 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 ther
   hand, are requirements specific to individual drivers.

   Code "0" (No restrictions) must be coded if D25, License Status This Class
   of Vehicle, equals "0" (No license required) or "1" (No license, license
   required).

Variable Name: Additional License Restriction

Format: 1 column - numeric   Beginning
                                                                    Column   37

Element Values:

   Blank - Driver not present (D09)
   0   No additional restriction
   2   Daylight driving only
   3   Handicap related restriction
   4   Activity restriction
   5   More than two restrictions
   8   Other restriction (specify)
   9   Unknown

Source: Official driver record and police report (if applicable). Official
          driver records take precedence over police reported information.

Remarks:

   "Blank" indicates that no driver was present.

   Code "0" (No additional restriction) if no restrictions were reported (D26,
   License Restriction, equals code "0"), or only one restriction was reported.
   The restriction reported on the preceding variable (D26) must have been of a
   lower numerical value than the restriction reported here with the exception
   of the other restriction ("8") code. In this instance, either "5" (More
   than two restrictions) or "8" (Other restriction) should be coded for this
   variable. Code "5" if the driver had three or more restrictions.

   In addition, code "0" (No additional restriction) must be coded if D25,
   License Status This Class of Vehicle, equals "0" (No license required) or
   "1" (No license, license required).

   If a driver had a "learner's permit" (variable D25 = 7, License Status This
   Class of Vehicle) and was caught driving unaccompanied by a person who holds
   a valid driver's license for the vehicle type being operated, then do not
   consider this "failure to be accompanied" as a restriction since it is im-
   plied 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 partic-
   ular 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, n the other
   hand, are requirements specific to individual drivers.

Variable Name: Previous Speeding Convictions

Format: 1 column - numeric   Beginning
                                                       Column   38

Element Values:

   Range: 0 through 8

   Blank - Driver not present (D09)
   8 Eight or more
   9 Unknown

Source: Official driver record.

Remarks:

   "Blank" indicates that no driver was present.

   Unknown ("9") means that no official records were obtainable.

   Record the number of speeding convictions (points assessed, licens   suspen-
   sions, etc.) listed on the driver's record for the "previous three years"
   inclusive from the date of the accident.

Variable Name: Previous Other Moving Violation Convictions

Format: 1 column - numeric   Beginning
                                                               Column   39

Element Values:

   Range: 0 through 8

   Blank - Driver not present (D09)
   8   Eight or more
   9   Unknown

Source: Official driver record.

Remarks:

   "Blank" indicates that no driver was present.

   Unknown ("9") means that no official records were obtainable.

   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).

Variable Name: Previous D.W.I. Convictions

Format: 1 column - numeric   Beginning
                                                       Column   40

Element Values:

   Range: 0 through 8

   Blank - Driver not present (D09)
   8 Eight or more
   9 Unknown

Source: Official driver record.

Remarks:

   "Blank" indicates that no driver was present.

   Unknown ("9") means that no official records were obtainable.

   Record the number of driving while intoxicated (or driving under the influ-
   ence) 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   41

Element Values:

   Range: 0 through 8

   Blank - Driver not present (D09)
   8   Eight or more
   9   Unknown

Source: Official driver record.

Remarks:

   "Blank" indicates that no driver was present.

   Unknown ("9") means that no official records were obtainable.

   Record the number of previous suspensions or revocations of the driver's li-
   cense the state has listed on the record. The suspension or revocation n ed
   not be for a traffic violation (e.g., failure to appear at an accident hear-
   ing 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 li-
   cense must have been reinstated. Code each listing of suspension or r voca-
   tion as a unique occurrence unless evidence to the contrary is clearly indi-
   cated. 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 sus-
   pension 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 suspen-
   ded 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 Accidents

Format: 1 column - numeric   Beginning
                                                   Column   42

Element Values:

   Range: 0 through 8

   Blank - Driver not present (D09)
   8 Eight or more
   9 Unknown

Source: Official driver record.

Remarks:

   "Blank" indicates that no driver was present.

   Unknown ("9") means that no official records were obtainable.

   Record the number of previous accidents listed on the driver's record f r
   the "previous three years" inclusive from the date of the accident.

   If the state's driver records does not list previous accidents, then code
   unknown ("9").

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 <u>not</u> 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. <u>The location of the first harmful event is obscure.</u> 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 th 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.** Th inv stigator either f llows the rules pertaining to: (a) in-a-junction, or (b) not-in-a-junction to determine the roadway segment or segments for which the environmental variables are reported.

(a) **In-a-junction.** First, determine the traffic unit level environmental variables for each in transport vehicle. Go independently to the mouth of the roadway that brought each vehicle into the junction. In the case of a vehicle abandoned in a junction, go to the mouth of the roadway that most likely brought the vehicle into the junction. Verify the identity of each involved roadway. The identity is needed so that each roadway's TA-1 classification can be subsequently determined from a map in-office. Collection of each roadway's classification is required so that the accident level comparison (below) can be accomplished. Next, follow the guidelines presented for variable D33 (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 (D34-D43) the valu s 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 n which a vehicle involved in the first harmful event was travelling just prior to its entrance into the junction:

(1) Choose the roadway with the higher (lower numerically) TA-1 classification. If the values are the same, then proceed to rule (2). In either case, record the value in variable A22, TA-1 class.

(2) Choose the roadway with the greater number of lanes (variable D33). If the number of lanes are the same, then proceed to rule (3).

(3) Choose the roadway on which the most at-fault driver was travelling, except for the alleys and driveways where the street used by the other vehicle is always chosen.

If all of the in transport vehicles involved in the accident's first harmful event came from the same roadway, then select that roadway. Once you have chosen the roadway, complete the accident level environmental variables (A26-A29, A31-A38) based on the values recorded for that roadway's traffic unit level environmental variables (D33-D43). 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 "05") is an example of an accident not in a junction.] Determine the traffic unit level environmental variables for each in transport vehicle before attempting to determine the accident level environmental variables. Since the location of the first harmful event is not in a junction, the investigator must proce d, in ac-

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

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

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

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

(2) On roadway: Go to the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Determine the number of lanes (D33) for each involved vehicle by selecting the value which provides the most representative description of the driver's roadway leading to this location. Mak this determination, and all subsequent traffic unit level environmental determinations (D34-D43), by looking back along the vehicle's path just prior to the impact. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables, use a generalized cross-section of the roadway at the location of the first harmful event [location where the vehicle last left the roadway if it occurred "off roadway" in (1) above]. Record TA-1 Class (A22) for the roadway at this location. In addition, determine the appropriate values for each of the remaining accident level nvironmental variables (A26-A29, A31-A38).

One special rule n eds to be considered for th accident l vel determination. If the location of the first harmful event is one and the sam as an area of transition (of any kind: straight-curve, level-grade, wet-dry, concret -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 f 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 it it were not for the "throat" rule (see Variable A24, Relation to Junction, third 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.

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 wher that vehicle sustained its initial damage or its occupants were initially injured.

EXAMPLES:

TRAFFIC UNIT LEVEL
ENVIRONMENTAL
VARIABLES

ACCIDENT LEVEL
ENVIRONMENTAL VARIABLES

POINT OF DEPARTURE
FROM ROADWAY

ACCIDENT LEVEL
ENVIRONMENTAL VARIABLES

TRAFFIC UNIT LEVEL
ENVIRONMENTAL VARIABLES

Variable Name: Number of Travel Lanes

Format: 1 column - numeric
Beginning
Column   43

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 lead-
    ing to the location of this vehicle's first harmful event.

    If the first harmful event occurs off the roadway, code the value n 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 road-
    ways, code the number of lanes on the basis of the most representative des-
    cription 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, or deceleration lanes exist and are physically
    located within the cross section of the roadway where the first harmful
    event occurred, and these lanes are the most representative of the driver's
    environment just prior to the impact, then they are to be included in the
    number of lanes. Channelized lanes which are separated by physical barriers
    or divisions greater than 4 feet in width are excluded. The channelized
    lane(s) in this instance constitute(s) a divided roadway.

    The number of lanes counted includes any of which are narrowed or rendered
    unusabl by restriction of the right- f-way cited in variables A39 (Restric-
    tion of Roadway at Scene) or A40 (Additional Restriction of Roadway at
    Scene).

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

In a number of instances, there will be uncertainty as to the number of
lanes due to: (1) nonstandard roadway widths; (2) variability of width in
the same roadway due to disrepair and other reasons; or (3) absence of lane,
center, and edge lines, etc. The number coded in these cases should repre-
sent 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 spac
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 custom-
ary 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 d sig-
nated for turning (e.g., by lane marking, signs, or signals).

If the vehicle was on an entrance or exit ramp (A24, Relation to Juncti n,
code "08"), code the number of lanes for that roadway section (also s e D34,
Trafficway Division and Median Type, remarks).

If the vehicle was in a crossover or on a driveway (see A24, Relation to
Junction, definitions for codes "07" and "10") which is in essence a pri-
vateway (ANSI D16.1-1976, section 2.2.2, page 5), code the number of lanes
for that vehicle.

Variable Name: Trafficway Division and Median Type

Format: 1 column - numeric   Beginning
                                                          Column   44

Element Values:

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

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

Remarks:

    The attribute is determined from the same roadway which was used to deter-
    mine the Number of Travel Lanes (D33). 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 con-
    cerning the location of the first harmful event, refer to point "1" in the
    accident level versus traffic unit level environmental data discussi n, fol-
    lowing D32, Previous Accidents.)

    A trafficway may include several roadways if it is a divided highway. Traf-
    ficways are not divided unless the divider is a barrier or median four feet
    or greater (1.2 meters) in width and curbed, unpaved/uncurbed r paved
    flush--painted or unpainted.

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

    Entrance and exit ramps separated from the primary roadway [i.e., the one
    used for TA-1 class (A22) purposes] are not considered divided. These are
    unique roadways; however, two ramps existing together but separated by a
    barrier, should be coded as divided.

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

Variable Name: Access Control

Format: 1 column - numeric   Beginning
                                                                  Column   45

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 deter-
     mine the Number of Travel Lanes (D33). It is associated with the location
     of this vehicle's first harmful event.

     The investigator selects the descriptor that best represents the v hicle's
     environment just prior to the impact. (NOTE: If uncertainty exists con-
     cerning the location of the first harmful event, refer to point "1" in the
     accident level versus traffic unit level environmental data discussion, fol-
     lowing D32, Previous Accidents.)

     Code "1" (Full) refers to those situations where the authority to control
     access is exercised to give preference to through traffic by providing ac-
     cess 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 hav-
     ing 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, D33. 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, th n code "2". If no indication of
     access limiting can be found, then code "3". If a decision cannot be made,
     code "9".

Variable Name: Direction of Travel Flow

Format: 1 column - numeric

Beginning
Column   46

Element Values:

1 One way
2 Two way
9 Unknown

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

Remarks:

The attribute is determined from the same roadway which was used to deter-
mine the Number of Travel Lanes (D33). 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 con-
cerning the location of the first harmful event, refer to point "1" in the
accident level versus traffic unit level environmental data discussion, f l-
lowing D32, Previous Accidents.)

Variable Name: Shoulder Presence

Format: 1 column - numeric   Beginning
                                                         Column   47

Element Values:

    0   No shoulder
    1   Left shoulder
    2   Right shoulder
    3   Left and right shoulders
    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 deter-
    mine the Number of Travel Lanes (D33). 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 con-
    cerning the location of the first harmful event, refer to point "1" in the
    accident level versus traffic unit level environmental data discussion, fol-
    lowing D32, Previous Accidents.)

    Consider the same lanes which were used to determine the Number of Travel
    Lanes (D33), 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 junc-
    tion, select the element value based on the leg of the roadway that this ve-
    hicle 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).

    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 en-
    tire width of the vehicle under consideration does not have to fit on the
    contiguous area to qualify the area as a shoulder. The area is a shoulder
    if it is contiguous to the roadway, provides lateral support to the roadway,
    and is two feet or greater in width. [Note: A separation of opposing lanes
    which does not constitute a median cannot constitute a shoulder. If the
    location of the First Harmful Event (A11) occurs in this separation, then
    for A13, Relation to Roadway, code "1" (On roadway).]

    Code "0" (No shoulder) if the roadway is curbed and has no shoulders; code
    the appropriate response if there are both curbs and shoulders (either code
    "1", "2", or "3").

    Shoulders are still present even if n t usable at the time of the accident
    due to ambient conditions such as plowed snow, parked vehicles, etc.

Variable Name: Roadway Alignment

Format: 1 column - numeric   Beginning
                                                     Column   48

Element Values:

    1   Straight
    2   Curve right
    3   Curve left
    9   Unknown

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

Remarks:

    The attribute is determined from the same roadway which was used to deter-
    mine the Number of Travel Lanes (D33). It is associated with the locati n
    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 con-
    cerning the location of the first harmful event, refer to point "1" in the
    accident level versus traffic unit level environmental data discussion, fol-
    lowing D32, Previous Accidents.)

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

    Codes "2" (Curve right) and "3" (Curve left) refer to a horizontal surface
    in transition between two points of tangency as in the examples below. The
    vehicle's direction of travel determines whether the curvature is right or
    left.
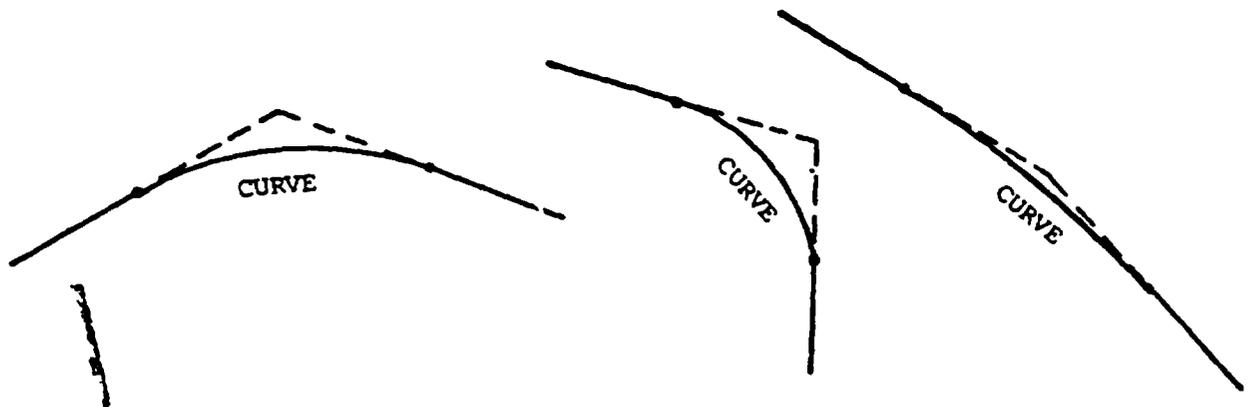
    Any perceptually-determined curvature between two tangent s ctions of a
    roadway constitutes a curve. It is not n cessary to quantify the degree of
    curvature.

Variable Name: Roadway Profile

Format: 1 column - numeric   Beginning
                                                           Column   49

Element Values:

    1 Level
    2 Positive grade
    3 Negative grade
    4 Hillcrest
    5 Sag
    9 Unknown

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

Remarks:

    The attribute is determined from the same roadway which was used to deter-
    mine the Number of Travel Lanes (D33). 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 con-
    cerning the location of the first harmful event, refer to point "1" in the
    accident level versus traffic unit level environmental data discussion, fol-
    lowing D32, Previous Accidents.)

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

    Codes "2" (Positive grade) and "3" (Negative grade) refer to a tangent sur-
    face whose gradient is >2%.

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

    Code "5" (Sag) refers to a surface in vertical transition between two points
    of tangency as in the following examples:

Variable Name: Roadway Surface Type

Format: 1 column - numeric   Beginning
                                                         Column   50

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 det r-
    mine the Number of Travel Lanes (D33). It is associated with the location
    of this vehicle's first harmful event.

    The investigator selects the descriptor that best represents the vehicl 's
    environment just prior to the impact. (NOTE: If uncertainty exists con-
    cerning the location of the first harmful event, refer to point "1" in the
    accident level versus traffic unit level environmental data discussion, f l-
    lowing D32, Previous Accidents.)

Variable Name: Roadway Surface Condition

Format: 1 column - numeric   Beginning
                                                        Column   51

Element Values:

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

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

Remarks:

   The element value selected is based on the location which the investigator
   determines best represents the driver's pre-crash environment. In determin-
   ing the surface condition, the investigator should use police reports, in-
   terviews 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 (D33) and report the surface condition for those lanes.

   It is possible for different surface conditions to exist on the same road-
   way (e.g., intermittent wet and dry sections). The investigator should con-
   sider, 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, th
   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.

Variable Name: Traffic Controls

Format: 2 columns - numeric   Beginning
                                                       Column   52

Element Values:

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

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

Remarks:

    The attribute is determined from the same roadway which was used to d ter-
    mine the Number of Travel Lanes (D33).   It is associated with the location
    of the first harmful event.

    The investigator selects the descriptor that best represents the vehicle's
    environment just prior to the impact.   (NOTE: If uncertainty exists con-
    cerning the location of the first harmful event, refer to point "1" in the
    accident level versus traffic unit level environmental data discussion, fol-
    lowing D32, Previous Accidents.)

    This variable measures controls which regulate vehicular traffic.   Exclud d
    are any controls which solely regulate pedestrians (e.g., Walk/Wait sig-
    nals).

    Pavement markings do not constitute traffic control devices under the pres-
    ent definition.

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

    Code "09" (Traffic controls not functioning) should be used for any nonfunc-
    tioning traffic control, including a stop sign turned the wrong way or brok-
    en off.

Variable Name: Traffic Controls (cont'd.)

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

The investigator should consider the intent of this question. If at the time of the accident there was no intent to control vehicle traffic, then code "00" (No controls); otherwise, code the appropriate value.

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

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

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

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

Codes "05" through "07" should only be used when the first harmful event occurs in the junction of a roadway and a railroad bed [i.e., A24, Relation to Junction, equals "09" (Railroad grade crossing)]. If A24 equals "09", then codes "00", "05", "06", "07", or "09" must be used.

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

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

Variable Name: Traffic Controls (cont'd.)

If a school guard, police officer, or other officially-designated person
controls both pedestrian and vehicular traffic, code "98" [Other (traffic
control)]. This includes statutory controls at junctions which are other-
wise not physically controlled. For example, state law requires that when
two drivers meet at an uncontrolled intersection, the one on the right has
the right-of-way.

If the nature of the accident in conjunction with the roadway chosen under
variable D33, Number of Traffic Lanes, will result in variable A24, Relation
to Junction, being coded "05" (Intersection related), then code the traffic
control for the intersection into which the roadway fed. The reported rela-
tion to the intersection need not have been due to the presence of a control
(see A24, code "05").

Remember, there are no attributes on variable A24, Relation to Juncti n, en-
titled "driveway, alley access-related", "railroad grade crossing-relat d",
or "crossover-related". If non-junction ("01") will be coded for variable
A24, Relation to Junction, then no controls ("00") should be coded on this
variable unless: (1) the school zone sign (code "08") criteria are met, (2)
the pedestrian signal (code "10") is used, or (3) an applicable other (code
"98") traffic control is available.

If the lanes which were used to determine the Number of Travel Lanes (D33)
have two or more controls, select one of the values as follows:

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

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

If the intersection is channelized and not divided, and controlled differ-
ently on the channel than on the through lanes (e.g., signal and yield
sign), report the traffic controls depending on whether the roadway (D33,
Number of Travel Lanes) was chosen based on its through lanes or its chan-
nelized lanes.

Variable Name: Speed Limit

Format: 2 columns - numeric   Beginning
                                                        Column   54

Element Values:

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

Source: Primary sources are scene inspection or statutory law.

Remarks:

   The attribute is determined from the same roadway which was used to deter-
   mine the Number of Travel Lanes (D33).   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 con-
   cerning the location of the first harmful event, refer to point "1" in the
   accident level versus traffic unit level environmental data discussion, fol-
   lowing D32, Previous Accidents.)

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

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

   If no speed limit sign is posted within a "reasonable" distance from the lo-
   cation of the first harmful event along the approach leg of the vehicle for
   which D33 (Number of Travel Lanes) was selected, the investigator should re-
   ference state statutes to obtain the applicable statutory maximum for the
   scene (local or state).

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

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

Variable Name: Accident Occurrence in School Zone

Format: None   Beginning   Not
                                                                    Column   Applicable

Element Values:

   No
   Yes

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

Remarks:

   The attribute is determined from the same roadway which was used to deter-
   mine the Number of Travel Lanes (D33). 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 con-
   cerning the location of the first harmful event, refer to point "1" in the
   accident level versus traffic unit level environmental data discussion, fol-
   lowing D32, Previous Accidents.)

   Yes should only be used if a sign or road marking was present and the acci-
   dent 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: Investigator I.D. Number

Format: 1 column - numeric   Beginning
                                                                   Column   10

Element Values:

   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:

   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 (unl ss
   reliable evidence to the contrary exists), and that one person is a..so as-
   sumed to be the driver.

   This variable is a mandatory variable and cannot be changed.

Variable Name: Occupant Number

Format: 2 columns - numeric   Beginning
                                                   Column   13

Element Values:

   Range: 01 through 50

Source: Investigator assigned.

Remarks:

   Occupant numbers must be assigned sequentially, beginning in the nclosed
   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 vehi-
   cle) 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 oc-
   cupants 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 con-
   taining left front occupant). However, code the assumed driver of a hit-
   and-run vehicle as "01".

   An occupant on or in the lap of another person should be assigned a number
   one higher than the person whose lap they were on or in.

   This variable is a mandatory variable and cannot be changed.

Variable Name: Occupant's Age

Format: 2 columns - numeric   Beginning
                                                      Column   15

Element Values:

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

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

Remarks:

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

    For drivers, verify age with data on licensing file. Licensing file data
    takes precedence over police or interview data.

Variable Name: Occupant's Sex

Format: 1 column - numeric

Beginning
Column   17

Element Values:

   1 Male
   2 Female
   9 Unknown

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

Remarks:

  Self-explanatory.

Variable Name: Occupant's Height

Format: 2 columns - numeric

Beginning
Column   18

Element Values:

   Range: 12 through 85 inches
   99 Unknown

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

Remarks:

   Code actual height to nearest inch.

Variable Name: Occupant's Weight

Format: 3 columns - numeric   Beginning
                                                             Column   20

Element Values:

    Range: 005 through 400 pounds
    999   Unknown

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

Remarks:

    Code actual weight to nearest pound.

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 dri-
    ver.

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
03	Front seat - right side		passenger
04	Second seat - left side	12	Truck-tractor sleeping section
05	Second seat - middle	13	Other enclosed area (specify)
06	Second seat - right side	14	In or on unenclosed area (specify)
07	Third seat - left side	15	In or on trailing unit (specify)
08	Third seat - middle	99	Unknown
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 pas-
sengers "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 opp sed
to on or in someone's lap), since only one can be assigned the seat's posi-
tion, the additional passenger codes "10" and "11" must be used. Assign th
older person the seat's position (i.e., codes "01"-"09").

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.

Code "13" (Other enclosed area) for any occupants beyond the 3rd seat in
other than a bus.

Code "13" for a fold-down type seat.

Code "14" (In or on unenclosed area) includes those occupants riding on a
fender, the boot of a convertible, the open cargo box on a truck, etc. Per-
sons appended to the vehicle for motion are either pedestrians or other non-
motorists.

Variable Name: Occupant's Seat Position (cont'd.)

For buses use the following scheme:

BENCH*   ISLE   BENCH*

```
+-----------------------------------------------+
| DRIVER                                        |
| +--------+                                    |
| |  01    |      02            03              |   STEPWELL
| +--------+                                    |
|                                               |
| +--------+              +--------+            |
| |  04    |      05      |  06    |            |
| +--------+              +--------+            |
|                                               |
| +--------+              +--------+            |
| |  07    |      08      |  09    |            |
| +--------+              +--------+            |
|                      |                        |
|                      v                        |
|                     11                        |
|                                               |
|                                               |
|                                               |
+-----------------------------------------------+
```
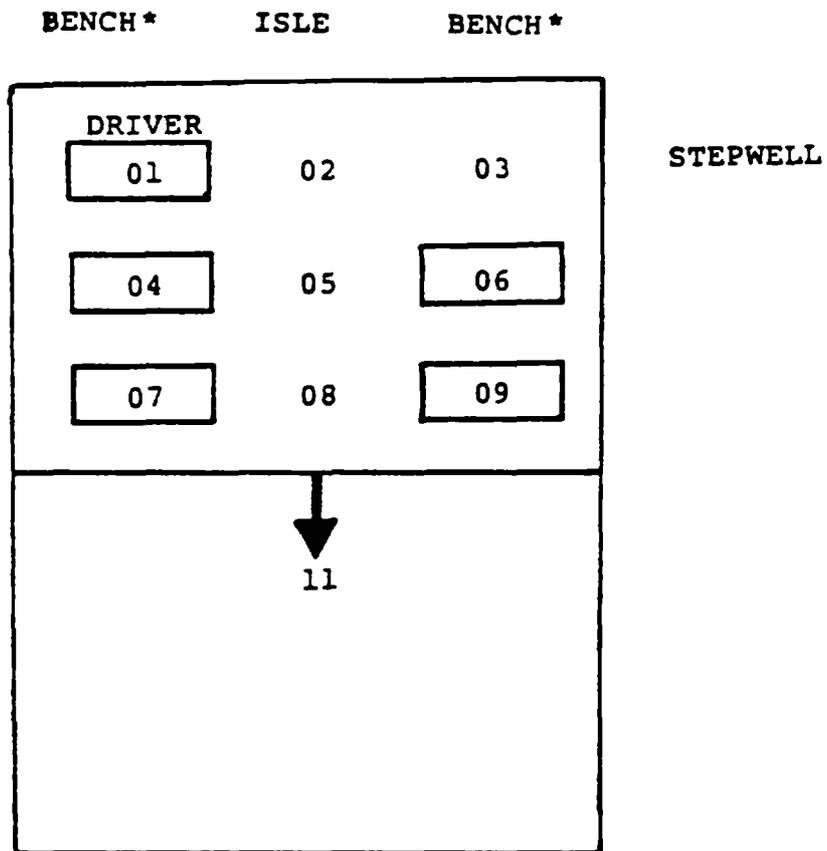
*Regardless of whether seat is lateral or longitudinal.

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. How-
    ever, this does not include the sidecars.

    Entrapped (code "1") means that part of the occupant was in the vehicl and
    mechanically restrained; jammed doors and immobilizing injuries, by them-
    selves, are not sufficient to constitute entrapment.

    Persons who are completely or partially ejected and subsequently become pin-
    ned 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 investigat r
    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 sit-
    uation.

    The margin indicator, which references the Vehicle Form, should be filled in
    with a checkmark (√) to indicate that the actual crosscheck back to the Ve-
    hicle 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 converti-
    ble, and persons riding on open tailgates).

    Ejection refers to persons being completely or partially thrown from the ve-
    hicle 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 occu-
    pant's body remains in the vehicle. This does not apply to occupants wh
    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" (Com-
    plete ejection)].

    Persons in or on a Special Vehicle (V14, "35" through "44") will have to be
    handled depending upon the occupant protection provided. If the occupant
    can be contained (at least from the waist down) inside of the occupant com-
    partment, then ejection is relevant; otherwise, code "0" (None) for th se
    occupants.

    Police reported ejections may be coded if there is no vehicle inspecti n or
    occupant interview, provided that the ejectee was in the seating compartment
    of the vehicle and there is no evidence which contradicts the reported ejec-
    tion.

    The margin indicator, which references the Vehicle Form, should be filled in
    with a checkmark (✓) to indicate that the actual crosscheck back to the Ve-
    hicle Form has be n made prior to coding the investigator's final opinion.

Variable Name: Ejection Area

Format: 1 column - numeric   Beginning
                                                  Column   28

Element Values:

  0 No ejection
  1 Windshield
  2 Left front
  3 Right front
  4 Left rear
  5 Right rear
  6 Rear
  7 Roof (convertible or sun roof)
  8 Other area (e.g., sidecar, back of pickup, etc.)
  9 Unknown

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

Remarks:

  Code "0" (No ejection) applies to persons who are not ejected, to motorcycle
  occupants in other than a sidecar, or to persons riding on fenders.

  Code "6" (Rear) is restricted to persons riding in a passenger compartment,
  who are ejected through the rear window, open tailgate (e.g., station
  wagon), hatchback, etc.

  Codes "1" through "7" are designated for use with areas designed for passen-
  ger protection (e.g., passenger cars, vans, truck cabs, self-contained RVs
  and motor homes). Trailers, add-on campers, haywagons, etc., are to be as-
  signed code "8" (Other area).

  Code "8" (Other area) also applies to persons riding on open tailgates, or
  ejected through standard roofs which are torn open. Persons ejected from
  special vehicles with waist down protection but not encapsulated should also
  be coded here.

  Code "9" (Unknown) if the sole source for the ejection is the police r -
  port.

  The margin indicator, which references the Vehicle Form, should be filled in
  with a checkmark (/) to indicate that the actual crosscheck back to the Ve-
  hicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Ejection Medium

Format: 1 column - numeric   Beginning
                                                      Column   29

Element Values:

    0 No ejection
    1 Door
    2 Open roof structure
    3 Fixed windows
    Operable Windows
    4 Roll down type
    5 Hinged type
    6 Sliding type
    7 Other type (specify)

    8 Other medium (specify)
    9 Unknown

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

Remarks:

    Code "0" (No ejection) applies to persons who are not ejected, to motorcycle
    occupants in other than a sidecar, or to persons riding on fenders.

    Code "8" (Other medium) applies to persons riding in pickup beds, on flat
    beds, in sidecars, on open tailgates, and for other situations which cannot
    be classified in codes "1"-"7", such as standard roofs which are torn open.

    In addition, use "8" when someone is ejected from a trailer or from an add-
    on camper, haywagon, special vehicle with only waist down protection, etc.

    Codes "4"-"7" all refer to windows.

    Code "2" (Open roof structure) applies to convertible or sun roofs only.

    Code "9" (Unknown) if the sole source for the ejection is the police report.

    The margin indicator, which references the Vehicle Form, should be filled in
    with a checkmark (√) to indicate that the actual crosscheck back to the V -
    hicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Medium Status

Format: 1 column - numeric   Beginning
                                                                Column   30

Element Values:

    0   No ejection
    1   Open
    2   Separation
    3   Closed, closed when damaged
    9   Unknown

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

Remarks:

    Code "0" (No ejection) applies to persons who are not ejected, to motorcycle
    occupants in other than a sidecar, or to persons riding on fenders.

    Code "1" (Open) applies to convertible roofs, sun roofs, windows, doors or
    tailgates that are open immediately prior to impact, or to other open areas
    of vehicles such as pickup beds, motorcycle sidecars, special vehicles with
    only waist down protection and flat bed trucks.

    Codes "1" (Open) and "3" (Closed, closed when damaged) refer to the status
    of the medium immediately prior to the impact.

    Code "2" (Separation) is restricted to use only with bonded windows, and it
    reflects a separation which may be attributable to either the forces f the
    collision or to internal contact.

    Code "3" (Closed, closed when damaged) refers to a window that is closed or
    partially closed when damaged.

    Code "3" (Closed, closed when damaged) also refers to a door that is closed,
    but when damaged experiences latch and/or hinge failure causing the door to
    open.

    Code "3" (Closed, closed when damaged) may also be used when any vehicle
    structure (e.g., standard roof) is damaged such as to permit ejection.

    Code "9" (Unknown) if the sole source for the ejection is the police report.

    The margin indicator, which references the Vehicle Form, should be filled in
    with a checkmark (√) to indicate that the actual crosscheck back to the Ve-
    hicle Form has been made prior to coding the investigator's final opinion.

Variable Name: Treatment - Mortality

Format: 1 column - numeric   Beginning
                                                       Column   31

Element Values:

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

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

Remarks:

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

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

   Code "2" (Hospitalization) when hospitalization occurs as a result of injury
   (n ed not be taken directly to a hospital). See Hospital Stay (021) f r
   hospitalization criteria.

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

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

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

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

.

Variable Name: Hospital Stay

Format: 2 columns - numeric   Beginning
                                                                       Column   32

Element Values:

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

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

Remarks:

   Official sources (if they exist) take precedence over 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 subsequu nt
   to admission, then code at least "01", even if the person expires the same
   day as admitted.

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

Variable Name: Working Days Lost

Format: 2 columns - numeric   Beginning
                                                           Column   34

Element Values:

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

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

Remarks:

    Report the actual number of "work" days lost due to the accident by an em-
    ployed person or a full-time college student.   Children, adolescents, re-
    tirees, 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).

    If a person is fatal at the scene, pronounced dead on arrival, or survival
    does not extend beyond the emergency room, code "32" (Fatally injured).

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

    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 acci-
    dent but stayed home to take care of wife who was injured and required as-
    sistance).

    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"
    should be used.

Variable Name: Manual (Active) Restraint System - Availability

Format: 1 column - numeric   Beginning
                                                          Column   36

Element Values:

   0   None available - vehicle occupant
   1   Shoulder belt
   2   Lap belt
   3   Lap belt and shoulder belt
   4   Child safety seat
   5   Motorcycle helmet
   8   Restraint available - type unknown or other (specify)
   9   Unknown

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

Remarks:

   Select the system which was available for use, if so desired, by the occu-
   pant.   Restraints which were installed but subsequently removed   r 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.

   Child safety seat (code "4") 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 if it exists, even if there are more children
   than safety seats.

   Identify any other restraint if the variable is coded "8" (Restraint avail-
   able - type unknown or other).

   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 - vehicle occupant
1   Shoulder belt
2   Lap belt
3   Lap belt and shoulder belt
4   Child safety seat (properly installed and used)
5   Motorcycle helmet
8   Restraint used - type unknown or other (specify)
9   Unknown

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

Remarks:

Code "3" (Lap belt and shoulder belt) is used when the occupant is "enc m-
passed" both in the lap and upper torso region by a lap and shoulder belt
combination. Defeated interlock or buzzer warning systems, as well as mal-
adjustment of the belts do not detract from the usage; however, if the iner-
tia reel, retracting mechanism, or latch mechanism malfunctioned, the lap
and/or shoulder belt which failed should not be considered as used. If a
person has an integral lap and shoulder belt but is only "encompassed" by
the lap portion (having the shoulder belt behind his or her back), code "2"
(Lap belt).

Codes "1" (Shoulder belt) and "2" (Lap belt) must be similarly considered.

Code "4" (Child safety seat) is to be indicated only when the safety seat is
installed so as to comply with the manufacturer's directions (i.e., seat
must be integrated with the vehicle via the seat belts, through the use of a
tether, etc.), and is occupied by the child.

Code "5" (Motorcycle helmet) is to be used if the helmet is worn; it is not
necessary for the chin strap to be used.

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 and
          interviewee.

Remarks:

    Code "0" (Not equipped) if the vehicle did not have any automatic re-
    straints.

    Code "1" (Airbag) if the vehicle was equipped with an airbag. (Note: De-
    ployment of the airbag is considered in variable 026, Automatic (Passive)
    Restraint Function.)

    Code "2" (Airbag disconnected) refers to a situation where components f the
    system are rendered inoperative prior to the collision (e.g., fuse removed,
    blown airbags removed, etc.).

    Code "3" (Airbag not reinstalled) refers to a situation where the bag is not
    repositioned, the gas cannister is not charged, etc., following a depl yment
    previous to the present accident.

    Code "4" (2-point automatic belts) or "5" (3-point automatic belts) depend-
    ing 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.

    The margin indicator, which references the Vehicle Form, should be filled in
    with the response from the Vehicle Form to aid in the actual crosscheck
    prior to coding the investigator's final opinion.

Variable Name: Automatic (Passive) Restraint Function

Format: 1 column - numeric   Beginning
                                                            Column   39

Element Values:

    0 Not equipped
    1 Automatic belt in use
    2 Automatic belt not in use
    3 Deployed airbag
    4 Non-deployed airbag
    9 Unknown

Source: Investigator determined—-inputs include vehicle inspection and
          interviewee.

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.)

    The margin indicator, which references the Vehicle Form, should be filled in
    with the response from the Vehicle Form to aid in the actual crossch ck
    prior to coding the investigator's final opinion.

Variable Name: Relation of Interviewee to Occupant

Format: 1 column - numeric   Beginning
                                                    Column   40

Element Values:

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

Source: Element chosen

Remarks:

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

NASS Injury Coding Conventions for the Occupant Injury Classification

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

1. The first four rules below are given in the NASS field forms on how to select injuries for coding and are included here for the convenience of the coder.

   a. If there are six or less injuries listed in the O.I.C. reduction section, code all of the injuries ordered by Source of Data (1st—autopsy, 2nd—hospital/medical, 3rd—treating physician, or 4th—interviewee and other sources) and by AIS severity within source.

      Order by source

   b. If there are more than six injuries, order the injuries by source and by AIS severity within source. Code this ordering, injury-by-injury. If a group of ordered injuries has the same source, the same AIS, and the group includes at least the sixth and seventh injuries in the ordering, then a choice must be made as to which injury or injuries to code.

      Then by severity within source

   c. Choose the injury or injuries that will enable the maximum number of different ISS body regions to be represented in the coded data. If no new ISS body region can be added then simply code in accordance with the original ordering.

      Maximize ISS within that source

   d. If the occupant has less than six injuries, then the number of rows required to be completed is equal to the number of injuries plus one (i.e., no injuries requires one row (e.g., columns 41 to 48, Occupant Form)). In the additional row "not injured" will be coded for all variables including AIS severity.

      If < 6 rows, close out next row with zeros

   e. Other points to consider if you must make a choice: try to associate contact points with individual injuries. List individual injured areas if possible, instead of lumping them together into a code of X, Y, or O. For instance, if there are lacerations to both thigh and shin, code both TLLI-1 and LLLI-1 instead of YLLI-1.

      Individualize injuries

2. If an AIS is determined to be one of two consecutive numbers, but a clear indication cannot be made after reviewing all the information provided, assign the lower AIS.

   Uncertainty Rule #1—code lower

3. Th coder should take care not to code the same injury twice simply because information concerning it is available from two different sources. For example, if the interview is used in gathering data, only the injuries not already coded based upon medical records should be coded.

   Don't double count

4. Cervical spine strain may, in some cases, still be referred to as "whiplash". "Whiplash" is not a medical term and is not used in AIS-80. If an injury is described as "whiplash", it should be coded as cervical spine acute strain, no fracture or dislocation, NPTM-1.

   "Whiplash" NPTM-1

5. Neck injuries may sometimes be described as "strains" and sometimes as "sprains". For NASS purposes, neck injuries should be coded as "strains" (see Rule #16 below).

   No sprains to neck

6. All internal structures of the mouth, with the exception of the teeth, are coded as part of the digestive system (D). Teeth are coded as skeletal (S).

   Mouth - teeth = D

7. Body region cod 0 (wh le body) should be used only if 50% or more of the whole body surface (0) is affected. An exception is made for burns affecting more than one body region (see Rule #13 below). Aspect code W (whole region) is used only if 50% or more of the body region is affected.

50% rules

8. When there is uncertainty about the location of minor multiple abrasions, contusions and lacerations to the body surface, they should be aggregated, regardless of their location(s), and the code OW__-1 should be used.

Uncertainty Rule #2—whole body

9. An AIS-6 should be used only for injuries specifically coded AIS-6 in the Abbreviated Injury Scale and not because the victim died.

Watch your "6"s

10. Burn, flying glass, and inertial force injuries are assigned a noncontact (90) code for injury source (see Rule #18 for further explanation of noncontact injuries).

Code 90 injuries

11. The AIS codes individual injuries only. Injuries to bilateral body parts are now coded as two separate injuries (e.g., fractured left tibia and fractured right femur). When the term, bilateral is used to describe hemothorax or pneumothorax with certain chest injuries, it should be emphasized that the results, which are not coded, are present bilaterally, but that the injury per se is still a single injury.

Bilateral limited

12. If the medical or interview information indicates a contused knee, elbow, wrist, ankle, etc., and does not specifically state whether the contusion is to the bone or joint, code the injury as integumentary, __CI-1. If the contusion is known to be to the bone, use __CS-_; if to the joint, use __CJ-_. Example: contused knee, K.CI-1.

Uncertainty Rule #3—most superficial system if lsion unknown

13. Burn injuries should be coded using the following guidelines:

   a. If only one body region is burned, use that body region code (e.g., ARBI-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., XRBI-2, burned right whole arm 2°).

   Burn injuries and the rule of nines

   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 on page III-4 of your NASS Injury Coding Manual.

14. The lesion codes P (pain), X (asphyxia), and H (hemorrhage) are NO LONGER VALID. They represent results of injuries and not injuries, per se, and therefore, are not coded. The AIS-80 revision is designed to code the injury itself (e.g., MIUW-3, retroperitoneum injury involving hemorrhage).

Pain, asphyxia and hemorrhage not valid

15. In NASS, "not injured" is defined as AIS=0. Code "0" for all OIC variables, including AIS severity, for cases in which there are no injuries, or as the last injury listing for occupants sustaining less than six injuries.

Closeout or no injury = 0

16. The following definitions have been used traditionally to differentiate "sprain" and "strain" injuries:

Strain versus sprain

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

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

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

17. Lesions to the forehead are coded "face superior," or FS__-_ in the NASS Injury Coding Manual.

<div style="text-align:right">Coding the fore-
head</div>

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

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

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

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

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

(1) twisting or stretching of muslces in the arm, leg, back, etc. with no associated contact identifiable (most often these injuries will be minor muscle strain injuries);

<div style="text-align:right">injury sources</div>

(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 defintions.

Injury	Injury Mechanism Determined from Crash Evidence	Injury Source
Example 1		
Neck dislocation NPDV-3	a. head strikes windshield	a. (01) windshield
	b. forehead hits roof or convertible top	b. (34) roof or convertible top
	c. head strikes steering assembly	c. (03) steering assembly
	d. back hits seatback, no head restraint, head rolls back over seat	d. (90) noncontact injury source

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

Example 2

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

Example 3

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

Example 4

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

Example 5

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

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

                                                    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
                                                               49
                                                               57
                                                               65
                                                               73
                                                               81

Element Values:

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

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

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

   For coding the following situations, the correct procedure is:

        Not injured: 0   0   0   0   0   0   0   0
                           ─── ─── ─── ─── ─── ─── ─── ───
                           41   42   43   44   45   46   47   48

028
035
042
049
056
063

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.)

Injured, severity $\frac{U}{41}$ $\frac{U}{42}$ $\frac{U}{43}$ $\frac{U}{44}$ $\frac{7}{45}$ $\frac{9}{46}$ $\frac{7}{47}$ $\frac{1,2,3,4,5,6\ or\ 7}{48}$
unknown:

                         $\frac{0}{49}$ $\frac{0}{50}$ $\frac{0}{51}$ $\frac{C}{52}$ $\frac{0}{53}$ $\frac{0}{54}$ $\frac{0}{55}$ $\frac{0}{56}$

Unknown if injured: $\frac{9}{41}$ $\frac{9}{42}$ $\frac{9}{43}$ $\frac{9}{44}$ $\frac{9}{45}$ $\frac{9}{46}$ $\frac{9}{47}$ $\frac{9}{48}$

                         $\frac{0}{49}$ $\frac{0}{50}$ $\frac{0}{51}$ $\frac{0}{52}$ $\frac{0}{53}$ $\frac{0}{54}$ $\frac{0}{55}$ $\frac{0}{56}$

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 f the Occupant Form.

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

                                                                         029
                                                                         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
                                                                       50
                                                                       58
                                                                       66
                                                                       74
                                                                       82

Element Values:

        R   Right   S   Superior - upper
        L   Left   I   Inferior - lower
        B   Bilateral   W   Whole region
        C   Central   U   Injured, unknown aspect
        A   Anterior - front   0   Not injured
        P   Posterior - back   9   Unknown if injured

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

    The NASS Injury Coding Manual contains a listing of most injuries. Deter-
    mine from the manual, for each injury, the aspect of the injury and record
    it on the form.

                                                          030
                                                          037
                                                          044
                                                          051
                                                          058
                                                          065

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

Format: 1 column - alphanumeric   Beginning
                                                    Column   43
                                                              51
                                                              59
                                                              67
                                                              75
                                                              83

Element Values:

A	Abrasion	P	Perforation, puncture
B	Burn	R	Rupture
C	Contusion	S	Sprain
D	Dislocation	T	Strain
E	Total severence	V	Avulsion
F	Fracture	Z	Fracture and dislocation
G	Detachment, separation	O	Other
K	Concussion	U	Injured, unknown lesion
L	Laceration	0	Not injured
M	Amputation	9	Unknown if injured
N	Crushing		

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

   The NASS Injury Coding Manual contains a listing of most injuries. Deter-
   mine from the manual, for each injury, its lesion and record it on the 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
                                                                       52
                                                                       60
                                                                       68
                                                                       76
                                                                       84

Element Values:

        A   Arteries - veins   N   Nervous system
        B   Brain   O   Eye
        C   Spinal cord   P   Pulmonary - lungs
        D   Digestive   Q   Spleen
        E   Ears   R   Respiratory
        G   Urogenital   S   Skeletal
        H   Heart   T   Thyroid, other endocrine gland
        I   Integumentary   V   Vertebrae
        J   Joints   W   All systems in region
        K   Kidneys   U   Injured, unknown system
        L   Liver   0   Not injured
        M   Muscles   9   Unknown if injured

Source: Variable 034, 041, 048, 055, 062, and 069 respectively.

Remarks:

    The NASS Injury Coding Manual contains a listing of most injuries. Deter-
    mine from the manual, for each injury, its system/organ and record it on the
    f rm.

UNIFORM SYMBOLS FOR ACCIDENT DIAGRAMMING

Vehicle and Pedestrian Symbols

Automobile (pre-impact or at-impact position) Exception: draw <u>solid</u> outline if stopped at-impact.

Automible (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 fact r, 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

M torcyclist; bicyclist (handlebars are curved pposite the direction of travel)

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
                                                               54
                                                               62
                                                               70
                                                               78
                                                               86

Element Values:

    00 Not injured
    Front
    01 Windshield
    02 Mirror
    03 Steering assembly, including transmission selector lever when column
        mounted
    04 Add-on equipment (e.g., CB, tape deck, air conditioner)
    05 Instrument panel and below, excluding foot controls and parking brake
    09 Other front object

    Side
    11 Side interior surface, excluding hardware or armrests
    12 Side hardware or armrests
    13 Roof pillar supports
    14 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

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

Floor
41 Floor
42 Floor or console mounted transmission lever, including console
43 Parking brake handle
44 Foot controls including parking brake

Rear
51 Backlight (rear window)
52 Backlight storage rack, door, etc.
59 Other rear objects

Exterior of Occupant's Vehicle
61 Hood
62 Outside hardware (e.g., outside mirror, antenna)
63 Other exterior surface or tires
69 Unknown exterior objects

Exterior of Other Motor Vehicle
71 Bumper
72 Hood edge
73 Other front of vehicle
74 Hood
75 Hood ornament
76 Windshield, roof rail, A-pillar
77 Side surface
78 Side mirrors
79 Other side protrusions
80 Rear surface
81 Undercarriage

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.

033
040
047
054
061
068

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.)

Remarks:

Interior flying glass refers to the person being struck by glass which has already fractured and is airborne. This is coded as "26" (Interior loose objects). This does not refer to a person causing glass to shatter upon their impacting it.

Investigator should record only those contact mechanisms which can be documented by some physical evidence (e.g., scuffs, hair, smudges, dents, cracks, etc.). Use page 3 of the Occupant Form and page 7 of the Vehicle Form to record the injury source evidence.

                                                              034
                                                              041
                                                              048
                                                              055
                                                              062
                                                              069

Variable Name: 1st O.I.C. - Source of Data
                 2nd O.I.C. - Source of Data
                 3rd O.I.C. - Source of Data
                 4th O.I.C. - Source of Data
                 5th O.I.C. - Source of Data
                 6th O.I.C. - Source of Data

Format: 1 column - alphanumeric   Beginning
                                                    Column   48
                                                              56
                                                              64
                                                              72
                                                              80
                                                              88

Element Values:

    Official   Unofficial
    1 Autopsy records with or without   4 Interviewee
       hospital/medical records   5 E.M.S. personnel
    2 Hospital/medical records without   6 Police
       autopsy records   7 Other source (specify)
    3 Treating physician   0 Not injured
                                           9 Unknown if injured

Source: Element chosen

Remarks:

    Code "1" (Autopsy records with or without hospital/medical records) excludes
    records from lay, nonmedical personnel; they must be the result of an au-
    topsy by a physician or other similarly qualified life scientist.

    Code "3" (Treating physician) refers to any physician who saw the injured
    person and who has records of that treatment.

    Code "4" (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.

    Code "5" (E.M.S. personnel) refers to a person certified by the state as
    trained in emergency medical service techniques. Code "5" should not be
    used for ambulance attendants, police, or other personnel not trained in
    E.M.S. techniques.

    Cod "6" (Police) can be used, but only when no other source of injury in-
    formation is available. See last sentenc of first paragraph on page 6, Oc-
    cupant Form.

034
041
048
055
062
069

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 "7" (Other) is used, for example, with data obtained from lay coroners.

   Code "0" (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   89

Element Values:

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

Source: Police report

Remarks:

     Code the police reported injury severity for this occupant.

     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 inca-
     pacitating nature are classified as "A" (code "3"), nonincapacitating-evi-
     dent injuries are "B" (code "2"), and possible injuries are "C" (cod "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 expli-
     citly so indicate.

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

— REAR WHEEL AT FINAL POSITION

— FRONT WHEEL AT FINAL POSITION

— POSITION OF IMPACT POINT   1 - FIRST IMPACT
2 - SECOND IMPACT
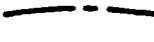
— INDICATIVE MARK FOR SCRATCHES

— 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 <u>solid</u> outline if stopped at-impact.

Automible (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 fact. r, 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

M torcyclist; bicyclist (handlebars are curved pposite 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

$\oplus$ Point of impact

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯   Skidmarks
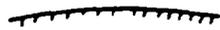
⌒⌒⌒⌒⌒⌒⌒⌒⌒   Centripetal curve scuffs

⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽⸽   Tire scuff marks
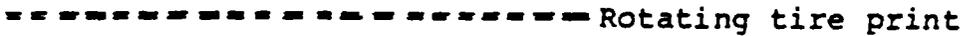
■ ■ ▬▬■ ▬■ ▬ ■▬ ▬ ▬▬▬▬ Rotating tire print

⬭ ∘ ⬭   Gouges

/ ⸗ ⸗ ⸗ /   Scratches

⬭ (large outline)   Liquids (puddle and run-off)

(scattered marks)   Debris (funnel out away from poin: of
                                 impact to show direction of
                                 force)

Any other accident-induced markings, components from vehicles. etc sh uld
be shown in their approximate location and a reasonable likeness sketched
on the diagram. However, do not clutter diagram; make an additional d:agram,
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
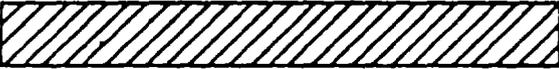
 Painted median

———————————————————————————— Curb

 Paved shoulders with diagonal lines

➜ ➜ ➡ Turn arrows

▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭ Wall

▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨ Bridge abutment and railing

▾———▪———▪———▪———▪—▾ Guard rail

———·———·———·———·——— Fence

Railroad tracks

Embankment (arrows show "DOWN")

Shrubbery - hedges

Trees (draw trunk and perimeter of
foliage to approximate size)

←—RED
←GREEN   Traffic signal

←—RED
←—AMBER   Flashing light

Traffic signs back to back

Sign (indicate words or symbols)

Street light and pole (arm length
may change with scene)

o   Street light without arm

Public utility pole

Building

Fire Hydrant

Street Sign

Delineator post

All crosswalks, road surface symbols and ther relevant markings should be
depicted and drawn to approximate scale on the diagram as much as p ssible.

PHOTOGRAPHY

Case photographs are an important part of each NCSS report for several reasons: 1) they document details which are often difficult to describe, 2) they permit subsequent interpretation of factors which are not otherwise recorded and 3) they are essential in the quality contr 1 program to ensure that all teams interpret and record information uniformly.

Equipment

Preferred equipment for this type of program is a 35 mm camera with an electronic flash unit. The use of a film such as Kodak Ektachrome-X, ASA 64 is recommended. Processing is simple and the ASA 64 film works well for the type of photography typically performed by accident investigators. In discussing investigation photography, it should be noted that a common error involves the failure to use the flash unit. Even in daylight, under overcast conditions or where background lighting is a problem, the flash should be used for vehicle exterior photography. The flash should be used for all interior photographs.

Photographic Coverage

Photographs in this study are taken for the specific purpose of documenting the condition of the vehicle interior and exterior (with emphasis on vehicle damage and occupant contact points) and the accident scene and scene evidence. The coverage indicated in the sketches in this section represents the minimum number of photographs required. At least 5 exterior and 3 interior photographs should be taken for each vehicle. Four scene photographs also are required as a minimum. It should be possible to complete most cases with one roll of 135-20 film. However, if it is clear that additional photographs are needed to include all necessary damage or evidence, they should be taken. The cost of a roll of film is far less than that of the data lost if a sufficient number of photographs are not taken.

VEHICLE: FRONT AND REAR IMPACT
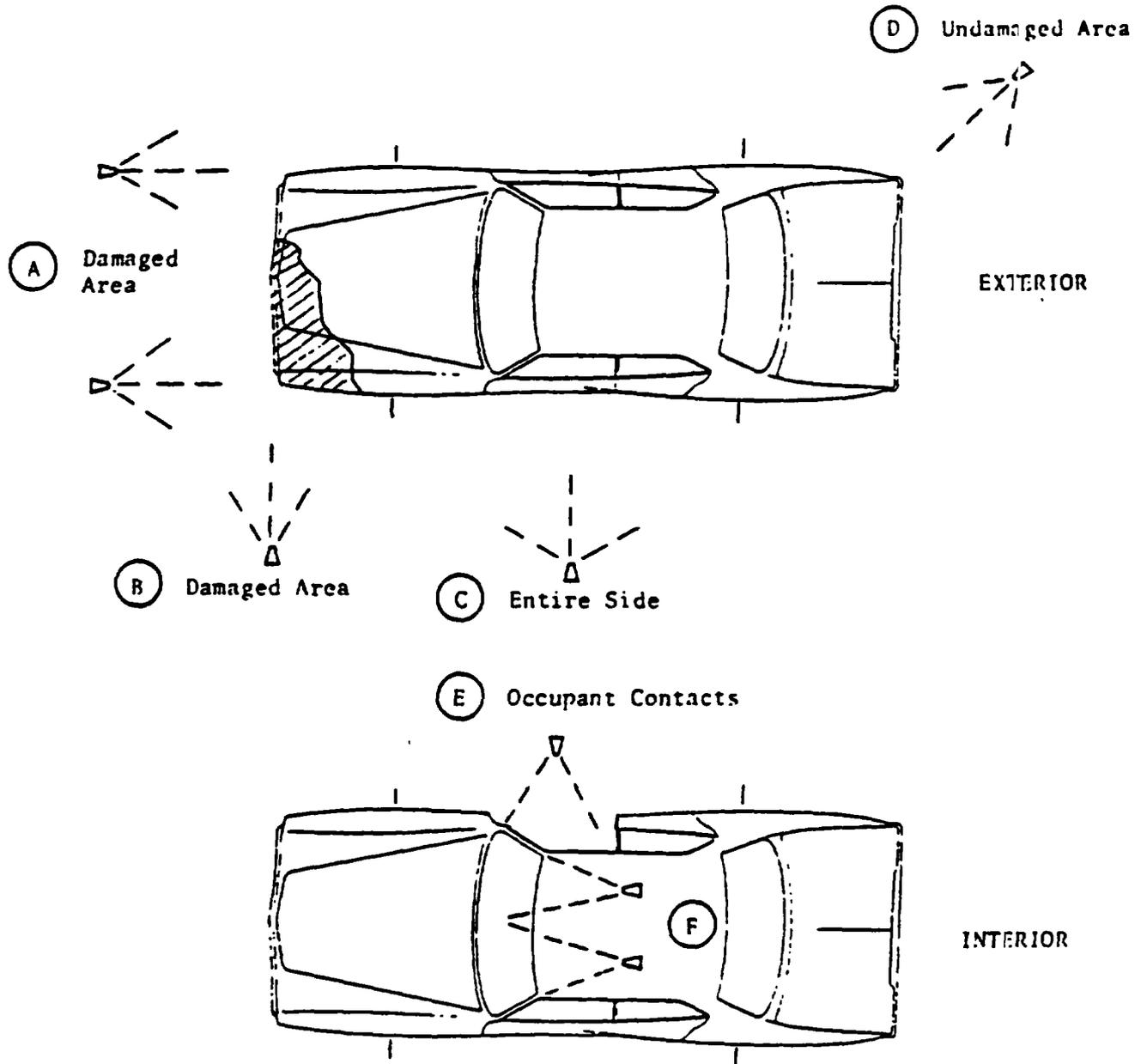
D Undamaged Area

A Damaged Area

EXTERIOR

B Damaged Area

C Entire Side

E Occupant Contacts

F

INTERIOR

NOTE: If an impact involves underride or override, photograph damage at the appropriate height to properly document the extent. If additional photographs are needed to provide adequate coverage in certain cases, they should be taken.

Vehicle

Photographs should be taken from a crouched position at a level slightly above the vehicle belt line. General camera placement for typical accident types is illustrated on the following page. In front impacts, a photograph should be taken from the front and directly along each side of the vehicle (A) to illustrate any body distortion. The photographs of the damaged area should include all damage. The photograph of the undamaged side should include the entire front of the vehicle.

A third photograph (B) should be taken at a right angle to the frontal damage photograph, from the side with the greatest vehicle crush. This photograph should provide a right angle view along the foremost part of the car. Photograph (C) is a centered side view of the entire car, and (D) is a three-quarter view of the two undamaged sides of the vehicle.

Interior photographs should include one from the right front door (E) (or left front, if necessary or appropriate) and two from the rear seat (F) to show occupant contacts. The latter should be taken of the left and right front half of the interior as illustrated. These views should overlap somewhat and include the area from the header to the lower instrument panel. If an additional photograph is needed to include a damaged floor pan, it should be taken. A close-up of contact areas or damage also would be useful.

In side impacts, a side photograph of the damaged area (A) and two angled photographs to show depth of penetration (B) --one taken from forward and the other taken from the rear of the damaged area. Two photographs should be taken from either front or rear (as best illustrates any distortion or bowing of the vehicle) along the body line (C) . A final three-quarter view should be taken of the undamaged side of the vehicle (D) (from the rear if the (C) phot- graphs are from the front, and from the front if (C) photographs are taken from the rear.

VEHICLE: SIDE IMPACT
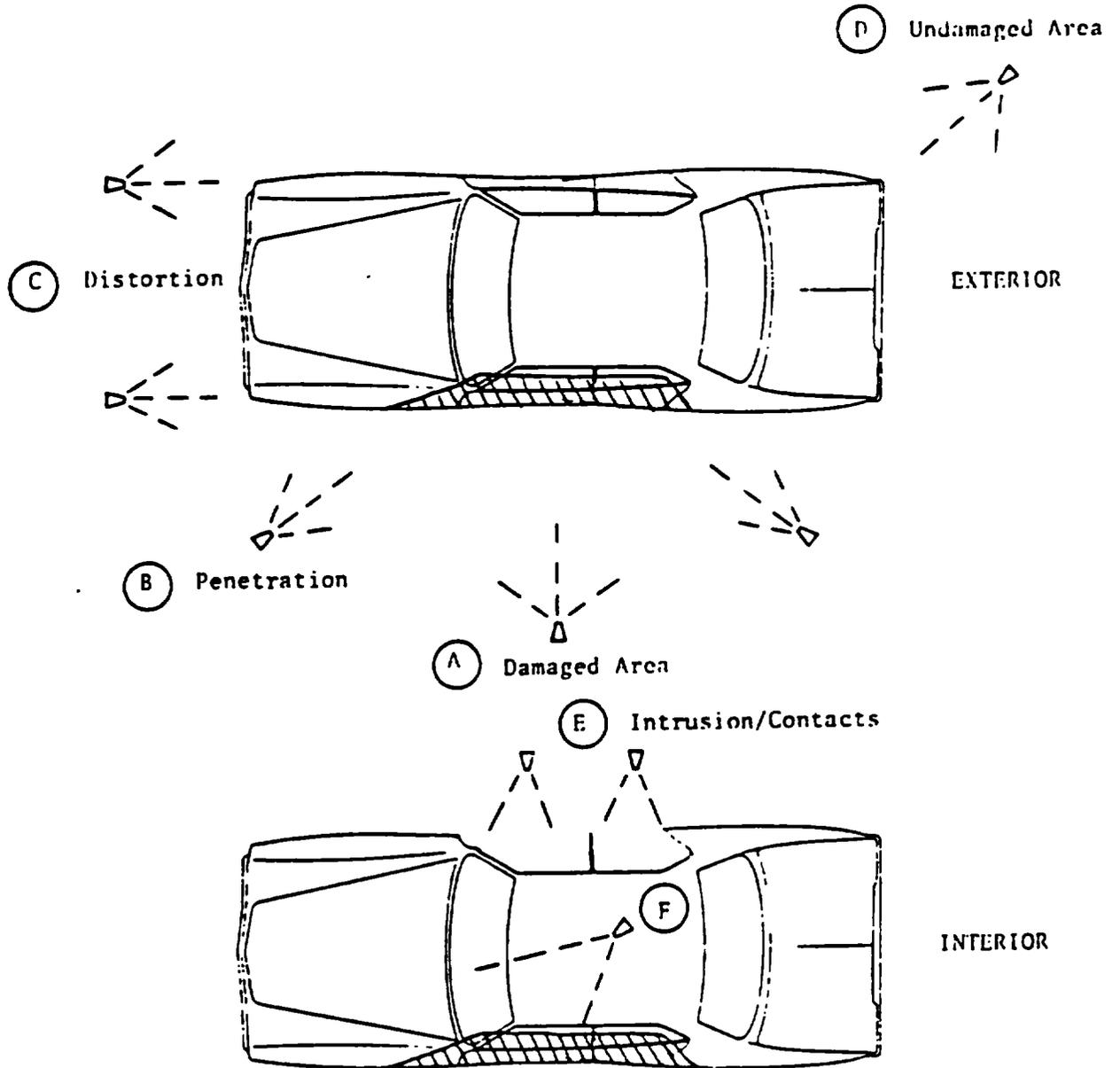
(D) Undamaged Area

(C) Distortion

EXTERIOR

(B) Penetration

(A) Damaged Area

(E) Intrusion/Contacts

(F)

INTERIOR

NOTE: If an impact involves underride or override, photograph damage at the
appropriate height to properly document the extent. If additional
photographs are needed to provide adequate coverage in certain cases,
they should be taken.

Two photographs should be taken of the front and rear interior from the side of the vehicle which was not impacted Ⓔ. These photographs are to show intrusion (or lack thereof) as well as occupant contacts. A final photograph from the rear seat into the left A-pillar and d or area Ⓕ to show occupant contacts. If rear occupants are present, a closeup of contacts would also be helpful.

Scene

In general, a photograph should be taken along the path of each vehicle from perhaps ten feet behind the first tire markings (if present). If vehicle path evidence extends considerably over fifty feet, another intermediate photograph, or two, would be helpful. The point of impact and vehicle rest positions should also be shown. Uniform symbols for scene marking, made with yellow lumber crayons or paint, should highlight the available physical evidence. The uniform symbols simplify the communication between the investigator and reviewer regarding interpretation of photographically depicted scene evidence.