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TRI-LEVEL STUDY OF THE CAUSES OF TRAFFIC ACCIDENTS: INTERIM REPORT I

VOLUME II Appendices

Institute for Research in Public Safety
School of Public and Environmental Affairs
Indiana University
Poplars Research and Conference Center
400 East Seventh Street
Bloomington, Indiana 47401

August 31, 1973

Prepared for:
United States Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20591

Report No. DOT-HS-034-3-535-73-TAC

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16. Abstract

This is the final report of the first year of activity under a proposed three-year program entitled "Tri-Level Study of the Causes of Traffic Accidents." This study has been performed by the Indiana University Institute for Research in Public Safety (IRPS), under contract to the National Highway Traffic Safety Administration (Contract No. DOT-HS-034-3-535). The report covers the period August 15, 1972 to August 14, 1973.

Data were collected on three levels of detail. Police reports and other baseline data on the Monroe County, Indiana study area were collected on Level A. On Level B, teams of technicians responded to accidents at the time of their occurrence to conduct on-scene investigations. On Level C, a sample of 22% of these accidents were independently examined by a multidisciplinary team. A general population survey was also conducted.

The report is presented in nine major sections: 1.0, Introduction; 2.0, Methodology Overview; 3.0, Findings Regarding Accident Causes; 4.0, Accident and Control Sample Comparisons; 5.0, Cluster Analysis; 6.0, Problem Driver Identification; 7.0, Analysis of Study Sample Representativeness; 8.0, Conclusions; and 9.0, Recommendations (Volume I). Principal data collection forms are included in Appendices B and C (Volume II).

This is Volume II of a two-volume report, covering the report appendices. Study results are presented in Volume I.

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Special thanks are due the doctors, nurses, and staff at both the Bloomington Hospital and the Indiana University Health Center who have cooperated to enable our investigators to obtain driver interviews and other needed information.

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Highway Safety Research

PRE-CRASH, TRI-LEVEL METHODOLOGY FOR COLLISION DATA GENERATION

For Presentation to the North Atlantic Treaty Organization's Committee on Challenges to Modern Society; 28 June 1973

Under Contract to the National Highway Traffic Safety Admin. of the U.S. Dept. of Transportation (DOT-HS-034-2-263)

John R. Treat, B.S.M.E., J.D
Kent B. Joscelyn, J.D.
Principal Investigators
1 June 1973

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PRE-CRASH, TRI-LEVEL METHODOLOGY FOR COLLISION DATA GENERATION

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Report of a system developed by the Indiana University Institute for Research in Public Safety, under contract to the National Highway Traffic Safety Administration of the U.S. Department of Transportation (DOT-HS-034-2-263).

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1 June 1973

The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the National Highway Traffic Safety Administration.

PRE-CRASH, TRI-LEVEL METHODOLOGY FOR COLLISION DATA GENERATION

Abstract

This paper summarizes procedures and techniques developed in conjunction with a Tri-Level Accident Investigation Program, conducted by the Indiana University Institute for Research in Public Safety for the National Highway Traffic Safety Administration of the U.S. Department of Transportation, under Contract No. DOT-HS-034-2-263.

The three levels of the "tri-level program" are described, including the principal data collection forms and procedures.

The three levels of this investigation methodology are first, the collection of baseline information on the vehicle, driver, and roadway/environmental populations; second, the on-site investigation by technicians of approximately 600 accidents per year at the time of their occurrence; and third the independent investigation of a sample of these accidents by a multidisciplinary team.

Using this methodology, accident causes were identified and ranked. Information was also developed about the pre-crash condition of accident cars as compared to general population cars, the extent to which findings derived by technicians differed from those obtained by the multidisciplinary team, and the representativeness of the samples studied.

PRE-CRASH, TRI-LEVEL METHODOLOGY FOR COLLISION DATA GENERATION

This paper describes a tri-level accident investigation system which has been developed by the Indiana University Institute for Research in Public Safety (IRPS) under contract to the National Highway Traffic Safety Administration of the U.S. Department of Transportation (NHTSA)[1].

Accidents investigated in conjunction with the system are limited to those occurring in Monroe County, Indiana, which has been selected as the study universe. For the successful operation of an accident investigation system of this kind, it is desirable that the study area generate a reasonably large number of accidents per annum, that all parts of the area can be easily reached within a few minutes by research investigators, and that the study area provide representative general and accident populations. In these respects, Monroe County provides an ideal study area. IRPS offices are centrally located in Bloomington, which is Monroe County's major city (population 56,000). From this location virtually all, parts of Monroe County can be reached within a few minutes driving time, it being nearly square in shape with sides of 20 miles. The total county population of some 86,000 people generates about 4,000 driver- or police-reported accidents per year. The county's accident distribution, in terms of place of occurrence (urban or rural), severity (property damage, personal injury, or fatality), accident configuration (head-on, rear-end, etc.), road surface condition (dry, wet, snow, ice), and most similar measures, is quite similar to national distributions for the same factors[2].

While much of IRPS' system is applicable to accident investigation efforts in general, it has been applied primarily to the investigation of pre-crash phase phenomena, and the identification of accident-causative factors. During the early stages of system use, particular emphasis was placed on identifying the role of vehicle failures and deficiencies in accident causation. At present this emphasis has shifted to a more balanced interest in all types of causes, whether human, vehicular, or environmental, although the pre-crash focus has been retained. Typical questions which either have been or are now being addressed by the system are:

- With what frequency do particular human, vehicular, or environmental deficiencies cause accidents?

- What kinds of drivers are involved in what kinds of accidents under what kinds of circumstances, and for what kinds of reasons?

- How does the pre-crash condition of vehicles in the accident sample differ from that of vehicles in a general population sample?

The system which IRPS has developed to answer such questions includes data collection, analysis, and reporting capabilities. This paper will focus primarily on the data collection aspect.

IRPS refers to its system as being "tri-level," since data about accidents are collected on three levels of detail. On Level A, data from police accident reports are collected. These provide information of minimal detail about some 4,000 accidents per year. Other baseline information is also collected on this level, including data regarding the local driver, vehicle, and roadway populations.

On Level B, teams of technicians respond to accidents immediately upon learning of their occurrence, and conduct "on-site" investigations. These limited-scope investigations draw only upon information available at the scene, and that which can be obtained through immediate follow-up efforts at vehicle impoundment lots and hospital emergency rooms. This level provides a moderate level of detail on approximately 600 accidents per year.

On Level C, a multidisciplinary team independently examines a sample of the accidents investigated on Level B, in order to develop highly detailed information about a relatively small number of accidents. Approximately 100 to 150 accidents are investigated each year in this manner.

LEVEL A: POLICE REPORT AND BASELINE DATA COLLECTION

The objective of data collection on this level is to define the study area in terms of both its accident experience and its driver, vehicle, and roadway populations.

Each year approximately 4,000 accidents occur in the county which are the subject of official police or driver reports to the State. Indiana law requires that accidents occurring on public property which involve personal injury or property damage in excess of $100 must be reported to the Indiana State Police via a standard police report form. These accident reports are processed by the State onto a magnetic data tape. Through cooperative agreements with State Police, IRPS provides a blank tape to the State on which

they transfer information from their own tape, but with identifying information such as the names of involved parties removed. This tape is then returned to IRPS, which uses the University's computer facilities to access the information for Monroe County, in order to define th overall accident experience in the study area. The tape is analyzed in terms of such factors as driver age and sex, accident severity, accident configuration, place of occurrence (urban/rural), prevailing light condition (day/night/dusk/dawn), and road surface condition (dry/wet/snow/ice). By comparing these data with similar national data, it is possible to test the representativeness of Monroe County accidents with respect to the national accident picture. Comparisons with similar data generated from IRPS own accident samples (as investigated by the technician and multidisciplinary teams), enable the representativeness of those samples to be assessed.

Having the tape readily accessible at IRPS' own computer facility also provides a relatively large data base which can be conveniently accessed as a source of general accident information.

In addition to collecting information to define accident experience in the study area, Level A also involves the collection of data on the local driver, vehicle, and roadway populations. Information on the overall age and sex distribution of the total Monroe County population is easily acquired from U.S. Census reports[3]. Acquiring the age and sex distributions of county drivers has proven to be more difficult. The Indiana Bureau of Motor Vehicles maintains an integrated tape of license information on all drivers in the state; however, it is not readily accessible by county. Therefore, we have arranged to access their hardcopy files at the Monroe County License Branch in Bloomington. An IRPS employee periodically visits the local license branch to take a systematic sample from the license application file, noting the age and sex of each driver.

Information about the model year and make distribution of the county vehicle population has proven to be quite easy to acquire, thanks to the cooperation of a national firm[4] which makes a business of storing vehicle registration information for most of the country. This firm is able to provide make and model year distributions for the state, the county, and even for Bloomington, the county's primary city. The model year and make distributions of the accident-involved vehicle population are easily acquired by accessing IRPS' copy of the State Police accident data tape.

A final set of data collected on Level A is that regarding the county roadway population. Here we have found city, county, and state information to be most helpful. The city has detailed information on the city streets, such as total miles and percent paved. The County Commissioners generally have similar information for the county. Finally, every few years the State Highway Commission updates all roadway information for the State, thereby providing a third source of information, although one which in some years may be considerably out of date. Using this roadway information, IRPS has been able to compare the Monroe County driving environment to that of the nation on such factors as roadway location (urban/rural), and type of surface (surfaced/non-surfaced). Although IRPS is often thought of as being in a rural location, the county roadway and accident distributions in terms of urban or rural location have been found to be similar to the national distributions for the same factors[5].

Implicit in the comparisons described is the need to acquire similar national data. Although the extent of available national data is limited, and categories used on the national level sometimes differ from those used on the state or local level, reasonable comparisons have been found to be possible in each subject area using a variety of national sources[6].

LEVEL B: ON-SITE INVESTIGATION

Since Level B provides the accidents which are sampled for investigation on Level C, it is the natural starting point for a discussion of investigation procedures.

Level B operations may be summarized as follows: an IRPS investigating team consisting of either two or three technicians, monitors police radios continually during its assigned duty period, and also monitors special "hot-line" telephones which provide immediate contact with local law enforcement agencies. Immediately upon learning of an accident occurrence anywhere in Monroe County, these investigators proceed to the scene of the accident in specially equipped investigation vehicles. At the scene, they conduct an investigation independent of that conducted by the police. This investigation involves the interviewing of drivers, occupants, and witnesses; an inspection of the involved vehicles and inspection of the environment, including both potentially-involved design features, and physical evidence related to the accident. The team then returns to IRPS offices, and while continuing to monitor radio frequencies, produces a case report on the accident.

Accident Selection Criteria

IRPS on-site investigation teams attempt to investigate all accidents occurring during their assigned hours for which:

- it is believed that the police will complete an accident report form for submission to the State; State law currently requires such a report when accidents occur on public property and involve personal injury or property damage exceeding $100;
- the only motor vehicles involved are automobiles or similar vehicles weighing less than 8,000 lbs., gvw;
- vehicles involved were not pulling trailers, unless such vehicles were parked.

For an investigation to take place it is also necessary that IRPS is immediately notified of the accident, that IRPS investigators arrive soon enough for an inspection to be conducted, and that involved parties cooperate in submitting to an interview and allowing their vehicles to be inspected. Given these criteria and requirements, and with 70 hours per week of on-site coverage, IRPS is currently able to investigate approximately 20% of all accidents investigated by police agencies in the county.

The criteria mentioned were chosen to increase the uniformity of data collected. Non-reported accidents are excluded since it would be impossible to compare them against a baseline of accident experience in the study area. Large trucks were excluded since they present unusually complex braking and handling problems, require special tools, and would not be accommodated by reasonably attainable garage facilities. Motorcycles were excluded because they too introduce complexities of reconstruction which are not shared by regular passenger vehicles. For example, front to rear braking distribution cannot be reliably obtained. An additional factor was that neither large trucks nor motorcycles could be tested on the dynamic brake testing equipment which was in use at the time the criteria were established. These limitations of vehicle type are not mandatory, and might be dropped at IRPS in the future as analysis objectives change. However, they have resulted in highly consistent minimum involvement rates with a maximum degree of reliability.

It should be noted that accident severity was not mentioned as a selection criterion. Unlike many recent studies, IRPS has attempted to examine a representative sample of accidents at all levels of severity. In recent comparisons it was found that about 73% of the accidents in the IRPS sample involved only property damage, while 26% involved

personal injury, and less than 1% involved a fatality. This breakdown is quite similar to that recently reported for the nation as a whole[7].

Police Cooperation

The Monroe County study area is served by three principal law enforcement agencies -- the Indiana State Police, the Monroe County Sheriff's Department, and the Bloomington Police Department. The key to any research investigation activity of this kind is good police cooperation. In some areas it may be impossible to develop an adequate level of cooperation, but even where police attitudes are favorable, it is never developed without a distinct and concerted effort. The keys to obtaining police cooperation are: securing support and approval in advance at the upper management levels; developing personal rapport between police officers and research investigators; avoiding all infringements on police efforts; assisting officers in any ways possible -- e.g., by directing traffic at accident scenes; and maintaining an attitude of respect and dependence. The latter point is especially important. A haughty academic attitude has been the downfall of many a researcher seeking police support. IRPS teams operate without any special powers or legislative privileges, and simply could not function without the voluntary cooperation of local law enforcement agencies. A very high level of cooperation has been achieved; police sometimes hold scenes for IRPS investigators, and have allowed IRPS vehicles to be equipped with two-way radios operating on police radio frequencies.

Team Configuration

IRPS has operated both two- and three-man teams on Level B. Three men per team is ideal, since it allows one man to handle interviews, another to inspect vehicles, and the third to measure scene evidence and consider the role of the environment. However, economy has recently dictated the use of two-man teams, and this has been found to be workable. When a two-man configuration is used, one man generally handles the interviewing, while the second handles both the scene data and the vehicle inspection. This division of labor should probably be a function of the talents of the individual investigators, rather than an inflexible rule. One consequence of the two-man teams is that slightly more time is required per investigation, which increases the chance of missing another accident which occurs before the first investigation is completed. Time required at the scene has increased from an average of about 35 minutes with three-man teams to about 50 minutes with two-man teams.

Background of Team Members

Persons employed by IRPS for the on-site investigator position have generally been technicians, rather than professionals in related fields. The objective of this level is to acquire a moderate level of detail on a reasonably large number of accidents, at moderate overall cost. Use of fully qualified professionals would push the cost up considerably. Further, the time available per investigation, both on the scene and for purposes of case report production, would not permit them to fruitfully apply most of their expertise. For example, given the few minutes available at the accident scene, and the conditions of darkness, wetness, and heavy traffic which often prevail, an automotive engineer would be at an extreme disadvantage in attempting to make highly expert judgments related to vehicular factors. For such reasons IRPS has concluded that well trained technicians are preferable for this role. They must be bright, alert people, who function well under the pressures which may often be experienced at an accident scene. If a man is being hired primarily to interview, he must be articulate and good at establishing rapport. If he is being hired primarily to inspect vehicles, it is desirable that he have had experience working as a mechanic. Ideally, of course, an on-site investigator will be well enough rounded that his assignment can be switched as necessary.

Hours of Coverage

In an early phase of system operation, IRPS maintained 24-hour-per-day, 7-day-per-week coverage on Level B. Continuous coverage is desirable, since it tends to ensure that data which vary as a function of time are representatively examined. However, the relatively low accident frequency which occurs late at night in most areas tends to greatly increase the cost per investigation. For reasons of economy, IRPS was forced to limit its Level B coverage to 10 hours per day, 7-days-per-week. Hours were selected which provided a compromise between highest accident frequency, and a fair representation of both day and night accidents. The hours chosen were 11:30 a.m. to 10:30 p.m., with a break from 6:00 p.m. to 7:00 p.m. for dinner. It has been found that during this period, which comprises about 42% of each week, some 60 to 70% of all county accidents occur. In comparing results from periods of 24-hour-per-day coverage and periods of limited coverage, few notable differences have been detected, with the exception that alcohol impairment was noted as a factor much less frequently during periods in which late night and early morning accidents were not investigated.

In selecting the extent of coverage, a factor to consider is that team-hours are more easily increased in large than

in small increments -- a function of the standard 40 hour work week. During the period of limited coverage, IRPS employed either four or six full-time personnel, each of whom was assigned to either of two permanent teams (comprised at various times of either two or three men). Each team was "on duty" 3 1/2 days at a time. The extra 4 hours each week (each team only worked 36 hours "on duty" rather than the regular 40), were used either to complete case reports or to compensate for overtime worked in behalf of sick or vacationing investigators.

Notification System

It is vital that the investigating team immediately learn about as high a percentage of accidents as possible. In order to accomplish this, IRPS combines radio monitoring with a hot-line notification system.

There are three principal law enforcement agencies which investigate accidents in Monroe County, and IRPS monitors all of their frequencies. For this purpose, crystal-controlled radios which have the capacity of "scanning" several frequencies are used. Such radios are widely available, durable, inexpensive, and require no elaborate antenna or other special equipment.

The monitoring system is supplemented by "hot-line" telephones connected with the two law enforcement agencies which handle the highest volume of accidents. These telephones enable police dispatchers to notify IRPS investigators of an accident by merely lifting a telephone receiver -- no dialing is required. The only problem is that the dispatchers sometimes forget to provide the requested notification. Although monitoring provides notification of the majority of accidents, it cannot provide notification of the "on-station dispatch", wherein the investigating officer is sent out directly from his headquarters, and no related radio transmission takes place. The extent of "on-station dispatches" varies radically among agencies and locations, so local practices must be taken into account in designing a notification system.

In addition to the hot-line telephones and radio monitors in the investigation room, IRPS' investigation vehicles are well equipped with communications gear. This includes scanning-type monitors, so that investigators immediately become aware of accidents being handled by any of the local agencies. This is particularly important because it enables investigators returning from one accident to learn immediately of others which have occurred.

These vehicles also have two-way radios operating on local law enforcement frequencies, which enable investigators to pinpoint such factors as the exact accident location while enroute to the scene, and also enable one investigation vehicle to communicate with another.

Finally, one of these vehicles is equipped with a mobile telephone. This telephone is the only direct link between the investigation vehicles and IRPS offices. It enables investigators to call in for advice or instructions, and facilitates communications with the hospital emergency room and other important information sources. Another benefit is that the cooperation of accident victims is often won by offering the use of this telephone to call friends or family from the accident scene.

On-Site Investigation Procedures

The team monitors the radios continuously while on duty, and at the same time completes reports on previous accidents. Notification of an accident may be received either by radio monitoring or by hot-line telephone. If the call comes by hot-line, the team will be given whatever information is then known as to accident severity and location. If a radio transmission is monitored it is likely that only partial information will be obtained. The team will then immediately contact the appropriate law enforcement agency via hot-line to get accurate information on such important information as the accident location. If the accident has occurred in an urban area, only one vehicle is dispatched to the scene; otherwise, both vehicles are used so that they may both be positioned to protect the scene, using their overhead flashing lights.

Travel to the scene is conducted with caution, and in complete conformance to all ordinary traffic regulations; the overhead lights are put into operation only after arrival at the accident scene. In an area the size of Monroe County (a 20 mile per side square) the time saved by a high speed run simply does not offset the risks involved. More significant time savings can be achieved by having all equipment ready and efficiently organized for rapid departure than by speeding to the scene.

Immediately upon arrival at an accident scene, the first problem is properly placing the investigation vehicles -- a matter sometimes surprisingly difficult in light of the maze of people, vehicles, and flashing lights which often surround an accident scene. The vehicles must be placed so that they afford maximum protection to those investigating or assisting

with the investigation; are reasonably accessible; are not traffic hazards in themselves; and do not obstruct police or other rescue vehicles.

Once the IRPS vehicles are parked, one investigator usually has a brief discussion with the investigating officer, if his arrival significantly preceeded that of the IRPS team. The officer will generally give a brief description of what he knows about the accident, including how it happened and injuries sustained, and will point out drivers, occupants, and witnesses of whom he is aware. This brief introduction often saves considerable time. In return, the IRPS investigator offers assistance to the police. Generally, no assistance is requested; when it is, it is usually for help in directing traffic. If help is needed, this usually results in the accident having to be forfeited for research purposes, as there will not be time to get the data required before the scene is cleared. However, the rapport developed in this manner will repay the research effort many times over in future cooperation.

Driver Interviews

Finally, and usually within about ten minutes of learning about the accident, the actual investigation begins. The human factors investigator approaches one of the drivers. Since many of our investigations are of minor accidents, the driver is frequently available at the scene. If he has been injured, the on-site team tries to get an interview at the hospital emergency room after they have completed their investigation at the scene. Having reached a driver, the investigator first introduces himself, and states that he is from the Institute for Research in Public Safety. He explains that he is not connected with the police or any insurance company, but is conducting an investigation, for research purposes only, under contract to the federal government. He adds that we treat our information with the strictest confidence, and that our information is never voluntarily released. At this point most drivers agree to cooperate and the investigator inquires whether they would mind having the conversation recorded. Surprisingly few persons object to use of the recorder. The investigator then places the small cassette tape recorder in operation, generally holding it inconspiciously under his clipboard.

The investigator then begins a line of questioning which is designed to get a good description of what happened, as well as all of the information necessary to complete the on-site human factors data form. Information sought includes: driving experience, vehicle familiarity, road and area familiarity, opinion of vehicle condition, use of restraints,

estimate of speed, and a complete description of the accident. This interview is necessarily brief, and must be conducted with extreme efficiency, as accident scenes are rapidly cleared, and at a minimum, all involved drivers must be interviewed. Each interview typically requies five to ten minutes per person.

After completing the interview, the interviewer asks the driver whether he would be willing to be interviewed again in greater detail, and have his vehicle taken to our garage for inspection, in conjunction with an in-depth (Level C) investigation. If all involved drivers agree, the in-depth team is notified and an in-depth investigation may be initiated. This procedure will be discussed further in the description of Level C.

Vehicle Inspection

The vehicle inspector has to move extremely fast -- particularly if a vehicle is not drivable, as it is apt to be towed from the scene within minutes. He begins with whichever vehicle is likely to be moved or driven away first, and begins checking the items specified by the on-site vehicle data form. Items checked on all cars include: vehicle identification number; odometer reading; inspection sticker data; tread depths; tire sizes, makes, and models; the brake system, including fluid level, hose condition, and pedal reserve and leak-down; the steering system, including steering linkage integrity, freeplay, power steering belt condition, and fluid level and leakage; windshield obstructions; wiper and washer condition and function; mirror condition; shock absorber function; stop and turn lamp function; and horn function. Items checked only when conditions warrant include headlamp function, taillight function, back-up light function, emergency flasher function, and defroster/demister function. Each item is recorded as passing or failing according to a set of written criteria which accompany the form. If an item fails, written comments are provided to indicate the specific reason for the failure.

Environmental Investigation

The third team member records physical evidence relating to the accident (such as skidmarks and pavement gouges) and notes the role of environmental influences, such as road design, warning signs, and ambient conditions. En route to the scene, the environmental investigator generally records preliminary information about the accident, including location;

day, date, and time of notification; police agency investigating; team members responding; atmospheric conditions, including light condition, cloud cover, precipitation, and temperature. Upon arrival at the scene he immediately marks and measures the physical evidence, and photographs the accident scene. Measurements are taken to define the pre-crash and post-crash trajectories of involved vehicles, points of impact, and the final resting place of vehicles, debris, and other related items. All measurements are recorded with respect to a reference point and reference line, so that the information can be accurately reduced to a drawing. Other ambient factors noted include existing traffic conditions, pavement condition, and estimated coefficient of friction. Permanent environmental features noted include road or intersection configuration; highway lighting; regulatory and warning signs; traffic signals, including means of actuation, visibility condition, and length of amber phase; lines, symbols, or words on the pavement; view obstructions; pavement construction; roadway curvature, crown, superelevation, and/or grade; pavement width and speed limit.

Following completion of their investigation, team members return to their vehicles and resume monitoring the radio for additional accidents. They are immediately available to respond to another accident should one occur. Otherwise they return to IRPS offices to complete their investigation and prepare a case report.

Report Preparation

The on-site case report consists of completed human, vehicular, and environmental data forms; a sketch of the accident scene drawn to approximate scale, showing the pre-, at-, and post-impact trajectories of involved vehicles and significant environmental features; unmounted color slides of the accident vehicles and scene; and a conclusion form. The conclusion form is prepared by the senior member of each team, after each team member's data have been discussed and compared. The conclusions reached concerning accident causes are categorized according to the same system used by the in-depth team on Level C. This system, in which factors are designated as "causal or severity-increasing," and are rated as "certain, probable, or possible," will be discussed in a subsequent section.

The completed case file on each accident is reviewed by supervisory personnel, and then coded, keypunched, and stored in a central data file.

On-Site Investigation Equipment

IRPS maintains two vehicles for transit from IRPS offices to accident scenes, so that at least one is always available despite maintenance requirements. Another reason for having two vehicles is that they are equipped with overhead protective lighting systems, and by properly placing each vehicle well away from the accident location in opposite direction, the safety of investigators at the accident scene is greatly increased.

Vehicles chosen for this purpose are full-size four door sedans. These are ordered with heavy-duty cooling and electrical systems which are essential, since these vehicles sometimes idle for extended periods at accident scenes under conditions of heavy electrical drain from radio or overhead lighting equipment.

The overhead light systems contribute greatly to scene safety. A combination of yellow and red flashing lights is used. This distinguishes IRPS vehicles from law enforcement vehicles, which in Indiana use only red lights. At the same time, it has been found that the motoring public in this area slows more and exercises more caution in response to a red light than a yellow one; hence, the desirability of maintaining red in the combination.

These vehicles carry an assortment of special equipment in the trunk. This includes a fire extinguisher, first aid kit, blankets, measuring tapes, a wheeled measuring device, marking stakes, spray paint, lumber crayons and chalk, flashlights, clipboards, film, flashcubes, and warning flares. In the summer, this equipment may also include cameras and tape recorders, although during cold weather these are kept inside, since cold weather adversely affects their operating characteristics.

A camera is another essential item of equipment. IRPS prefers that its investigators take color slides. A high quality instamatic-type camera has proved to be ideal, because it is durable, easy to use, consistently produces adequately focused and exposed pictures, has a reasonably wide field of view, it easily reloaded, and with flashcubes is easily used at night. IRPS has found that time and mobility requirements do not permit the use of more complex equipment by the on-site teams, and that the increase in quality to be obtained does not justify it.

With the permission of accident participants, tape recorders are used to record driver interviews, and are sometimes used

in the vehicular and environmental phases of an investigation -- particularly if the weather is inclement, making the use of a pad and pencil difficult. Small cassette-type recorders are preferred, particularly those equipped with sensitive integral microphones, which enable recordings to be obtained unobtrusively. Once permission has been obtained, such recorders can be set aside so that their presence is forgotten, and a high level of candor achieved.

Investigator apparel must enhance investigator safety, and provide a uniform, readily identifiable appearance. However, IRPS believes that official-looking uniforms are not desirable, as they result in research investigators being mistaken by the public for law enforcement officers, and may also offend the sensitivities of law enforcement agencies. The IRPS uniform begins with green work shirts and work pants, devoid of badges or other adornments. Over this, a vest, jacket, or heavy coat (depending on the season) is worn at all times. Such outer apparel is bright orange in color, and is prominently adorned with white reflective tape. An IRPS investigator can be instantly spotted at any accident scene, day or night, by the bright color of this outer apparel. University insignia and a name tag are affixed to these outer garments.

A few special items of equipment are required by the vehicle investigator. In addition to a flashlight, he requires a tire pressure gauge, a tire tread depth gauge, a steel measuring tape, and a small adjustable wrench and screwdriver for master cylinder covers.

LEVEL C: IN-DEPTH INVESTIGATION

Approximately one-fourth of all accidents investigated by technicians on Level B are independtly examined by a multidisciplinary team on Level C, and the results are separately tallied. In theory, it is intended that accidents investigated on Level B be randomly selected for investigation on Level C. However, motorists often refuse to cooperate for the Level C investigation, which involves a greater level of inconvenience, thereby preventing many accidents from being acquired. As a result, an attempt is made to acquire nearly all Level B accidents for Level C investigation. Only rarely does an overabundance of accidents require that Level C acquisition be temporarily halted. However, in no event is an accident selected due to preconceptions by IRPS as to what caused it. Whether any particular accident is selected remains a matter of chance, without regard to potential causes. Comparisons of the samples obtained on levels B and C indicate that despite such sampling difficulties, a reasonably representative Level C sample is being obtained.

Level C operations may be summarized as follows: on-site investigators attempt to persuade drivers involved in accidents they investigate to consent to an additional "in-depth" investigation. Consent is transmitted to the in-depth team as soon as possible -- often directly from the scene via mobile telephone. If the vehicle of a consenting motorist is not drivable, arrangements are made to have it towed directly from the scene to IRPS' indoor inspection facility. If a vehicle is drivable, an appointment is tentatively set to have the car driven to this facility at a subsequent early date. At the same time, the drivers are advised that a subsequent interview will be necessary, and a tentative date is set. The drivers are then advised that they will be recontacted shortly to confirm the appointments and arrangements.

Subsequently, an extensive interview of each driver and witness is conducted by the team sociologist, vehicles are inspected by a mechanic and automotive engineer, scenes are inspected for environmental faults by a traffic engineer, and the entire accident is reconstructed by a specialist in such reconstruction. The multidisciplinary group then meets to decide on causal factors, conclusions, and recommendations arising out of the accident. A technical writer next produces a brief case report of the accident, which together with a detailed scale drawing and color slides of the accident and accident vehicles, is mailed to the project sponsor, the National Highway Traffic Safety Administration. These reports, which make no reference to names of participants or identifying numbers, are then published for distribution to safety officials, and for sale to the public[8]. Information from these cases is also coded and introduced into a centrally-located automated data file, along with accident data supplied by other government-sponsored accident investigation teams[9]. Extensive data from each investigation is also coded and keypunched at IRPS, and introduced into its own accident data file for later analysis.

Team Composition

For many of the important highway safety questions of today, viable alternatives to the process of having investigators make assessments on a clinical, case-by-case basis, have not been developed. For any individual accident or assessment, the accuracy and usefulness of many such assessments is assured only by the qualifications of the experts responsible for it. It is the function of the multidisciplinary team to bring professionals in relevant fields of expertise together, so that each can supply his unique inputs and then interact to provide balanced outputs, which in theory represent the most highly reliable judgments which can be

obtained. As accidents involve interactions of men, machines, and environment, IRPS has retained professionals with expertise related to each of these components as members of its multidisciplinary team.

In the human factors area a graduate-degree holder in sociology or psychology is preferrable. IRPS currently employs a sociologist with some specialization in social psychology for this role. This "human factors specialist/interviewer" conducts interviews of drivers, passengers, and witnesses; guides the clinical assessment of human causal influences; and designs and develops human factors-related analyses and data collection forms and procedures. A pharmacologist, a physician, and a pathologist are available when needed.

A traffic/transportation engineer oversees the environment-related aspects of in-depth investigation. This individual is responsible for the detailed review of each accident scene to determine if such factors as poor design, construction, or maintenance practices may have played a role in causing accidents or increasing their severity. He also guides the clinical assessment of environmental causal influences, and designs and develops traffic engineering-related analysis and data collection forms and procedures.

The traffic engineer is assisted by an accident reconstruction specialist skilled in the interpretation of accident-induced physical evidence, such as skidmarks and pavement gouges, and the formulation of speed and other estimates through the application of mass-energy-momentum principles.

A mechanical engineer with training or experience in the automotive engineering field bears principal responsibility for the examination of vehicle factors. A particularly good grasp of the theory underlying vehicle suspension and handling has been found to be essential. This individual oversees the inspection of each accident-involved vehicle to determine the role of vehicular failures and deficiencies. He also guides the clinical assessment of the role of vehicular factors, and designs and develops vehicle-related analyses and data collection forms and procedures.

The mechanical/automotive engineer is assisted by a mechanic, who has vocational school training in his field, and several years of on-the-job experience with automotive dealerships. This individual conducts the in-depth vehicle inspection, using a detailed data collection form with established pass-fail criteria. He is responsible for the proper removal and replacement of all parts, as required to complete the vehicle inspection.

Several support personnel round out the in-depth data collection and reporting team. One individual, with experience in drafting and surveying, assists the traffic engineer and reconstruction specialist in the collection of data from accident scenes, as well as in its reduction to scale drawings and other required formats. Another individual, who has an engineering degree, works part-time as a technical writer, producing brief case reports on each in-depth investigation.

Multidisciplinary Investigation Procedures

If the on-site team secures the cooperation of the participants in an accident during working hours, the in-depth team is contacted from the scene via mobile telephone. At that time, a specific appointment is usually set for both an in-depth interview and an in-depth vehicle inspection. Ideally, the interview and the inspection are conducted at the same time at the garage, which has a small office for interviewing purposes. Similarly, depending on their schedule and other current activities, one or more in-depth team members may immediately travel to the scene -- possibly reaching it before vehicles or participants have been removed.

If cooperation is secured during other than routine working hours, the on-site team puts a special summary of relevant facts and tentative arrangements on the desk of the individual responsible for coordinating such arrangements. On the next working day, this individual immediately finalizes all arrangements regarding vehicle inspection and in-depth interviews. As soon as possible an in-depth investigator is dispatched to the scene. Whenever in-depth team members are unable to respond immediately, the on-site team takes added pains to preserve important evidence, e.g., by marking final resting places and other evidence in detail, using spray paint.

IRPS procedures do not require immediate response by in-depth team members, since it has been found that it is not feasible to tie a limited number of professionals to a schedule which ensures that an immediate response will occur at any time. However, on-site teams can be and are retained to ensure that data are preserved until a member of the in-depth team arrives and begins his independent investigation. Level B must thus be viewed as both an independent data source, and a means of acquiring accidents for in-depth investigation.

Driver Interviews

The in-depth interview is conducted as soon as possible after the accident by the team's human factors specialist.

The interview is intended both to obtain as detailed a description of the accident as possible, and to acquire all information needed for completion of the IRPS in-depth human factors data form. The interview may be conducted at the garage at the same time as the vehicle inspection, or at the driver's home, school, or place of work.

Typically, the interview is initiated by the interviewer introducing himself, explaining the purpose for the investigation, that this more intensive interview is necessary only because this accident was drawn at random for further investigation, and that we treat our information with as much confidentiality as possible. Next, permission is requested to record the interview, and is almost always granted. Discussion usually begins with the interviewee being asked to describe his accident. Information is then sought to complete the human factors form, including driving experience; vehicle, road, and area familiarity; past accidents and fault with respect to each; past tickets and court contacts; physical limitations; vehicle deficiencies; restraint usage; and pre-accident physical and psychological status. Subsequently, depending on driver age, an impulse-expression test may be administered[10]. If there is any evidence or suspicion that drinking may have been involved, an alcoholism screening test is administered[11]. Finally, detailed information regarding injuries is solicited. Near the end of the interview, sensitive topics are probed, and if an interviewee is suspected of lying or distorting the truth, various questioning tactics are pursued in a final attempt to draw out the truth.

Vehicle Inspection

As previously indicated, it is a requirement on Level C that all vehicles be brought to the IRPS garage for inspection. The inspection is jointly conducted by the automotive engineer and the mechanic. An in-depth vehicle inspection form has been developed which is used to structure the inspection process. This form requires each item checked to be rated as passing or failing, according to an accompanying set of criteria.

This form has been divided into three sections, consisting of Interior, Lights, and Vision (Section A); Engine Compartment and Steering (Section B); and Wheels, Tires, Suspension and Brakes (Section C).

Each section is subdivided into two levels. The first of these levels in each section is required to be completed on all accident-involved vehicles inspected. Level Two within

each section is only required to be completed if there is some indication, or some logical possibility, that a deficiency within the components covered by the section could have played a role in causing or increasing the impact severity of the accident.

Examples of items examined on Level One of Section A include windshield obstructions; mirror condition; horn function; condition of rubber pedal covers; presence of litter and other objects which could obstruct controls; defroster, washer, and wiper function; and stoplight and turn signal function. Items inspected on Level Two of this section include headlight aim and function, transmission detent and inhibitor switch function, and loose seats and visors.

Examples of items inspected on Level One of Section B include steering pump belt and fluid, brake fluid level and leakage, clutch performance and adjustment, engine mounting integrity, exhaust leakage, steering system play, and tie rod end and idler arm play. Items inspected on Level Two of this section include idle speed, timing, dwell, and point resistance.

Examples of items inspected on Level One of Section C include toe-in/out; shock absorber condition; spring condition; and details about the right front and left rear wheels, including brake lining or pad thickness and clearance, drum diameter, wheel cylinder leakage, and bearing or hub seal leakage. On Level Two of this section, data similar to that acquired on Level One are obtained for the remaining left front and right rear wheels and, during the period when IRPS had access to a dynamic brake tester, information was also acquired regarding braking force as a function of pedal load, no load drag, speedometer accuracy, and parking brake performance.

Environmental Investigation

The in-depth environmental investigation is a joint undertaking of the team's traffic/transportation engineer and accident reconstruction specialist. These investigators visit the accident scene as soon as possible for a detailed analysis. Their job is to assemble both data related to the accident, such as pre- and post-impact trajectories of involved vehicles; and the contribution of road-way design, construction, and maintenance factors to its occurrence. Particular attention is paid to the length of skid or skuff marks, and the deflection in these resulting from impact, as such information may enable estimates of travel and impact

speeds to be calculated. Measurements of grade, crown, and superelevation are obtained with rod and transit, and road curvature is measured if relevant. Such factors as the adequacy of signs, signals, and pavement markings are also considered. The coefficient of friction is estimated and often verified by skid-testing.

Following the environmental analysis, a detailed scale drawing is produced, showing pre- and post-impact trajectories; points of impact; final testing points of vehicles, debris, and other evidence; and the position of all significant environmental features. In addition to their value as a reporting medium, such drawings are often an invaluable aid in the reconstruction process.

Currently, an in-depth environmental data form is being developed by project traffic engineering personnel, which will enable the adequacy of the driving environment in the area of each accident to be assessed in much the same manner as the in-depth vehicle inspection form enables specific vehicle deficiencies to be assessed.

Multidisciplinary Analysis and Conclusion Session

The culmination of each in-depth investigation is a session at which in-depth team members present their data and interact to reach conclusions, determine accident causes, and formulate recommendations arising out of the investigation.

Each session begins with a statement of facts regarding the accident, such as when, where, and under what environmental circumstances it occurred. Color slides are then presented, showing the accident scene, involved vehicles, and other subjects of interest. Representatives of each discipline next summarize the information they have obtained. In this process, key excerpts of driver and witness interviews are read, and vehicle roadways, and driving environment deficiencies and their potential roles are outlined. On some occasions it is determined that more investigation is necessary before the investigation can be concluded. Ordinarily, however, the session concludes with the group leader going to the blackboard to list causal factors suggested for inclusion by the group. These are then discussed and a certainty rating (certain, probable, possible) is assigned to each factor which has not been rejected. Majority rules in this determination. Related conclusions and recommendations are also decided by the group in this manner.

All group findings are recorded by the technical writer/engineer, who attends all Analysis and Conclusion Sessions.

He then incorporates all the findings, together with other data in the case file, into a brief case report, which is forwarded to the project sponsor (NHTSA). Finally, all in-depth data collection forms are coded, keypunched, and entered into an automated data file for subsequent analysis.

Multidisciplinary Investigation Equipment Requirements

Many of the same items of equipment used by the on-site team are required for in-depth investigation, e.g., safety apparel, measuring tapes, tape recorders, and cameras. The human factors inquiry requires the least equipment -- a cassette tape recorder to record interviews. However, special analysis objectives now being considered may require adding vision- and reaction-time testing hardware.

Environmental and traffic engineering assessments require the usual lumber crayons and spray paint (for marking the pavement), and measuring tapes. Also required are a rod and transit. In addition, more complex photographic equipment can be used to advantage, as the in-depth team has more time at the scene and can visit it at a time when traffic and light conditions are conducive to good photography.

It is with respect to the vehicle that in-depth investigation demands the most extensive array of special facilities and equipment. Originally, the mechanic and automotive engineer went to the vehicles, wherever they were being stored or kept pending repair, with a jack and other equipment in tow. However, the often cold, wet, and muddy conditions sometimes severely hampered inspection efforts. As a result, it was determined that all involved vehicles must be taken to an indoor inspection facility, so that all inspections are conducted under dry, warm, and well lighted conditions, with all proper equipment at hand. For this purpose IRPS maintains a garage facility approximately 3,000 sq. ft. in area. A small surplus of space is essential so that cars awaiting inspection and those which have been inspected but are awaiting disposition, can be stored indoors, safe from theft and the elements.

Principal items of equipment required at the garage are an optical alignment gauge, a brake micrometer, 12" outside calipers, a torque wrench, a hydraulic jack, chassis stands, a tachometer/dwell meter, a timing light, a tire pressure gauge, a tread depth gauge, and an extensive variety of standard mechanic's tools. Another extremely useful item of equipment is a dynamic brake tester, although IRPS is currently of the opinion that its expense exceeds its utility to the project.

CAUSAL CATEGORIZATION SYSTEM

To date, the primary application of IRPS' tri-level system has been to assess and rank causes of highway accidents. To do this, a system has been developed in which factors are identified as being either causal or severity-increasing, and the investigating team's certainty regarding the involvement of each is ranked as certain, probable, or possible. The following definitions have been developed.

Causal Factor: A factor necessary or sufficient for the accident's occurrence; had the factor not been present in the accident sequence, the accident would not have occurred.

Severity-Increasing Factor:

A factor not necessary of sufficient or sufficient for the accident's occurrence, but which increased the severity of the impact which resulted.

A certain rating is analogous to a 95% confidence level, and is applied when there is virtually no doubt as to the involvement of a factor in the role specified. Probable is analogous to an 80% confidence level, and is used when evidence strongly supports the involvement of a factor, but does not establish its involvement beyond all doubt. No analogous confidence level can be assigned to a possible rating, which indicates that a deficiency may have been present although its involvement is neither rejected nor adequately supported by available evidence. The judgment that a factor is involved is cautiously and conservatively reached, as it is IRPS intention to reliably establish minimum involvement rates for each factor or group factors.

Causal Factor Categories

Causal factors are designated as either human, vehicular, or environmental. Human factors include the errors, deficient performances, and sub-standard conditions and states of drivers and pedestrians in the moments immediately preceding an accident; earlier human errors, such as failing to have a deficient vehicular component repaired, are not included. Vehicular factors include all system and component failures and degradations, whether they are the result of improper design, manufacture, or maintenance. Environmental factors include all factors not classified as human or vehicular; these are principally roadway design, maintenance, or signing deficiencies, and ambient limitations.

Human Factors/Direct Causes

In this model, the driver is viewed as an information processor, who must perform perception, comprehension, decision, and action functions, in order to drive. Information processing failures, either partial or complete, are designated *direct causes*. Mental, physical, or psychological factors which limit the ability of the driver to perform his information-processing functions are also examined, and are designated human *conditions and states*. In general, the accident investigation approach is better suited to assessing *direct causes* rather than *conditions and states*, due to the difficulty of establishing a causal relationship with regard to the latter.

Human direct causes associated with either perception or comprehension are designated *recognition errors*. Subcategories of *recognition errors* include *inattention, internal distraction, external distraction,* and *improper lookout*.

Decision error subcategories include *misjudgment* (of speed and/or distance), *false assumption, improper maneuver, improper driving technique or practice, excessive speed, tailgating, inadequate signal, improper evasive action, inadequate defensive driving technique, failure to turn on headlights,* and *excessive acceleration*.

Finally, subcategories of *action errors* include *inadequate directional control, panic or freezing,* and *overcompensation*.

Two other categories of *direct causes* are *critical non-performance* (e.g., black-out or dozing), and *non-accident* (e.g., suicide attempts).

Human Factors/Conditions and States

Under human *conditions and states*, factors are first categorized as *physical/physiological, mental/emotional,* or *experience/exposure*.

Subcategories of *physical/physiological* factors include *alcohol impairment, other drug impairment, fatigue, chronic illness, physical handicap,* and *reduced vision*. Subcategories of *mental/emotional* factors include *emotional upset, road/area unfamiliarity,* being *in-hurry,* and *mental deficiency*. Subcategories of *experience/exposure* include *driver inexperience, vehicle unfamiliarity, road over-familiarity,* and *pressure from other drivers*.

Vehicular Factors

Vehicular factors are categorized as affecting the *brake system, tires and wheels, communication systems* (including lights, signals, and horns), the *steering system,* the *suspension system, driver seating and controls,* the *power train and exhaust,* or the *body and doors.* Subcategories have been developed within each system.

Environmental Factors

Environmental factors are designated either *highway-* or *ambience-related. Highway-related* factors include *control hindrances, inadequate signs and signals, view obstructions, design problems,* and *maintenance problems. Ambience-related* factors include *slick roads, vision limitations, avoidance obstructions, animals or objects in road, rapid weather changes, camouflage effect,* and *environmental overload.*

Definitions for each of these major categories have been developed, as have more detailed categories under each heading[12].

SYSTEM OUTPUTS

In the fall of 1972, IRPS completed its initial analyses of data acquired through its tri-level accident investigation system[13]. In order to facilitate these analyses, much of the data collected on Levels A, B, and C were coded, keypunched, and entered onto magnetic tape or disc.

The most important analysis output was the tabulation of accident causes. For both levels B and C, tables were produced indicating the number of times each causal factor had been identified, and the percentage of total accidents investigated which this represented. In this manner, the relative involvement of human, vehicular, and environmental causal factors was established. A major finding was that vehicular factors were implicated less frequently than either human or environmental factors.

Another analysis compared results obtained by the technicians on Level B, with those obtained by the multidisciplinary team on Level C. In most respects, results from the two levels were found to be comparable.

A third analysis involved a comparison of inspection data obtained from IRPS accident vehicle sample, with similar data from a general population sample obtained in a separate study[14]. It was found that there was a tendency for compo-

nents of vehicles in the accident population to be deficient slightly more frequently than those of vehicles in the general vehicle population sample.

In a fourth analysis, the representativeness of IRPS accident samples to the county, and of the county to the nation, was examined. Some of the sample comparisons used have already been mentioned in the discussion of Level A. It was found that in terms of most measures available for comparison, the Level B and C samples were sufficiently representative of the county, and the county sufficiently representative of the nation, that study results could be relied upon to provide a good indication of the relative involvement of human, vehicular, and environmental factors in the national accident picture.

At the present time IRPS is applying the system to new analysis objectives, some of which imply specialized coding, keypunching, and programming tasks of limited utility. However, at the same time, IRPS is increasing the level of flexibility and automation in its data file system, so that a wide range of special analyses can rapidly and efficiently be conducted to satisfy the day-to-day needs of the sponsor and others in need of accident data. With more than one thousand Level B accidents now in the file, and with as many as 2000 variables already being coded from each Level C investigation, there are adequate data available to provide useful information about many heretofore unanswered questions.

NOTES AND REFERENCES

[1]System development was initiated in July 1970, in conjunction with "A Study to Determine the Relationship Between Vehicle Defects and Crashes," under Contract No. FH-11-7244 (later changed to DOT-HS-034-2-263). The study was completed 31 August 1972.

Study methodology is described in detail in "Interim Report of A Study to Determine the Relationship Between Vehicle Defects and Crashes: Methodology," a report to the National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. 20590, under Contract No. DOT-HS-034-2-263 (DOT Report No. HS-800-661).

Study results are reported in "A Study to Determine the Relationship Between Vehicle Defects and Crashes," a final report to the National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. 20590, under Contract No. DOT-HS-034-2-263 (DOT Report No. HS-800-850 and HS-800-851). In subsequent entries, this report will be designated "Final Report."

A summary of project methodology and results has also been published: J.R. Treat and K.B. Joscelyn, "Results of A Study to Determine Accident Causes." 1973 Intern. Automotive Eng. Cong. paper 730230. New York: Soc. Automotive Eng., Inc. 1973.

System operation and development continue at this time in conjunction with "A Comprehensive Study of the Causes of Traffic Accidents," under contract to the National Highway Traffic Safety Administration, U.S. Department of Transportation, (Contract No. DOT-HS-034-3-535).

[2]See Final Report, II, pp. 66-112 (see note 1).

[3]A complete census is published every ten years. The most recent is, "Census of Population 1970," U.S. Bureau of the Census, Washington, D.C. 20233. Another useful Bureau of the Census publication is the annual, "Statistical Abstracts of the United States."

[4]R.L. Polk & Co., Motor Statistical Division, 431 Howard Street, Detroit, Michigan 48231.

[5]Final Report, II, pp. 85 and 86 (see note 1).

[6]The principal publications relied upon for national statistics are: "Accident Facts," published annually by the National Safety Council, 425 No. Michigan Ave., Chicago, Illinois 60611; "Highway Statistics," published annually by the Federal Highway Administration, U.S. Department of Transportation, Washington, D.C. 20590; special reports from the National Accident Summary File, National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. 20590; and special reports released by R.L. Polk & Co., Motor Statistical Division, 431 Howard Street, Detroit, Michigan 48231.

[7]Final Report, II, pp. 91 and 104 (see note 1).

[8]Reports may be obtained from the National Technical Information Service, Springfield, Virginia 22151. Color slides of these accidents may be viewed at the offices of the National Highway Traffic Safety Administration, U.S. Department of Transportation, 400 Seventh St., S.W., Washington, D.C. 20590.

[9]A contract report regarding the Report Automation and Utilization Program was submitted by the Highway Safety Research Institute, University of Michigan, Ann Arbor, Michigan 48105, to the National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. 20590, in October 1972, under Contract No. DOT-HS-031-1-037 (DOT Report Nos. HS-800-767 to HS-800-771).

[10]S.H. Schuman, D.C. Pelz, N.J. Ehrlich, and M.L. Selzer, "Young male drivers: impulse expression, accident, and violations." J. Amer. Med. Assoc., 200(12): 102-106. June 19, 1967.

[11]M.L. Selzer, "The Michigan Alcoholism Screening Test (MAST)," Proc. Fifth Intern. Conf. on Alcohol and Traffic Safety, pp. 1-7. Freiburg, Germany. 1969.

See also, "Alcohol Safety, I," a report by the Highway Safety Research Institute, University of Michigan, Ann Arbor, Michigan 48105, to the National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. 20590, under Contract No. FH-11-6555 (DOT Report Nos. HS-800-109 and HS-800-110).

[12]See Final Report, I, Appendix I (see note 1).

[13]Results were reported in Final Report, I and II (see note 1).

[14]See "Final Report for Inspection of Motor Vehicles in Bloomington, Indiana, and Monroe County," a report by Ultrasystems, Inc., Newport Beach, California 92660, to the National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. 20590, under Contract No. DOT-HS-094-1-130 (DOT Report No. HS-800-773).

APPENDIX B

On-site (Level B) Data Collection Forms

ON-SITE HUMAN FACTORS FORM

Phase and Array Number 4 1 7 (1 2 3)

Number Of: Traffic Units per Accident __ __ (4 5)

On-site, In-depth Flag __ (6)

On-Site Case Number __ __ __ __ (7 8 9 10)

Traffic Unit Number __ __ (11 12)

Card Number 0 1 (13 14)

Date of Collision _____

Vehicle Number _____ Driver No. _____

Driver's Name _____

Address _____

_____

Phone Number _____

Vehicle Make and Model _____

_____

Interviewer _____

DOS ONLY:
Date Received _____

DRIVER CHARACTERISTICS

1. Sex

__ (1) Male
__ (2) Female (15)

2. Date of Birth ___/___/___ (mo dy yr) (16 17) (18 19) (20 21)

3. Age _____ (22 23)

4. How is your general health?

__ (1) Excellent
__ (2) Good
__ (3) Fair
__ (4) Poor (24)

5. Do you have any physical disabilities or impairments?

__ (1) No
__ Yes (specify: _____

_____

_____)

If yes, do you feel that they (it) interfere(s) with your ability to drive?

__ (2) Interfere(s)
__ (3) No Do(es) not interfer (25)

6. Do you wear glasses or contact lenses?

__ (1) Yes, wearing at the time of the accident.
__ (2) Yes, but not wearing at time of accident.
__ (3) No (26)

7. Is your license subject to any restrictions such as requiring corrective lenses, right-hand outside mirror, etc.?

__ (1) Yes (specify: _____

_____

_____)

__ (2) No (27)

8. Do you smoke?

__ (1) Yes, and smoking at time of accident.
__ (2) Yes, but not smoking at time of accident.
__ (3) No (28)

DRIVER EXPERIENCE

9. How long have you been driving?

_____ years

(_____ months) (29 30 31)

ON-SITE HUMAN FACTORS FORM

10. How many miles do you think that you have driven in the last 12-month period (total yearly mileage)?

_____ miles

(_____ miles/100) 32 33 34 35

VEHICLE FAMILIARITY

11. Is the accident vehicle your primary mode of transportation?

__ (1) Yes
__ No

If not, what type of vehicle do you usually drive? (check type most frequently driven)

__ (2) Full size (Buick Electra, Ford Galaxie, etc.)
__ (3) Intermediate (Chevelle, Charger, etc.)
__ (4) Compact (Dodge Dart, Gremln, etc.)
__ (5) Subcompact (Vega, VW, etc.)
__ (6) Sports Car (MG, Corvette, etc.)
__ (7) Light truck (Pickup, Van)
__ (8) Motorcycle
__ (9) Other (specify: _____

_____) 36 37

12. How long have you driven the accident vehicle?

_____ years

(_____ months) 38 39 40

13. How many miles do you think that you have driven it in the last 12-month period?

_____ miles

(_____ miles/100) 41 42 43 44

ROADWAY FAMILIARITY

14. How often do you drive this particular roadway?

__ (1) Daily
__ (2) Twice weekly
__ (3) Once weekly
__ (4) Twice monthly
__ (5) Once monthly
__ (6) Very infrequently
__ (7) First time on roadway

45

15. What is the speed limit for this roadway?

_____ mph

46 47

RESTRAINT USAGE

16. Were you wearing a seat belt?

__ (1) Yes
__ No

If not, why not? (check primary reason)

__ (2) Not equipped or available
__ (3) Inconvenient to use
__ (4) Uncomfortable
__ (5) Forgot, but usually use
__ (6) Forgot, not in the habit
__ (7) Use only on long trips
__ (8) Unnecessary, they don't really work anyway
__ (9) Other (specify: _____

_____

_____) 48 49

17. Were you wearing a shoulder harness?

__ (1) Yes
__ No

If not, why not? (check primary reason)

__ (2) Not equipped or available
__ (3) Inconvenient to use
__ (4) Uncomfortable
__ (5) Forgot, but usually use
__ (6) Forgot, not in the habit
__ (7) Used only on long trips
__ (8) Unnecessary, they don't really work anyway
__ (9) Other (specify: _____

_____

_____) 50 51

ON-SITE HUMAN FACTORS FORM

DRIVER DESCRIPTION OF ACCIDENT

Tape record driver's description of accident -- be certain to cover the areas indicated by the following cues!

Trip origin

Trip destination

Travel direction

Travel lane

Travel speed

Traffic conditions

First awareness of danger

Defensive or evasive behavior assumptions

Preventive, defensive, or evasive action

Immediate pre-crash action

Vehicle response -- mechanical defects or contributing defects

Turn signals, brake lights, headlights, or horn

Loss of vehicle control

Braking delays

Braking technique

Environmental confusion due to roadway design, control devices, etc.

Distractions

View obstruction

Impact speed

Immediate post-crash action

INTERVIEWER ASSESSMENT AND EVALUATION

Did driver seem to be having any of the following difficulties? (check all that apply!)

18. __ Speech impediment ___ 52

19. __ Hearing impediment ___ 53

20. __ Vision impediment ___ 54

21. __ Lack of coordination ___ 55

22. __ Inalertness ___ 56

23. __ Mental disorientation ___ 57

24. __ Other difficulty (specify_____

_____

_____ ___ 58

Comment on the significance of any of the above factors:

_____

_____

_____

_____

25. Was there any indication that the driver had consumed any alcoholic beverages?

__ (1) Yes (explain:_____

_____

_____)

__ (2) No ___ 59

26. Was there any indication that the driver had taken any drugs or medication?

__ (1) Yes (explain:_____

_____

_____)

__ (2) No ___ 60

27. Was there any indication that the driver had been emotionally upset or anxious prior to the accident?

__ (1) Yes (explain:_____

_____

_____)

__ (2) No ___ 61

ON-SITE HUMAN FACTORS FORM

28. Was there any indication that any activity or occurrence inside or outside the vehicle diverted the driver's attention from the driving task?

__ (1) Yes (explain: _____

_____

_____)

__ (2) No

62

29. Was there any evidence that the driver's mind had been preoccupied or wandering?

__ (1) Yes (explain: _____

_____

_____)

__ (2) No

63

30. Was there any indication of driver panic when danger was perceived?

__ (1) Yes (explain: _____

_____

_____)

__ (2) No

64

DRIVER COOPERATION

31. Respondent's attitude toward interviewer.

__ (1) Hostile

__ (2) Suspicious, guarded

__ (3) Casual, impersonal

__ (4) Friendly, cooperative

65

32. In-depth cooperation:

__ (1) Yes, and later cooperation seemed highly likely

__ (2) Yes, but driver reluctant to cooperate

__ (3) No, driver refused for the following reasons:

_____

_____

_____

__ (4) No attempt was made for the following reason:

_____

_____

_____

66

33. Were any inducements useful or necessary in securing cooperation?

__ (1) Yes (explain: _____

_____

_____)

__ (2) No

67

Record times and places when and where driver can likely be reached:

	Place		Time	
(1)	_____	Fr.	____:____	AM PM
	_____	TO	____:____	AM PM
(2)	_____	Fr.	____:____	AM PM
	_____	TO	____:____	AM PM
(3)	_____	Fr.	____:____	AM PM
	_____	TO	____:____	AM PM

ON-SITE HUMAN FACTORS FORM

ACCIDENT DESCRIPTION

Driver #_____was going N-E-W-S on_____in the

_____traffic lane at a driver estimated speed of_____mph. (Complete driver's description of accident to include all pertinent observations, assumptions, and decisions made, evasive actions taken, and other relevant information. Include driver quotations to assist in narrative where practical).

IN-DEPTH HUMAN FACTORS FORM

OCCUPANT INFORMATION

Fill in the chart using the appropriate codes from below.
(Enter any additional information on back of page)

OCC. No.	SEAT POSITION	RE-STRAINTS USED	RE-STRAINTS AVAILABLE	AGE	SEX	AIS	HEIGHT	WEIGHT	AREAS OF OCCUPANT CONTACT
1									
2									
3									
4									
5									
6									
7									
8									
9									

SEX
1=Male
2=Female

Seated Position
01=Left front
02=Center front
03=Right front
04=Left rear
05=Center rear
06=Right rear
07=Left third seat
08=Center third seat
09=Right third seat
10=Bed of truck
11=Inside pickup camper
12=Other
13=Unknown

RESTRAINTS USED AND AVAILABLE
1=None
2=Lap belt only
3=Shoulder belt only
4=Lap and Shoulder belt
5=Unknown

AIS
0=No injury
1=Minor
2=Moderate
3=Severe injuries (not life-threatening)

AIS cont.
4=Severe injuries (life-threatening, survival probable)
5=Critical injuries
6=Fatality (one fatal lesion)
7-8-9: Review AMA codes
10=Unknown

CODES FOR AREAS OF OCCUPANT CONTACT

00=Unknown
01=Air conditioning or ventilation outlets
02=Glove compartment area
03=Hardware items (ashtray, instruments, knobs, etc.)
04=Heater or AC ducts
05=Instrument panel
06=Mirrors
07=Parking brake
08=Radio
09=Steering assembly
10=Sunvisors & fittings, and/or top molding (header)
11=Transmission selector lever
12=Windshield
13=Armrests
14=A-pillar
15=B-pillar

AREAS OF CONTACT CONT.

16=C-pillar
17=D-pillar
18=Courtesy lights
19=Hardware (sides)
20=Surface of side interiors
21=window frames
22=Window glass
23=Backlight (rear window)
24=Coat hooks
25=Roof or convertible top
26=Roof side rails
27=Console
28=Foot controls
29=Back of seats
30=Head restraints
31=Interior loose object
32=Other occupants
33=Restraint system hardware
34=Restraint system webbing
35=Hood
36=Objects exterior to car
37=Outside surface of car
38=Other
39=Backlight header
40=Other occupants
41=Flying glass
42=Tapedecks
43=Road surface
44=Eye glasses
45=Floors
50=No contact

TAC ON-SITE VEHICLE DATA FORM LOCATION: _____

I. GENERAL INFORMATION

A. Accident on-site case number _____

B. Accident in-depth case number _____

C. Vehicle number _____

II. IDENTIFICATION

A. Vehicle type _____

B. Make _____

C. Model _____

D. Model year 19____

E. Number doors _____

F. Body style _____

G. Colors _____

H. License

1. Number _____

2. State _____

3. Year _____

I. Vehicle identification number _____

III. COCKPIT

A. Odometer reading _____

B. Inspection

1. Date _____

2. Mileage _____

3. State _____

4. Number _____

5. Station No. _____

C. Vehicle Inspection:

☐ Was completed, as far as damage would allow

☐ Was not completed

D. If not completed as far as damage would allow, was due to:

☐ Lack of time

☐ Lack of permission or cooperation

☐ Other (explain): _____

E. If inspected:

☐ Hood was opened

☐ Hood would not open

☐ Not Applicable

Note: An inspection is not "incomplete" merely because the hood would not open, for purposes of C & D above.

Note: For purposes of this form, LEFT (l) is the driver's left as he sits in the vehicle facing forward. Similarly, RIGHT (r) is the driver's right.

IV. TIRES

1. lF tire pressure_____/psi (if zero, explain:_____
_____)

   Tread depth Inner_____/32, Center_____/32, Outer_____/32

   Size, make/model_____ Type_____

2. lR tire pressure_____/psi (if zero, explain:_____
_____)

   Tread depth Inner_____/32, Center_____/32, Outer_____/32

   Size, make/model_____ Type_____

3. rR tire pressure_____/psi (if zero, explain:_____
_____)

   Tread depth Inner_____/32, Center_____/32, Outer_____/32

   Size, make/model_____ Type_____

4. rF tire pressure_____/psi (if zero, explain:_____
_____)

   Tread depth Inner_____/32, Center_____/32, Outer_____/32

   Size, make/model_____ Type_____

	CNC	P	D	AD	Comments
V. BRAKES					
5. Fluid level					
6. Hoses					
7. Pedal reserve and Leak-down . .					
8. Servo: ☐ Yes ☐ No					
VI. STEERING					
9. Linkage					

	CNC	P	D	AD	Comments
10. Play (Record amount: ____deg.).					
11. Power assist ☐Yes ☐No					
12. Power steering belt.					
13. Power steering fluid level . .					
14. Power steering leaks					
VII. VISION					
15. Windshield obstruction					
16. Window obstruction (side & rear).					
17. Wipers					
a. at time of accident ☐on ☐off ☐unknown					
b. condition and function . .					
c. park position.					
18. Washers ☐N/E					
a. reservoir.					
b. function					
c. aim.					
19. Mirror (inside) ☐N/E					
20. Mirrors					
a. outside - left ☐N/E . .					
b. outside - right ☐N/E . .					
VIII. SUSPENSION					
21. Shock absorber function					
a. lF					
b. lR					
c. rR					
d. rF					

	CNC	P	D	AD	Comments
IX. LIGHTS					
22. Stop lamp function					
a. left.					
b. right					
23. Turn indicator function					
a. lF.					
b. lR.					
c. rR.					
d. rF.					
24. Rear light lens condition					
a. left.					
b. right					
X. CONTROLS					
25. Shift lever position at time of accident:					
☐Known: _____					
☐Unknown					
26. Horn.					
XI. CONTINGENT FACTORS					
Note: Check the following when specified or whenever conditions warrant.					
27. When DARK check LIGHTS:					
a. at time of accident, light switch was:					
☐on-high ☐on-low ☐on-beam unknown					
☐on "park" ☐switch position unknown					
b. headlamp function					
(1) left outer or upper - High					

	CNC	P	D	AD	Comments
(2) left inner or lower - High ☐N/E					
(3) right inner or lower- High ☐N/E					
(4) right outer or upper - High . .					
(5) left outer or upper - Low . . .					
(6) right outer or upper - Low. . .					
c. front parking lights ☐N/E					
(1) come on with headlamps ☐yes ☐no					
(2) function - left					
(3) function - right.					
d. tail light function					
(1) left.					
(2) right . . . . . ☐N/E					
e. sidemarker function ☐N/E					
(1) lF.					
(2) lR.					
(3) rR.					
(4) rF.					
28. IF reversing, back-up lights ☐N/E					
29. IF was stopped along road, 4-way Flasher ☐N/E					
a. ☐in-use ☐not in use ☐use unknown					
b. function					
30. Defroster (if in use or if use would have been desirable)					
a. ☐in-use ☐not in use ☐use unknown					

	CNC	P	D	AD	Comments
b. control position: _____					
c. function.					
31. If relevant due to vision obstruction, etc., window roll-down mechanism					
a. lF.					
b. rF.					

XII. LOADS

30. Luggage and other interior loads: (other than passengers)

☐ yes Estimated weight _____ pounds.

☐ no

☐ unknown

31. Trunk or cargo area:

☐ yes Estimated weight _____ pounds.

☐ no

☐ unknown

32. Rooftop:

☐ yes Estimated weight _____ pounds.

☐ no

☐ unknown

XIII. BRIEF DESCRIPTION OF VEHICLE DAMAGE

_____

_____

_____

_____

_____

XIV. ADDITIONAL COMMENTS

Please comment on other vehicle deficiencies observed, unusual modifications, physical evidence, etc.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

INSTRUCTIONS AND CRITERIA FOR COMPLETION OF ON-SITE VEHICLE INSPECTION FORM

A. General Instructions

1. The form is designed so that where open space is provided in the vertical column, one column (and only one column) will always apply, so that a checkmark should always be inserted in the applicable column.

2. The first column is labeled CNC, which means "could not check." A check should be entered in this column whenever it is impossible for any reason to make an accurate assessment of the pre-crash condition of the item or system specified. Whenever a check is entered in this column, note must be made in the Comments column as to the reason why an assessment was not possible. Frequently, the reason will be that the item or system has been damaged in the accident. In other cases, components cannot be checked because the hood will not open. Whatever the reason, it must be noted

3. The second column is labeled P, which stands for "pass." Whenever an inspection of the type which has been specified is possible, and fully passes, this column should be checked and no comment is required.

4. The third column is labeled D, which stands for "defect." Whenever an inspection of the type specified is possible, and by the criteria explained below the item or system is in any way defective, this column must be checked, except when the AD column is appropriate. Whenever a check is made in the D or AD columns, an explanation of the defect must be entered in the Comments column.

5. The fourth column is labeled AD, which stands for "potential accident-causative defect." Whenever an inspection of the type specified is possible, and by the criteria established below, the item or system is in any way defective, and the investigator has any reason to believe at the time of his inspection that the defect in question may have played a causal role in the accident, the AD column should be checked. A check in the AD column must be accompanied by explanation in the Comments column. Selection of the AD column is obviously not determinative that a particular defect did in fact play a role in the accident; it merely serves to highlight the vehicle investigator's opinion that the potential for involvement was high.

6. Section XI., Contingent Factors; Items 27-31, inclusive, need not be completed in all cases, but must be completed when specified or whenever conditions make those items relevant.

7. It is expected that all items will be answered based on the investigator's inspection of the vehicle alone and not on information provided by the driver or other sources.

B. Criteria

The following instructions and criteria are to be applied by the inspector in determining what response to give or which column to check. Where a given item or system is obviously defective, the D or AD column should be checked and complete explanation given, even though the defect is not specifically covered by the criteria provided.

Item	Instruction
1-4	Tires - Whenever a tire tested is nearly or completely deflated, explanation is desired as to whether this was a pre-crash deflation, or one probably caused by accident damage. If such a determination is not possible, this must also be noted, and the reason explained. Type of Carcass Construction (e.g., radial, bias, belted-bias) and Tread Type (e.g., regular, snow, studded-snow), are desired. Where a pre-crash deflation is believed to have occurred, also enter whether tube or tubeless.
5	Fluid Level - If the brake fluid level is less than one-half way up the reservoir, record a D. If the level is so low that the recuperator port can be uncovered by cycling the brake pedal, record an AD.
6	Hoses - Where brake hoses are leaking significantly, and this is clearly not accident-induced, enter a D. If they are leaking badly or have burst, and braking was involved, use AD.
7	Pedal Reserve and Leak-Down - Failure of the following tests should ordinarily be classified AD, unless no braking was involved in the accident, in which case D applies. (1) If the pedal travel, before the feel of resistance

is reached is such that the tester believes that full travel might be reached in an actual stop, thus limiting the control exercised by the driver, the item must be classified defective. The item is defective even though pumping restores normal operation.

(2) When the pedal reserve is being checked, the pedal must be held down with a moderate load for at least 30 seconds. If the pedal recedes under the load, this is evidence of leakage in the brake system (either external or internal), and the system is defective.

9 Linkage - If there is serious steering play and the source of this play is visibly in the linkage, this item is defective.

10 Play - Steering wheel play must be recorded in degrees, must be measured with the engine running if the car has power steering. If there is more than 15° play, this item is defective. In all cases, record the actual measurement, in degrees, in the space provided.

12 Power Steering Belt - If the steering pump belt is slack enough or worn enough to slip under sudden inputs, this item is defective.

13 Power Steering Fluid Level - This item should be checked with the engine running, but is to be checked even if the engine will not start. If the fluid reservoir is less than 1/4 full, this item is defective. If the reservoir is lower than this, and cycling the steering can result in the level dropping below the outlet, AD will ordinarily apply if the vehicle was in motion.

14 Power Steering Leaks - Check with engine running, if possible, by cycling the steering each way and looking for leaks in the power steering components. Regardless of whether the engine will run, if there definitely is significant leakage, the item is defective.

15 Windshield - If there is an obstruction of the windshield of any kind which significantly limits an occupant's vision through the windshield, this item is defective. Such obstructions would include improperly placed decals, excessive dirt or film, chips, "stars," or other blemishes.

These might also include ice, snow, or condensation, though it must be remembered that it is only the status of these factors at the time of the accident that is of significance, so that where forward vision is obstructed by such factors at the time of investigation, and the status at the time of the accident is unknown, the CNC column should be checked, and explanation provided in the Comments column. As a guide, if there are chips, "stars," or other blemishes within the driver's field of vision larger than can be covered by a quarter, this item is defective.

16 Window Obstruction (Side and Rear) - If there are stickers, chips, "stars," or other blemishes which significantly obstruct vision through the side or rear windows, this item is defective.

17 Wipers - (17A.) Wiper Use. Observance of the wiper switch position and/or careful observation of the windshield will often reveal whether the wipers were in operation at the time of the accident, and this item should be checked accordingly.

(17B.) Condition and Function. If the wipers do not function properly, or if one or more blades are missing or observably in a degraded condition, this item is defective. However, this item is not defective merely because one or more blades fails to "park" properly, as this item is to be evaluated separately below.

(17C.) Park Position. If one or more blades do not return to its proper "off" condition at or below the lower edge of the windshield, this item is defective.

18 Washers - (18A.) If the reservoir is frozen, or if the fluid level is so low that the washers do not operate, then this item is defective.

(18B.) Function. If the reservoir has fluid and is not frozen, but the washers do not emit fluid, then this item is defective.

(18C.) Aim. If the function of one or more of the washers is otherwise acceptable, but one or more of the outlets are not aimed sufficiently well to allow

proper cleaning of the windshield, then this item is defective.

19 Mirror (Inside) - If the vehicle is equipped with an inside mirror, but the mirror is obstructed, mis-aimed, etc., this item is defective. When evaluating mis-aim, care must be taken to insure that an accurate evaluation of pre-crash position is taking place, and that the mis-alignment is not due to impact. If a vehicle was originally equipped with an inside mirror, but the mirror was broken off or removed prior to the accident, then D or AD should be checked rather than N/E.

20 Mirrors - (20A.) Outside-Left. If this mirror is obstructed, will not hold proper adjustment, etc., this item is defective. If the vehicle was originally equipped with such a mirror, but it was broken off or removed pre-crash, then the D or AD column should be checked rathe. than N/E.

(20B.) Outside-Right. The same criteria apply as for outside-left.

21 Shock Absorber Function - Dampers (shock-absorbers) can unfortunately only be tested for their function by "bouncing" the car on its springs. Because different makes and models vary widely in the stiffness of both springs and dampers, this time-honored test is far from satisfactory. However, if the dampers permit more than one free cycle, they are in need of replacement, and this item is defective. Particularly if the shocks have lost all of their resistance and the vehicle was in motion, it is possible that their ineffectiveness could constitute an AD.

24 Rear Light Lens Condition - This check is divided into the left and right sets of rear light lenses. If any rear light is broken or cracked to the extent that the light directed to the rear is predominately white, this item is defective.

26 Horn - If the horn does not sound at all, or sounds intermittently or at an extremely low volume level, then this item is defective.

27 Lights - Whenever it is sufficiently dark at the time of the accident that use of parking or headlights would be desirable, items 27A-E must be checked.

(27A.) Light switch position at time of accident. Interviewing of persons involved is not required for the answer to this question. However, occasionally the lights and/or light switch will remain in their pre-crash status until the time of your arrival, in which case inspection of the vehicle will reveal this information.

(27B.) Headlamp Function. All lamps must be checked in both the high and low beam positions. Invariably, the dual filament bulb on quad headlight systems will be the outer or upper lamp. Where a dual lamp system is being checked, it will be necessary to place check-marks in the 2 N/E boxes provided. If any lamp will not illuminate, or when illuminated is obviously at much less than normal intensity, this item is defective.

(27C.) No Criteria

(27D.) Taillight function. Note that this item is not defective merely because the rear lenses are broken and allow predominately white to show to the rear, as this circumstance is taken care of under item 24. Occasionally, particularly on older pick-up trucks, vehicles will be encountered which do not have right side tail-lights, so that an N/E box is provided.

(27E.) Side Marker Function. Side markers may be either of the reflector or illuminated type, or both. Where a side marker is of a reflector type, it may be difficult to know whether it is intended to be illuminated. Therefore, a side marker is defective if it is of a reflector type, but is broken or obscured so that it doesn't reflect properly, or is defective if it is an illuminated type but does not properly illuminate. Note that many vehicles do not have side markers, so that an N/E box is provided.

28 Back-Up Lights - If a vehicle was reversing at the time of the accident, an inspection of the back-up lights is required. If one or more of the back-up lights will not illuminate, and this is not due to accident damage, then

this item is defective. Note that the system cannot be passed if any of the lights have been accident damaged, although if any undamaged light does not operate the system can be defected.

29 Four-way Flasher - If a vehicle was stopped along the road, or if other circumstances such as extremely heavy rain or fog made use of the four-way flasher desirable, then it must be checked. Note that for the system to be passed, all four lamps must flash properly when tested. If accident damage prevents any of the lights from working, then CNC will apply, if none of the undamaged lights fails to operate, or D if one or more of the undamaged lights did fail to operate. Many vehicles will not be equipped with a four-way flasher, so that an N/E box is provided.

30 Defroster - Frequently, particularly in the winter time, proper defroster use and operation is essential to clear vision and driving safety. Therefore, whenever frost or condensation could be a factor, it is essential that the defroster system be checked. Use at the time of the accident will often be indicated by the position of the controls at the time of your arrival, as these are most often not shut off by a person departing the vehicle following an accident. Following Control Position it is desired that you list the position of the relevant controls including blower use and speed. Under function, if the blower does not operate, or if it does operate but the flow of air reaching the windshield is obviously grossly inadequate, then this item is defective. As a check, it is suggested that you place your cue cards over the defroster outlets with the blower in the high position. Any properly operating defroster system will cause significant displacement of the cue card.

31 Window Roll-Down Mechanism - Whenever the circumstances of the accident tend to indicate that either or both side windows were obstructed and that the driver failed to perceive information from either side of the car, the window roll-down mechanism should be checked. Frequently in the winter time, frost and condensation necessitate that side windows be rolled down to provide adequate vision to the side. If the window will not roll down, or is excessively difficult to roll down, this item is defective.

ES2

TAC ON-SITE ENVIRONMENTAL FORM

On-Site case no._____

I. IDENTIFICATION

A. Accident location_____

_____

B. Day of week_____

C. Date_____

D. Accident was a: ☐ PD ☐ PI ☐ Fatal

II. ATMOSPHERIC CONDITIONS

A. Light (check one only): ☐ Day ☐ Night ☐ Dusk ☐ Dawn

B. Cloud cover (check one only): ☐ Clear ☐ Part ☐ Full

C. Precipitation:

1. Intensity (check one only):
   ☐ None ☐ Light ☐ Moderate ☐ Heavy

2. Type (check all that apply):
   ☐ Rain ☐ Sleet ☐ Hail ☐ Snow ☐ Other_____

D. Temperature: approximately_____°F

E. Wind:

1. Intensity (check all that apply):
   ☐ Slight ☐ Moderate ☐ Hard ☐ Gusting ☐ Calm

2. Blowing from (check one only):

☐ North	☐ Northeast	☐ Variable
☐ South	☐ Southeast	☐ Unknown
☐ East	☐ Southwest	
☐ West	☐ Northwest	

G. Visibility (check one only):
   ☐ Clear ☐ Hazy ☐ Fog ☐ Other

III. TRANSITORY ENVIRONMENT

A. Traffic was (check one only):
   ☐ Light ☐ Moderate ☐ Heavy ☐ Could not estimate pre-crash flow

B. For this area and time, however, traffic was:
   ☐ About normal ☐ Abnormal

C. Upon arrival pavement was (check all that apply):

1. ☐ Dry
2. ☐ Damp
3. ☐ Wet
4. ☐ Slushy
5. ☐ Loose snow-pack
6. ☐ Hard snow-pack
7. ☐ Icy
8. ☐ Other (specify)_____
9. ☐ Foreign matter (specify)_____

D. Coefficient of friction estimate (one value only with last digit "0" or "5"):

@ 0._____% g.

IV. ACCIDENT DESCRIPTION

A. Converging trajectories (check all that apply and sequence occurrence):

1. ☐ Head-on.....____
2. ☐ Opposing oblique.....____
3. ☐ Right angle.....____
4. ☐ Acute oblique.....____
5. ☐ Rear-end.....____
6. ☐ Ran-off-road.....____
7. ☐ Overturned-on-road.....____
8. ☐ Other (specify).....____

B. Additional descriptors (check all of the following which you know to have occurred):

1. ☐ Vehicle(s) rolled over
2. ☐ Fire erupted
3. ☐ Door(s) came open on impact

C. Objects other than traffic units struck (check all that apply):

1. ☐ None
2. ☐ Guard rail
3. ☐ Sign post
4. ☐ Tree
5. ☐ Utility pole
6. ☐ Bridge abutment or rail
7. ☐ Other_____

V. HIGHWAY AND SCENE DATA

A. Check only one which applies:

1. ☐ Non-intersection accident
2. ☐ Intersection accident

B. General information

1. Marginal Development (check all that apply and indicate primary one, "P")

☐ Residential.....____
☐ Commercial.....____
☐ Industrial.....____
☐ Agricultural....____
☐ Undeveloped.....____
☐ School.....____
☐ Other_____....____

2. Signs (regulatory or warning within 300' of POI) ☐ None

Fillin the blank with the type of sign and check box only if obstructed:

a. Driver #1: _____ ☐ _____ ☐ _____ ☐
b. Driver #2: _____ ☐ _____ ☐ _____ ☐
c. Driver #3: _____ ☐ _____ ☐ _____ ☐
d. Driver #4: _____ ☐ _____ ☐ _____ ☐
e. Driver #5: _____ ☐ _____ ☐ _____ ☐

3. Lines/symbols/words on pavement:

a. ☐ None
b. Check both information presented and driver to which it applies:

	Driver no. 1	2	3	4	Comment below if faded, obstructed, etc.
1. ☐ Single black and/or white	☐	☐	☐	☐	_____
2. ☐ Double solid yellow	☐	☐	☐	☐	_____
3. ☐ No passing (line)	☐	☐	☐	☐	_____
4. ☐ Edge line	☐	☐	☐	☐	_____
5. ☐ Stop	☐	☐	☐	☐	_____
6. ☐ Lane lines	☐	☐	☐	☐	_____
7. ☐ Crosswalk	☐	☐	☐	☐	_____
8. ☐ Turn arrows	☐	☐	☐	☐	_____
9. ☐ Straight arrows	☐	☐	☐	☐	_____
10. ☐ Other words (identify): _____ _____ _____	☐	☐	☐	☐	_____

4. View obstruction

a. (check one only) ☐ None ☐ Permanent ☐ Temporary
b. If permanent or temporary view obstructions were noted, check boxes to indicate all drivers whose vision was obscured:

1. ☐ D-1
2. ☐ D-2
3. ☐ D-3
4. ☐ D-4
5. ☐ Other (list): _____

c. Parked units

1. ☐ Parked legally ☐ Parked illegally
2. Distance of closest bumper to intersecting street or other landmark: (P-1) _____ feet from _____
(P-2) _____ feet from _____
(P-3) _____ feet from _____

NOTE: fill out only if at intersection

5. Type of intersection

a. 4 Legs

- ☐ Cross
- ☐ Off-set cross
- ☐ Narrowing cross
- ☐ Wye-tee

3 Legs

- ☐ Tee
- ☐ Wye (tangent)
- ☐ Wye (divergent)
- ☐ Other _____

6. Traffic signals

a. ☐ None
b. ☐ Set cycle
c. ☐ Variable cycle due to pressure pad or detector
d. Visibility/condition (check all that apply):

- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Obstructed

e. Flashing light: ☐ Yes ☐ No

1) If yes to flashing light, was it RED? ☐ Yes ☐ No
2) If yes to red (check all that apply):

a) ☐ N-S traffic
b) ☐ E-W traffic

3) If yes to flashing, was it AMBER? ☐ Yes ☐ No
4) If yes to amber: ☐ N-S traffic ☐ E-W traffic

NOTE: fill out only when conditions warrant

7. Highway lighting

a. ☐ None
b. ☐ Mercury-vapor
c. ☐ Sodium-vapor
d. ☐ Fluorescent
e. ☐ Incandescent
f. ☐ Other _____

g. Effectiveness

- ☐ Good
- ☐ Fair
- ☐ Nil

C. Roadway descriptions

Name	For unit(s) 1 2 3 4 5 6	For unit(s) 1 2 3 4 5 6	For unit(s) 1 2 3 4 5 6	Comments
Two-way	☐	☐	☐	
One-way	☐	☐	☐	
Asphalt	☐	☐	☐	If other, identify in margin
Concrete	☐	☐	☐	
Gravel	☐	☐	☐	
Dirt	☐	☐	☐	
Other	☐	☐	☐	
New and sharp	☐	☐	☐	If other, identify in margin
Traveled and worn	☐	☐	☐	
Traffic Polished	☐	☐	☐	
Excessively oily	☐	☐	☐	
In good repair	☐	☐	☐	Check all that apply
Cracked	☐	☐	☐	
Chuckholes	☐	☐	☐	
Other	☐	☐	☐	
Straight	☐	☐	☐	If other, identify in margin
No crown	☐	☐	☐	
Normal crown	☐	☐	☐	
Excessive crown	☐	☐	☐	
Other	☐	☐	☐	
Curved	☐	☐	☐	From one tangent to another
0-30°	☐	☐	☐	
31-60°	☐	☐	☐	
61-90°	☐	☐	☐	
Over 90°	☐	☐	☐	
Reverse camber	☐	☐	☐	If other, identify in margin
No bank	☐	☐	☐	
Excessive bank	☐	☐	☐	
Normal	☐	☐	☐	
Other	☐	☐	☐	
Level	☐	☐	☐	Level is 1 % or less
% pos to:	to	to	to	
Curb and gutter	☐	☐	☐	Identify other and comment if any are cont. hindrances
Shoulder	☐	☐	☐	
Grass and weeds	☐	☐	☐	
Ditch	☐	☐	☐	
Other	☐	☐	☐	
Width				nearest foot
Speed limit	MPH	MPH	MPH	
Posted	☐	☐	☐	
Statutory	☐	☐	☐	

VI. IMPACT DATA

A. Measurements:

1. RP:_____ _____ft. N-E-W-S of RL

2. RL:_____

3. POI:_____ft. N-E-W-S of RP;_____ft. N-E-W-S of RL

4. #2:_____ft. N-E-W-S of RP;_____ft. N-E-W-S of RL

B. Pre-impact skidmarks:

Unit #1:	Unit #2:	Unit #3:
☐ None	☐ None	☐ None
LF_____ft	LF_____ft	LF_____ft
RF_____ft	RF_____ft	RF_____ft
LR_____ft	LR_____ft	LR_____ft
RR_____ft	RR_____ft	RR_____ft

C. Post-impact travel: (skid, free-roll, roll-over, vault, etc.)

1. Unit #1_____ _____ _____ft
(action) (surface)

_____ _____ _____ft

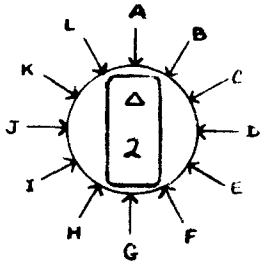
2. Unit #2_____ _____ _____ft
_____ _____ _____ft

3. Unit #3_____ _____ _____ft
_____ _____ _____ft

D. Final rest positions:

1. Unit #1 L-R Frt._____ft. _____of RP; _____ft. _____of RL
L-R Rear_____ft. _____of RP; _____ft. _____of RL
2. Unit #2 L-R Frt._____ft. _____of RP; _____ft. _____of RL
L-R Rear_____ft. _____of RP; _____ft. _____of RL
3. Unit #3 L-R Frt._____ft. _____of RP; _____ft. _____of RL
L-R Rear_____ft. _____of RP; _____ft. _____of RL

VII. RECONSTRUCTION DATA



A. Angle of converging trajectories: Code_____
(Use item #2 as struck traffic unit)

B. Identify any unit(s) moved before arrival_____

C. Was the true FRP of the above unit(s) ascertained?

☐ Yes ☐ No

ADDITIONAL COMMENTS:

TAC ON-SITE PEDESTRIAN DATA FORM

Accident on-site case no._____ Accident date_____

Accident in-depth case no._____

Pedestrian no._____

Pedestrian's name_____

Address_____

Telephone no._____

Did pedestrian indicate that he would cooperate with in-depth investigators if this case is selected?

☐ Yes ☐ No ☐ Unknown

I. PEDESTRIAN INFORMATION

A. Sex

☐ Male
☐ Female

B. Age

1. Date of birth_____

2. Age_____

C. Road/area familiarity

1. **Walks** this road how often_____

☐ 1 = daily
☐ 2 = twice/week
☐ 3 = once/week
☐ 4 = bi-monthly
☐ 5 = once/month
☐ 6 = infrequently
☐ 7 = first time on road

2. Living in this area for _____ months

D. 1. Did pedestrian have physical limitations at time of accident?

☐ Yes ☐ No

2. If yes, check applicable boxes:

a. ☐ Eyesight (corrected)
b. ☐ Eyesight (not corrected)
c. ☐ Hearing
d. ☐ Temporary illness
e. ☐ Chronic illness
f. ☐ Partial paralysis
g. ☐ Previous injury
h. ☐ Reduced efficiency
i. ☐ Intoxication
j. ☐ Drugs
k. ☐ Missing limbs or extremities
l. ☐ Other

If other, explain: _____

_____

_____

II. PEDESTRIAN INFORMATION

Height _____

Weight _____

Pre-Crash Pedestrian Action

- ☐ Cross at Inter.
- ☐ Emerging Between Pk'd Cars
- ☐ Cross Not at Inter.
- ☐ Walking in Rdway
- ☐ With Traffic
- ☐ Against Traffic
- ☐ Standing
- ☐ Running
- ☐ Getting off/on Veh.
- ☐ Working on Veh.
- ☐ Other Working
- ☐ Playing
- ☐ Unknown/other
- ☐ Not in Roadway

Other _____

Injury Severity

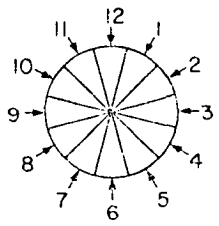
- ☐ 0 No Injury
- ☐ 1 Minor
- ☐ 2 Moderate
- ☐ 3 Severe (Not Life Threatening)
- ☐ 4 Severe (Life Threatening)
- ☐ 5 Critical
- ☐ 6 Fatal
- ☐ 7-8-9 See A.M.A. Code
- ☐ 11 Unknown

Clothing Code

(Check Off and Fill In Color)

- ☐ Hat _____
- ☐ Jacket/Shirt/Coat _____
- ☐ Dress _____
- ☐ Pants _____
- ☐ Footwear _____
- ☐ Carrying Object _____
- ☐ Other _____

Vehicle Force Direction on Pedestrian (Facing 12:00)



_____

Post-Accident Impact

- ☐ None
- ☐ Auto
- ☐ Tree
- ☐ Sign/Sign Post
- ☐ Utility Pole
- ☐ Curb
- ☐ Other _____

Final Rest Position

- ☐ Roadway
- ☐ Shoulder
- ☐ Sidewalk
- ☐ Under Auto
- ☐ Other _____

Final Rest Attitude

- ☐ Face Up
- ☐ Face Down
- ☐ On Right Side
- ☐ On Left Side
- ☐ On Feet
- ☐ Other _____

II. PEDESTRIAN INFORMATION (cont'd)

Describe Specific Injuries

_____

_____

_____

_____

_____

III. PHYSICAL/PSYCHOLOGICAL

	Yes	Par-tial	No	Can Not Say
A. General appearance				
1. Is anything strikingly in-appropriate about appearance?	___	___	___	___
2. Explain: _____				
B. Physical signs				
1. Does pedestrian appear groggy or dopey?	___	___	___	___
2. Does pedestrian stumble or show other signs of lack of muscle coordination?	___	___	___	___
3. Is pedestrian's speech slurred, thick-tongued or mush-mouthed?	___	___	___	___
4. Does pedestrian appear to have trouble hearing?	___	___	___	___
5. Does pedestrian appear to have trouble seeing or focusing his eyes?	___	___	___	___

III. PHYSICAL/PSYCHOLOGICAL (cont'd)

		Yes	Par-tial	No	Can Not Say
6.	Does pedestrian appear confused or disoriented in his speech and/or actions?	___	___	___	___
7.	Is there any indication of fatigue, sleepiness or dozing before the accident?	___	___	___	___
8.	Any indication of consumption of alcoholic beverage?	___	___	___	___
9.	Any indication of drugs, cold medicines, antihistamines, etc?	___	___	___	___
10.	Any indication of feeling ill or depressed?	___	___	___	___
11.	If so, state nature of illness or reason for depression and give reason for conclusion. _____ _____ _____				
12.	Was there any indication of pedestrian panic when danger was perceived?	___	___	___	___
13.	If so, explain: _____ _____ _____				
14.	Recalling that emotional and/or physical shock of an accident, as well as injury, can result in one or more of the above conditions, can you tell what caused any of the above conditions noted "Yes"?	___	___	___	___
15.	If so, qualify your observation. _____ _____ _____				

III. PHYSICAL/PSYCHOLOGICAL (cont'd)

	Yes	Par-tial	No	Can Not Say
C. Emotional state				
1. Was the pedestrian under any psychological stress prior to the accident? (Because of fight or temper, distressing news or experience, etc.)	___	___	___	___
2. If yes, explain: _____				
2. a. Was pedestrian in a hurry?	___	___	___	___
b. If yes, explain: _____				
3. a. Was pedestrian preoccupied or distracted by anything? (Children, pets, insects, etc.)	___	___	___	___
b. If yes, explain: _____				
4. a. Was pedestrian confused?	___	___	___	___
b. If yes, by what, and explain: _____				

IV. ACCIDENT DESCRIPTION

Pedestrian #_____ was walking/running N-E-W-S on

_____ in the_____.

(Complete pedestrian's description of accident to include all pertinent observations, assumptions, and decisions made, evasive actions taken, and other relevant information. Include pedestrian quotations to assist in narrative where practical. If possible, describe pedestrian kinematics from P.O.I. to F.R. - including pertinent distances).)

TAC On-Site Motorcycle Data Form

DATE: _____ TIME: _____

LOCATION: _____

I. GENERAL INFORMATION

A. Accident On-Site Case Number _____

B. Accident In-Depth Case Number _____

C. Vehicle Number _____

II. DOCUMENTATION INTEGRITY

A. Motorcycle Inspection:

☐ Was completed, as far as damage would allow

☐ Was not completed

B. If Not Completed as Far as Damage Would Allow, Was Due to:

☐ Lack of time

☐ Lack of permission or cooperation

☐ Other (explain): _____

_____

III. IDENTIFICATION

1. Motorcycle Type

☐ Street

☐ Enduro

☐ Moto-Cross

2. Make _____

3. Displacement (cc) _____

4. Model Year _____

5. Colors _____

6. License Plate

a. Number _____

b. State _____

c. Year _____

7. Motorcycle Identification Number

_____

8. Odometer Reading _____

9. Inspection Data

a. Date _____

b. Station Number _____

c. Mileage _____

d. Number _____

e. State _____

IV. TIRES

1. Front Tire Pressure_____/PSI (If Zero, Explain:_____

_____

Tread Depth -- Inner_____/32, Center_____/32, Outer_____/32

Size_____Make_____Model_____

Type ☐ Street ☐ Trials ☐ Knobby

2. Rear Tire Pressure_____/PSI (If Zero, Explain:_____

_____

Tread Depth -- Inner_____/32, Center_____/32, Outer_____/32

Size_____Make_____Model_____

Type ☐ Street ☐ Trials ☐ Knobby

	CNC	P	D	Comments
V. WHEELS				
1. Rim				
a. Front:				
☐ Bent				
☐ Fractured				
☐ Complete Break				
b. Rear:				
☐ Bent				
☐ Fractured				
☐ Complete Break				
2. Spokes				
a. Front:				
☐ Missing ☐ Loose				
☐ Bent ☐ Broken				
b. Rear:				
☐ Missing ☐ Loose				
☐ Bent Broken				

	CNC	P	D	Comments
VI. Brakes				
a. Front:				
☐ Mechanical Drum				
☐ Hydraulic Disc				
☐ Master Cylinder ☐ Yes ☐ No				
If yes, fluid level_____				
b. Rear:				
☐ Mechanical Drum				
☐ Hydraulic Disc				
☐ Hydraulic Drum				
VII. STEERING				
1. Front Fork				
☐ Standard				
☐ Modified ☐ Raked				
☐ Vertical Head/Fork Extension				
☐ Angled Head/Fork Extension				
Fork Extension Length_____inches				
2. Handlebars				
☐ Street				
☐ Enduro				
☐ Ape-Hangers ☐ Moderate				
☐ High-Rise				
☐ Condition				
☐ Loose				
☐ Bent				
☐ Broken				
☐ Damaged				
Handlebar Height From Seat_____inches				

	CNC	P	D	Comments
3. Steering Head Damper				
☐ Friction				
☐ Mechanical				
☐ Hydraulic				
VIII. VISION				
1. Fairing ☐ N/E				
2. Windshield ☐ N/E				
☐ Condition				
☐ Visibility				
☐ Obstructions				
3. Mirrors				
a. Left ☐ N/E ☐ Condition				
b. Right ☐ N/E ☐ Condition				
IX. SHOCK ABSORBER FUNCTION				
1. Left Front				
2. Left Rear				
3. Right Rear				
4. Right Front				
X. LIGHTS				
1. Headlamp ☐ N/E				
☐ Off ☐ On-High ☐ On-Low				
☐ On-Beam Unknown				
2. Taillight				
☐ N/E ☐ Function ☐ Lens Condition				
3. Brake Light Function ☐ N/E				

	CNC	P	D	Comments
4. Turn Indicator Function ☐ N/E				
a. Left Front				
b. Left Rear				
c. Right Rear				
d. Right Front				
5. Sidemarkers ☐ N/E				
a. Left Front				
b. Left Rear				
c. Right Rear				
d. Right Front				
XI. CONTROLS				
1. Handlebar Grip Condition				
2. Throttle Function				
3. Clutch Lever				
☐ N/E ☐ Condition ☐ Function				
4. Hand-Brake Lever				
☐ N/E ☐ Condition ☐ Function				
5. Shift Lever				
☐ N/E ☐ Condition ☐ Function				
6. Foot-Brake Pedal				
☐ N/E ☐ Condition ☐ Function				
7. Horn				

XII. LOADS

1. Luggage and/or Other Loads (Other than Passenger)

☐ Yes ☐ No ☐ Unknown

2. Luggage and/or ther Loads Attached to or in:

☐ Saddlebags ☐ Caddy Box ☐ "Sissy Bar"

☐ Handlebars ☐ Gas Tank ☐ Rear Fender

☐ Carriage Rack ☐ Rear of Saddle

XIII. BRIEF DESCRIPTION OF MOTORCYCLE DAMAGE

_____

_____

_____

_____

_____

_____

_____

_____

_____

XIV. ADDITIONAL COMMENTS

Please comment on motorcycle modifications, deficiencies observed, accessories not otherwise noted (e.g., sidecar, leg-guard bars, etc.) physical evidence, etc.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

CS1

TAC ON-SITE CONCLUSION FORM

On-Site Case No._____

Date_____ Police Agency_____

Day of Week_____ Investigator(s)_____

Location_____

I. VEHICULAR FACTORS

Factor No.	Factor Name	Vehicle No.	Exist.	Invol.	Team Judgment	Significance

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

NOTE: Use back of page if more space is needed.

II. HUMAN FACTORS

Factor No.	Factor Name	Driver No.	Exist.	Invol.	Team Judgment	Significance

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

NOTE: Use back of page if more space is needed.

III. ENVIRONMENTAL FACTORS

Factor No.	Factor Name	Relevant to Driver No.	Exist.	Invol.	Team Judgment	Significance

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

Factor No._____. Explanation and Evidence:_____

_____

_____

_____

NOTE: Use back of page if more space is needed.

SAFETY BELT INTERLOCK SYSTEM

Phase and Array Number 4 4 0 (1 2 3)

Number Of: ___ (4) ___ (5)

On-Site, In-Depth Flag ___ (6)

On-Site Case No. ___ (7) ___ (8) ___ (9) ___ (10)

Traffic Unit No. ___ (11) ___ (12)

Card No. 0 1 (13 14)

In-Depth Case Number_____ DOS ONLY:

Completed by_____ Date Rec'd_____

PART I - VEHICLE INSPECTION

1. Was the interlock system operational before the crash?

__(1) Unknown
__(2) Yes (Disregard remaining questions in Part I)
__(3) No ___ (15)

2. Was any part of the system intentionally defeated?

__(1) Unknown
__(2) Yes
__(3) No (go to question 10) ___ (16)

If intentionally defeated, in what manner was it done?

◯ Unknown

3. __Belt buckled behind occupant ___ (17)
4. __Lap belt cut ___ (18)
5. __Shoulder belt cut ___ (19)
6. __Buzzer rendered inoperative ___ (20)
7. __Logic mechanism altered ___ (21)
8. __Logic mechanism by-passed by ignition circuit ___ (22)
9. __Other (explain):_____ ___ (23)

10. If questions 1 and 2 were negative, describe failure mode of the system.

_____

PART II - DRIVER INTERVIEW

11. Have you or any other person ever attempted to defeat or "get around" any aspect of the starter interlock system? (including warning buzzer, lights, switches, etc.)

__(1) Unknown ___ (24)
__(2) Yes
__(3) No (go to question 37)

Why was the attempt made to defeat the system?

◯ Unknown

12. __Took too long to start the car ___ (25)
13. __Do not like to wear restraints ___ (26)
14. __Passengers complained about being forced to wear restraints ___ (27)
15. __No objection to wearing restraints, but I will not be forced to do so in my own automobile ___ (28)
16. __Other:_____ ___ (29)

How was the system defeated?

◯ Unknown

17. __Unable to defeat the system (go to question 36) ___ (30)
18. __Wired around the system to the starter ___ (31)
19. __Disconnected the buzzer ___ (32)
20. __Shorted the seat sensors ___ (33)
21. __Tied the belts in knots ___ (34)
22. __Permanantly buckled the belts ___ (35)
23. __Tuck the belts under the carpet after starting the car ___ (36)
24. __Buckled the belt behind occupant after starting the car ___ (37)
25. __Cut the shoulder belt ___ (38)
26. __Cut the lap belt ___ (39)
27. __Altered the logic mechanism. If yes, explain:_____ ___ (40)
28. Other:_____ ___ (41)

Who accomplished this?

◯ Unknown

29. __Driver ___ (42)
30. __Owner (not driver) ___ (43)
31. __Automobile dealer ___ (44)
32. __Garage mechanic ___ (45)
33. __ Relative ___ (46)
34. __Friend ___ (47)
35. __Other:_____ ___ (48)

Continued on the back...

36. Why were you unable to defeat the system?

__(1) Unknown
__(2) Too hard to get to
__(3) Did not have proper tools
__(4) Did not know enough about the system
__(5) Other: _____
__(6) N/A

49

37. How many times has your vehicle failed to start when you went through the normal fastening routine?

_____

50 51

38. Did you then attempt to defeat the system?

__(1) Unknown
__(2) Yes
__(3) No
__(4) N/A

52

39. How many times has your vehicle started but then stalled after going through the normal fastening and starting routine?

_____

53 54

PDD1

ON-SITE TO IN-DEPTH PRELIMINARY DATA

On-Site Case No. S-_____ In-Depth Case No. D-_____

Date:_____, 197___ Time:_____ HRS.

Location:_____

Investigators:_____, _____, and_____

Accident Involved (Traffic Units): _____

IDENTIFICATION DATA

Veh. #1:	Veh. #2:
Year_____ Make _____	Year _____ Make _____
Color_____ Lic. # _____	Color _____ Lic. # _____
Towed to:	Towed to:
Driver:	Driver:
Name _____	Name _____
Age _____	Age _____
Address:	Address:
Telephone: _____	Telephone: _____
Pass:	Pass:
Name _____	Name _____
Age _____	Age _____
Address:	Address:

Witnesses: _____

Observations and Remakrs: _____

NOTE (1) Use additional sheet if more than two vehicles involved.
(2) Draw free-hand sketch on back of form.

CASE NO. POST CRASH FACTORS

S. _____

D. _____

O.S. Notified	-	HRS	
Via	-		
O.S. Arrived	-	HRS	
Primary Inves. Agency	-		
Secondary Inves. Agency	-		
Prim. Agency Arr.	-	HRS	
Secon. Agency Arr.	-	HRS	
Ambulance Arr.	-	HRS	
First Wrecker Agency Arr.	-	HRS	Name:
Second Wrecker Agency Arr.	-	HRS	Name:
Primary Inves. Agency Dep.	-	HRS	
Secondary Inves. Agency Dep.	-	HRS	
Ambulance Dep.	-	HRS	With:
First Wrecker Dep.	-	HRS	With:
Second Wrecker Dep.	-	HRS	With:
O. S. Dep.	-	HRS	

Was traffic impeded at any time? Yes No
If yes, when and for how long?

Were there any near misses or secondary accidents?
If yes, explain.

Other observations-

DRAWING

iRPS TRI-LEVEL BULLETIN

TO: Mr. John Keryeski, NHTSA DATE:

REPORTED BY THE INSTITUTE FOR RESEARCH IN PUBLIC SAFETY
INDIANA UNIVERSITY, BLOOMINGTON, INDIANA 47401
UNDER CONTRACT TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION CONTRACT DOT-HS-034-3-535

- **SUBJECT:** FORD FALCON SEAT LATCH FAILURE IN HIGH SPEED IMPACT

EXAMPLE

- **IDENTIFICATION:**

CASE DESIGNATION: TAC-B-90 (also TAC-C-8) INVESTIGATING AGENCY: Monroe Co. Sheriff's Dept.

DATE: 11 Nov. 1972 TIME: 1155 Hours PLACE: One mile north of SR 48 on Hartstraight Road-- Monroe County-- West of Bloomington, IN 47401

LIGHT CONDITIONS: Daylight, 100% Cloud Cover AMBIENT CONDITIONS: Dry, 41°, Hazy

- **INCIDENT DESCRIPTION:**

U-2, 1965 Ford Falcon Futura, was southbound on 2 lane Hartstraight Road, west of Bloomington, Indiana. U-2 was stopped behind a non-contact, disabled, 1965 Ford Galaxie-- also stopped in the southbound lane of Hartstraight Road. U-1, 1964 Chevrolet Impala SS, came over a hillcrest traveling approximately 60-65 MPH. U-1 left 149 feet of pre-impact skidmarks striking U-2 in the rear (6 o'clock force direction). U-2 was then pushed forward (roughly a 11 o'clock direction) ninety feet into a tree (12 o'clock force direction). Impact speed of POI #1 (car to car) is estimated at approximately 30 MPH and impact of POI #2 (car to tree) is estimated at approximately 15 MPH.

- **ITEM DESCRIPTION:**

The seat latch mechanism on the right side of the bench seat in the Ford Falcon failed, allowing the right side to slide off the forward end of the track. However, it is not believed that this failure caused or increased the injuries sustained by D-2.

U-1	1964	Chevrolet Impala SS	VIN	20927W163694
U-2	1965	Ford Falcon Futura	VIN	5H16C1066179
NCU	1965	Ford Galaxie	VIN	Unknown

- **REPORTED BY:** John P. Cornwell, On-Site (Level B) Investigator
- **APPROVED FOR SUBMISSION:** DATE: November 22, 1972

DAILY ACTIVITY REPORT

On-Site Investigator _____
Date _____ Shift Hours _____ to _____
Name of Documentors _____ and _____
Vehicle: Unit No. _____ Odometer: Shift End _____
Shift Start _____
Miles Driven _____

Purchases: (Attach all purchase slips to report)
I.U. Garage: Gas _____
Local Purchase _____ Where _____
Time _____

EQUIPMENT INVENTORY

Camera	___OK	___MIS
Recorders	___OK	___MIS
Rola-Tape	___OK	___MIS
100 Ft. Cloth Tape	___OK	___MIS
6 Ft. Metal Tape	___OK	___MIS
2 Sets Rain Gear	___OK	___MIS
1 Pair H/Duty Gloves	___OK	___MIS
1 Unity Spot Light	___OK	___MIS
1 6-Volt Flood Light	___OK	___MIS
2 Blankets	___OK	___MIS
1 Crow Bar	___OK	___MIS
1 Set Starting Cables	___OK	___MIS
1 Clipboard Ray Light	___OK	___MIS

VEHICLE CHECK

Radio	___OK	___Problems/Remarks
Top Lights	___OK	___Problems/Remarks
Greenhouse	___OK	___Problems/Remarks

_____
_____
_____

EXPENDABLES USED

Film _____ Flask _____
Flares _____ 20 min. _____
30 min. _____
First Aid _____

ACTIVITY LOG

START TIME	END TIME	ACTIVITY

ACCIDENT LOG

				CHECK APPROPRIATE COLUMN				
NO.	TIME OF NOTIF.	10-20 WHEN NOTIF.	AGENCY AND MEANS OF NOTIF.	ACCIDENT 10-20	RESPOND	INVEST.	ASSISTED	SCRATCHED

EXPLAIN FULLY ANY FAILURE TO RESPOND OR REASON FOR SCRATCHING ACCIDENT.

REMARKS

APPENDIX C

In-depth (Level C) Data Collection Forms

IN-DEPTH HUMAN FACTORS FORM*

In-depth Case Number_____ Drivers Name_____ Number_____

Address_____ Phone_____

Date of Collision___/___/___ Time___:___AM PM

Location_____

Interviewer_____

Date of Interview___/___/___ Time___:___AM PM

Location of Interview_____ DPA ONLY: Date Rec'd_____

Phase and Array Number 4 1 8 (1 2 3)

Number Of: Traffic Units per Accident (4 5)

On-Site, In-Depth Flag 2 (6)

On-Site Case Number (7 8 9 10)

Traffic Unit Number (11 12)

Card Number 0 1 (13 14)

DEMOGRAPHIC CHARACTERISTICS

1. Sex

__(1) Male
__(2) Female (15)

2. Age (16 17)

Date of Birth Month (18 19)

Day (20 21)

Year (22 23)

3. Height _____(_____in) (24 25)

4. Weight _____lbs (26 27 28)

5. Education

__(1) 1-7 years
__(2) 8-11 years
__(3) H.S. graduate
__(4) 1-3 years of college
__(5) College graduate
__(6) Post-grad or professional degree
__(7) Vocational, technical, or business school (29)

6. Major current occupation (Give job title and brief work description:_____

_____

_____)

__(1) Professional, technical, and kindred
__(2) Non-farm managers, officials and proprietors
__(3) Farmers and farm managers
__(4) Clerical and kindred
__(5) Sales workers
__(6) Craftsmen, foreman, and kindred
__(7) Operatives and kindred
__(8) Private household workers
__(9) Service workers
__(10) Farm labors and foremen
__(11) Laborers, except for farm and mine
__(12) Housewife
__(13) Student
__(14) Other (specify:_____

_____) (30 31)

IN-DEPTH HUMAN FACTORS FORM

7. About how much was your total family income last year?

__(1) under $3,000
__(2) $3,000-5,999
__(3) $6,000-7,999
__(4) $8,000-11,999
__(5) $12,000-14,999
__(6) $15,000-19,999
__(7) $20,000-24,999
__(8) $25,000 or more

32

8. How many persons are living on this income? _____

33 34

9. What is your present marital status?

__(1) Single
__(2) Married, divorced and remarried or widowed
__(3) Divorced or separated
__(4) Other (specify:_____)

35

10. How many times, if any, have you previously been married?

__(1) None
__(2) Once
__(3) Twice
__(4) Three or more times

36

PHYSICAL CONDITION

11. How is your general health?

__(1) Excellent
__(2) Good
__(3) Fair
__(4) Poor

37

12. Have you ever had a serious illness or injury that still bothers you?

__(1) Yes (explain:_____

_____)
__(2) No

38

13. Are you disabled or do you have any physical handicaps?

__(1) Yes (explain:_____

_____)
__(2) No

39

14. Do you wear glasses or contact lenses?

__(1) Yes, wearing at the time of accident.
__(2) Yes, not wearing at the time of the accident
__(3) No

41

15. Is your driver's license subject to any restrictions?

__(1) Yes, (specify:_____

_____)
__(2) No

42

16. Were you sleepy or drowsy at the time of the accident?

__(1) Yes (explain:_____)
__(2) No

42

17. Were you feeling unusually tired or fatigued from your day's activities?

__(1) Yes (explain:_____)
__(2) No

43

PSYCHOLOGICAL CONDITION

18. Were you under any particular emotional strain before the accident?

__(1) Yes (explain:_____

_____)
__(2) No

44

19. Did you have any disagreements with a member of your family, a friend, or someone where you work before the accident?

__(1) Yes (explain:_____

_____)
__(2) No

45

IN-DEPTH HUMAN FACTORS FORM

Which of the following words best describes how often you (had an upset stomach) in the past year (Code as follows: 1=often, 2=sometimes, 3=rarely, 4=never)?

20. __had an upset stomach ___ 46

21. __had headaches ___ 47

22. __felt nervous or tense ___ 48

23. __worried about things ___ 49

24. __felt depressed ___ 50

DRIVING EXPERIENCE

25. How long have you been driving?

_____months ___ 51 ___ 52 ___ 53

26. How many miles do you think that you have driven in the last twelve-month period?

_____miles

(_____miles/100) ___ 54 ___ 55 ___ 56 ___ 57

27. Which of the following types of driver training have you successfully completed?

__(1) no driver training
__(2) high school course
__(3) college course
__(4) private driver school
__(5) other (specify:_____

_____) ___ 58

ACCIDENT/VIOLATION HISTORY

28. How many accidents have you ever been involved in while driving?

_____accidents ___ 59 ___ 60

29. How many of these occurred in the last 5 years?

_____accidents ___ 61 ___ 62

30. How many of these occurred in the last two years?

_____accidents ___ 63 ___ 64

31. How many of these occurred in the last year?

_____accidents ___ 65

32. In how many of the total number of accidents that you have been involved in were you judged at fault?

_____accidents ___ 66 ___ 67

33. Has your car insurance ever been cancelled?

__(1) Yes (explain:_____

_____)
__(2) No ___ 68

How many times have you been ticketed for any of the following types of moving traffic violations?

○ Never been ticketed (go to item 42)

34. __ speeding over the limit ___ 69 ___ 70

35. __reckless driving ___ 71 ___ 72

36. __DWI ___ 73 ___ 74

37. __other (specify:_____

_____) ___ 75 ___ 76

END OF CARD 01

DUPLICATE COLUMNS 1-12 FROM PRECEDING CARD Card Number 0 2 (13 14)

How many times have you been ticketed for any of the following types of moving traffic violations in the past year?

◯ Haven't been ticketed in the last year

38. __speeding over the limit 15 16

39. __reckless driving 17 18

40. __DWI 19 20

41. __other (specify:_____

_____) 21 22

42. Has your driver's license ever been suspended or revoked?

__(1) Yes (explain:_____

_____)

__(2) No 23

VEHICLE FAMILIARITY

43. Is the accident vehicle your primary mode of transportation?

__(1) Yes
__No

If not, what type of vehicle do you normally drive?

__(2) Full size (Buick Electra, Chevrolet Bel Air, etc.)
__(3) Intermediate (Chevelle, Charger, etc.)
__(4) Compact (Dart, Nova, etc.)
__(5) Subcompact (Vega, VW, etc.)
__(6) Sports car (MG, Corvette, etc.)
__(7) Light truck (Pickup, Van)
__(8) Motorcycle
__(9) Other (bicycle, etc.)
__(10) Don't usually drive 24 25

44. How long have you driven the accident vehicle?

_____months 26 27 28

45. How many miles have you driven it in the last twelve-month period?

_____miles

(_____miles/100) 29 30 31 32

VEHICLE CONDITION

46. Has your vehicle had any repairs or new parts in the last 6 months?

__(1) Yes
__(2) No 33

If yes, which of the following components was (were) affected? (Check all that apply and specify work done!)

47. __brakes_____

_____ 34

48. __tires_____

_____ 35

49. __power train_____

_____ 36

50. __steering_____

_____ 37

51. __suspension_____

_____ 38

52. __other (specify:_____

_____ 39

53. Did the vehicle have any unrepaired damage from previous accidents?

__(1) Yes (explain:_____

_____

__(2) No 40

54. How do you determine when your vehicle will be serviced?

__(1) mileage-per owner's manual
__(2) mileage-per own judgment
__(3) when a problem arises
__(4) when maintenance person suggests a need
__(5) no particular method
__(6) other (specify:_____) 41

55. How many miles do you think you have driven since any of your brake shoes or pads were last replaced?

__(1) never replaced (go to item 60)
__(2) less than 10,000 miles
__(3) 10,000 to 25,000 miles
__(4) 25,000 miles or more
__(5) don't know 42

Which shoes or pads were replaced? (Check all that apply!)

56. __left front 43

57. __left rear 44

58. __right rear 45

59. __right front 46

How long has each of your tires been in its present position?

60. Left front

__(1) less than 10,000 miles
__(2) 10,000-25,000 miles
__(3) more than 25,000
__(4) don't know 47

61. Left rear

__(1) less than 10,000 miles
__(2) 10,000-25,000 miles
__(3) more than 25,000
__(4) don't know 48

62. Right rear

__(1) less than 10,000 miles
__(2) 10,000-25,000 miles
__(3) more than 25,000
__(4) don't know 49

63. Right front

__(1) less than 10,000 miles
__(2) 10,000-25,000 miles
__(3) more than 25,000
__(4) don't know 50

64. Do you think all of your tires have sufficient tread?

__(1) Yes
__(2) No (explain:_____
_____)
__(3) don't know 51

65. When was your tire pressure last checked?

__(1) within the last week
__(2) more than a week but less than a month
__(3) more than a month
__(4) don't know 52

66. Was there any part of the vehicle which was not working properly immediately before the accident?

__(1) Yes (explain:_____
_____)
__(2) No 53

67. Was there anything in particular about the vehicle which may have contributed to the accident?

__(1) Yes (explain:_____
_____)
__(2) No 54

TRIP/ROADWAY

68. Where did your trip originate?

__(1) home
__(2) work
__(3) shopping
__(4) school
__(5) social/recreational
__(6) restaurant
__(7) personal business
__(8) other (specify:_____
_____) 55

69. What was the intended destination of the trip?

__(1) home
__(2) work
__(3) shopping
__(4) school
__(5) social/recreational
__(6) restaurant
__(7) personal business
__(8) other (specify:_____

_____)

56

What was the purpose of this trip?

_____

_____

70. How long have you been driving in this general area?

_____months

57 58 59

71. How often do you drive the road on which the accident took place?

__(1) daily
__(2) twice weekly
__(3) once weekly
__(4) twice monthly
__(5) once monthly
__(6) very infrequently
__(7) first time on road

60

72. Were you confused in any way by the roadway or control devices?

__(1) Yes (explain:_____

_____)

__(2) No

61

RESTRAINT USAGE

73. Were you wearing a seat belt at the time of the accident?

__(1) Yes
__No

If no, which of the following best describes your reason for not using a seat belt?

__(2) not available
__(3) inconvenient to use
__(4) uncomfortable
__(5) forgot
__(6) not in habit
__(7) used only when traveling
__(8) don't believe in using them (explain:_____

_____)

__(9) other (specify:_____

_____)

62 63

74. Were you wearing a shoulder harness at the time of the accident?

__(1) Yes
__No

If no, which of the following best describes your reason for not using a shoulder harness?

__(2) not available
__(3) inconvenient to use
__(4) uncomfortable
__(5) forgot
__(6) not in habit
__(7) used only when traveling
__(8) don't believe in using them (explain:_____

_____)

__(9) other (specify:_____

_____)

64 65

DRUG/ALCOHOL USAGE

Had you taken any kind of drugs or medication within 48 hours of the accident? (Check all that apply!)

75. __none (go to item 86) __ 66

76. __analgesics __ 67

77. __nutritional drugs __ 68

78. __hormones __ 69

79. __dietetic and cardiovasculars __ 70

80. __autonomics and central nervous system drugs __ 71

81. __gastro-intestinal drugs __ 72

82. __anti-infectives __ 73

83. __biological drugs __ 74

84. __other __ 75

Specify drug name(s), prescription Number(s), recommended dosage(s) and time taken.

NAME	PRESCRIP. #	DOSAGE	TIME TAKEN
			/ /
			: AM PM
			/ /
			: AM PM
			/ /
			: AM PM

85. In your opinion, did the drug(s) impair your driving ability in any way?

__(1) Yes (explain:_____

_____)

__(2) No __ 76

86. Had you consumed any alcoholic beverages within 24 hours of the accident?

__(1) Yes
__(2) No (go to item 97) __ 77

END OF CARD 02

DUPLICATE COLUMNS 1-12 FROM PRECEDING CARD 0 3 (13 14)

How much of the following types of beverages did you consume? (Indicate quantity of each type)

87. __bottles of beer __ __ (15 16)

88. __glasses of wine __ __ (17 18)

89. __drinks containing hard liquor __ __ (19 20)

90. Over what period of time did you consume these beverages?

__(1) one hour
__(2) two hours
__(3) three hours
__(4) four hours
__(5) five hours
__(6) six or more hours
__(7) don't know __ 21

91. How long before the accident did you consume your last drink?

__(1) less than one hour
__(2) 1-2 hours
__(3) 3-4 hours
__(4) 5-6 hours
__(5) more than 6 hours
__(6) don't know __ 22

92. In your opinion, was your drinking in anyway involved in the accident?

__(1) Yes
__(2) No __ 23

If yes, in which of the following ways was it related? (Check all that apply!)

93. __impaired physical response 24

94. __impaired judgment 25

95. __impaired perception 26

96. __other (specify:_____

_____) 27

MISCELLANEOUS

97. Do you normally drive with one or both hands on the steering wheel?

__(1) left hand only
__(2) right hand only
__(3) both hands
__(4) either hand 28

98. Which foot do you normally brake with?

__(1) right foot
__(2) left foot
__(3) either foot 29

99. Were all of your vehicle's windows and vents closed at the time of the accident?

__(1) Yes
__(2) No 30

100. Did you have your air conditioner, heater, or defroster operating at the time of the accident?

__(1) Yes
__(2) No 31

101. Do you smoke?

__(1) Yes, but not smoking at time of accident
__(2) Yes, and smoking at time of accident
__(3) No 32

102. Were you wearing sunglasses at the time of the accident?

__(1) Yes
__(2) No 33

103. Were you carrying luggage or cargo in the vehicle at the time of the accident?

__(1) Yes (describe its location and estimate its weight:_____

_____)
__(2) No 34

TAPE RECORD DRIVER'S DESCRIPTION OF THE ACCIDENT (REFER TO CUE CARD)

ACCIDENT SUMMARY

104. What were the traffic conditions at the time of the accident?

__(1) heavy
__(2) moderate
__(3) light
__(4) no other traffic present 35

105. Was the driver in a hurry?

__(1) Yes
__(2) No 36

106. Was the driver's mind wandering or preoccupied?

__(1) Yes (explain:_____

_____)
__(2) No 37

Just prior to the accident, did any activity or occurrence inside the car divert the driver's attention from the driving task? (Check all that apply!)

◯ no internal distractions

107. __talking ___ 38

108. __listening to tape player or radio ___ 39

109. __adjusting controls ___ 40

110. __smoking ___ 41

111. __eating ___ 42

112. __other (specify:_____

_____) ___ 43

Was there anything outside the car that distracted the driver's attention away from the driving task? (Check all that apply!)

◯ no outside distractions

113. __other traffic ___ 44

114. __pedestrians ___ 45

115. __unusual event like loud noise ___ 46

116. __driver-selected outside activity ___ 47

117. __other (specify:_____

_____ ___ 48

Was there anything that impaired or blocked your view of the area in which the accident took place? (Check all that apply!)

◯ no view obstructions

118. __other traffic ___ 49

119. __curve(s) in road or hillcrest ___ 50

120. __trees or foliage ___ 51

121. __embankment ___ 52

122. __roadside structure ___ 53

123. __parked vehicle ___ 54

124. __other (specify:_____

_____) ___ 55

125. How fast did the driver say he was traveling prior to entering the collision sequence?

_____mph ___ ___ 56 57

126. When was the first time the driver perceived the threatening situation? (approximate distance in feet)

_____feet ___ ___ ___ 58 59 60

127. Did the driver take any kind of evasive action?

__(1) no
__(2) braked only
__(3) steered only
__(4) braked and then steered
__(5) steered and then braked
__(6) steered and braked simultaneously
__(7) other (specify:_____

_____) ___ 61

128. If evasive action could have been taken but was not, then why not?

__(1) none possible
__(2) delayed reaction
__(3) insufficient time
__(4) misjudgment
__(5) unsure of other driver's action
__(6) panic
__(7) other (specify:_____

_____) 62

129. How fast did the driver say he was traveling at impact?

_____mph 63 64

130. What were the driver's actions at impact?

__(1) unaware, no action
__(2) braced
__(3) covered face with hands
__(4) other 65

131. What was the driver's post-impact position in the car?

__(1) normal driving position
__(2) thrown from normal driving position 66

132. What were the driver's immediate post-impact actions?

__(1) no action
__(2) exited the vehicle
__(3) moved vehicle off road
__(4) assisted injured persons
__(5) other (specify:_____

_____) 67

133. Was an ambulance required?

__(1) Yes
__(2) No 68

134. How was the car removed from the scene?

__(1) towed
__(2) driven away 69

135. Driver's opinion of police actions:

__(1) positive
__(2) negative (explain:_____

_____)
__(3) no opinion 70

136. Driver's assessment of principal human fault:

__(1) self
__(2) other driver
__(3) pedestrian
__(4) other (specify:_____

_____) 71

137. Driver's ranking of relative contribution of human vehicular and environmental factors (rank 1,2,3)

__(1) human 72

__(2) vehicular 73

__(3) environmental 74

END OF CARD 03

DUPLICATE COLUMNS 1-12 FROM PRECEDING CARD 0 4 13 14

In the driver's opinion, could he have done anything differently that might have prevented or reduced the severity of the accident? (Check all that apply!)

138. __could have gone slower or adjusted speed 15

139. __could have accelerated to safety 16

140. __could have steered to safety 17

141. __could have applied brakes differently 18

142. __could have been more alert or paid closer attention 19

143. __could have signaled for turn, lane change, etc. 20

144. __could have signaled other driver with horn 21

145. __could have had related vehicle defect corrected or repaired 22

146. __could have anticipated a potentially dangerous situation 23

147. __other (specify:_____

_____) 24

148. Interviewer's general impression of respondent's attitude and demeanor:

__(1) hostile, uncooperative
__(2) suspicious, guarded
__(3) casual, impersonal
__(4) friendly, cooperative

25

ENTER TEST SCORES WHERE APPLICABLE

149. __Driver Knowledge Test 26 27

150. __Pelz-Schuman Driver Opinion Questionnaire 28 29

151. __MAST 30 31

IN-DEPTH HUMAN FACTORS FORM: STATUS REVIEW

TO THE INVESTIGATOR: Place a check mark (✓) in the appropriate square to the right of each content item to indicate its status.

CONTENT ITEM	Page(s)	FROM Card Column	TO Card Column	Completed	Pending	Not Completed
DRIVER KNOWLEDGE TEST	12-13	04 32	04 51			
DYNAMIC VISION TEST	14-15	04 52 05 15	04 78 05 66			
PELZ-SCHUMAN DRIVER OPINION QUESTIONNAIRE	N/A	N/A	N/A			
MICHIGAN ALCOHOLISM SCREENING TEST (MAST)	N/A	N/A	N/A			

TO THE CODERS:

Completed status means the test is present and a score has been entered above on this page if applicable.

Pending status indicates that while the data is not yet in the file, it is expected to be Completed at some later time. The respective card columns should be left blank.

Not Completed status means that the particular data item was either not ascertained or inapplicable. Code all nines (9's) in the card columns assigned respectively to each item.

INVESTIGATOR NOTES: _____

IN-DEPTH HUMAN FACTORS FORM
DRIVER KNOWLEDGE QUESTIONNAIRE

Please read each question carefully and select the one response that you feel best answers it. Indicate your choice by placing an "x" in the corresponding blank on its left. Be sure that you answer every question and that you mark one and only one response!

1. Under normal conditions the top speed limit for driving in a business district is:

__(1) 15 mph
__(2) 20 mph
__(3) 25 mph
__(4) 30 mph

32

2. If there are no painted lines on the road you:

__(1) May drive anywhere on your side.
__(2) Should drive as if there were lines.
__(3) Should drive wherever traffic is moving the fastest.
__(4) May drive in the center of the road.

33

3. When driving at dusk or dawn, or on an unusually dark day:

__(1) Turn on your parking lights.
__(2) Keep your sunglasses on to cut down headlight glare.
__(3) Turn your lights on high beam.
__(4) Turn your lights on low beam.

34

4. If your brakes are not holding because they are wet, you should:

__(1) Continue driving and they will dry off.
__(2) Keep one foot on the gas and one lightly on the brake until dry.
__(3) Stop on the side of the road and wait for them to dry.
__(4) Don't use your brakes until they are dry.

35

5. For driving on sand or snow, the best forward traction can be attained:

__(1) By letting air out of the rear tires so they are several pounds below.
__(2) By letting air out of the rear tires and adding weight over the driving wheels.
__(3) By simply keeping the tires at their recommended pressure.
__(4) By adding weight over the driving wheels and keeping them at recommend or slightly higher pressure.

36

6. When you want to make a right turn into a driveway you should:

__(1) Avoid stopping on the road.
__(2) Swing to the left before making the turn.
__(3) Signal after you begin to turn.
__(4) Signal the traffic behind you to pass

37

7. If you come to an intersection that is hard to see around because of trees or buildings:

__(1) Proceed as if there was a yield sign at the intersection.
__(2) Stop near the center of the intersection and then continue when it is safe.
__(3) Slow down and blow your horn to warn drivers who cannot see you.
__(4) Stop at the intersection and edge forward slowly.

38

8. The most dangerous time to drive in the rain is:

__(1) Just before the rain starts because it gets dark but most motorists have not slowed down yet.
__(2) Just after the rain starts because the rain mixes with road film making the roads slick.
__(3) After it has rained for about 30 minutes because the rain has washed away all the grit that gives you traction
__(4) Just after the rain stops because other motorists can see again, and start to drive faster but the streets are still wet.

39

9. If brakes are applied continually, such as is necessary when coming down a long, steep grade, they may become very hot. When this happens:

__(1) The brake warning lamp on the dashboard will come on.
__(2) The brakes will loose their stopping ability.
__(3) The brakes will improve in effectiveness; brakes work best when hot.
__(4) The brakes should operate normally, since heat has very little effect on them.

40

10. If you are driving at high speed and have a blowout, you should:

__(1) Let go of the steering wheel because the car will straighten itself automatically.
__(2) Step hard on the brakes to stop as quickly as possible.
__(3) Apply the brakes gently, with extreme caution.
__(4) Pull off the road first then slow down. ___ 41

11. If the rear of your vehicle is skidding to the left you should:

__(1) Move the steering wheel back and forth in a zig-zag pattern.
__(2) Turn the top of your steering wheel to the left.
__(3) Hold your steering wheel from moving until out of the skid.
__(4) Turn the top of your steering wheel to the right. ___ 42

12. If you cannot stop in time before hitting another vehicle, it is best to:

__(1) Gradually slow down and then hit the other vehicle.
__(2) Blow the horn and continue at normal speed.
__(3) Try to steer around the vehicle and avoid braking hard.
__(4) Remove your foot from the gas and put on the brake as hard as possible. ___ 43

13. If you have locked your vehicle's brakes and you are sliding toward another vehicle, you should:

__(1) Attempt to steer around the vehicle.
__(2) Sound your horn and flash your lights.
__(3) Pump your brakes and attempt to steer around the vehicle. ___ 44
__(4) Use your emergency brake.

14. If you know that you will soon be making a turn you should:

__(1) Look well ahead to locate the turning point.
__(2) Blow the horn several hundred feet before you turn.
__(3) Flash your bright lights to warn other traffic.
__(4) Speed up so as to avoid making other vehicles wait. ___ 45

15. If the signal at a railroad crossing does not indicate that a train is coming you should:

__(1) Speed up and cross the track quickly.
__(2) Continue at the same speed and check for a train before crossing.
__(3) Slow down and look both ways.
__(4) Come to a complete stop before continuing across. ___ 46

16. When passing a vehicle you should return to the right side of the road when:

__(1) You are 50 feet in front of the passed vehicle.
__(2) The other driver signals you to do so.
__(3) You have cleared the front bumper by a vehicle length.
__(4) You can see its entire front end in your rearview mirror. ___ 47

17. It is best to check tire pressures:

__(1) After the car has been parked for a long time and the tires are "cold".
__(2) After the car has been driven vigorously and the tires are "hot".
__(3) Whenever convenient; it doesn't matter if the tires are hot or cold.
__(4) With the car on a lift, so that there is no weight on the tires. ___ 48

18. When driving through fog at night, you should use your:

__(1) High beam headlights.
__(2) Parking lights.
__(3) Low beam headlights. ___ 49
__(4) 4-way flashers.

19. Before leaving the road to avoid a head-on crash you should slow down by:

__(1) Pumping the brakes.
__(2) Applying constant pressure on the brakes.
__(3) Turning off the engine. ___ 50
__(4) Shifting into neutral.

20. At night you should drive slow enough to be able to stop within:

__(1) 5 car lengths.
__(2) The distance lighted by your headlights.
__(3) The time it takes for a light to change from yellow to red.
__(4) 10 seconds from the time you hit the brake. ___ 51

DYNAMIC VISION TEST

IN-DEPTH HUMAN FACTORS FORM

	10	14	4	9	3	7	1	2	5	6	11	12	13	8	TOTAL		LEFT		RIGHT	
(7) FIELD	L90	L80	L70	L60	L90	L80	L70	R70	R80	R90	R60	R70	R80	R90	52	53	54	55	56	57
(8) DAI 90	T90	R80	L70	B60	L90	R80	T70	R70	T80	B90	R60	L70	B80	L90	58	59	60	61	62	63
(9) DAI 35	R35	T35	L30	B25	R20	T15	R10	L10	B15	R20	B25	T30	L35	L35	64	65	66	67	68	69

STATIC ACUITY - NO GLARE

R	L	B	L	B	T
175	150	125	100	85	70
T	L	R	T	L	B
R	L	B	R	B	R
L	T	T	B	T	L
R	B	L	T	B	R
L	R	B	L	R	T
B	R	T	T	L	R

T	B	L	B	L	R	L	T	R
85	70	60	50	40	35	30	25	20
L	B	T	L	T	B	T	R	B
B	R	B	R	B	R	R	R	L
T	L	L	T	L	T	L	B	R
B	R	R	B	T	T	R	T	T
R	T	B	L	R	L	L	L	B
L	R	L	T	B	B	B	T	R

(1)(N) 70 71 72 (6)(L) 73 74 75

(11) STATIC ACUITY - VEILING GLARE

R	L	B	L	B	T
175	150	125	100	85	70
T	L	R	T	L	B
R	L	B	R	B	R
L	T	T	B	T	L
R	B	L	T	B	R
L	R	B	L	R	T
B	R	T	T	L	R

T	B	L	B	L	R	L	T	R
85	70	60	50	40	35	30	25	20
L	B	T	L	T	B	T	R	B
B	R	B	R	B	R	R	R	L
T	L	L	T	L	T	L	B	R
B	R	R	B	T	T	R	T	T
R	T	B	L	R	L	L	L	B
L	R	L	T	B	B	B	T	R

76 77 78

(12) STATIC ACUITY - SPOT GLARE

R	L	B	L	B	T
175	150	125	100	85	70
T	L	R	T	L	B
R	L	B	R	B	R
L	T	T	B	T	L
R	B	L	T	B	R
L	R	B	L	R	T
B	R	T	T	L	R

T	B	L	B	L	R	L	T	R
85	70	60	50	40	35	30	25	20
L	B	T	L	T	B	T	R	B
B	R	B	R	B	R	R	R	L
T	L	L	T	L	T	L	B	R
B	R	R	B	T	T	R	T	T
R	T	B	L	R	L	L	L	B
L	T	L	T	B	B	B	T	R

SEE (*) 15 16 17

Trial

(2) CAM	R	L	(3) CMD	R	L
256	L	R	190	L	L
128	R	L	128	L	S
64	R	L	64	S	L
32	L	R	32	S	L
16	R	L	16	L	S
12	L	R	12	L	S
8	L	R	8	S	L
6	R	L	6	S	L
4	R	L	4	S	L
2	L	R	2	L	S

Trial

(4) PAM	R	L	(5) PMD	R	L
256	L	R	190	L	L
128	R	L	128	L	S
64	R	L	64	S	L
32	L	R	32	S	L
16	R	L	16	L	S
12	L	R	12	L	S
8	L	R	8	S	L
6	R	L	6	S	L
4	R	L	4	S	L
2	L	R	2	L	S

*Duplicate Col. 1-12 from Preceeding Card

CARD NUMBER 0 5 (13 14)

	TOTAL		THRESHOLD			TOTAL		THRESHOLD		
S	18	19	20	21	22	23	24	25	26	27
L								28	29	30

	TOTAL		THRESHOLD			TOTAL		THRESHOLD		
S	31	32	33	34	35	36	37	38	39	40
L								41	42	43
TONE								44	45	

(10) PVA-120° R T B L R T L L T B R

200 175 150 125 100 85 70 60 50 40 30 46 47 48

Over . . .

(13) REACTION TIMES

Simple

Trial # 1 ___ ___ ___
49 50 51

Trial # 2 ___ ___ ___
52 53 54

Trial # 3 ___ ___ ___
55 56 57

(14) Complex

Trial # 1 ___ ___ ___
58 59 60

Trial # 2 ___ ___ ___
61 62 63

Trial #3 ___ ___ ___
64 65 66

IN-DEPTH HUMAN FACTORS FORM

OCCUPANT INFORMATION

Fill in the chart using the appropriate codes from below.
(Enter any additional information on back of page)

OCC. No.	SEAT POSITION	RE-STRAINTS USED	RE-STRAINTS AVAILABLE	AGE	SEX	AIS	HEIGHT	WEIGHT	AREAS OF OCCUPANT CONTACT
1									
2									
3									
4									
5									
6									
7									
8									
9									

SEX
1=Male
2=Female

Seated Position
01=Left front
02=Center front
03=Right front
04=Left rear
05=Center rear
06=Right rear
07=Left third seat
08=Center third seat
09=Right third seat
10=Bed of truck
11=Inside pickup camper
12=Other
13=Unknown

RESTRAINTS USED AND AVAILABLE
1=None
2=Lap belt only
3=Shoulder belt only
4=Lap and Shoulder belt
5=Unknown

AIS
0=No injury
1=Minor
2=Moderate
3=Severe injuries (not life-threatening)

AIS cont.
4=Severe injuries (life-threatening, survival probable)
5=Critical injuries
6=Fatality (one fatal lesion)
7-8-9: Review AMA codes
10=Unknown

CODES FOR AREAS OF OCCUPANT CONTACT

00=Unknown
01=Air conditioning or ventilation outlets
02=Glove compartment area
03=Hardware items (ashtray, instruments, knobs, etc.)
04=Heater or AC ducts
05=Instrument panel
06=Mirrors
07=Parking brake
08=Radio
09=Steering assembly
10=Sunvisors & fittings, and/or top molding (header)
11=Transmission selector lever
12=Windshield
13=Armrests
14=A-pillar
15=B-pillar

AREAS OF CONTACT CONT.

16=C-pillar
17=D-pillar
18=Courtesy lights
19=Hardware (sides)
20=Surface of side interiors
21=window frames
22=Window glass
23=Backlight (rear window)
24=Coat hooks
25=Roof or convertible top
26=Roof side rails
27=Console
28=Foot controls
29=Back of seats
30=Head restraints
31=Interior loose object
32=Other occupants
33=Restraint system hardware
34=Restraint system webbing
35=Hood
36=Objects exterior to car
37=Outside surface of car
38=Other
39=Backlight header
40=Other occupants
41=Flying glass
42=Tapedecks
43=Road surface
44=Eye glasses
45=Floors
50=No contact

IN-DEPTH HUMAN FACTORS FORM

Occupant No._____

1. This form should be filled out for each injured occupant. Add additional forms if necessary.
2. Check boxes to indicate type of injury to each body region, if known.
3. If you are reasonably assured that one or more specific components or areas contacted by this occupant resulted in an associable injury enter the proper code(s) in the starred (*) section. (See page A ((occupant injury)) for codes)
4. Describe specific occupant injuries on the back of this sheet.

BODY REGION	*ENTER CODE(S) FOR AREAS OF POSSIBLE CONTACT				CHECK TYPE OF INJURY									
	1	2	3	4	OVERALL INJURY TO BODY REGION	FRACTURE	LACERATION	CONTUSION	COMPLAINT OF PAIN	ABRASION	CONCUSSION	BURN	HEMORRHAGE	OTHER
Internal Organs						/					/			
Brain						/								
Face											/			
Head											/			
Neck (Cervical Region)											/			
Shoulder Girdle											/			
Right Upper Limb											/			
Left Upper Limb											/			
Chest & Upper Back (Thorax)											/			
Lower Back (Lumber Region)											/			
Abdomen						/					/			
Pelvic Girdle											/			
Right Lower Limb											/			
Left Lower Limb											/			
Whole Body						/					/		/	

IN-DEPTH HUMAN FACTORS FORM
DRIVER OPINION SUPPLEMENT
ARRAY 50

DOS ONLY

1. What is your cummulative grade-point average (GPA) as a student?

__(1) A
__(2) B
__(3) C
__(4) D
__(5) Don't know

__(6) Check here if you are a high school graduate

15

Most drivers have to take a chance now and then -- such as passing on a winding road, driving fast on a wet road, or turning left in front of oncoming traffic.

Some drivers will be more likely to take a chance when other people are in the car; some drivers will be more likely to take a chance when driving alone. How about you?

CIRCLE ONE ANSWER IN EACH LINE

	More likely to take a chance	Less likely to take a chance	Same as alone	Don't drive with such a person	Never take chances	
2. With a friend(s) in the car	1	2	3	4	5	16
3. With a date (or wife/husband	1	2	3	4	5	17
4. With a parent(s) in the car	1	2	3	4	5	18

In this research we want to find out how people actually drive. Listed below are many things that people sometimes do when they drive. As you think back over the past month (or typical month), about how often would you estimate that you did each of these things?

CIRCLE ONE ANSWER IN EACH LINE

	Not at all	Once or twice	Each week	Almost daily	No idea	
5. Drove with a radio or stereo on (or check here if no radio __)	1	2	3	4	5	19
6. Drove with one hand on wheel	1	2	3	4	5	20
7. Drove through a yellow light	1	2	3	4	5	21
8. Had a friendly race with another car	1	2	3	4	5	22
9. Kept up with traffic that was going 10 mph over the speed limit	1	2	3	4	5	23
10. Drove 15 mph or more over the prevailing traffic inside the city	1	2	3	4	5	24
11. Drove 10 mph or more over the prevailing traffic on an open highway	1	2	3	4	5	25
12. Dared or took a dare from another car	1	2	3	4	5	26

... Continued on next page ...

DOS ONLY

In addition to driving at different times of day, and on different kinds of roads, people also drive when they are in different states of mind.

Again think of the past month, or if that was very different from your usual driving, think of a typical month. How often in that month did you drive in each state of mind listed below? A rough estimate is okay.

CIRCLE ONE ANSWER IN EACH LINE

	Not at all	Once or twice	Each week	Almost daily	No idea	
13. When I was tired or sleepy	1	2	3	4	5	27
14. When I was in a hurry	1	2	3	4	5	28
15. When I felt worried or depressed	1	2	3	4	5	29
16. In order to get away from people and be on my own	1	2	3	4	5	30
17. When I was smoking	1	2	3	4	5	31
18. When I was angry	1	2	3	4	5	32
19. After a couple of drinks	1	2	3	4	5	33

In a typical week last month, please estimate roughly how much time you spend driving for each of the following purposes (where you were the driver, not a passenger). Write your answer in hours. If you did no driving for some purpose, write "0". (Not time just sitting in the car, or at a store or a movie, but actually driving.)

Hours per week (rough estimate)

20. Driving to or from work, or as part of my job _____ Hrs. 34 35 36

21. Driving to or from school _____ Hrs. 37 38

22. For recreation, shopping, visiting, etc. _____ Hrs. 39 40 41

23. Sum of these = TOTAL HOURS driving per week _____ Hrs. 42 43 44

Besides the time you were actually driving to and from places such as to work, school, stores, etc., how much time did you spend in an average recent week in these ways?

Hours per week

24. Working on cars (my own, or friends') -- repairing, testing, cleaning, etc. _____ Hrs. 45 46 47

25. Being in an around cars for fun and entertainment such as at drive-ins, with friends, etc. _____ Hrs. 48 49

Sum of these . . . . . _____ Hrs. 50 51 52

... Continued on next page ...

DOS ONLY

Within the past year, how often have you felt or done the following things?

CIRCLE ONE ANSWER IN EACH LINE

	Not at all	Once or twice	Every month	Every week	Almost daily	
26. Been mad enough to feel like smashing something, but didn't	1	2	3	4	5	53
27. Been mad enough so I actually did smash something	1	2	3	4	5	54
28. Felt like getting into a fist fight with someone but didn't	1	2	3	4	5	55
29. Actually got into a fight and hit somebody	1	2	3	4	5	56

At present, how much of the time do you feel pressure from other people who are trying to tell you how to run your life?

CIRCLE ONE ANSWER IN EACH LINE

Pressure From:	Hardly ever	Once in a while	Some of the time	Most of the time	Almost always	
30. My parents or other older relatives	1	2	3	4	5	57
31. My wife (husband) or girlfriend (boyfriend)	1	2	3	4	5	58
32. Friends or relatives my own age	1	2	3	4	5	59
33. People who have authority over me	1	2	3	4	5	60

Sometimes, after an argument or quarrel, people go out for a drive to help them "blow off steam." During the past three months, how often have you gone driving to blow off steam after an argument?

CIRCLE ONE ANSWER IN EACH LINE

How often in three months:

After an argument with:	Not at all	Once or twice	Every month	Every week	Almost daily	
34. My parent or other older relative	1	2	3	4	5	61
35. My wife (husband) or girlfriend (boyfriend)	1	2	3	4	5	62
36. One of my friends or relatives my own age	1	2	3	4	5	63
37. People who have authority over me	1	2	3	4	5	64

END, THANK YOU!

TAC IN-DEPTH VEHICLE DATA FORM

In-depth Case No. _____ Date of VDP Inspection _____

On-Site Case No. _____ Accident Data: Date _____

Vehicle No. _____ Time _____

Conditions _____

Investigator's Preliminary Observations _____

_____

I. IDENTIFICATION

A. Vehicle type _____

B. Make _____

C. Model _____

D. Model year 19____

E. No. doors _____

F. Body style _____

G. Colors _____

H. License

1. Number _____
2. State _____
3. Year _____

I. Vehicle identification no. _____

J. Engine

1. Type _____
2. Displacement _____ cu. in.
3. Horse power _____

K. Empty Vehicle weight _____

L. Lubrication (most recent)

1. Mileage _____
2. Date _____
3. Services performed _____

M. Odometer reading _____

1. On-site odometer reading _____
2. Difference _____

N. State Inspection

1. Date _____
2. Mileage _____
3. State _____
4. Number _____
5. Station No. _____

II. INSPECTION FOR DEFECTS

SECTION A: INTERIOR, LIGHTS AND VISION

LEVEL 1

Item	Measure	N/A	P	D	AD
1 Windshield					
[Stickers] [Cracks] [Stars] . .					
2 Rear Window					
[Stickers] [Cracks] [Stars] . .					
3 Other Glass					
[Stickers] [Cracks] [Stars] . .					
4 Mirror, Interior					
5 Mirror, Exterior					
6 Horns [Control] [Function] . .					
7 Pedal Reserve (brake) . . . (See A73 and perform)					
8 Pedal Rubbers [A] [B] [C] . .					
9 Seat Belts Available . . .					
[$2F_S$ $1F_L$] [$2F_S$] [$2F_L$] [$3F_L$] . [$2R_L$] [$3R_L$]					
10 Obstructive Floor Mats . .					
11 Loose [Wires] [Fittings] . .					
12 Loose [Litter] [Items] . . .					

Item	Measure	N/A	P	D	AD
13 Loose Steering Wheel Cover					
14 Steering Wheel Spinner. .					
15 Steering Column Security					
U-Clamp [ ] Upper Bushing [ ]					
16 Reflecting Surfaces . . .					
17 Defroster					
18 Stop Lights [l] [r]					
19 Turn Lights Rear [l] [r] .					
Turn Lights Front [l] [r] .					
Cancellation [l] [r] . . .					
20 Turn Indicators Visible					
from Side [F] [R]					
21 Windshield Wipers					
Function [l] [r]					
Condition [l] [r]					
Park [l] [r]					
22 Windshield Washers					
[Function] [Aim] . . .					

l = Left
r = Right
F = Front
R = Rear

N/A = Not applicable or not accessible
P = Pass
D = Defect
AD = Potential accident-causative defect

SECTION A: INTERIOR, LIGHTS AND VISION

LEVEL 2 Item	Measure	N/A	P	D	AD
51 High Beam Warning Lamp. . .					
52 Turn Indicator Warning Lamps [l] [r]					
53 4-Way Flasher & Warning Lamps					
54 Transmission Detents. . . .					
55 Inhibitor Switch.					
56 Instruments Function. . . .					
57 Instrument Lights					
58 Brake Failure Warning Lamp.					
59 Rear Lights					
l [Funct] [Reflect] [Lens] . . .					
r [Funct] [Reflect] [Lens] . . .					
60 Parking Lights					
l [Funct] [Reflect] [Lens] . . .					
r [Funct] [Reflect] [Lens] . . .					
61 Side Markers					
l [Funct] [Reflect] [Lens] [F] [R] .					
r [Funct] [Reflect] [Lens] [F] [R] .					
62 Back-Up Lights					
l [Funct Lens]					
r [Funct Lens]					

Item	Measure	N/A	P'	D	AD
63 Headlights					
Function [l] [r] (Low). . .					
[l] [l] [r] [r] (High) . .					
1/2 Covers					
Retraction [Up] [Down] . . .					
Aim High Beam					
[l] [r]					
Low Beam					
[l] [r]					
64 Obscured Lenses on Exterior Lamps.					
65 Loose Seats.					
66 Loose Visors					
67 Modification to [Interior] or [Controls] . . .					
68 Inherent Confusion Factors					
69 Dip Switch Interference. .					
70 Vision Interference. . . .					
71 Wiper Parking.					
72 Volume Setting: [Radio/Tape]					
73 Brake Pedal Behavior . . .					
Rapid Onset and Sustained.					
Slow Onset and Sustained .					
Light and Sustained. . . .					

SECTION B: ENGINE COMPARTMENT AND STEERING

LEVEL 1 Item	Measure	N/A	P	D	AD	Item	Measure	N/A	P	D	AD
1 Steering Pump Belt						8 Exhaust Leaks					
2 Steering Pump Fluid . . .						9 Windshield Washer [Reservoir]					
3 Brake Fluid.						10 Steering Play					
4 Brake Fluid Leaks.						11 Steering Box Security . . .					
[M/cyl] [Pipes] [Fittings] [Other]						12 Tie Rod Ends.					
5 Transmission Fluid Level .						13 Idler Arm Play.					
6 Clutch [Perf] [Adj]						14 Steering Column U Joints. .					
7 Engine Mountings [Fl] [Fr] [R]						15 Steering Box Play					
						16 Steering Box, Stiff Spots .					
						17 Steering damper					

SECTION B: ENGINE COMPARTMENT AND STEERING

LEVEL 2 Item	Measure	N/A	P	D	AD	Item	Measure	N/A	P	D	AD
50 Battery						55 Hoses [Connection]					
51 Main Electrical Connections						[Condition]					
52 Accelerator Pump						56 Idle Speed . . . Spec___rpm					
53 Accelerator Linkage. . . .						57 Initial Timing . Spec__°B/A					
54 Carburetor Linkage						58 Dwell. . . . . Spec___° .					
54a Automatic choke.						59 Point Resistance.					
						60 [Rotor] [Cap].					

SECTION C: WHEELS, TIRES, SUSPENSION AND BRAKES

LEVEL 1

Item	Measure	N/A	P	D	AD
1 Toe. . . . Spec _____ . .					
2 Wheels: Condition [F R l r]					
Modified [F R l r]					
Loose or Missing Lug/Nut [F R l r]					
3 lF Wheel Bearing Play . . .					
4 rF Wheel Bearing Play . . .					
5 rF Brake Disc/Drum Condition					
6 rF Drum Diameter Max _____ Min _____					
7 rF Lining Diameter [R] [B] .					
8 rF Pad/Lining Thickness . .					
9 rF Pad/Lining Condition					
[Contam | Dam | Glaze]					
10 Defects in mechanism or single cylinder caliper (rF)					
11 rF Hub Seal Leakage					
12 rF Cylinder Leakage					
13 rF Brake Hose					
14 lR Brake Disc/Drum Condition					
15 lR Brake Drum Diameter Max . . . _____ Min . . . _____					

Item	Measure	N/A	P	D	AD
16 lR Lining Diameter [R] [B] .					
17 lR Pad/Lining Thickness . .					
18 lR Pad/Lining Condition					
[Contam | Dam | Glaze]					
19 lR Bearing Seal Leakage . .					
20 lR Cylinder Leakage					
21 lR Brake Hose					
22 Defects in mechanism or single cylinder caliper (lR)					
23 lF Tire Pressure. Spec _____					
Tread Depth Inner.					
Center					
Outer.					
Cupping					
Walls					
Size _____					
Make _____					
Model _____					

(Pressures in psi)

(Thicknesses in 32nds of an inch)

LEVEL 1

Item	Measure	N/A	P	D	AD
24 1R Tire Pressure Spec ____					
Tread Depth Inner					
Center. . . .					
Outer					
Cupping.					
Walls.					
Size _____					
Make _____					
Model _____					
25 rR Tire Pressure Spec ____					
Tread Depth Inner					
Center. . . .					
Outer					
Cupping.					
Walls.					
Size _____					
Make _____					
Model _____					
26 rF Tire Pressure Spec ____					
Tread Depth Inner					
Center. . . .					
Outer					
Cupping.					
Walls.					
Size _____					

Item	Measure	N/A	P	D	AD
Make _____					
Model _____					
27 Mixed Tire Types					
28 Lower Control Arm Pivots [l] [r]					
29 Upper Control Arm Pivots [l] [r]					
30 Tie Bar Bushings [l] [r] . . .					
31 Tie Bar Mountings [l] [r] . .					
32 Dampers [lF] [lR] [rF] [rR]					
33 Damper Bushings [lF] [lR] [rF] [rR]					
34 F Springs [Spacers] [Sag] [Broken]					
35 R Springs [Spacers] [Sag] [Broken]					
36 Suspension Modifications					
Front.					
Rear					
37 Servo Hose					

SECTION C: WHEELS, TIRES, SUSPENSION AND BRAKES

LEVEL 2

Item		Measure	N/A	P	D	AD
50	1F Brake Disc/Drum Condition					
51	1F Drum Diameter . . . . . . Max. . . . . . Min.					
52	1F Lining Diameter [R] [B] . .					
53	1F Pad/Lining Thickness. . .					
54	1F Lining Condition [Contam | Dam | Glaze]					
55	Defects in mechanism or single cylinder caliper (1F)					
56	1F Hub Seal Leakage.					
57	1F Cylinder Leakage.					
58	1F Brake Hose.					
59	rR Drum Condition.					
60	rR Drum Diameter . . . . . . Max. . . . . . Min.					
61	rR Lining Diameter [R] [B] . .					
62	rR Pad/Lining Thickness. . .					
63	rR Lining Condition [Contam | Dam | Glaze]					
64	rR Bearing Seal Leakage. . .					
65	rR Brake Hose.					

Item		Measure	N/A	P	D	AD
66	Defects in mechanism or single cylinder caliper (rR).					
	rR Cylinder Leak.					
	Front Brake Test	Left		Right		
67	No Load Drag.					
68	Front Brake Effort.					
	Pedal Load (A)					
69	Maximum Imbalance					
	Rear Brake Test					
70	No Load Drag.					
71	Brake Force at Pedal Load (A) .					
72	Pedal Load (A)					
73	Maximum Imbalance					
74	Parking Brake					
74a	Speedo accuracy at 46 mph true					
75	Booster Performance					
76	Upper Ball Joints . . . . . . [l | r] Spec_____					
77	Lower Ball Joints . . . . . . [l | r] Spec_____					
78	Anti-roll Bar Bushings. . . .					
79	Anti-roll Bar Mounts.					
80	Rear Anti-roll Bar Bushings .					
81	Rear Suspension Arm Pivots. .					

III. MODIFICATIONS

Place a check (✓) to the left of each system named if there was a SIGNIFICANT MODIFICATION of that system. Follow this on the right with the number code indicating the probable effect of the modification.

A. ☐ Tires and wheels . . . . . _____
B. ☐ Brake system . . . . . _____
C. ☐ Steering system. . . . . _____
D. ☐ Suspension system. . . . . _____
E. ☐ Engine and power train . . _____
F. ☐ Vision-related systems . . _____
G. ☐ Exhaust system . . . . . _____
H. ☐ Auditory . . . . . _____
I. ☐ Controls . . . . . _____
J. ☐ Cockpit . . . . . _____
K. ☐ Greenhouse . . . . . _____
L. ☐ Other . . . . . _____

CODE A
1 = Positive situation, modification aided
2 = Neutral effect
3 = Negative effect
4 = Unknown effect

M. Describe in detail all MODIFICATIONS noted above, and EXPLAIN their possible role, if any, in accident causation.

_____

_____

_____

_____

_____

_____

IV. INVESTIGATOR ASSESSMENT OF VEHICLE CONDITION

A. General mechanical (Check one only)

☐ Excellent
☐ Good
☐ Fair
☐ Poor

B. Maintenance (Check one only)

☐ Excellent
☐ Adequate
☐ Neglected

C. Describe any recent maintenance: _____

_____

_____

V. General Information

List power accessories: _____

Describe padded components: _____

NOTES ON ALL RECORDED DEFECTS

Item No.	SECTION A -- LEVEL 1

NOTES ON ALL RECORDED DEFECTS

Item No.	SECTION A -- LEVEL 2

NOTES ON ALL RECORDED DEFECTS

Item	SECTION B -- LEVEL 1

NOTES ON ALL RECORDED DEFECTS

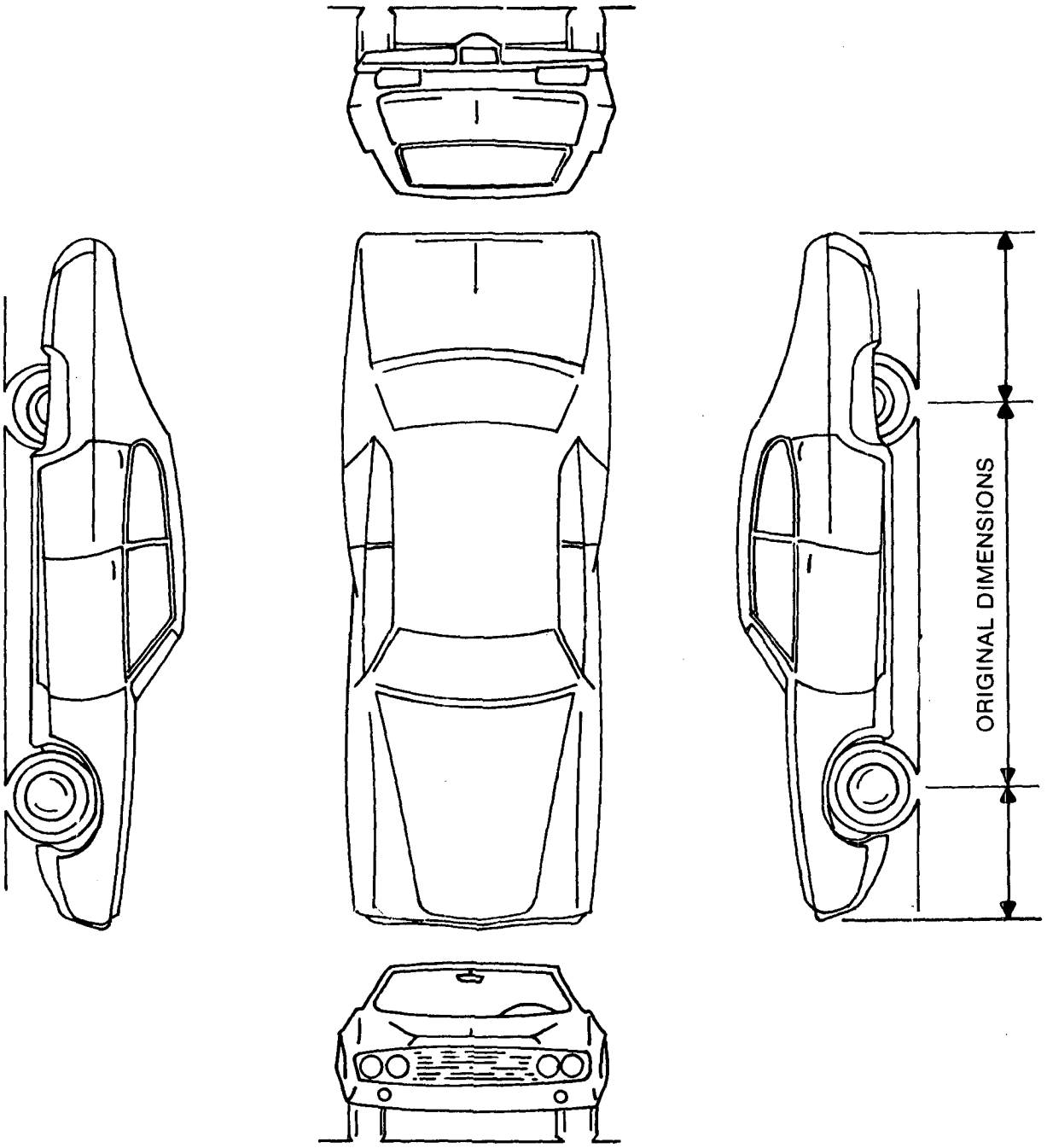
Item	SECTION B -- LEVEL 2

NOTES ON ALL RECORDED DEFECTS

Item	SECTION C -- LEVEL 1

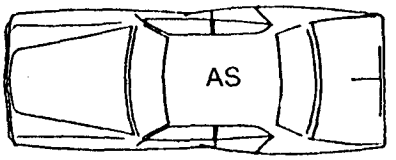
NOTES ON ALL RECORDED DEFECTS

Item	SECTION C -- LEVEL 2

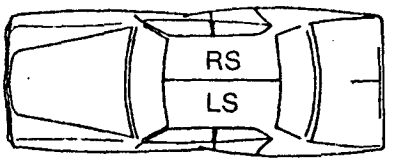


VEHICLE "BOOK" CURB WEIGHT
ESTIMATED LOADS
ESTIMATED VEHICLE WEIGHT
All Dimensions in Inches

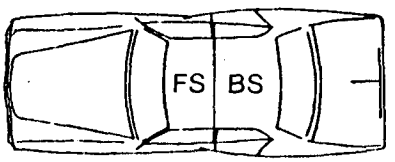
VEHICLE INTERIOR DEFORMATION INDEX



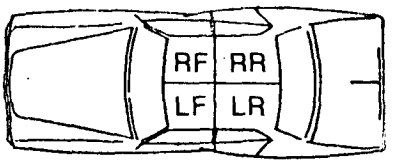
AS ALL SEATS



RS RIGHT SEATS
LS LEFT SEATS



FS FRONT SEATS
BS REAR SEATS



LF LEFT FRONT
LR LEFT REAR
RF RIGHT FRONT
RR RIGHT REAR

VIDI is partly based on the same principles as the VDI and is meant to be used in combination with the VDI.

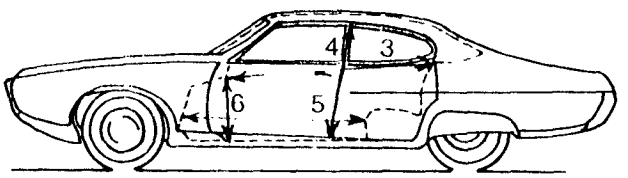
VDI gives a detailed specification of the location and extent of external deformation. VIDI is meant to complete this information regarding the reduction of the passenger compartment.

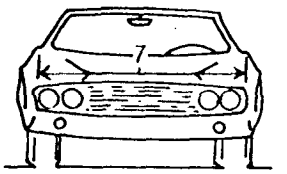
The amount of reduction is given in a 10-degrees linear scale with "0" meaning no reduction, "5" meaning reduction to the half and "X" meaning total reduction.

The location of the reduction is related to the seat/seats concerned.

Col 3-7 are used to indicate the reduction, where:

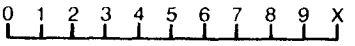
Col 3	means the deformation between the top of the rear seat back rest and the instrument panel (not overhanging padding) or intruding objects
Col 4	means the deformation between floor and roof
Col 5	means the deformation between the foremost lower part of the rear seat and the fire wall
Col 6	means the deformation between the lower part of the instrument panel and the floor
Col 7	means the inner width deformation.





VIDI

DEFORMATION SCALE



INDEX COLUMN NO.- T 2 3 4 5 6 7

VI. VEHICLE DAMAGE SUMMARY

In-depth investigation requires a careful description of damage, with emphasis on the DEPTH, LOCATION, and DIRECTION OF IMPACT. Please enter a written description as necessary to supplement the attached diagram. Take photographs showing damage.

A. External (Depth, location, direction of impact)

_____

_____

_____

_____

_____

_____

B. Internal (Penetrations and stress damage)

_____

_____

_____

_____

_____

_____

C. Vehicle Deformation Index

Primary VDI: _ _ - _ _ _ _ - _

Secondary VDI: _ _ - _ _ _ _ - _

Note: Take photographs showing vehicle damage and all pertinent defects.

VII. INVESTIGATION SUMMARY ANALYSIS

Note: The following should be the last item completed, but must be completed before the conclusion and analysis session, where it is to be used as a primary source in the vehicle presentation.

A. Brief Description of General Vehicle Condition and Maintenar

B. Summary of Relevant Defects:

C. Explanation of how potential accident-causative defects may have applied to the accident situation:

INSTRUCTIONS AND CRITERIA FOR COMPLETION OF IN-DEPTH VEHICLE INSPECTION FORM

A. GENERAL INSTRUCTIONS

Like the inspection, the form is divided into three sections. Section A concerns the interior, lights, and vision. Section B concerns the engine compartment and steering mechanism; Section C, the wheels, tires, suspension, and brakes.

Each section is further divided into two levels: Level 1 examination being conducted (where accident damage does not make this impossible) on every car subjected to in-depth investigation. Level 2, on the other hand, is only used in some cases.

The layout of the form is markedly different from that employed earlier, and must be filled out according to the instructions which appear in this memo.

B. LEVELS

Level 2 of a particular section should always be completed if, either before the examination or during the course of it, there are any grounds for believing that defects in that area of the vehicle could have played a part in the accident. For example, if the accident took place after dark, Level 2 of Section A should always be completed. The purpose of the division is to prevent totally unnecessary examination being made, at the same time ensuring that no essential components are ignored.

The on-site form should be read by the engineer before starting to examine the vehicle in-depth, and its findings taken into consideration before deciding which levels to use.

The following lists lay down the circumstances in which Level 2 will be used in each section, but where there is a doubt as to which level should be used, err on the side of caution, and use level 2:

1. Section A. Level 2 will be completed if:

   a. The accident took place at night.

   b. The accident took place in rain or reduced vision.

c. The car concerned was hit by another car in the course of a turn or a stop.

d. The accident involved reversing by the car concerned.

e. The driver could have been distracted by something inside his/her vehicle or failed to see another vehicle or an obstacle.

f. The car concerned may not have been seen by another driver.

g. A control may have failed to function correctly or predictably.

h. A defective instrument or warning device could have deceived the driver (e.g., turn indicator lamp out would not warn the driver that his turnlights were on).

i. There is a difference in drivers' stories of whether warnings were given.

j. Any comment from the driver indicates a need for deeper investigation than Level 1 provides.

k. The examining engineer or the project directorate feel that Level 2 would be advantageous.

2. <u>Section B. Level 2 will be completed if</u>:

a. Power failure could have played a part in the accident.

b. Lack of response to controls could have played a part in the accident.

c. Any comment by the driver indicates a need for deeper investigation than Level 1 provides.

d. The examining engineer or the project directorate feel that Level 2 would be advantageous.

3. <u>Section C. Level 2 will be completed if</u>:

a. Brake defect(s) could have had a part in the accident.

b. Steering response defects could have played a part in the accident.

c. Lack of straight line stability or cornering stability could have played a part in the accident.

d. Any comment by the driver indicates a need for deeper investigation than Level 1 provides.

e. The examining engineer or the project directorate feel that Level 2 would be advantageous.

Note: If the decision to do Level 2 of Section C is reached before Level 1 is completed, the brake test should be administered before the drums are pulled.

C. USING THE FORMS

1. Whenever a defect is noted in the appropriate column, a note must be made in the section available for such notes. This note should describe the defect and reference the photograph (if any) as well as indicate the part which the defect could have played in the accident. In addition, the note should also indicate any need for further investigation, metallurgical analysis, etc.

2. Whenever a measurement can be made, it should be, and the result recorded; the specification should also be recorded where this is known.

3. If the vehicle is not equipped with a particular component or accessory or if it is accident-damaged and cannot, therefore, be checked, a check should be made in the N/A column, and explanation provided in the "notes" section. If there is no check within the N/A column, there must always be a check in the P (pass), D (defect), or AD column.

4. Where there are several choices (e.g., A7) in a given item for examination, and a defect is recorded, the appropriate box must be marked.

5. When reference is to be made to a particular item, the form used in the previous paragraph should be used, i.e., A7. This refers to Section A, Level 1, Item 7. It should

be noted that the Level 2 sections start at 50, so that the indication of level is redundant.

6. Certain tests must be carried out in a particular manner. Reference to the criteria will describe how each test is to be made and what limits should be set.

7. Column P should be used if the component is functioning correctly and is in all respects satisfactory. It should not be used if it is functioning but is unsatisfactory in design; in that case D or AD should be used, and an explanation provided.

8. Column D should be used for all defects which should be repaired or call for replacement or adjustment. In every case where a D (or AD) is awarded, notes must be provided. The technician/engineer must put himself in the position of those conducting the Analysis Session and provide enough information to enable a decision to be reached as to whether the item could have had a bearing in the accident. It must be remembered that even though the circumstances as known by those who examined the vehicle were not such as to warrant an AD, not all the factors may be known at the time of the vehicle examination, so later data may warrant the alteration from D to AD (potential accident-causative defect).

9. Column AD is intended to enable the examiner to distinguish those defects (whether of design or deterioration) which in the light of knowledge at the time of the exam could have been relevant to the accident. It is not the responsibility of the examiner at the time of the examination to reach a decision as to whether a given item was relevant. It is his responsibility to call out defective items which he believes could have been relevant as AD. Whenever an AD is awarded (as with D) notes must be provided which not only give details of the defect but which also explain the relevance. Criteria supplied to determine whether an item passes or fails are to be strictly applied. However, criteria suggesting occasions for the use of AD rather than D are merely guides, and the decision to use AD is a matter of judgment. The use of AD merely highlights the potential significance of a particular defective component.

10. The data provided by the in-depth vehicle examiner is intended to help those attending the Analysis Session to arrive at a conclusion about the cause or causes of the accident. The engineer in charge must make sure that he provides the answers to any questions which may be asked.

11. Where a selection box is provided (e.g., C1) and two of the items are defective, it is normally possible to indicate which two by simple check marks. However if, for example, the Fℓ and Rr are to be selected, this would look like all 4, so check the boxes as follows:

F √	R √	l √	r √

D. IRPS IN-DEPTH VEHICLE INSPECTION CRITERIA

Item No. Section A: Level 1

1 If there is an obstruction of the windshield of any kind which significantly limits an occupant's vision through the windshield, this item is defective. Such obstructions would include improperly placed decals, excessive dirt or film, chips, "stars", or other blemishes. These also might include ice, snow, or condensation, though it must be remembered that it is only the status of these factors at the time of the accident that is of significance. As a guide, if there are chips, "stars" or blemishes within the driver's field of vision larger than can be covered by a quarter, this item is defective. If the defect is of such nature that in the circumstances of the accident the driver's vision could have been adversely affected, mark the item AD.

2,3 Windows should be marked D if they are badly marred or if the regulating mechanism does not work. If the driver's vision, or the vision of a passenger who could have seen the impending danger and warned the driver, or the vision of the driver of any occupants of the other involved vehicle either into or through the vehicle concerned, could have affected the outcome of the emergency situation, the defect should be classified AD.

4,5 If an outside mirror is obstructed, will not hold proper adjustment, or is definitely outside a proper viewing position and cannot be properly adjusted, this item is defective. If the vehicle was originally equipped with such a mirror, but it was broken off or removed pre-crash, then the item is also defective, rather than N/A. If such a mirror is defective, and vision to the rear was a factor in the accident, use of AD may be appropriate.

6 If the action of the horn is prevented by defective switchgear or connections, or if it fails to function, it must be classified D. If the circumstances of the accident were such that a warning of approach could have prevented or mitigated the accident, such a defect must be classified as AD.

7 While there is no definitive way of testing or measuring brake pedal travel, it is not difficult to carry out a quasiquantitative test. If the pedal travel, before the feel of resistance is reached, is such that the tester believes that full travel might be reached in an actual stop, thus limiting the control exerted by the driver, the item must be classified D, or AD if braking was involved. Even though pumping may restore normal operation, if the pedal reaches the end of the stroke in an emergency application, time is wasted, so AD is appropriate.

8 If pedal rubbers have deteriorated to the point that they are in need of replacement, but not to the point where they could constitute a definite hazard, use D. If they could constitute a hazard, either by allowing the driver's foot to slip or by catching it, use AD.

9 No criterion required; this item only gathers information.

10 Floormats can be obstructive to the point where they prevent free use of the control pedals. If this is the case, use AD. If the mat (mats) is (are) loose and could have been obstructive and if there is a sign that they have been in the past, use AD with an appropriate note. If they are loose, but if there is no evidence that they have ever caused problems, use D. Pay close attention to the kickdown switch and the throttle pedal hinge.

11 Loose wires and fittings are of interest only if they could have caught on a control or one of the driver's limbs or extremities. If this is the case, use AD. If there are defects of this nature which should be remedied, but which would not have affected the driver's activities, use D.

12 Loose litter and items which could have lodged under a control, caught in the driver's clothes or limbs or caused him distraction should be classified AD. If the car is generally littered or strewn with loose items which could not (or if the circumstances are known to be such that their presence would not) have been damaging, use D.

13 A steering wheel cover which can move on the rim without turning the wheel should be classified as defective. If steering efforts were involved in the accident situation, use AD.

14 If a spinner is present on the steering wheel, use D. The circumstances of the accident must be known before a decision can be reached on whether AD is appropriate. The presence of a spinner is especially hazardous if it catches in the driver's clothes, or if it is capable of movement on the wheel; it is also hazardous if the driver is so close to the wheel that the spinner could either foul the driver's person or his clothes.

15 Loose U-clamp or upper bushing is grounds for D. Only in extreme cases or those in which the utmost sensitivity of control was called for should AD be used.

16 If there are surfaces on the dash or around the windshield, side windows or wipers which could cause distracting or distorting reflections, use AD if the circumstances are known to have been sensitive. Otherwise, use D.

17 If the defroster (or demister) was required in the circumstances which prevailed at the time of the accident, and was not operative, use AD. If it was inoperative but is known not to have been required, use D.

18 If both stop lights do not function and were needed to prevent or mitigate the accident, use AD. If they were irrelevant, but defective, use D.

19 See 18. If cancellation is defective, use D, unless its defect could have been relevant; then use AD. If there is any defect in the turn indicators, and this was sensitive in the circumstances, level 2 should be completed.

20 In many modern domestic cars, the turn indicators are invisible from the flank towards which the turn is being signalled. If this is the case, use D. If this either was relevant, or could have been, to the accident situation, use AD.

21 If the wipers are defective in any way, whether the defect concerned blade condition, speed, control, or park position, use D. If this situation could have been relevant in the circumstances, use AD.

22 If the washers are defective in any way, use D. This applies even though the reason may be that the reservoir is empty. If the circumstances of the accident made the existence of operative washers relevant, use AD.

NOTE: If the items examined hitherto lead the examiners to even a tentative conclusion that there may be defects in areas other than those listed in items 1-22 (whether included in level 2 or not), he should pursue them until he is sure. If level 1's answers indicate that level 2 should be explored (even though a previous decision had been reached to stop at level 1), level 2 should be completed.

Item No. Section A: Level 2

51 If the high beam warning lamp does not work and the accident took place at night, and there is any indication that the driver of the car concerned was unable to see adequately, use AD. If there is any indication that the driver of the other vehicle (or pedestrian) involved may have been dazzled, use AD. If, on the other hand, the lamp does not work, but its malfunction does not appear in any way relevant, use D.

52 Apply the same principles outlined in 51 to this item, except that the time of day is not a factor.

53 See 52.

54 If the detents are loose, or if their effect is not such as to maintain the transmission selector in whatever position it is put, record a D. If this could have been relevant -- if, for example, there is any possibility that the car ceased to respond to driver inputs and hence caused or contributed to the accident -- use AD. This situation is most likely to take place if the reverse detent is inadequate. It may also indicate an engine mounting defect -- or be caused by such a defect. See B7.

55 The starter should only be operative in N or P (on an automatic transmission car). On fully automatic VWs or Audis, it is only operative in N, not in P. If it works in any moving gear or fails to work in N or P, record a D. If the circumstances of the accident make this defect relevant, use AD. In some cases, the switch is effective, but the lever needs to be "juggled" before the starter will function. This can be grounds for D or AD, according to the circumstances of the accident.

56 If any instruments or warning lights fail to operate correctly, use D. If the circumstances make the defect potentially relevant, use AD. An example would be a temperature gauge which did not work, allowing a failed coolant hose burst to go undetected by the driver, either preventing the engine from functioning correctly or blinding him with clouds of water vapor.

57 If instrument lights do not function and the driver therefore cannot see the reading, use D. If the accident took place in the dark and the defect could have been relevant, use AD. This is particularly true of speedometer instrument lights, for obvious reasons.

58 If one circuit of the brakes had failed and the driver was unaware of it because the warning lamp did not work, use AD. If the brakes had not failed, the failure lamp's failure is irrelevant, so use D.

59 AD should only be used if both rear lights had failed and the fact is relevant. If there are any rear lamp defects (many cars have up to six rear lamp bulbs), use D. (See Item 64.)

60 AD should be used if a parking light's defect is relevant; if, for example, the headlights are not on and the car's presence was only indicated by one parking lamp, use AD provided this is relevant to the situation.

61 Sidemarkers are sometimes lights, sometimes reflectors, and sometimes a mixture of the two. Therefore, care must be taken in scoring them defective. If the sidemarker is merely a reflector, it is defective if the reflector is obscured or broken. If the sidemarker is an illuminated type, it is defective if the lamp does not illuminate, or if the lens is broken out so that the proper color does not predominate. Only use AD if the failure or defect is relevant.

62 If either or both of the reversing lamps are defective, use column D; if the defect is relevant to the accident, use AD. In some cases the reversing lamps are on in a forward gear (either as well as or instead of, in reverse); if this is the case and could have confused or misled a following driver, use AD. Otherwise, use D.

63 If there is any defect in the headlamp system, use D in the appropriate line. The presence of one-half covers is in itself a defect, since they are invariably fixed to the top of the lens, and dazzle emanates from the lower half of the reflector. If the accident took place at night, the presence of half covers almost automatically calls for AD since they not only do not reduce dazzle, but also reduce light output. When aim is being considered, it is important that the car should be loaded as nearly as possible to what it was at the time of the accident. It is also important to consider that headlamps can be too high (more than one unit up on a level road), causing dazzle, or too low (more than four units down on a level road), causing inadequate range on dipped beam. It is important also to realize that the low-beam (no. 2) lamp in a four-lamp system, has two filaments -- one of which is supposed to be correctly located to project an accurate low-beam pattern

and the other of which is less accurately located and should throw a higher, but less well-defined beam intended to supplement the main beam from the no. 1 lamp.

64 If rear lamp lenses or stop lamp lenses are so coated with mud, dirt, dust or other covering that the light from the bulb is invisible (bear in mind that brake lights must be visible in bright sunlight too), a D must be recorded. If this defect is relevant, use AD. (See also, Item 59.)

65 If the driver's seat (or the front seat in a car equipped with a bench seat) is loose, or if the locking mechanism is insecure, record a D. If it is so insecure that the driver's control of the car could easily be affected, or if a lesser movement could have been relevant in the circumstances of the accident, record an AD.

66 If the visors on either side are so loose as to allow them to fall under normal circumstances, record a D. If the defect is relevant, record an AD. Similarly, if the passenger's visor could have affected the driver's vision in the accident, use an AD.

67 If any modifications have been made to the interior or controls, they must be recorded. If they had a positive effect, record a P. If they had a deleterious effect, record an AD. Examples of modifications are: additional instruments, additional switches, tape-decks, add-on air-conditioner parts, and gear-shift lever extensions. In varying circumstances and positions, any one of these can be either advantageous or dangerous. Record all modifications but only score the disadvantageous ones as D or AD, whichever is appropriate.

68 If there are any factors which, by reason of poor design or some subsequent deterioration, could have caused confusion, record a D. As usual, if this was relevant, record an AD. An example is wiper and light switches which are visually similar and adjacent. Another is that some imported cars (notably BMWs) have turn indicator switches on the right of the steering column. Other imported cars, notably Fiats, have a hand-operated dip switch which can also turn the headlamps off, if

moved either too far, or in the wrong direction. A driver unfamiliar with the car could justifiably be confused and then items should be recorded as D or AD if the driver was unfamiliar with his vehicle and this was relevant.

69 If any floor covering, loose items or other components could have interfered with the operation of the dip switch, record a D. If the defect was relevant, record an AD.

70 If there is a load, or any individual item which obscures the driver's vision, record a D. If this was relevant, record an AD. Examples are balloons or stickers which advertise oil additives or that the car has visited some tourist attraction. Local license stickers can also qualify here.

71 If the wipers park on-screen or in such a way as to obscure the driver's vision, record a D. If the defect is relevant, record an AD.

72 If the radio or tape player was "on" at the time of the accident, and was set at such an inordinately high volume that other vehicles' warnings of approach could not have been heard, record a D. If this was relevant, record an AD. Most often, this cannot be determined at the time of in-depth vehicle inspection, so that N/A is appropriate.

73 Hydraulic brake systems can suffer from internal and external leaks. Internal leaks are normally only found in master cylinders, but may be discovered by applying, and holding, a load to the brake pedal. The types of defect vary and it is necessary to apply a sudden load, a high load, and a light load to make sure that none of these situations can result in pedal drop. The load should be held for at least 30 seconds in each case, and any pedal drop should be classed as at least a D. If the pedal does drop, the tester should maintain the load until the end of the travel is reached, or until drop ceases. Full information should be provided in the notes. This defect is sufficiently serious and insidious that any instance, where the car is moving, should be classed as an AD. Only if the car is not moving should column D be used.

NOTE: If the items examined in level 2, Items A51 to A73, lead the examiners to even a tentative conclusion that there may be defects in areas other than those listed, he should pursue them until he is sure.

Item No.	Section B: Level 1
1	If the steering pump belt is slack enough or worn enough to slip under sudden inputs, a D should be recorded. If the defect is relevant, record an AD.
2	If the fluid reservoir is less than one-fourth full, record a D. If the reservoir is lower than this, and cycling the steering can result in the level dropping below the outlet, record an AD, especially if the defect is relevant. The engine should be running.
3	If the brake fluid is so low that the recuperator port can be uncovered by cycling the brake pedal, record an AD. If the level is less than one-half way up the reservoir, record a D. The engine should be running if the brakes are power assisted.
4	If there are brake fluid leaks, item A73 ought to have recorded a defect. If there is a leak at any union, cylinder or fitting, and A73 did not record a defect, repeat 73 while the leak is carefully watched, after it has been thoroughly cleaned.
5	Low transmission fluid level sometimes results in reluctance to shift (either up or down), a tendency to hunt between gears, or a tendency to slip. Low fluid level should therefore always result in a D. If any of the features noted above was reported, or could have been relevant, a road test should be conducted if possible. Any relevant defect should be recorded as an AD.
6	A car equipped with a conventional transmission may evince clutch shudder, slip or other defects. Clutch slip is most likely to occur at peak torque in the highest gear (top) and may be expected if there is insufficient free play in the withdrawal mechanism. Defects should be recorded as D and if they are relevant, as AD.

7 Broken, defective or worn engine mountings will exaggerate or emphasize transmission or clutch defects. They can also result in noises, vibrations or other noticeable phenomena. The defects should be recorded as D and if they are relevant to the cirmstances of the accident, as AD.

8 Exhaust leaks at the joint of manifold at tailpipe can allow carbon monoxide to enter the driving compartment, and in certain circumstances result in carbon monoxide poisoning. Any such exhaust leaks should be classified as D, and if the vehicle had been on the road an extended period of time, AD may be appropriate. Especially consider use of AD in winter, when all the windows are shut, or if the windows are shut and air-conditioning is in use.

9 This item supplements A22 and may be the reason for a D or AD in A22.

10 Steering play must be measured with the engine running if the car has power steering. Steering play is to be measured in degrees and must be recorded. Steering wheel free play of over 15 degrees is to be classified as a D, and over 60 degrees AD. Steering wheel free play of less than 60 degrees may also be classified as AD if the circumstances warrant. Free play can be measured either directly in degrees using a protractor, or measured in inches of steering wheel movement.

11-15 These are the various possible reasons for the presence of defects in B10. Any free play in one of these items is a D and may be an AD if serious and relevant.

16 The steering should be cycled from full lock left to full lock right at least twice with the car static or just moving, and with the engine running if power steering is fitted. Any stiff spot or discontinuity should be investigated and classified D, or AD if relevant.

17 A steering damper is sometimes fitted to prevent steering kickback, or a tendency towards shimmy, from reaching the driver. If the rubber bushes are badly deteriorated, or if the damper possesses very little or no resistance to compression or extension, score a D. If

there is an indication that steering fight or shimmy played a part in the accident, record an AD.

NOTE: If the items examined in level 1 lead the examiner to even the tentative conclusion that there are defects in areas other than those listed, he should pursue them until he is sure.

Item No.	Section B: Level 2
50	Battery connections, if dirty or loose, can cause momentary power failures, refusal to start, or sudden or inexplicable power failures when a load is applied (or even, on rare occasions, when no apparent load is applied). If the connections are visibly dirty, tests should be made to ascertain whether there is any chance of such a defect occurring. Any evidence of such a defect should be carefully documented and recorded as a D, or AD if relevant.
51	Main connections include high tension leads, primary ignition leads, starter solenoid connections, ground straps, etc. Any connections faulty enough to give suspicion of a power failure should be recorded as a D, or an AD if relevant.
52	The accelerator pump (if fitted) can best be checked by removing the air cleaner and looking down the carburetor venturi (the primary or primaries in a multichoke instrument) to see whether snap opening of the throttle will result in a visible squirt of raw gasoline. The absence of such a squirt is a D and if it is relevant, an AD. The direction of the squirt can also be relevant. If the stream of fluid impinges on any part of the carburetor before it reaches the throttle plate, steps should be taken to discover whether this is O.E.M., or if the jet has been bent out of line. Throttle response can be affected in such cases, and if there is a defect it could easily be relevant to a power-failure accident.

53,54 If the linkage from the pedal to the carburetor or the linkage on the instrument itself shows any sign of defect, such as hanging up, loss of springs, stickiness or deformation, record a D. If the defect is relevant, record an AD. If the vehicle is equipped with a cruise control, this must be cycled to insure that it does not actuate the throttle plate when it should not. If the driver complains of sticking throttle, bear in mind that engine movement on the mountings may have contributed to the circumstances; extraneous or loose wires or other items can also cause momentary linkage troubles.

54a The automatic choke should be wide open at normal operating temperature, and should open under the influence of the unloader mechanism. Defects can result in slow response, stumbling, or a flat-spot. Use D if these defects were irrelevant, or AD if relevant.

55 If coolant vacuum or freon hoses or oil cooler hoses where fitted) show signs of deterioration, leakage or chafing, record a D. If the defect could have had any bearing on engine response, or power delivery, and was relevant to the accident, record an AD.

56 Using the tachometer dwell-meter, measure the engine idle-speed and record both the actual speed and the specified figure. This should usually be done with an automatic transmission in D, but some manufacturers make their recommendation in N. In any event, even if the idle speed is as recommended, if it causes undue creep and shows a tendency to load-up and die in gear, record a D and if the defect is relevant, an AD.

57 Measure the idle-speed timing and record both the manufacturer's spec. and the figure read. If possible, check whether the advance mechanism works and whether it does so correctly. Record a D if the timing is off by more than $\pm 2°$, and if the defect is serious and relevant, an AD.

58 Measure the dwell; minor errors - up to 2° or 3° - are not significant and 4 or 6 cylinder engines can stand up to $\pm 6°$ before performance is noticeably affected, but if there is any indication of poor performance due to point misbehavior, give details and record a D or AD as appropriate.

59 Burned, bruised or badly pitted points will usually increase the point resistance, which should also be checked. This is done with the ignition on; the points closed and the dwell-meter connected. If the voltage drop across the points is 0.2 V or less (0.5 on Fords) there is no cause for concern. Higher resistances, or even, in rare cases, normal resistances accompanied by severe pitting or burning, can cause stumbling, missing or weak sparks and hence contribute to an accident. Such factors, or excessive voltage drop, must be recorded D or AD if relevant.

60 Examine the rotor and cap for cracks, tracking, corrosion or erosion in high tension towers or for wear and erosion at the internal pick-ups. Pay attention to the central high tension pickup brush. Any evidence of defects must result in a D and if the defect is relevant, in an AD. Look also in the coil and distribution towers for corrosion at the connection. If the engine has a persistant miss at idle or under load, determine which cylinder is at fault and then examine the plug-lead carefully for breaks in continuity, especially if nonmetallic conducters are used.

NOTE: If the items examined in level 1 lead the examiner to even the tentative conclusion that there are defects in areas other than those listed, he should pursue them until he is sure.

Item No. Section C: Level 1

1 The toe should be measured with the Dunlop toe-gauge in two spots, diametrically opposed to one another, using the spreader bar. The readings should be averaged and recorded in the measurement column. The specification must also be recorded. If the toe is other than within the range 1/16 inch out to 1/8 inch in (or within the manufacturer's recommendations) record a D. If the defect appears relevant to the accident, record an AD. It must be born in mind that toe is crucial to straight line stability, especially in crosswinds, on cambered roads or under braking, but unless the error is exceptionally large, will not

affect stability in steady-state cornering, since slip angles are usually large enough to overcome the error.

2 If the wheels are non-standard or reversed, spaced or otherwise modified, there may be overloading of the outer front wheel bearings, errors in the camber off-set (a factor in steering feedback, straight-line stability and self-aligning torque), the roll-center height, the load-transfer and the roll angle. Any of these factors may (but do not necessarily) affect the handling and cornering behavior. It is impossible to be more specific about the effects of such modifications and indeed, some such alterations have only beneficial results. It may be possible to say that the effects are deleterious, and clearly such factors as loose or missing lug-nuts, studs or bolts and spacers, or reversed standard wheels, are not advantageous, and must be scored D, or AD if relevant. Any such alterations should call for extra-critical examinations of outer front-wheel bearings. If only some of the wheels are thus damaged or modified, those that are must be defined by checking off the letters in the appropriate boxes.

3,4 Front wheel bearing play should be only just discernible at the wheel rim, with the weight of the car off its wheels. Any more than this is a defect and should be so classified. If the play is considerable and the circumstances of the accident were such as to make fine control at speed a factor, record an AD.

5 Brake discs or drums can show considerable grooving or scoring before brake performance is adversely affected. However, uneven scoring, scoring when linings are new, or hot-spotted working surfaces can result in pull or pedal fight. Cracks are unlikely to result in much decrease in performance unless they reach the open end of the drum and permit the drum to distort under working loads. It is not usually possible to discover, from visual examination, whether surface defects will cause performance snags and therefore the existence of such defects should be followed whenever possible by brake tests. Whenever such defects were present, record

a D, or AD if relevant and make a full explanation in the appropriate note section. Also explain why a brake test is impossible if this is the case.

6 The brake drum diameter is an indication of wear and/or whether the drum has been turned, and whether the drum is out of round. Normally it is only permissible to turn drums .040 oversize. More than .015 out of round is a defect, too. If such defects exist, record a D; if they are relevant to the accident, record an AD. Make sure that the two diameters are recorded at maximum and minimum.

7 Lining diameter, in conjunction with C6, above, gives an indication of lining clearance. Excessive clearance can result in excessive pedal travel, which in a hard stop from speed (without wheel lock) can result in the pedal travel being used up and hence brake performance loss. It is not possible to say whether excessive travel, perhaps allied to long initial travel and brake fade (reduction of coefficient of friction with increased temperature), could exist without a brake test (and not always with one). The need for a test is therefore clear if such defects are present. See 6 above for when to use D and AD. Be sure to check the appropriate box to note whether riveted or bonded.

8 Lining thickness on drum brakes should always be at least 1/32 inch above the highest rivet. If it is not, high pedal loads can result in the lining being compressed to the point where rivets prevent further compression and hence effectively limit brake performance. Where disc brakes are fitted, very thin pads, combined with discs which have been turned, could result in popped pistons, but this defect will be obvious if it exists. It is extremely unlikely. Disc brake pads should not be allowed to wear to less than 4/32 inch. If the brake pads are worn out of parallel, a cause should be sought. In many cases it will be found and recorded under C10, where the single-cylinder caliper has seized in one side. This may or may not affect performance. Only a test will show. Any defect or below-minimum thickness should be scored D, or AD if relevant.

9 If the lining or pad is contaminated with grease or brake fluid, the brake may either grab or slip; in either event a D is called for, and an AD if the accident involved braking. If both wheels on that axle locked, the defect is unlikely to be relevant, and the decision as to whether it is causal or not can only be reached at the Analysis Session.

10 Single cylinder caliper disc brakes can wear to the point that they do not move smoothly and evenly. When this is the case, brake grabbing or unevenness can result. It is not likely to be easily detected, but can sometimes be discovered if the pads are not wearing parallel. Some imported cars' single cylinder brakes swing rather than slide, so their pads do not start parallel. Care must be taken to make sure which type is being examined. The existence of such a defect, even in a mild form, calls for a D; if relevant, AD should be used. In drum brakes, defects such as improperly assembled automatic adjuster or piston pushrods should be sought and noted here. Equally, such gross defects as broken or missing linings, distorted shoes, suspect push-off springs and so on should be recorded here, and scored as D or AD.

11 Hub seal leakage can lead to lining contamination, and is not likely to be an AD by itself. If the pad or lining is contaminated, the defect should be recorded under C9. If not, and the bearing is damaged, this will appear under C4. However, if there is hub seal leakage, a D should be recorded, or an AD if it led to potential accident-causative circumstances.

12 See 11.

13 As with 11 and 12, a defect in a brake hose is unlikely to ever constitute AD of itself. The only circumstances in which it could do so is if there is a soft spot which enables the pedal travel to "bottom". In that case, A73 would also be an AD.

14-22 See 5-13.

23 If the tire pressure is below that specified as a minimum by the manufacturer by more than four psi,

or above the maximum by more than 4 psi, a D should be recorded, or an AD if relevant.

If the tire tread depth is less than 3/32 inch or is severely cupped, record it as D. If the road was wet and the vehicle involved was moving, use of AD may be appropriate. If severe cupping is present, the road was wet, and the speed of the vehicle was in excess of 30 miles per hour, use of AD again should be considered.

If the size of the tire is smaller than that specified, record a D, and if relevant, an AD.

24-26 See 23.

27 When radials, belted-bias and cross-ply type tires are mixed on the same car, a D should be recorded, <u>if</u> differing types were used on the same axle, or <u>if</u> the type utilized on the rear axle is not "stiffer" than that utilized on the front. In their usual or typical order of stiffness, the constructions are: first, radial; second, belted-bias; third, cross-ply. When a D is recorded, it is particularly important that detailed notes are provided describing in specifics the type of construction utilized at each wheel. Even where a P is recorded due to the stiffer construction being used at the rear, when the types differ, explanation and comment must be provided.

A car fitted with conventional, cross-ply tires on both front wheels is generally in a fairly safe condition, while one with radials on the two front wheels and <u>any</u> other type on the back wheels is generally not. Similarly, a car with a radial on one wheel and another type on the other wheel of the same axle is in a D or AD conditon.

As always, where the differences noted are believed relevant to the accident, an AD should be utilized rather than a D.

28 Lower control arm bushings are usually made of rubber. If these are damaged, "chunked", or in any other condition which permits undue compliance or movement, score a D. If accurate control or handling was or could have been a factor in accident avoidance, score an AD. If the bushings are <u>not</u> rubber, any play in the pivots must be

scored as a D (or AD if relevant). It may be necessary to use a prybar to discover if there is play or compliance.

29 Upper control arm bushings should be treated in the same way as lower ones, except that, because they are not normally loaded by the springs with the car's weight, they are less likely to fail. Where the spring is mounted on the upper control arm, of course, this situation is reversed.

30 The tie-bars (otherwise known, incorrectly, as strut-bars or, correctly, as brake-reaction rods) connect the outer end of the lower control arm and the frame or hull-structure. The end remote from the control arm is usually pivoted on the same longitudinal axis as the control arm, and mounted in an axially resiliant bushing. This bushing is designed to permit considerable fore-and-aft movement of the lower ball joint. Signs of metal-to-metal contact, chunking or serious deterioration of the rubber bushing should result in a D; so should marked differences in resilience between left and right bushings. If the accident involved heavy braking without locked front wheels, or the need for accurate steering response on a rough surface, defects should be scored AD.

31 The outer ends of the tie-bars are bolted, riveted, or welded (rarely) to the lower control arms. Any play here represents a defect and should be scored as a D. It is very unlikely, however, that there could be enough movement at this point to compare with the motion permitted by the bushing (see C30); hence, an AD is not likely to be justified.

32 Dampers (shock-absorbers) can unfortunately only be tested for their function by "bouncing" the car on its springs. Because different makes and models vary quite widely in the stiffness of both springs and dampers, this time-honored test is far from satisfactory. However, if the dampers permit more than one free cycle, they are in need of replacement, and should be scored D. If they have lost all their resistance, their ineffectiveness could constitute an AD if the

defect is relevant. Leaks are only of interest as the reason for lack of performance; they are not significant in themselves as being indications of reduced resistance.

33 Dampers have rubber bushings at both ends, and any lost bushings, broken eyes or stems, or disconnected mountings, call for a D. If loss of suspension control was relevant to the accident, use AD.

34 Coil springs and leaf springs often sag and permit the car to sit lower than designed. The results of this are inaccurate steering and suspension geometry and reduced suspension bump-movement. It is not always possible to tell by inspection whether spring sag is serious or not, but if this is possible, a D is called for. An AD should be used if the defect is relevant. Any spring spacers -- especially if they are used unevenly -- warrant a D, and an AD if the defect is relevant. Spring spacers increase the spring rate, decrease available travel and cause stress-raisers in the spring material.

35 See 34, but in leaf springs, look also for discontinuities in the leaves, and score D if a master leaf is broken (AD if the vehicle was in motion). Especially look for master leaves broken in front of the axle mounting, since the master leaf is a locating member as well as a support. If loss of control under heavy braking is a factor in the accident, this defect is likely to have contributed (calling for an AD).

36 Any suspension modifications should be recorded. Some alterations (such as the installation of a bump-bar on swing axle equipped cars) can be a definitely advantageous change; others (such as elongated shackles) are equally definite disadvantages. Traction bars usually help to control the axle's gyrations under heavy acceleration and braking, but can also stiffen the suspension unduly. Thus, their effect could be either advantageous or disadvantageous, according to the circumstances. Score those judged disadvantageous as D, or AD if relevant.

37 If the servo hose (from the manifold to the brake booster) is deteriorated and soft, it could, under certain circumstances, collapse and limit the braking assistance available to the driver. This, however, is extremely rare. The only other fault possible is a broken, torn, or leaking hose. The effect of this is obvious and should be scored D or AD appropriately.

NOTE: If the items examined in level 1 lead the examiner to even the tentative conclusion that there are defects in areas other than those listed, he should pursue them until he is sure.

Item No. Section C: Level 2

50-66 See C5-13.

67-74 Brake test. Throughout the brake test, all measurements must be recorded. No space is allowed for NA, P or D, but the AD column is available, and should be used as the D column would ordinarily. Notes must be provided, in the usual way, to explain the use of an AD. For these items only, any reading judged improper or worthy of special rate should be scored AD.

The objects of the brake test are to discover whether the brakes pull unduly to one side, and if so, under what circumstances; and whether the front-to-rear distribution of braking effort is satisfactory or could have contributed to the accident.

The testing machine has design limitations in that it cannot measure accurately any brake forces higher than 350 pounds per wheel. In a correctly distributed brake system, on a conventional domestic car, this limits the analogous situation to a deceleration of less than 0.3g. The absence of faults at this low deceleration does not necessarily exclude the possibility of their existence at higher decelerations, but the presence of faults does, in all possibility, mean that the fault still exists at the higher decelerations, and may be intensified. The brake test procedure is as follows:

67 Record left and right rolling friction figures with the pedal load gauge mounted, but no pedal load applied. This will usually be about 50 pounds per wheel. This drag comes from a combination of bearing friction, windage and tire distortion, plus any brake drag which may exist. Unless one brake shows over double what the other one does and this can be shown to be due to a situation which existed before the brakes were dismantled for examination, an AD is most unlikely. Normally, any undue drag will have been eliminated when the brakes were stripped. If the car has cerametallic linings, high drag on one side could keep that set of shoes warm and hence make them far more effective than the other make. Care must be used to check the lining material on cars with very uneven no-load drag.

68 Make several light applications of the pedal to distribute dust and settle the components where these have been disturbed. Then increase the pedal load steadily until the higher of the two brake forces reaches 350 pounds. At this point note the pedal load and both brake forces. Release the pedal and record the figures.

69 The maximum imbalance usually occurs at maximum brake effort, but this is not always the case, and it may occur as the load is on its way up. For example, the needles may reach 350 and 300 pounds having passed through 250 and 150 pounds. Consider the use of AD if the imbalance exceeds 100 pounds.

70 No load drag on a rear-wheel drive car is likely to be higher on rear wheels because some axle drag will be included. A limited-slip differential is likely to throw the no-load figures off and may also affect the higher brake loads, too. Its presence can be detected by the existence of a steel tag on one of the differential mounting bolts. Note on the form and in the comments section if the vehicle has a limited-slip differential.

71 As in 68, after several light applications, the pedal load should be steadily increased, but in this case, only to the point reached during test C68. The importance of using the same pedal load in each case cannot be exaggerated, since this is the source of the brake distribution findings. For this reason the tester is required

to record the pedal load again at 72. If, for any reason, it is impossible to employ the same pedal load (pedal load A), an explanation is required.

73 Again, the maximum imbalance may occur at maximum load or during the increase.

74 The effect of the parking brake should be recorded.

NOTE 1: If the car is equipped with power assisted brakes, the engine should be running at the time of the tests, but the transmission should be in neutral. If, in special circumstances, there is reason to believe that there is (or was) exceptional additional drag from engine braking, tests 71, 72 and 73 should be repeated with the transmission in the appropriate gear.

NOTE 2: The decision as to whether the brake performance could have contributed to the accident is better left to the analysis session, since all the circumstances will be available for inclusion at that time. However, any outstanding defects or peculiarities should be scored AD if this seems appropriate.

74a The speedometer reading on the brake tester (some cars, such as VW models and some Oldsmobiles have front wheel driven speedometers) should be 46 mph. Record on the form what the actual reading is.

75 To test the booster, the engine should be switched off, the brake pedal depressed several times to exhaust any reservoir of vacuum; the pedal should then be depressed and held while the engine is started. If the pedal falls away, the booster is working correctly. If it does not, the booster is defective. Score D if this is the case, and AD if the defect is relevant.

76,77 Ball joints on domestic cars are normally designed with some play permissible. If the play is excessive -- i.e., beyond the manufacturer's tolerance, record a D. If the play is grossly excessive and could have affected the driver's efforts to avoid the accident, record an AD.

It is important that the clearances be measured with the suspension supported properly. In cars with loaded lower ball joints (i.e., those with the spring on the lower control arm) the lower control arm must be supported as far out as possible; half-way along the control arm is NOT satisfactory, since this permits the suspension to "sag" and the ball joint will not be in a normal attitude. If the upper ball joint is the loaded one (i.e., the spring is on the upper control arm), the upper control arms must be supported with the appropriate strut, and the car lifted up under the frame. This holds the loaded ball joint in a typical attitude, and at the same time, unloads the joint. The lower loaded joint is usually allowed about .060 to .070 axially, with no lateral play. Upper loaded joints are usually allowed no axial play, and the lateral play is to be measured at the lower tire extremity, where it almost touches the floor. Great care must be taken to ensure that only ball joint play is measured; slack bearings can exaggerate lateral play if it is measured indirectly.

Even quite serious play can be irrelevant to an accident, but can still represent a defect which should be remedied, because of the possibility of catastrophic failure at some future date. If the car has trunnions or kingpins and pivots, just discernible play is all that is allowed. More than this constitutes a D. Such defects should be recorded in the space provided for ball-joints and explained in the appropriate rate section.

78,79 Front anti-roll bars are quite often integral and essential parts of the suspension linkage; they sometimes take the place of tie-bars (see C30 and C31). Their bushings and mountings should therefore be examined in the same light as those of the tie-bars. If the anti-roll bar is attached to the lower control arm by a link which is clearly designed to isolate control arm fore-and-aft motion from the anti-roll bar, this is not the case, and defects in mountings and bushings only affect the roll angle assumed by the car. Defects of this type are unlikely to be critical to control except in very unusual circumstances, but should be scored D or AD, as usual.

80 Rear anti-roll bars are almost never essential parts of the suspension linkage from the wheel location viewpoint. Failed bushings or mounts can therefore affect the roll-angles and rates only. Record a D or AD, as usual, though an AD is not likely to be justified except in unusual circumstances.

81 Rear suspension linkage includes leaf-spring front eyes, leaf-spring shackles, suspension trailing arms in coil sprung cars, semi-trailing or trailing arms in independently sprung cars, traction bars in cars so equipped, Panhard rods (transverse axle-control rods), and any other links, rods, or members which locate the wheels in their suspension travel.

Defects in such components can include failed bushings, bent or broken components, cracks, lost bolts or missing rivets. Any defect which permits uncontrolled -- or inadequately controlled-wheel movements could result in rear wheel steering effects, and if this could have affected the accident, use AD. If the defect is present but could not have influenced the accident, use D.

In-Depth Case No. D-_____ On-Site No. S-_____

ENVIRONMENT SUMMARY

Identification:

Accident occurred on _____
route or street

(at its intersection with _____)

(_____ _____ from _____)
distance direction

(in) (_____ _____ from _____, ____
distance direction nearest city/town

Township, Indiana; _____, _____
configuration marg. dev.

area; on _____, _____ ____, 197__, at ___:___ AM PM
day of week month date

involving _____
number and type of traffic units

in a _____ collision. Accident severity
type

was PD/PI-____/F.

Ambience:

_____, ____% _____ cloud cover,
day, night, etc.

visibility _____, (no precipitation/_____
descriptor

_____ (falling), temperature ____°F., relative humidity
type

____%, ____ mph _____ wind gusting to ____ mph. Road

surface was _____, shoulders were

_____.

Roadway:

_____ - _____, _____ wide, ____ lanes,
name of road type

_____ median, _____ surface in _____
condition, estimated coefficient of friction 0.____,
(____, _____ shoulders in _____ condition/
_____" _____ curbs in _____ condition),
(straight/_____' curve _____ going _____),
radius rt. or lt. direction

_____" crown/superelevation, (Level/_____% grade positive
to _____.
direction

_____ - _____, _____ wide, ____ lanes,
name of road type

_____ median, _____ surface in _____
condition, estimated coefficient of friction 0.____,
(____, _____ shoulders in _____ condition/
_____" _____ curbs in _____ condition),
(straight/_____' curve _____ going _____),
radius rt. or lt. direction

_____" crown/superelevation, (Level/_____% grade positive
to _____.
direction

Traffic Controls:

_____ - posted/statutory _____ mph
name of road

speed limit, (lines, words or symbols on pavement)_____

_____

_____

_____

(sign data, legend & position from POI)_____

_____

_____

(signal data) None Number signal faces applicable ____,

visibility _____, condition _____, green phase

_____ sec., amber _____ sec., red _____ sec., all-red _____

sec., advance or delayed (describe)_____

_____

_____

(flashing lights): None Red for ____/____ traffic
dir.

Amber for ____/____ traffic
dir.

(protective devices: describe guard rails, abutments,

delineator posts, etc.)_____

_____

_____

Conclusions:

Describe environmental factors felt to have been causally relevant.

Factor	Description

Describe observations which might indicate factors pertaining to vehicle or human factors disciplines.

Recommendations:

Observations peculiar to this accident not elsewhere recorded:

IN-DEPTH ENVIRONMENTAL ROADWAY FORM

Phase and Array Number 4 (1) 3 (2) 2 (3)

Number Of: Roadways per Accident __ (4) __ (5)

On-Site, In-Depth Flag 2 (6)

On-Site Case No. __ (7) __ (8) __ (9) __ (10)

Traffic Unit No. b (11) b (12)

Card No. 0 (13) 1 (14)

Roadway Number __ (15)

In-Depth Case Number _____

Completed By _____

Location _____

_____

DOS Only:

Date Rec'd. _____

ROADWAY

1. Pavement Width (ft.) __ (16) __ (17)

2. __(1) Adequate
__(2) Inadequate
__ (18)

3. Normal Cross Slope (ft./ft.) - Right __.__ (19) (20) __ (21)

4. __(1) Adequate
__(2) Inadequate
__ (22)

5. Normal Cross Slope (ft./ft.) - Left __.__ (23) (24) __ (25)

6. __(1) Adequate
__(2) Inadequate
__ (26)

7. Type of Pavement
__(1) Concrete
__(2) Asphalt
__(3) Gravel
__ (27)

8. Condition of Pavement
__(1) New
__(2) Cracked or chuckholes
__(3) Travelled
__(4) Traffic polished
__(5) Bleeding Conditions (asphalt only)
__ (28)

9. Shoulder Width (ft.) - Right __ (29) __ (30)

10. __(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present
__ (31)

11. Shoulder Width (ft.) - Left __ (32) __ (33)

12. __(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present
__ (34)

13. Shoulder Cross Slope (ft./ft.) - Right __.__ (35) (36) __ (37)

14. __(1) Adequate
__(2) Inadequate
__ (38)

15. Shoulder Cross Slope (ft./ft.) - Left __.__ (39) (40) __ (41)

16. __(1) Adequate
__(2) Inadequate
__ (42)

17. Type of Shoulder
__(1) Concrete
__(2) Asphalt
__(3) Gravel
__ (43)

18. Fill or Cut Slope - Right
__(1) Adequate
__(2) Inadequate
__ (44)

19. Fill or Cut Slope - Left
__(1) Adequate
__(2) Inadequate
__ (45)

20. Height of Curb (inches) - Right __ (46) __ (47)

21. __(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present
__ (48)

IN-DEPTH ENVIRONMENTAL ROADWAY FORM

22. Height of Curb (inches) - Left [49 50]

23. __(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present [51]

24. Median Width (ft.) [52 53]

25. __(1) Adequate
__(2) Inadequate [54]

26. Type of Median
__(1) Concrete
__(2) Asphalt
__(3) Gravel or grass [55]

27. Coefficient of Friction [56 57 58]

28. Horizontal Alignment
__(1) tangent
__(2) curve right
__(3) curve left
__(4) reverse curve [59]

29. Degree of curve (°) [60 61 62]

30. __(1) Adequate
__(2) Inadequate [63]

31. Superelevation (ft./ft.) [64 65]

32. __(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present [66]

33. Horizontal Sight Distance (ft.)
(code 998 for 998 and over) [67 68 69]

34. __(1) Adequate
__(2) Inadequate [70]

Vertical Alignment

35. Percentage of grade (%)
(if negative; code a minus (-) in col. 71) [71 72 73 74]

36. __(1) Adequate
__(2) Inadequate [75]

37. Vertical Sight Distance (ft.)
(code 998 for 998 or over) [76 77 78]

38. __(1) Adequate
__(2) Inadequate [79]

END OF CARD 01

DUPLICATE COLUMNS 1-12 FROM PRECEDING CARD [13 0] [14 2]

Roadway Number [15]

TRAFFIC CHARACTERISTICS

39. Number of Lanes [16]

40. __(1) Adequate
__(2) Inadequate [17]

41. Traffic volume
(code 9998 for 9998 or over) [18 19 20 21]

42. __(1) light
__(2) moderate
__(3) heavy [22]

43. Capacity
(code 9998 for 9998 or over) [23 24 25 26]

44. __(1) Adequate
__(2) Inadequate [27]

45. Speed Limit (mph) [28 29]

46. __(1) Adequate
__(2) Inadequate [30]

47. Street Operation
__(1) two-way
__(2) one-way [31]

48. Type of Parking
__(1) None
__(2) Parallel
__(3) Angle [32]

49. Parking Usage
__(1) one side
__(2) both sides [33]

50. Limit of Parking Distance (ft.) [34 35 36]

51. __(1) Adequate
__(2) Inadequate [37]

Pavement Markings

52. Centerlines
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present [38]

IN-DEPTH ENVIRONMENTAL ROADWAY FORM

53. Edgelines
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present
__ 39

54. Lane Lines
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present
__ 40

55. Crosswalks
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present
__ 41

56. Directional Arrows
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present
__ 42

57. School Markings
__(1) Adequate
__(2) Inadequate
__ 43

TRAFFIC SIGNAL

58. Signal Presence
__(1) Present
__(2) Present-not needed
__(3) Not present-needed
__ 44

59. Type of Signal
__(1) Pre-timed
__(2) Semi-actuated
__(3) Full actuated
__ 45

60. Full Cycle Length (seconds)
__ __ __ 46 47 48

61. Green Interval (seconds)
__ __ 49 50

62. __(1) Adequate
__(2) Inadequate
__ 51

63. Amber Interval (seconds)
__ __ 52 53

64. __(1) Adequate
__(2) Inadequate
__ 54

65. Red Interval (seconds)
__ __ 55 56

66. __(1) Adequate
__(2) Inadequate
__ 57

67. All Red Interval (seconds)
__ __ 58 59

68. __(1) Adequate
__(2) Inadequate
__ 60

69. Left Turn Interval (seconds)
__ __ 61 62

70. __(1) Adequate
__(2) Inadequate
__ 63

71. Right Turn Interval (seconds)
__ __ 64 65

72. __(1) Adequate
__(2) Inadequate
__ 66

73. Visibility of Signal
__(1) Adequate
__(2) Inadequate
__ 67

74. Condition of Signal
__(1) Adequate
__(2) Inadequate
__ 68

75. Type of Installation
__(1) Mast arm
__(2) Span wire
__(3) Pedestal
__ 69

76. Flashing Signal Presence
__(1) Present
__(2) Present - not needed
__(3) Not present - needed
__ 70

77. Visibility of Flashing Signal
__(1) Adequate
__(2) Inadequate
__ 71

78. Condition of Flashing Signal
__(1) Adequate
__(2) Inadequate
__ 72

OTHER CONTROL DEVICES

79. Roadside Delineators
__(1) Adequate - present
__(2) Inadequate - present
__(3) Needed - not present
__ 73

80. Lateral Distance (ft.)
__ __ 74 75

81. __(1) Adequate
__(2) Inadequate
__ 76

82. Distance of Coverage (ft.)
(code 998 for 998 and over)
__ __ __ 77 78 79

83. __(1) Adequate
__(2) Inadequate
__ 80

END OF CARD 02

IN-DEPTH ENVIRONMENTAL ROADWAY FORM

DUPLICATE COLUMNS 1-12 FROM PRECEDING CARD

Roadway Number 0 3 (13 14) (15)

84. Roadside Guard Rail
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present (16)

85. Lateral Distance (ft.) __ __ (17 18)

86. __(1) Adequate
__(2) Inadequate (19)

87. Distance of Coverage (ft.)
(code 998 for 998 or over) __ __ __ (20 21 22)

88. __(1) Adequate
__(2) Inadequate (23)

RAILROAD CROSSING

89. Signs
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present (24)

90. Signals
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present (25)

91. Gates
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present (26)

92. Crossbucks
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present (27)

93. Pavement Markings
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present (28)

94. Train Man
__(1) Present
__(2) Not present (29)

FIXED OBJECTS

95. Trees Lateral Distance (ft.) __ __ (30 31)

96. __(1) Adequate
__(2) Inadequate (32)

97. Utility Pole Lateral Distance (ft.) __ __ (33 34)

98. __(1) Adequate
__(2) Inadequate (35)

99. Roadway Structures Lateral Distance (ft.) __ __ (36 37)

100. __(1) Adequate
__(2) Inadequate (38)

101. Embankments Lateral Distance (ft.) __ __ (39 40)

102. __(1) Adequate
__(2) Inadequate (41)

103. Mailbox Lateral Distance (ft.) __ __ (42 43)

104. __(1) Adequate
__(2) Inadequate (44)

105. Highway or Street Lighting
__(1) Adequate-present
__(2) Inadequate-present
__(3) Needed-not present (45)

106. Roadway Classification
__(1) Rural - Interstate
__(2) Rural - Major highway
__(3) Rural - Secondary highway
__(4) Urban - Freeway
__(5) Urban - Expressway
__(6) Urban - Arterial or Collectors
__(7) Urban - Local (46)

107. Roadway Type
__(1) Divided four-lanes
__(2) Undivided four-lanes
__(3) Three lanes
__(4) Two lanes
__(5) More than four lanes (47)

108. List the traffic unit(s) to which this roadway data is applicable.

__ __ (48 49)

__ __ (50 51)

__ __ (52 53)

__ __ (54 55)

IN-DEPTH ENVIRONMENTAL FORM

Phase and Array Number	4 0 2 (1 2 3)
Number Of: Blank	b b (4 5)
On-Site, In-Depth Flag	2 (6)
On-site Case Number	(7 8 9 10)
Traffic Unit	b b (11 12)
Card Number	0 1 (13 14)

In-Depth Case Number _____

Completed By _____

Location _____

_____

DOS Only:
Date Rec'd. _____

ENVIRONMENTAL DESCRIPTORS

1. Date of Collision
   Month (15 16)
   Day (17 18)
   Year (19 20)
2. Time of Collision (21 22 23 24)
3. Temperature (25 26 27)
   For temperatures less than 0°F place a (-) in column 25

4. Light Conditions (28)
   __(1) Day
   __(2) Night - Unlighted
   __(3) Night - Lighted
   __(4) Dawn or Dusk

5. Visibility (29)
   __(1) Clear
   __(2) Hazy
   __(3) Foggy

6. Precipitation (30)
   __(1) No precipitation
   __(2) Rain
   __(3) Sleet/Hail
   __(4) Snow

7. Cloud Cover (31)
   __(1) Clear
   __(2) Partly
   __(3) Full

8. Wind Velocity (32)
   __(1) Calm
   __(2) Moderate
   __(3) Hard
   __(4) Gusting

9. Wind Direction (33 34)
   __(1) North
   __(2) South
   __(3) East
   __(4) West
   __(5) Northeast
   __(6) Southeast
   __(7) Southwest
   __(8) Northwest
   __(9) Variable

10. Pavement Surface (35)
    __(1) Dry
    __(2) Wet
    __(3) Icy
    __(4) Snowy
    __(5) Packed Snow

11. Land Use (36)
    __(1) Residential
    __(2) Commercial
    __(3) Industrial
    __(4) Agriculture/Vacant Land
    __(5) Public Ground and Building

12. Type of Area (37)
    __(1) Rural
    __(2) Urban

13. Roadway Type (38)
    __(1) Divided four-lanes
    __(2) Undivided four-lanes
    __(3) Three lanes
    __(4) Two lanes
    __(5) More than four lanes

14. Intersection (39)
    __(1) Non-Intersection
    __(2) Cross-type
    __(3) Skewed Cross
    __(4) Tee Type
    __(5) Wye Type
    __(6) Multi-Leg

CODE FOR INTERSECTION ACCIDENTS ONLY.

15. Channelization (40)
    __(1) Adequate - present
    __(2) Inadequate - present
    __(3) Needed - not present

16. Turning Radii (41)
    __(1) Adequate
    __(2) Inadequate

17. General Design (42)
    __(1) Adequate
    __(2) Inadequate

18. Signing (43)
    __(1) Adequate - present
    __(2) Inadequate - present
    __(3) Needed - not present

19. Markings (44)
    __(1) Adequate - present
    __(2) Inadequate - present
    __(3) Needed - not present

IN-DEPTH ENVIRONMENTAL SIGN FORM

Phase and Array Number 4 3 3 (1 2 3)

Number Of: Signs per Accident ___ ___ (4 5)

On-Site, In-Depth Flag 2 (6)

On-Site Case Number ___ ___ ___ ___ (7 8 9 10)

Traffic Unit Number b b (11 12)

Card Number 0 1 (13 14)

Roadway Number ___ (15)

In-Depth Case Number _____

Completed By _____

Location _____

_____

DOS ONLY:

Date Received: _____

SIGN DESCRIPTORS

1. Sequential Sign Number ___ ___ (16 17)

2. Sign Code Number ___ ___ ___ (18 19 20)

3. Sign Type

__ (1) Regulatory

__ (2) Warning

__ (3) Guide

___ (21)

4. Sign Adequacy

__ (1) Adequate-present

__ (2) Inadequate-present

__ (3) Needed-not present

___ (22)

5. Size

__ (1) Adequate

__ (2) Inadequate

___ (23)

6. Lateral Distance (Feet) ___ ___ (24 25)

7. __ (1) Adequate

__ (2) Inadequate

___ (26)

8. Distance to the point of application (ft.) (code 998 for 998 and over) ___ ___ ___ (27 28 29)

__ (1) Adequate

__ (2) Inadequate

___ (30)

10. Height (Feet) ___ ___ (31 32)

11. __ (1) Adequate

__ (2) Inadequate

___ (33)

12. Condition

__ (1) Adequate

__ (2) Inadequate

___ (34)

13. If the sign was or should have been present and visible to the at-fault driver, check "yes". Otherwise check "no".

__ (1) yes

__ (2) no

___ (35)

14. List the traffic unit(s) to which the sign was or should have been visible.

___ ___ (36 37)

___ ___ (38 39)

___ ___ (40 41)

___ ___ (42 43)

Variable 13 above is to be completed by Coders!

APPENDIX D

Phase II Causal Result Detailed Data Tables

PHASE II HUMAN CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. HUMAN FACTORS (DIRECT CAUSES)	CERTAIN	C	127	84.1	1	.7	128	84.8
		B	387	73.0	2	.4	389	73.4
	CERTAIN OR PROBABLE	C	146	96.7	0	0.0	146	96.7
		B	476	89.8	4	.8	480	90.6
	CERTAIN PROBABLE OR POSSIBLE	C	149	98.7	1	.7	150	99.3
		B	499	94.2	7	1.3	506	95.5
1. CRITICAL NON-PERFORMANCE	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	5	.9	0	0.0	5	.9
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	0	0.0	6	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	0	0.0	6	1.1
A. BLACKOUT	CERTAIN	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	5	.9	0	0.0	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	5	.9	0	0.0	5	.9
B. DOZING	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
2. NON-ACCIDENT (SUICIDE ATTEMPT)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
3. RECOGNITION ERRORS	CERTAIN	C	72	47.7	0	0.0	72	47.7
		B	191	36.0	0	0.0	191	36.0
	CERTAIN OR PROBABLE	C	92	60.9	0	0.0	92	60.9
		B	265	50.0	3	.6	268	50.6
	CERTAIN PROBABLE OR POSSIBLE	C	99	65.6	0	0.0	99	65.6
		B	284	53.6	4	.8	288	54.3
A. DRIVER FAILED TO OBSERVE AND STOP FOR STOP SIGN (SPECIAL TABU-LATION -- NOT EX-CLUSIVE OF ANY OTHER FACTORS)	CERTAIN	C	15	9.9	0	0.0	15	9.9
		B	23	4.3	0	0.0	23	4.3
	CERTAIN OR PROBABLE	C	15	9.9	0	0.0	15	9.9
		B	28	5.3	0	0.0	28	5.3
	CERTAIN PROBABLE OR POSSIBLE	C	16	10.6	0	0.0	16	10.6
		B	29	5.5	0	0.0	29	5.5
B. DELAYS (REASONS NOTED)	CERTAIN	C	58	38.4	0	0.0	58	38.4
		B	166	31.3	0	0.0	166	31.3
	CERTAIN OR PROBABLE	C	77	51.0	0	0.0	77	51.0
		B	237	44.7	2	.4	239	45.1
	CERTAIN PROBABLE OR POSSIBLE	C	84	55.6	0	0.0	84	55.6
		B	256	48.3	3	.6	259	48.9

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1. INATTENTION	CERTAIN	C	18	11.9	0	0.0	18	11.9
		B	70	13.2	0	0.0	70	13.2
	CERTAIN OR PROBABLE	C	29	19.2	0	0.0	29	19.2
		B	106	20.0	3	.6	109	20.6
	CERTAIN PROBABLE OR POSSIBLE	C	35	23.2	0	0.0	35	23.2
		B	121	22.8	3	.6	124	23.4
A. TO TRAFFIC STOPPED, OR SLOW-ING AHEAD	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	30	5.7	0	0.0	30	5.7
	CERTAIN OR PROBABLE	C	8	5.3	0	0.0	8	5.3
		B	50	9.4	1	.2	51	9.6
	CERTAIN PROBABLE OR POSSIBLE	C	11	7.3	0	0.0	11	7.3
		B	54	10.2	2	.4	56	10.6
B. TO POSITION OF CAR ON ROAD	CERTAIN	C	5	3.3	0	0.0	5	3.3
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	7	4.6	0	0.0	7	4.6
		B	10	1.9	0	0.0	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	8	5.3	0	0.0	8	5.3
		B	11	2.1	0	0.0	11	2.1
C. TO ROAD FEATURE SUCH AS ON-COMING CURVES, LANE NARROWINGS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
D. TO ROAD SIGNS, SIGNALS PROVIDING DRIVER INFORMATION	CERTAIN	C	9	6.0	0	0.0	9	6.0
		B	20	3.8	0	0.0	20	3.8
	CERTAIN OR PROBABLE	C	10	6.6	0	0.0	10	6.6
		B	26	4.9	0	0.0	26	4.9
	CERTAIN PROBABLE OR POSSIBLE	C	12	7.9	0	0.0	12	7.9
		B	29	5.5	0	0.0	29	5.5
E. TO CROSS FLOW-FLOWING TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	12	2.3	0	0.0	12	2.3
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	15	2.8	2	.4	17	3.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	21	4.0	1	.2	22	4.2
F. OTHER OR UNSPECIFIED	CERTAIN	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	6	1.1	0	0.0	6	1.1
2. INTERNAL DISTRACTION	CERTAIN	C	8	5.3	0	0.0	8	5.3
		B	18	3.4	0	0.0	18	3.4
	CERTAIN OR PROBABLE	C	11	7.3	0	0.0	11	7.3
		B	27	5.1	1	.2	28	5.3
	CERTAIN PROBABLE OR POSSIBLE	C	13	8.6	0	0.0	13	8.6
		B	29	5.5	2	.4	31	5.8

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
A. EVENT IN CAR LOUD NOISE, YELL, SCREAM, ETC.	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	9	1.7	0	0.0	9	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	9	1.7	0	0.0	9	1.7
B. ADJUSTING RADIO OR TAPE PLAYER	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
C. ADJUSTING WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
D. CONVERSATION	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	8	1.5	0	0.0	8	1.5

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
E. OTHER OR UNSPECIFIED	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	9	1.7	1	.2	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	10	1.9	2	.4	12	2.3
3. EXTERNAL DISTRACTION	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	14	2.6	0	0.0	14	2.6
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	15	2.8	0	0.0	15	2.8
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	18	3.4	0	0.0	18	3.4
A. OTHER TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	5	.9	0	0.0	5	.9
B. DRIVER SELECTED OUTSIDE ACTIVITY	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	5	.9	0	0.0	5	.9
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	5	.9	0	0.0	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	5	.9	0	0.0	5	.9

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. ACTIVITY OF INTEREST	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	5	.9	0	0.0	5	.9
D. SUDDEN EVENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
E. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
4. IMPROPER LOOKOUT	CERTAIN	C	33	21.9	0	0.0	33	21.9
		B	71	13.4	0	0.0	71	13.4
	CERTAIN OR PROBABLE	C	39	25.8	0	0.0	39	25.8
		B	102	19.2	0	0.0	102	19.2
	CEPTAIN PROBABLE OR POSSIBLE	C	40	26.5	0	0.0	40	26.5
		B	109	20.6	2	.4	111	20.9

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. PULLING OUT FROM PARKING PLACE	CERTAIN	C	1	.7	0	0.0	1	.7
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	8	1.5	0	0.0	8	1.5
B. ENTERING TRAVEL LANES FROM INTER-SECTING STREET, ALLEY	CERTAIN	C	22	14.6	0	0.0	22	14.6
		B	41	7.7	0	0.0	41	7.7
	CERTAIN OR PROBABLE	C	26	17.2	0	0.0	26	17.2
		B	60	11.3	0	0.0	60	11.3
	CERTAIN PROBABLE OR POSSIBLE	C	26	17.2	0	0.0	26	17.2
		B	63	11.9	1	.2	64	12.1
C. PRIOR TO CHANGING LANES OR PASSING	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	10	1.9	0	0.0	10	1.9
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	14	2.6	0	0.0	14	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	15	2.8	0	0.0	15	2.8
D. OTHER OR UNSPECIFIED	CERTAIN	C	8	5.3	0	0.0	8	5.3
		B	14	2.6	0	0.0	14	2.6
	CERTAIN OR PROBABLE	C	11	7.3	0	0.0	11	7.3
		B	21	4.0	0	0.0	21	4.0
	CERTAIN PROBABLE OR POSSIBLE	C	12	7.9	0	0.0	12	7.9
		B	24	4.5	1	.2	25	4.7

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. DELAYS IN PER-CEPTION FOR OTHER OR UNKNOWN REASONS	CERTAIN	C	9	6.0	0	0.0	9	6.0
		B	11	2.1	0	0.0	11	2.1
	CERTAIN OR PROBABLE	C	15	9.9	0	0.0	15	9.9
		B	17	3.2	0	0.0	17	3.2
	CERTAIN PROBABLE OR POSSIBLE	C	18	11.9	0	0.0	18	11.9
		B	18	3.4	0	0.0	18	3.4
1. OF TRAFFIC STOPPED	CERTAIN	C	6	4.0	0	0.0	6	4.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	8	5.3	0	0.0	8	5.3
		B	8	1.5	0	0.0	8	1.5
	CERTAIN PROBABLE OR POSSIBLE	C	8	5.3	0	0.0	8	5.3
		B	8	1.5	0	0.0	8	1.5
2. OF POSITION OF CAR ON ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
3. OF ROAD FEA-TURES	CERTAIN	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. OF ROAD SIGNS OR SIGNALS PROVID-ING DRIVER INFO	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
5. OF CROSS-FLOWING TRAFFIC, AS MERG-ING TRAFFIC	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	0	0.0	6	4.0
		B	3	.6	0	0.0	3	.6
6. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	1	.2	0	0.0	1	.2
D. UNACCOUNTED FOR DELAYS IN COMPRE-HENSION OR REACTION	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	8	1.5	2	.4	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	8	1.5	2	.4	10	1.9

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1. DELAYED COMPRE-HENSION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
2. DELAYED REAC-TION	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	2	.4	8	1.5
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	2	.4	8	1.5
4. DECISION ERRORS	CERTAIN	C	59	39.1	1	.7	60	39.7
		B	215	40.6	3	.6	218	41.1
	CERTAIN OR PROBABLE	C	87	57.6	5	3.3	92	60.9
		B	284	53.6	11	2.1	295	55.7
	CERTAIN PROBABLE OR POSSIBLE	C	110	72.8	5	3.3	115	76.2
		B	308	58.1	21	4.0	329	62.1
A) MISJUDGEMENT OF DISTANCE, ETC.	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	9	1.7	0	0.0	9	1.7
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	11	2.1	0	0.0	11	2.1
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	14	2.6	0	0.0	14	2.6

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
B) FALSE ASSUMP-TION	CERTAIN	C	7	4.6	0	0.0	7	4.6
		B	73	13.8	0	0.0	73	13.8
	CERTAIN OR PROBABLE	C	13	8.6	0	0.0	13	8.6
		B	88	16.6	4	.8	92	17.4
	CERTAIN PROBABLE OR POSSIBLE	C	17	11.3	0	0.0	17	11.3
		B	97	18.3	6	1.1	103	19.4
1) ASSUMED OTHER DRIVER HAD TO STOP OR YIELD	CERTAIN	C	1	.7	0	0.0	1	.7
		B	5	.9	0	0.0	5	.9
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	5	.9	0	0.0	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	7	1.3	0	0.0	7	1.3
2) ASSUMED OTHER DRIVER WOULD STOP OR YIELD WITHOUT TRF CONTROL	CERTAIN	C	1	.7	0	0.0	1	.7
		B	9	1.7	0	0.0	9	1.7
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	13	2.5	0	0.0	13	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	13	2.5	1	.2	14	2.6
3) ASSUMED ONCOMING CAR WOULD MOVE LEFT OR RIGHT, OUT OF WAY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4) ASSUMED VEHICLE WAS GOING TO TURN AND DID NOT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	9	1.7	0	0.0	9	1.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	9	1.7	0	0.0	9	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	9	1.7	0	0.0	9	1.7
5) ASSUMED NO TRAFFIC WHEN THERE WAS	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	21	4.0	0	0.0	21	4.0
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	24	4.5	0	0.0	24	4.5
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	28	5.3	0	0.0	28	5.3
6) OTHER OR UNSPECIFIED	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	27	5.1	0	0.0	27	5.1
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	35	6.6	4	.8	39	7.4
	CERTAIN PROBABLE OR POSSIBLE	C	8	5.3	0	0.0	8	5.3
		B	38	7.2	5	.9	43	8.1
C. IMPROPER MANEUVER	CERTAIN	C	13	8.6	0	0.0	13	8.6
		B	38	7.2	0	0.0	38	7.2
	CERTAIN OR PROBABLE	C	17	11.3	0	0.0	17	11.3
		B	42	7.9	0	0.0	42	7.9
	CERTAIN PROBABLE OR POSSIBLE	C	17	11.3	0	0.0	17	11.3
		B	42	7.9	0	0.0	42	7.9

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1) TURNED FROM WRONG LANE	CERTAIN	C	5	3.3	0	0.0	5	3.3
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	10	1.9	0	0.0	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	10	1.9	0	0.0	10	1.9
2) DROVE IN WRONG LANE BUT CORRECT DIRECTION	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	10	1.9	0	0.0	10	1.9
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	11	2.1	0	0.0	11	2.1
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	11	2.1	0	0.0	11	2.1
3) DROVE IN WRONG DIRECTION OF TRAVEL FOR LANE	CERTAIN	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
4) PASSED AT IMPROPER LOCATION	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	10	1.9	0	0.0	10	1.9
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	10	1.9	0	0.0	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	10	1.9	0	0.0	10	1.9

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
5) OTHER OR UNSPECIFIED	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	9	1.7	0	0.0	9	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	9	1.7	0	0.0	9	1.7
D. IMPROPER DRIVING TECHNIQUE	CERTAIN	C	12	7.9	0	0.0	12	7.9
		B	22	4.2	0	0.0	22	4.2
	CERTAIN OR PROBABLE	C	19	12.6	0	0.0	19	12.6
		B	30	5.7	1	.2	31	5.8
	CERTAIN PROBABLE OR POSSIBLE	C	20	13.2	0	0.0	20	13.2
		B	33	6.2	2	.4	35	6.6
1) CRESTING HILLS, DRIVING IN CENTER OF ROAD	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	7	1.3	0	0.0	7	1.3
2) BRAKING LATER THAN SHOULD HAVE OR AT INAPPROPRIATE LOCATION	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	2	.4	0	0.0	2	.4

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
3) STOPPING TOO FAR OUT IN ROAD OR INTERSECTION	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
4) DRIVING TOO CLOSE TO CENTER LINE OR EDGE OF ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	2	.4	1	.2	3	.6
5) SLOWED TOO RAPIDLY	CERTAIN	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	5	.9	1	.2	6	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	8	1.5	1	.2	9	1.7
6) OTHER OR UNSPECIFIED	CERTAIN	C	7	4.6	0	0.0	7	4.6
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	11	7.3	0	0.0	11	7.3
		B	13	2.5	0	0.0	13	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	12	7.9	0	0.0	12	7.9
		B	14	2.6	0	0.0	14	2.6

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
E. INADEQUATE DEFENSIVE DRIVING TECHNIQUE	CERTAIN	C	4	2.6	1	.7	5	3.3
		B	11	2.1	0	0.0	11	2.1
	CERTAIN OR PROBABLE	C	13	8.6	1	.7	14	9.3
		B	13	2.5	0	0.0	13	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	17	11.3	1	.7	18	11.9
		B	18	3.4	0	0.0	18	3.4
1) SHOULD HAVE POSITIONED CAR DIFFERENTLY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
2) SHOULD HAVE ADJUSTED SPEED	CERTAIN	C	3	2.0	1	.7	4	2.6
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	6	4.0	1	.7	7	4.6
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	7	4.6	1	.7	8	5.3
		B	2	.4	0	0.0	2	.4
3) SHOULD NOT HAVE TAKEN OTHER DRIVERS ACTIONS FOR GRANTED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	10	1.9	0	0.0	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	14	2.6	0	0.0	14	2.6

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4) OTHER OR UNSPECIFIED	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	1	.2	0	0.0	1	.2
F. EXCESSIVE SPEED	CERTAIN	C	14	9.3	0	0.0	14	9.3
		B	46	8.7	3	.6	49	9.2
	CERTAIN OR PROBABLE	C	30	19.9	2	1.3	32	21.2
		B	75	14.2	9	1.7	84	15.8
	CERTAIN PROBABLE OR POSSIBLE	C	34	22.5	2	1.3	36	23.8
		B	84	15.8	13	2.5	97	18.3
1) FOR ROAD DESIGN REGARDLESS OF CON-DITION OR TRAFFIC	CERTAIN	C	10	6.6	0	0.0	10	6.6
		B	34	6.4	3	.6	37	7.0
	CERTAIN OR PROBABLE	C	17	11.3	2	1.3	19	12.6
		B	49	9.2	6	1.1	55	10.4
	CERTAIN PROBABLE OR POSSIBLE	C	19	12.6	2	1.3	21	13.9
		B	55	10.4	7	1.3	62	11.7
2) ONLY IN LIGHT OF TRAFFIC, PEDES-TRIANS, ETC.	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	12	2.3	2	.4	14	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	14	2.6	3	.6	17	3.2

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
3) SOLELY IN LIGHT OF WEATHER CONDI-TIONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	6	4.0	0	0.0	6	4.0
		B	8	1.5	1	.2	9	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	0	0.0	6	4.0
		B	9	1.7	3	.6	12	2.3
4) DUE TO COMBINA-TIONS ABOVE	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	4	.8	0	0.0	4	.8
5) OTHER OR UNSPECIFIED	CERTAIN	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
G. TAILGATING	CERTAIN	C	1	.7	0	0.0	1	.7
		B	9	1.7	0	0.0	9	1.7
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	16	3.0	0	0.0	16	3.0
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	0	0.0	6	4.0
		B	22	4.2	0	0.0	22	4.2

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
H. INADEQUATE SIGNAL	CERTAIN	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	9	1.7	1	.2	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	10	6.6	0	0.0	10	6.6
		B	16	3.0	3	.6	19	3.6
1) FAILURE TO SIGNAL FOR TURN	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	5	.9	0	0.0	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	12	2.3	1	.2	13	2.5
2) FAILURE TO USE HORN TO WARN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	0	0.0	1	.2	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	8	5.3	0	0.0	8	5.3
		B	1	.2	2	.4	3	.6
3) OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
I. FAILURE TO TURN ON HEADLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
J. EXCESSIVE ACCELERATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
K. PEDESTRIAN RAN INTO TRAFFIC	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	3	.6	0	0.0	3	.6
L. IMPROPER EVASIVE ACTION	CERTAIN	C	18	11.9	1	.7	19	12.6
		B	40	7.5	1	.2	41	7.7
	CERTAIN OR PROBABLE	C	31	20.5	3	2.0	34	22.5
		B	75	14.2	7	1.3	82	15.5
	CERTAIN PROBABLE OR POSSIBLE	C	46	30.5	2	1.3	48	31.8
		B	84	15.8	21	4.0	105	19.8

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1) LOCKED BRAKES/ COULD NOT STEER	CERTAIN	C	6	4.0	0	0.0	6	4.0
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	11	7.3	0	0.0	11	7.3
		B	17	3.2	0	0.0	17	3.2
	CERTAIN PROBABLE OR POSSIBLE	C	15	9.9	1	.7	16	10.6
		B	17	3.2	0	0.0	17	3.2
2) ABOVE DOES NOT APPLY, BUT DRIVER COULD HAVE STEERED BUT DID NOT	CERTAIN	C	9	6.0	0	0.0	9	6.0
		B	24	4.5	0	0.0	24	4.5
	CERTAIN OR PROBABLE	C	13	8.6	0	0.0	13	8.5
		B	41	7.7	7	1.3	48	9.1
	CERTAIN PROBABLE OR POSSIBLE	C	22	14.6	0	0.0	22	14.6
		B	48	9.1	14	2.6	62	11.7
3) DRIVER COULD HAVE ACCELERATED OUT OF DANGER, BUT DID NOT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.8	1	.2	5	.9
	CERTAIN OR PROBABLE	C	1	.7	1	.7	2	1.3
		B	6	1.1	1	.2	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	1	.7	5	3.3
		B	9	1.7	4	.8	13	2.5
4) OTHER OR UNSPECIFIED	CERTAIN	C	8	5.3	0	0.0	8	5.3
		B	9	1.7	0	0.0	9	1.7
	CERTAIN OR PROBABLE	C	13	8.6	1	.7	14	9.3
		B	16	3.0	1	.2	17	3.2
	CERTAIN PROBABLE OR POSSIBLE	C	15	9.9	2	1.3	17	11.3
		B	17	3.2	6	1.1	23	4.3

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
5. PERFORMANCE ERRORS	CERTAIN	C	12	7.9	0	0.0	12	7.9
		B	16	3.0	0	0.0	16	3.0
	CERTAIN OR PROBABLE	C	16	10.6	0	0.0	16	10.6
		B	24	4.5	5	.9	29	5.5
	CERTAIN PROBABLE OR POSSIBLE	C	17	11.3	0	0.0	17	11.3
		B	32	6.0	5	.9	37	7.0
A) OVERCOMPENSATION	CERTAIN	C	6	4.0	0	0.0	6	4.0
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	7	4.6	0	0.0	7	4.6
		B	10	1.9	2	.4	12	2.3
	CERTAIN PROBABLE OR POSSIBLE	C	7	4.6	0	0.0	7	4.6
		B	13	2.5	2	.4	15	2.8
B) PANIC OR FREEZING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	5	.9	0	0.0	5	.9
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	10	1.9	4	.8	14	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	14	2.6	4	.8	18	3.4
C) INADEQUATE DIRECTIONAL CONTROL	CERTAIN	C	8	5.3	0	0.0	8	5.3
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	11	7.3	0	0.0	11	7.3
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	12	7.9	0	0.0	12	7.9
		B	8	1.5	0	0.0	8	1.5

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1) ON CURVE-ALLOWED CAR TO ENTER OPPOS-ING LANE OF TRAVEL	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	3	.6	0	0.0	3	.6
2) ON STRAIGHT-ALLOWED CAR TO ENTER OPPOSING LANE OF TRAVEL	CERTAIN	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
3) ON STRAIGHT OR CURVE ALLOWED CAR TO GO OFF EDGE OF ROAD	CERTAIN	C	5	3.3	0	0.0	5	3.3
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	6	4.0	0	0.0	6	4.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	0	0.0	6	4.0
		B	2	.4	0	0.0	2	.4
4) OTHER	CERTAIN	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6

PHASE II HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
6. OTHER HUMAN CAUSAL FACTORS	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	8	1.5	0	0.0	8	1.5

PHASE II HUMAN CONDITIONS BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. PHYSICAL/ PHYSIOLOGICAL	CERTAIN	C	5	3.3	0	0.0	5	3.3
		B	21	4.0	0	0.0	21	4.0
	CERTAIN OR PROBABLE	C	11	7.3	0	0.0	11	7.3
		B	39	7.4	1	.2	40	7.5
	CERTAIN PROBABLE OR POSSIBLE	C	18	11.9	0	0.0	18	11.9
		B	53	10.0	3	.6	56	10.6
1. ALCOHOL IMPAIRMENT	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	18	3.4	0	0.0	18	3.4
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	28	5.3	1	.2	29	5.5
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	0	0.0	6	4.0
		B	40	7.5	1	.2	41	7.7
2. OTHER DRUG IMPAIRMENT	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	9	6.0	0	0.0	9	6.0
		B	5	.9	2	.4	7	1.3
3. FATIGUE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6

PHASE II HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. PHYSICAL HANDICAP	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
5. REDUCED VISION	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	4	.8	1	.2	5	.9
6. CHRONIC ILLNESS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
8. MENTAL/ EMOTIONAL	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	7	4.6	0	0.0	7	4.6
		B	11	2.1	0	0.0	11	2.1
	CERTAIN PROBABLE OR POSSIBLE	C	8	5.3	0	0.0	8	5.3
		B	18	3.4	2	.4	20	3.8

PHASE II HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1. EMOTIONALLY UPSET	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	6	1.1	0	0.0	6	1.1
2. PRESSURE FROM OTHER DRIVERS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	4	.8	0	0.0	4	.8
3. 'IN-HURRY'	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	8	1.5	2	.4	10	1.9
4. MENTAL DEFICIENCY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. EXPERIENCE/ EXPOSURE	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	17	3.2	0	0.0	17	3.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	47	8.9	2	.4	49	9.2
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	60	11.3	4	.8	64	12.1
1. DRIVER INEXPERIENCE	CERTAIN	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	16	3.0	2	.4	18	3.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	18	3.4	3	.6	21	4.0
2. VEHICLE UNFAMILIARITY	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	10	1.9	2	.4	12	2.3
3. ROAD OVER-FAMILIARITY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2

PHASE II HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. ROAD/AREA UNFAMILIARITY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	11	2.1	0	0.0	11	2.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	24	4.5	0	0.0	24	4.5
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	34	6.4	0	0.0	34	6.4

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL O/O	S/I N	S/I O/O	CAUSAL OR S/I N	CAUSAL OR S/I O/O
A. ENVIRONMENTAL FACTORS, INCLUDING SLICK ROADS	CERTAIN	C	27	17.9	2	1.3	29	19.2
		B	117	22.1	14	2.6	131	24.7
	CERTAIN OR PROBABLE	C	47	31.1	4	2.6	51	33.8
		B	195	36.8	26	4.9	221	41.7
	CERTAIN PROBABLE OR POSSIBLE	C	63	41.7	4	2.6	67	44.4
		B	263	49.6	35	6.6	298	56.2
1. SLICK ROADS	CERTAIN	C	6	4.0	1	.7	7	4.6
		B	37	7.0	13	2.5	50	9.4
	CERTAIN OR PROBABLE	C	8	5.3	3	2.0	11	7.3
		B	60	11.3	26	4.9	86	16.2
	CERTAIN PROBABLE OR POSSIBLE	C	10	6.6	3	2.0	13	8.6
		B	65	12.3	35	6.6	100	18.9
A. ROAD WET	CERTAIN	C	1	.7	0	0.0	1	.7
		B	16	3.0	10	1.9	26	4.9
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	33	6.2	18	3.4	51	9.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	36	6.8	25	4.7	61	11.5
B. ROAD SNOW AND/ OR ICE COVERED	CERTAIN	C	5	3.3	0	0.0	5	3.3
		B	18	3.4	1	.2	19	3.6
	CERTAIN OR PROBABLE	C	6	4.0	0	0.0	6	4.0
		B	20	3.8	3	.6	23	4.3
	CERTAIN PROBABLE OR POSSIBLE	C	7	4.6	0	0.0	7	4.6
		B	22	4.2	4	.8	26	4.9

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. GRAVEL AND/ OR SAND ON PAVEMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	2	.4	5	.9
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	6	1.1	6	1.1	12	2.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	7	1.3	7	1.3	14	2.6
D. ROAD SLICK DUE TO TRAFFIC POLISHING	CERTAIN	C	0	0.0	1	.7	1	.7
		B	0	0.0	1	.2	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	2	1.3	2	1.3
		B	0	0.0	1	.2	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	2	1.3	2	1.3
		B	0	0.0	1	.2	1	.2
E. WET AND TRAFFIC POLISHED ASPHALT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	1	.7	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	1	.7	2	1.3
		B	1	.2	0	0.0	1	.2
F. GRAVEL ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
G. OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
B. ENVIRONMENTAL FACTORS(EXCLUDING 'SLICK ROADS')	CERTAIN	C	22	14.6	1	.7	23	15.2
		B	85	16.0	4	.8	89	16.8
	CERTAIN OR PROBABLE	C	40	26.5	1	.7	41	27.2
		B	147	27.7	10	1.9	157	29.6
	CERTAIN PROBABLE OR POSSIBLE	C	54	35.8	1	.7	55	36.4
		B	213	40.2	17	3.2	230	43.4
1. HIGHWAY RELATED	CERTAIN	C	18	11.9	1	.7	19	12.6
		B	69	13.0	4	.8	73	13.8
	CERTAIN OR PROBABLE	C	32	21.2	1	.7	33	21.9
		B	119	22.5	8	1.5	127	24.0
	CERTAIN PROBABLE OR POSSIBLE	C	40	26.5	1	.7	41	27.2
		B	160	30.2	16	3.0	176	33.2
A. CONTROL HINDRANCES(E.G., PAVEMENT EDGE DROP-OFF)	CERTAIN	C	4	2.6	1	.7	5	3.3
		B	11	2.1	3	.6	14	2.6
	CERTAIN OR PROBABLE	C	6	4.0	1	.7	7	4.6
		B	20	3.8	4	.8	24	4.5
	CERTAIN PROBABLE OR POSSIBLE	C	7	4.6	1	.7	8	5.3
		B	24	4.5	6	1.1	30	5.7

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(1) DROP-OFF AT PAVEMENT EDGE	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	7	1.3	0	0.0	7	1.3
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	9	1.7	1	.2	10	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	10	1.9	1	.2	11	2.1
(2) EXCESSIVE ROAD CROWNS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	1	.2	2	.4
(3) IMPROPERLY BANKED CURVES	CERTAIN	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
(4) SOFT SHOULDERS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(5) DITCHES, EMBANKMENTS, AND OTHER ROADSIDE FEATURES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	3	.6	5	.9
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	5	.9	3	.6	8	1.5
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	3	.6	9	1.7
(6) UNEXPECTED WET OR SLICK SPOTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.2	1	.2
(7) OTHER OR UN-SPECIFIED CONTROL HINDRANCES	CERTAIN	C	1	.7	1	.7	2	1.3
		B	2	.4	1	.2	3	.6
	CERTAIN OR PROBABLE	C	2	1.3	1	.7	3	2.0
		B	4	.8	1	.2	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	1	.7	3	2.0
		B	5	.9	2	.4	7	1.3
B. INADEQUATE SIGNS AND SIGNALS	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	10	1.9	0	0.0	10	1.9
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	22	4.2	1	.2	23	4.3
	CERTAIN PROBABLE OR POSSIBLE	C	9	6.0	0	0.0	9	6.0
		B	40	7.5	5	.9	45	8.5

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) STOP SIGN NEEDED BUT NOT PROVIDED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	5	.9	0	0.0	5	.9
(2) STOP SIGN PRESENT BUT NOT ADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
(3) CURVE WARNING SIGNS NEEDED	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	7	1.3	2	.4	9	1.7
(4) CURVE SIGN PRESENT BUT NOT ADEQUATE	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	0	0.0	1	.2	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	3	.6	1	.2	4	.8

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(5) SIGNAL LIGHT POORLY PLACED AND/OR NOT ADE-QUATELY VISIBLE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
(6) POOR SIGNAL TIMING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
(7) CENTER OR LANE LINES NOT PRESENT OR INADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	8	1.5	0	0.0	8	1.5
(8) EDGE LINES NOT PRESENT OR INADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(9) OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	9	1.7	0	0.0	9	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	16	3.0	2	.4	18	3.4
C. VIEW OBSTRUCTIONS	CERTAIN	C	8	5.3	0	0.0	8	5.3
		B	38	7.2	0	0.0	38	7.2
	CERTAIN OR PROBABLE	C	17	11.3	0	0.0	17	11.3
		B	68	12.8	1	.2	69	13.0
	CERTAIN PROBABLE OR POSSIBLE	C	21	13.9	1	.7	22	14.6
		B	96	18.1	5	.9	101	19.1
(1) HILLCRESTS, DIPS, ETC.	CERTAIN	C	1	.7	0	0.0	1	.7
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	13	2.5	0	0.0	13	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	19	3.6	1	.2	20	3.8
(2) ROADSIDE EMBANKMENTS, ESCARPMENTS, ETC.	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	7	1.3	0	0.0	7	1.3

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(3) ROADSIDE STRUCTURES AND GROWTH	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	14	2.6	0	0.0	14	2.6
	CERTAIN OR PROBABLE	C	9	6.0	0	0.0	9	6.0
		B	20	3.8	0	0.0	20	3.8
	CERTAIN PROBABLE OR POSSIBLE	C	9	6.0	0	0.0	9	6.0
		B	33	6.2	2	.4	35	6.6
(4) STOPPED TRAFFIC	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	7	1.3	0	0.0	7	1.3
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	14	2.6	0	0.0	14	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	16	3.0	0	0.0	16	3.0
(5) PARKED TRAFFIC	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	8	1.5	0	0.0	8	1.5
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	19	3.6	1	.2	20	3.8
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	1	.7	6	4.0
		B	22	4.2	1	.2	23	4.3
(6) OTHER OR UN-SPECIFIED VIEW OBSTRUCTIONS	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	6	1.1	1	.2	7	1.3

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
D. DESIGN PROBLEMS	CERTAIN	C	5	3.3	0	0.0	5	3.3
		B	11	2.1	0	0.0	11	2.1
	CERTAIN OR PROBABLE	C	8	5.3	1	.7	9	6.0
		B	21	4.0	2	.4	23	4.3
	CERTAIN PROBABLE OR POSSIBLE	C	11	7.3	1	.7	12	7.9
		B	23	4.3	5	.9	28	5.3
(1) ACCESSES NOT SUFFICINTLY LIMITED OR IMPRO-PERLY PLACED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
(2) INTERSECTION DESIGN PROBLEMS	CERTAIN	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	5	.9	0	0.0	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	6	1.1	1	.2	7	1.3
(3) ROAD OVERLY NARROW, TWISTING, ETC.	CERTAIN	C	4	2.6	0	0.0	4	2.6
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	8	1.5	1	.2	9	1.7

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) TREES AND OTHER OBJECTS TOO CLOSE TO ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	1	.2	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	1	.2	3	.6
(5) OTHER OR UN-SPECIFIED DESIGN PROBLEMS	CERTAIN	C	0	0.0	1	.7	1	.7
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	0	0.0	2	1.3	2	1.3
		B	6	1.1	1	.2	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	2	1.3	3	2.0
		B	6	1.1	2	.4	8	1.5
E. MAINTENANCE PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	1	.2	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	2	.4	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	2	.4	5	.9
(1) SIGNALS INOPERATIVE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) TRAFFIC CONTROL SIGN MISSING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) TRAFFIC CONTROL SIGN OR SIGNAL OBSCURED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
(4) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	1	.2	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	2	.4	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	2	.4	3	.6
2. AMBIENCE RELATED	CERTAIN	C	4	2.6	0	0.0	4	2.6
		B	19	3.6	0	0.0	19	3.6
	CERTAIN OR PROBABLE	C	9	6.0	0	0.0	9	6.0
		B	33	6.2	2	.4	35	6.6
	CERTAIN PROBABLE OR POSSIBLE	C	19	12.6	0	0.0	19	12.6
		B	61	11.5	2	.4	63	11.9

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. SPECIAL HAZARDS	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	13	2.5	0	0.0	13	2.5
	CERTAIN OR PROBABLE	C	5	3.3	0	0.0	5	3.3
		B	23	4.3	0	0.0	23	4.3
	CERTAIN PROBABLE OR POSSIBLE	C	8	5.3	0	0.0	8	5.3
		B	28	5.3	0	0.0	28	5.3
(1) ANIMAL IN ROAD	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
(2) OBJECT IN ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
(3) NON-CONTACT VEHICLE CAUSED PROBLEM	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	6	1.1	0	0.0	6	1.1
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	12	2.3	0	0.0	12	2.3
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	16	3.0	0	0.0	16	3.0

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(4) STOPPED VEHICLE IN ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
(5) OTHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	5	.9	0	0.0	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	6	1.1	0	0.0	6	1.1
B. AMBIENT VISION LIMITATIONS	CERTAIN	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	7	1.3	0	0.0	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	18	3.4	1	.2	19	3.6
(1) RAIN	CERTAIN	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL O/O	S/I N	S/I O/O	CAUSAL OR S/I N	CAUSAL OR S/I O/O
(2) SNOW	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) FOG	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(4) DARKNESS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	8	1.5	0	0.0	8	1.5
(5) GLARE FROM SUN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	6	1.1	1	.2	7	1.3

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(6) GLARE FROM HEADLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
(7) OTHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
C. AVOIDANCE OBSTRUCTIONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	2	.4	2	.4	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	4	.8	2	.4	6	1.1
(1) PARKED OR STOPPED TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) TREES AND OTHER FIXED OBJECTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.2	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.2	1	.2
(3) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	1	.2	1	.2	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	1	.2	2	.4
D. RAPID WEATHER CHANGE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(1) SUDDENLY-ENCOUNTERED FOG	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) SUDDENLY-ENCOUNTERED SLICK ROADS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
E. CAMOUFLAGE EFFECT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	2	.4	0	0.0	2	.4
(1) MOTOR VEHICLE BLENDED IN WITH BACKGROUND	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4

PHASE II ENVIROMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	0	0.0	0	0.0	0	0.0
F. ENVIRONMENTAL OVERLOAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
G. OTHER AMBIENCE RELATED FACTORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	0	0.0	6	4.0
		B	11	2.1	0	0.0	11	2.1

PHASE II VEHICLE CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. VEHICLE FACTORS	CERTAIN	C	9	6.0	1	.7	10	6.6
		B	37	7.0	4	.8	41	7.7
	CERTAIN OR PROBABLE	C	24	15.9	3	2.0	27	17.9
		B	62	11.7	12	2.3	74	14.0
	CERTAIN PROBABLE OR POSSIBLE	C	39	25.8	2	1.3	41	27.2
		B	96	18.1	27	5.1	123	23.2
1. TIRES AND WHEELS	CERTAIN	C	0	0.0	1	.7	1	.7
		B	7	1.3	2	.4	9	1.7
	CERTAIN OR PROBABLE	C	6	4.0	2	1.3	8	5.3
		B	15	2.8	8	1.5	23	4.3
	CERTAIN PROBABLE OR POSSIBLE	C	9	6.0	2	1.3	11	7.3
		B	23	4.3	18	3.4	41	7.7
A. INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	1	.2	3	.6
	CERTAIN OR PROBABLE	C	5	3.3	1	.7	6	4.0
		B	3	.6	2	.4	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	8	5.3	1	.7	9	6.0
		B	4	.8	2	.4	6	1.1
1. UNDER-INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	1	.2	3	.6
	CERTAIN OR PROBABLE	C	5	3.3	1	.7	6	4.0
		B	3	.6	2	.4	5	.9
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	1	.7	7	4.6
		B	4	.8	2	.4	6	1.1

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
2. OVER-INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
3. IMPROPER PRESSURE DISTRIBUTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
B. INADE-QUATE TREAD DEPTH	CERTAIN	C	0	0.0	1	.7	1	.7
		B	5	.9	2	.4	7	1.3
	CERTAIN OR PROBABLE	C	3	2.0	2	1.3	5	3.3
		B	13	2.5	7	1.3	20	3.8
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	2	1.3	6	4.0
		B	21	4.0	17	3.2	38	7.2
C. BLOW-OUT SUDDEN FAILURE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
D. MISMATCH OF TIRE TYPES AND/OR SIZES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
E. WHEEL PROBLEMS (WHEEL LOSS OR FAILURE)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
F. OTHER TIRE OR WHEEL PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
2. BRAKE SYSTEM	CERTAIN	C	6	4.0	1	.7	7	4.6
		B	13	2.5	0	0.0	13	2.5
	CERTAIN OR PROBABLE	C	9	6.0	3	2.0	12	7.9
		B	15	2.8	1	.2	16	3.0
	CERTAIN PROBABLE OR POSSIBLE	C	12	7.9	3	2.0	15	9.9
		B	25	4.7	7	1.3	32	6.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
A. GROSS FAILURE (FRONT AND/OR REAR)	CERTAIN	C	3	2.0	1	.7	4	2.6
		B	11	2.1	0	0.0	11	2.1
	CERTAIN OR PROBABLE	C	5	3.3	2	1.3	7	4.6
		B	12	2.3	0	0.0	12	2.3
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	2	1.3	8	5.3
		B	14	2.6	3	.6	17	3.2
1. WHEEL CYLINDER FAILED	CERTAIN	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	1	.7	1	.7	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	1	.7	2	1.3
		B	2	.4	1	.2	3	.6
2. BRAKE LINE FAILED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
3. MASTER CYLINDER PROBLEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. INSUFFICIENT FLUID LEVEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
5. ADJUSTMENT MECHANISM LOSS OR FAILURE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
6. FAILED FOR OTHER OR UNSPECI-FIED REASONS	CERTAIN	C	2	1.3	1	.7	3	2.0
		B	5	.9	0	0.0	5	.9
	CERTAIN OR PROBABLE	C	5	3.3	1	.7	6	4.0
		B	6	1.1	0	0.0	6	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	6	4.0	1	.7	7	4.6
		B	7	1.3	2	.4	9	1.7
8. DELAYED BRAKING RESPONSE/ PUMPING REQUIRED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	1	.2	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	3	.6	6	1.1

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1. REQUIRED PUMPING DUE TO IMPROPER ADJUSTMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	1	.2	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	1	.2	3	.6
2. OTHER OR UNSPECIFIED REASONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	2	.4	3	.6
C. IMBALANCE (PULLED LEFT OR RIGHT)	CERTAIN	C	3	2.0	0	0.0	3	2.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	4	2.6	0	0.0	4	2.6
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	4	.8	0	0.0	4	.8
D. BRAKES GRABED, LOCKED PREMATURE-LY, (OR WERE OVERSENSITIVE)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
E. PERFORMANCE DEGRADED FOR OTHER OR UNSPECI-FIED REASONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	1	.7	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	1	.7	1	.7
		B	4	.8	1	.2	5	.9
3. STEERING SYSTEM	CERTAIN	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	5	.9	4	.8	9	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	7	4.6	0	0.0	7	4.6
		B	13	2.5	10	1.9	23	4.3
A. EXCESSIVE FREEPLAY	CERTAIN	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	3	.6	4	.8	7	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	3	2.0	0	0.0	3	2.0
		B	9	1.7	10	1.9	19	3.6
B. BINDING(UNDUE EFFORT REQUIRED)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. FREEZING OR LOCKING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
D. OTHER OR UNSPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	1	.2	0	0.0	1	.2
4. SUSPENSION PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	1	.2	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	1	.2	4	.8	5	.9
A. SHOCK ABSORBER PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	1	.2	2	.4

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) WEAK SHOCK ABSORBERS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	1	.2	2	.4
(2) MISSING, BROKEN OR OTHER SHOCK ABSORBER PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
B. SPRING PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	2	.4	2	.4
(1) BROKEN MISSING OR DEFECTIVE SPRINGS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.2	1	.2

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) RAISED REAR-END	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.2	1	.2
(3) SPRING IMBALANCES(DUE TO HELPER SPRINGS, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
C. OTHER OR UN-SPECIFIED SUSPENSION PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.2	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	2	.4	2	.4
5. POWER TRAIN AND EXHAUST	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. POWER LOSS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8
(1) RAN OUT OF FUEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
(2) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
B. EXHAUST SYSTEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) CO LEAKED INTO DRIVER'S COMPARTMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
6. COMMUNICATION SYSTEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	7	1.3	0	0.0	7	1.3
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	15	2.8	0	0.0	15	2.8
	CERTAIN PROBABLE OR POSSIBLE	C	9	6.0	0	0.0	9	6.0
		B	23	4.3	2	.4	25	4.7
A. VEHICLE LIGHTS AND SIGNALS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	6	1.1	0	0.0	6	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	7	4.6	0	0.0	7	4.6
		B	8	1.5	0	0.0	8	1.5

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) HEADLAMP PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(A) INOPERABLE HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(B) MIS-AIMED HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(C) DIRT-OBSCURED HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) INOPERABLE TAILLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	3	.6	0	0.0	3	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	4	.8	0	0.0	4	.8
(3) INOPERABLE TURN SIGNALS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	1	.7	0	0.0	1	.7
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
(4) TAILLIGHTS OBSCURED BY DIRT, ROAD GRIME, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
(5) OTHER LIGHT PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	2	1.3	0	0.0	2	1.3
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	5	3.3	0	0.0	5	3.3
		B	2	.4	0	0.0	2	.4

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
B. VEHICLE RELATED VISION OBSTRUCTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.6	0	0.0	3	.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	9	1.7	0	0.0	9	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	13	2.5	3	.6	16	3.0
(1) DUE TO ICE, SNOW, FROST, WATER, OR CONDENSATION ON WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	0	0.0	4	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.8	2	.4	6	1.1
(2) DUE TO CRACKED OR OPAQUE WINDOWS (E.G., CARDBOARD OR DECALS ON WINDOWS)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
(3) DUE TO DESIGN OR PLACEMENT OF WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	O/O	N	O/O	N	O/O
(4) DUE TO OBJECTS IN OR ATTACHED TO VEHICLE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
(5) DUE TO INOPERATIVE OR DEFICIENT VISION HARDWARE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	1.3	0	0.0	2	1.3
		B	1	.2	0	0.0	1	.2
(A) INOPERATIVE OR MISAIMED WINDSHIELD WASHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(B) INOPERATIVE OR INEFFECTIVE WIPER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(C) INOPERABLE OR INADEQUATE DEFROSTER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	0	0.0	0	0.0	0	0.0
(D) ABSENCE OR CONDITION OF MIRRORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.7	0	0.0	1	.7
		B	1	.2	0	0.0	1	.2
(E) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.6	1	.2	4	.8
C. AUDITORY PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(1) INOPERABLE OR WEAK HORN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
(2) EXCESSIVE RADIO OR TAPE PLAYER VOLUME INSIDE CAR	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
7. DRIVER SEATING AND CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. DRIVER CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.4	0	0.0	2	.4
(1) STEERING WHEEL PROBLEMS,(E.G., SPINNER SNAGGED CLOTHING)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) BRAKE PEDAL PROBLEM,(E.G., PEDAL BROKE OFF)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) ACCELERATOR PROBLEM,(E.G., STUCK)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) OTHER OR UN-SPECIFIED PROBLEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.2	0	0.0	1	.2
B. DRIVER ANTHROPOMETRIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(1) SEAT LOOSE OR BECAME DETACHED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) DRIVER NOT POSITIONED TO ADEQUATELY REACH CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(3) DRIVER NOT POSITIONED TO SEE ADEQUATELY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(4) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
8.BODY, DOORS, AND ALL OTHER VEHICLE FACTORS	CERTAIN	C	2	1.3	0	0.0	2	1.3
		B	7	1.3	1	.2	8	1.5
	CERTAIN OR PROBABLE	C	3	2.0	0	0.0	3	2.0
		B	9	1.7	2	.4	11	2.1
	CERTAIN PROBABLE OR POSSIBLE	C	4	2.6	0	0.0	4	2.6
		B	14	2.6	6	1.1	20	3.8

APPENDIX E

Phase III Causal Result Detailed Data Tables

PHASE III HUMAN CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
A. HUMAN FACTORS (DIRECT CAUSES)	CERTAIN	C	51	81.0	0	0.0	51	81.0
		B	250	81.7	3	1.0	253	82.7
	CERTAIN OR PROBABLE	C	61	96.8	0	0.0	61	96.8
		B	287	93.8	0	0.0	287	93.3
	CERTAIN PROBABLE OR POSSIBLE	C	63	100.0	0	0.0	63	100.0
		B	295	96.4	0	0.0	295	96.4
1. CRITICAL NON-PERFORMANCE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
A. BLACKOUT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
B. DOZING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
2. NON-ACCIDENT (SUICIDE ATTEMPT)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
3. RECOGNITION ERRORS (SPECIAL TABULATION -- NOT EXCLUSIVE OF ANY OTHER FACTORS)	CERTAIN	C	31	49.2	0	0.0	31	49.2
		B	145	47.4	1	.3	146	47.7
	CERTAIN OR PROBABLE	C	35	55.6	0	0.0	35	55.6
		B	172	56.2	1	.3	173	56.5
	CERTAIN PROBABLE OR POSSIBLE	C	39	61.9	0	0.0	39	61.9
		B	178	58.2	2	.7	180	58.8
A. DRIVER FAILED TO OBSERVE AND STOP FOR STOP SIGN	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	9	2.9	0	0.0	9	2.9
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	11	3.6	0	0.0	11	3.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	12	3.9	0	0.0	12	3.9
B. DELAYS (REASONS NOTED)	CERTAIN	C	29	46.0	0	0.0	29	46.0
		B	129	42.2	1	.3	130	42.5
	CERTAIN OR PROBABLE	C	33	52.4	0	0.0	33	52.4
		B	156	51.0	1	.3	157	51.3
	CERTAIN PROBABLE OR POSSIBLE	C	38	60.3	0	0.0	38	60.3
		B	161	52.6	2	.7	163	53.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1. INATTENTION	CERTAIN	C	9	14.3	0	0.0	9	14.3
		B	40	13.1	1	.3	41	13.4
	CERTAIN OR PROBABLE	C	12	19.0	0	0.0	12	19.0
		B	55	18.0	1	.3	56	18.3
	CERTAIN PROBABLE OR POSSIBLE	C	15	23.8	0	0.0	15	23.8
		B	59	19.3	2	.7	61	19.9
A. TO TRAFFIC STOPPED, OR SLOW-ING AHEAD	CERTAIN	C	6	9.5	0	0.0	6	9.5
		B	16	5.2	0	0.0	16	5.2
	CERTAIN OR PROBABLE	C	7	11.1	0	0.0	7	11.1
		B	23	7.5	0	0.0	23	7.5
	CERTAIN PROBABLE OR POSSIBLE	C	7	11.1	0	0.0	7	11.1
		B	23	7.5	0	0.0	23	7.5
B. TO POSITION OF CAR ON ROAD	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	5	1.6	0	0.0	5	1.6
C. TO ROAD FEATURE SUCH AS ON-COMING CURVES, LANE NARROWINGS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
D. TO ROAD SIGNS, SIGNALS PROVIDING DRIVER INFORMATION	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	11	3.6	0	0.0	11	3.6
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	13	4.2	0	0.0	13	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	14	4.6	0	0.0	14	4.6
E. TO CROSS FLOW-FLOWING TRAFFIC	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	4	1.3	0	0.0	4	1.3
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	9	2.9	0	0.0	9	2.9
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	10	3.3	1	.3	11	3.6
F. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	1	.3	4	1.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	1	.3	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	1	.3	5	1.6
2. INTERNAL DISTRACTION	CERTAIN	C	5	7.9	0	0.0	5	7.9
		B	10	3.3	0	0.0	10	3.3
	CERTAIN OR PROBABLE	C	7	11.1	0	0.0	7	11.1
		B	15	4.9	0	0.0	15	4.9
	CERTAIN PROBABLE OR POSSIBLE	C	9	14.3	0	0.0	9	14.3
		B	19	6.2	0	0.0	19	6.2

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. EVENT IN CAR LOUD NOISE, YELL, SCREAM, ETC.	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	3	1.0	0	0.0	3	1.0
B. ADJUSTING RADIO OR TAPE PLAYER	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
C. ADJUSTING WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
D. CONVERSATION	CERTAIN	C	3	4.8	0	0.0	3	4.8
		B	5	1.6	0	0.0	5	1.6
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	9	2.9	0	0.0	9	2.9
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	11	3.6	0	0.0	11	3.6

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
E. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
3. EXTERNAL DISTRACTION	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	19	6.2	0	0.0	19	6.2
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	22	7.2	0	0.0	22	7.2
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	23	7.5	0	0.0	23	7.5
A. OTHER TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	6	2.0	0	0.0	6	2.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	6	2.0	0	0.0	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	7	2.3	0	0.0	7	2.3
B. DRIVER SELECTED OUTSIDE ACTIVITY	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	0	0.0	9	2.9
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	10	3.3	0	0.0	10	3.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	10	3.3	0	0.0	10	3.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
C. ACTIVITY OF INTEREST	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
D. SUDDEN EVENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
E. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
4. IMPROPER LOOKOUT	CERTAIN	C	14	22.2	0	0.0	14	22.2
		B	66	21.6	0	0.0	66	21.6
	CERTAIN OR PROBABLE	C	15	23.8	0	0.0	15	23.8
		B	75	24.5	0	0.0	75	24.5
	CERTAIN PROBABLE OR POSSIBLE	C	15	23.8	0	0.0	15	23.8
		B	77	25.2	0	0.0	77	25.2

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. PULLING OUT FROM PARKING PLACE	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	5	1.6	0	0.0	5	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	5	1.6	0	0.0	5	1.6
B. ENTERING TRAVEL LANES FROM INTER-SECTING STREET, ALLEY	CERTAIN	C	11	17.5	0	0.0	11	17.5
		B	45	14.7	0	0.0	45	14.7
	CERTAIN OR PROBABLE	C	12	19.0	0	0.0	12	19.0
		B	51	16.7	0	0.0	51	16.7
	CERTAIN PROBABLE OR POSSIBLE	C	12	19.0	0	0.0	12	19.0
		B	52	17.0	0	0.0	52	17.0
C. PRIOR TO CHANGING LANES OR PASSING	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	12	3.9	0	0.0	12	3.9
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	12	3.9	0	0.0	12	3.9
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	13	4.2	0	0.0	13	4.2
D. OTHER OR UNSPECIFIED	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	7	2.3	0	0.0	7	2.3
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	8	2.6	0	0.0	8	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	8	2.6	0	0.0	8	2.6

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. DELAYS IN PER-CEPTION FOR OTHER OR UNKNOWN REASONS	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	17	5.6	0	0.0	17	5.6
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	18	5.9	0	0.0	18	5.9
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	18	5.9	0	0.0	18	5.9
1. OF TRAFFIC STOPPED	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	0	0.0	9	2.9
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	0	0.0	9	2.9
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	0	0.0	9	2.9
2. OF POSITION OF CAR ON ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
3. OF ROAD FEA-TURES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	O/O	N	O/O	N	O/O
4. OF ROAD SIGNS OR SIGNALS PROVIDING DRIVER INFO	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
5. OF CROSS-FLOWING TRAFFIC, AS MERGING TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
6. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
D. UNACCOUNTED FOR DELAYS IN COMPREHENSION OR REACTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1. DELAYED COMPRE-HENSION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
2. DELAYED REAC-TION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
4. DECISION ERRORS	CERTAIN	C	18	28.6	0	0.0	18	28.6
		B	132	43.1	7	2.3	139	45.4
	CERTAIN OR PROBABLE	C	32	50.8	1	1.6	33	52.4
		B	159	52.0	5	1.6	164	53.6
	CERTAIN PROBABLE OR POSSIBLE	C	37	58.7	2	3.2	39	61.9
		B	172	56.2	5	1.6	177	57.8
A) MISJUDGEMENT OF DISTANCE, ETC.	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	8	2.6	0	0.0	8	2.6
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	10	3.3	0	0.0	10	3.3
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	10	3.3	0	0.0	10	3.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
B) FALSE ASSUMP-TION	CERTAIN	C	5	7.9	0	0.0	5	7.9
		B	23	7.5	0	0.0	23	7.5
	CERTAIN OR PROBABLE	C	9	14.3	0	0.0	9	14.3
		B	30	9.8	0	0.0	30	9.8
	CERTAIN PROBABLE OR POSSIBLE	C	9	14.3	0	0.0	9	14.3
		B	31	10.1	0	0.0	31	10.1
1) ASSUMED OTHER DRIVER HAD TO STOP OR YIELD	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	5	1.6	0	0.0	5	1.6
2) ASSUMED OTHER DRIVER WOULD STOP OR YIELD WITHOUT TRF CONTROL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
3) ASSUMED ONCOMING CAR WOULD MOVE LEFT OR RIGHT, OUT OF WAY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4) ASSUMED VEHICLE WAS GOING TO TURN AND DID NOT	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	2	.7	0	0.0	2	.7
5) ASSUMED NO TRAFFIC WHEN THERE WAS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	7	2.3	0	0.0	7	2.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	10	3.3	0	0.0	10	3.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	10	3.3	0	0.0	10	3.3
6) OTHER OR UNSPECIFIED	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	7	2.3	0	0.0	7	2.3
	CERTAIN OR PROBABLE	C	5	7.9	0	0.0	5	7.9
		B	8	2.6	0	0.0	8	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	5	7.9	0	0.0	5	7.9
		B	8	2.6	0	0.0	8	2.6
C. IMPROPER MANEUVER	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	23	7.5	0	0.0	23	7.5
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	25	8.2	0	0.0	25	8.2
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	27	8.8	0	0.0	27	8.8

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
1) TURNED FROM WRONG LANE	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	11	3.6	0	0.0	11	3.6
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	11	3.6	0	0.0	11	3.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	12	3.9	0	0.0	12	3.9
2) DROVE IN WRONG LANE BUT CORRECT DIRECTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
3) DROVE IN WRONG DIRECTION OF TRAVEL FOR LANE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
4) PASSED AT IMPROPER LOCATION	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
5) OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	6	2.0	0	0.0	6	2.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	8	2.6	0	0.0	8	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	9	2.9	0	0.0	9	2.9
D. IMPROPER DRIVING TECHNIQUE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	19	6.2	0	0.0	19	6.2
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	25	8.2	0	0.0	25	8.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	25	8.2	0	0.0	25	8.2
1) CRESTING HILLS, DRIVING IN CENTER OF ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
2) BRAKING LATER THAN SHOULD HAVE OR AT INAPPROPRIATE LOCATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
3) STOPPING TOO FAR OUT IN ROAD OR INTERSECTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
4) DRIVING TOO CLOSE TO CENTER LINE OR EDGE OF ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
5) SLOWED TOO RAPIDLY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
6) OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	13	4.2	0	0.0	13	4.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	16	5.2	0	0.0	16	5.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	16	5.2	0	0.0	16	5.2

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL O/O	S/I N	S/I O/O	CAUSAL OR S/I N	CAUSAL OR S/I O/O
E. INADEQUATE DEFENSIVE DRIVING TECHNIQUE	CERTAIN	C	4	6.3	0	0.0	4	6.3
		B	12	3.9	1	.3	13	4.2
	CERTAIN OR PROBABLE	C	9	14.3	1	1.6	10	15.9
		B	18	5.9	2	.7	20	6.5
	CERTAIN PROBABLE OR POSSIBLE	C	13	20.6	2	3.2	15	23.8
		B	19	6.2	3	1.0	22	7.2
1) SHOULD HAVE POSITIONED CAR DIFFERENTLY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	1	.3	0	0.0	1	.3
2) SHOULD HAVE ADJUSTED SPEED	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	8	2.6	1	.3	9	2.9
	CERTAIN OR PROBABLE	C	5	7.9	1	1.6	6	9.5
		B	11	3.6	2	.7	13	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	8	12.7	2	3.2	10	15.9
		B	11	3.6	3	1.0	14	4.6
3) SHOULD NOT HAVE TAKEN OTHER DRIVERS ACTIONS FOR GRANTED	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	3	4.8	0	0.0	3	4.8
		B	5	1.6	0	0.0	5	1.6

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
4) OTHER OR UNSPECIFIED	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
F. EXCESSIVE SPEED	CERTAIN	C	7	11.1	0	0.0	7	11.1
		B	42	13.7	5	1.6	47	15.4
	CERTAIN OR PROBABLE	C	10	15.9	0	0.0	10	15.9
		B	48	15.7	5	1.6	53	17.3
	CERTAIN PROBABLE OR POSSIBLE	C	12	19.0	0	0.0	12	19.0
		B	52	17.0	5	1.6	57	18.6
1) FOR ROAD DESIGN REGARDLESS OF CON-DITION OR TRAFFIC	CERTAIN	C	6	9.5	0	0.0	6	9.5
		B	25	8.2	1	.3	26	8.5
	CERTAIN OR PROBABLE	C	7	11.1	0	0.0	7	11.1
		B	27	8.8	1	.3	28	9.2
	CERTAIN PROBABLE OR POSSIBLE	C	7	11.1	0	0.0	7	11.1
		B	29	9.5	1	.3	30	9.8
2) ONLY IN LIGHT OF TRAFFIC, PEDES-TRIANS, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	7	2.3	2	.7	9	2.9
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	8	2.6	2	.7	10	3.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	8	2.6	2	.7	10	3.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
3) SOLELY IN LIGHT OF WEATHER CONDI-TIONS	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	5	1.6	0	0.0	5	1.6
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	6	2.0	0	0.0	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	6	2.0	0	0.0	6	2.0
4) DUE TO COMBINA-TIONS ABOVE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	2	.7	6	2.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	6	2.0	2	.7	8	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	8	2.6	2	.7	10	3.3
5) OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
G. TAILGATING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	6	2.0	0	0.0	6	2.0

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL O/O	S/I N	S/I O/O	CAUSAL OR S/I N	CAUSAL OR S/I O/O
H. INADEQUATE SIGNAL	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	6	2.0	1	.3	7	2.3
	CERTAIN PROBABLE OR POSSIBLE	C	7	11.1	0	0.0	7	11.1
		B	10	3.3	1	.3	11	3.6
1) FAILURE TO SIGNAL FOR TURN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	1	.3	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	1	.3	5	1.6
2) FAILURE TO USE HORN TO WARN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	6	9.5	0	0.0	6	9.5
		B	4	1.3	0	0.0	4	1.3
3) OTHER OR UNSPECIFIED	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
I. FAILURE TO TURN ON HEADLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
J. EXCESSIVE ACCELERATION	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
K. PEDESTRIAN RAN INTO TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
L. IMPROPER EVASIVE ACTION	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	18	5.9	4	1.3	22	7.2
	CERTAIN OR PROBABLE	C	5	7.9	0	0.0	5	7.9
		B	31	10.1	4	1.3	35	11.4
	CERTAIN PROBABLE OR POSSIBLE	C	7	11.1	0	0.0	7	11.1
		B	36	11.8	4	1.3	40	13.1

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1) LOCKED BRAKES/ COULD NOT STEER	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	10	3.3	2	.7	12	3.9
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	14	4.6	3	1.0	17	5.6
	CERTAIN PROBABLE OR POSSIBLE	C	3	4.8	0	0.0	3	4.8
		B	14	4.6	3	1.0	17	5.6
2) ABOVE DOES NOT APPLY, BUT DRIVER COULD HAVE STEERED BUT DID NOT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	1	.3	4	1.3
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	11	3.6	2	.7	13	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	3	4.8	0	0.0	3	4.8
		B	15	4.9	3	1.0	18	5.9
3) DRIVER COULD HAVE ACCELERATED OUT OF DANGER, BUT DID NOT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	1	.3	3	1.0
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	2	.7	1	.3	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	4	1.3	1	.3	5	1.6
4) OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
5. PERFORMANCE ERRORS	CERTAIN	C	5	7.9	0	0.0	5	7.9
		B	10	3.3	1	.3	11	3.6
	CERTAIN OR PROBABLE	C	8	12.7	0	0.0	8	12.7
		B	15	4.9	2	.7	17	5.6
	CERTAIN PROBABLE OR POSSIBLE	C	8	12.7	0	0.0	8	12.7
		B	17	5.6	2	.7	19	6.2
A) OVERCOMPENSATION	CERTAIN	C	4	6.3	0	0.0	4	6.3
		B	7	2.3	0	0.0	7	2.3
	CERTAIN OR PROBABLE	C	7	11.1	0	0.0	7	11.1
		B	10	3.3	0	0.0	10	3.3
	CERTAIN PROBABLE OR POSSIBLE	C	7	11.1	0	0.0	7	11.1
		B	12	3.9	0	0.0	12	3.9
B) PANIC OR FREEZING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	2	.7	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	2	.7	3	1.0
C) INADEQUATE DIRECTIONAL CONTROL	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	4	1.3	0	0.0	4	1.3

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1) ON CURVE-ALLOWED CAR TO ENTER OPPOSING LANE OF TRAVEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
2) ON STRAIGHT-ALLOWED CAR TO ENTER OPPOSING LANE OF TRAVEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
3) ON STRAIGHT OR CURVE ALLOWED CAR TO GO OFF EDGE OF ROAD	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
4) OTHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
6. OTHER HUMAN CAUSAL FACTORS	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3

PHASE III HUMAN CONDITIONS BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. PHYSICAL/ PHYSIOLOGICAL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	12	3.9	0	0.0	12	3.9
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	21	6.9	2	.7	23	7.5
	CERTAIN PROBABLE OR POSSIBLE	C	6	9.5	0	0.0	6	9.5
		B	25	8.2	2	.7	27	8.8
1. ALCOHOL IMPAIRMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	9	2.9	0	0.0	9	2.9
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	15	4.9	1	.3	16	5.2
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	18	5.9	1	.3	19	6.2
2. OTHER DRUG IMPAIRMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
3. FATIGUE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7

PHASE III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. PHYSICAL HANDICAP	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
5. REDUCED VISION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
6. CHRONIC ILLNESS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
8. MENTAL/ EMOTIONAL	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	5	1.6	0	0.0	5	1.6
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	11	3.6	0	0.0	11	3.6
	CERTAIN PROBABLE OR POSSIBLE	C	6	9.5	0	0.0	6	9.5
		B	11	3.6	0	0.0	11	3.6

PHASE III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1. EMOTIONALLY UPSET	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
2. PRESSURE FROM OTHER DRIVERS	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
3. 'IN-HURRY'	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	6	2.0	0	0.0	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	6	2.0	0	0.0	6	2.0
4. MENTAL DEFICIENCY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. EXPERIENCE/ EXPOSURE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	9	2.9	0	0.0	9	2.9
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	18	5.9	0	0.0	18	5.9
	CERTAIN PROBABLE OR POSSIBLE	C	3	4.8	0	0.0	3	4.8
		B	21	6.9	0	0.0	21	6.9
1. DRIVER INEXPERIENCE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
2. VEHICLE UNFAMILIARITY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	3	4.8	0	0.0	3	4.8
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	3	4.8	0	0.0	3	4.8
		B	2	.7	0	0.0	2	.7
3. ROAD OVER-FAMILIARITY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7

PHASE III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. ROAD/AREA UNFAMILIARITY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	7	2.3	0	0.0	7	2.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	11	3.6	0	0.0	11	3.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	13	4.2	0	0.0	13	4.2

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. ENVIRONMENTAL FACTORS, INCLUDING SLICK ROADS	CERTAIN	C	8	12.7	0	0.0	8	12.7
		B	78	25.5	14	4.6	92	30.1
	CERTAIN OR PROBABLE	C	20	31.7	0	0.0	20	31.7
		B	113	36.9	14	4.6	127	41.5
	CERTAIN PROBABLE OR POSSIBLE	C	25	39.7	0	0.0	25	39.7
		B	129	42.2	12	3.9	141	46.1
1. SLICK ROADS	CERTAIN	C	4	6.3	0	0.0	4	6.3
		B	17	5.6	14	4.6	31	10.1
	CERTAIN OR PROBABLE	C	7	11.1	0	0.0	7	11.1
		B	23	7.5	19	6.2	42	13.7
	CERTAIN PROBABLE OR POSSIBLE	C	8	12.7	0	0.0	8	12.7
		B	26	8.5	22	7.2	48	15.7
A. ROAD WET	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	11	3.6	13	4.2	24	7.8
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	15	4.9	16	5.2	31	10.1
	CERTAIN PROBABLE OR POSSIBLE	C	5	7.9	0	0.0	5	7.9
		B	15	4.9	18	5.9	33	10.8
B. ROAD SNOW AND/ OR ICE COVERED	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
C. GRAVEL AND/ OR SAND ON PAVEMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	3	1.0	5	1.6
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	2	.7	4	1.3	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	4	1.3	5	1.6	9	2.9
D. ROAD SLICK DUE TO TRAFFIC POLISHING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
E. WET AND TRAFFIC POLISHED ASPHALT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
F. GRAVEL ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	1	.3	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	1	.3	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	1	.3	2	.7

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
G. OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	2	.7	1	.3	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	3	1.0	1	.3	4	1.3
B. ENVIRONMENTAL FACTORS(EXCLUDING 'SLICK ROADS')	CERTAIN	C	5	7.9	0	0.0	5	7.9
		B	62	20.3	3	1.0	65	21.2
	CERTAIN OR PROBABLE	C	15	23.8	0	0.0	15	23.8
		B	93	30.4	3	1.0	96	31.4
	CERTAIN PROBABLE OR POSSIBLE	C	20	31.7	0	0.0	20	31.7
		B	111	36.3	2	.7	113	36.9
I. HIGHWAY RELATED	CERTAIN	C	5	7.9	0	0.0	5	7.9
		B	42	13.7	3	1.0	45	14.7
	CERTAIN OR PROBABLE	C	14	22.2	0	0.0	14	22.2
		B	66	21.6	3	1.0	69	22.5
	CERTAIN PROBABLE OR POSSIBLE	C	14	22.2	0	0.0	14	22.2
		B	80	26.1	3	1.0	83	27.1
A. CONTROL HINDRANCES(E.G., PAVEMENT EDGE DROP-OFF)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	7	2.3	3	1.0	10	3.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	8	2.6	3	1.0	11	3.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	8	2.6	3	1.0	11	3.6

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) DROP-OFF AT PAVEMENT EDGE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
(2) EXCESSIVE ROAD CROWNS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) IMPROPERLY BANKED CURVES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(4) SOFT SHOULDERS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(5) DITCHES, EMBANKMENTS, AND OTHER ROADSIDE FEATURES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	3	1.0	5	1.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	3	1.0	5	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	3	1.0	5	1.6
(6) UNEXPECTED WET OR SLICK SPOTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(7) OTHER OR UN-SPECIFIED CONTROL HINDRANCES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
B. INADEQUATE SIGNS AND SIGNALS	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	0	0.0	9	2.9
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	18	5.9	0	0.0	18	5.9
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	31	10.1	1	.3	32	10.5

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) STOP SIGN NEEDED BUT NOT PROVIDED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	0	0.0	9	2.9
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	12	3.9	0	0.0	12	3.9
(2) STOP SIGN PRESENT BUT NOT ADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
(3) CURVE WARNING SIGNS NEEDED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
(4) CURVE SIGN PRESENT BUT NOT ADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
(5) SIGNAL LIGHT POORLY PLACED AND/OR NOT ADE-QUATELY VISIBLE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	1	.3	3	1.0
(6) POOR SIGNAL TIMING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(7) CENTER OR LANE LINES NOT PRESENT OR INADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
(8) EDGE LINES NOT PRESENT OR INADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(9) OTHER OR UNSPECIFIED	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	6	2.0	0	0.0	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	9	2.9	0	0.0	9	2.9
C. VIEW OBSTRUCTIONS	CERTAIN	C	4	6.3	0	0.0	4	6.3
		B	23	7.5	0	0.0	23	7.5
	CERTAIN OR PROBABLE	C	8	12.7	0	0.0	8	12.7
		B	38	12.4	1	.3	39	12.7
	CERTAIN PROBABLE OR POSSIBLE	C	8	12.7	0	0.0	8	12.7
		B	47	15.4	1	.3	48	15.7
(1) HILLCRESTS, DIPS, ETC.	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	4	1.3	0	0.0	4	1.3
(2) ROADSIDE EMBANKMENTS, ESCARPMENTS, ETC.	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	0	0.0	3	1.0

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(3) ROADSIDE STRUCTURES AND GROWTH	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	8	2.6	0	0.0	8	2.6
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	14	4.6	1	.3	15	4.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	18	5.9	1	.3	19	6.2
(4) STOPPED TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	7	2.3	0	0.0	7	2.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	7	2.3	0	0.0	7	2.3
(5) PARKED TRAFFIC	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	0	0.0	9	2.9
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	11	3.6	1	.3	12	3.9
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	14	4.6	1	.3	15	4.9
(6) OTHER OR UN-SPECIFIED VIEW OBSTRUCTIONS	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	0	0.0	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	5	1.6	0	0.0	5	1.6

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
D. DESIGN PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	8	2.6	0	0.0	8	2.6
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	13	4.2	0	0.0	13	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	14	4.6	1	.3	15	4.9
(1) ACCESSES NOT SUFFICINTLY LIMITED OR IMPRO-PERLY PLACED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(2) INTERSECTION DESIGN PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
(3) ROAD OVERLY NARROW, TWISTING, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	8	2.6	0	0.0	8	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	8	2.6	1	.3	9	2.9

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) TREES AND OTHER OBJECTS TOO CLOSE TO ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(5) OTHER OR UN-SPECIFIED DESIGN PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
E. MAINTENANCE PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	1	.3	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	1	.3	2	.7
(1) SIGNALS INOPERATIVE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) TRAFFIC CONTROL SIGN MISSING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) TRAFFIC CONTROL SIGN OR SIGNAL OBSCURED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(4) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
2. AMBIENCE RELATED	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	24	7.8	0	0.0	24	7.8
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	31	10.1	0	0.0	31	10.1
	CERTAIN PROBABLE OR POSSIBLE	C	9	14.3	0	0.0	9	14.3
		B	38	12.4	0	0.0	38	12.4

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. SPECIAL HAZARDS	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	21	6.9	0	0.0	21	6.9
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	25	8.2	0	0.0	25	8.2
	CERTAIN PROBABLE OR POSSIBLE	C	8	12.7	0	0.0	8	12.7
		B	28	9.2	0	0.0	28	9.2
(1) ANIMAL IN ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
(2) OBJECT IN ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) NON-CONTACT VEHICLE CAUSED PROBLEM	CERTAIN	C	2	3.2	0	0.0	2	3.2
		B	17	5.6	0	0.0	17	5.6
	CERTAIN OR PROBABLE	C	4	6.3	0	0.0	4	6.3
		B	20	6.5	0	0.0	20	6.5
	CERTAIN PROBABLE OR POSSIBLE	C	8	12.7	0	0.0	8	12.7
		B	23	7.5	0	0.0	23	7.5

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) STOPPED VEHICLE IN ROAD	CERTAIN	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	0	0.0	2	.7
(5) OTHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
B. AMBIENT VISION LIMITATIONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	8	2.6	0	0.0	8	2.6
(1) RAIN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) SNOW	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) FOG	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(4) DARKNESS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
(5) GLARE FROM SUN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	5	1.6	0	0.0	5	1.6

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(6) GLARE FROM HEADLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(7) OTHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
C. AVOIDANCE OBSTRUCTIONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(1) PARKED OR STOPPED TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) TREES AND OTHER FIXED OBJECTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
0. RAPID WEATHER CHANGE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(1) SUDDENLY-ENCOUNTERED FOG	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) SUDDENLY-ENCOUNTERED SLICK ROADS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
E. CAMOUFLAGE EFFECT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
(1) MOTOR VEHICLE BLENDED IN WITH BACKGROUND	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7

PHASE III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
F. ENVIRONMENTAL OVERLOAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
G. OTHER AMBIENCE RELATED FACTORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. VEHICLE FACTORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	11	3.6	6	2.0	17	5.6
	CERTAIN OR PROBABLE	C	2	3.2	0	0.0	2	3.2
		B	21	6.9	7	2.3	28	9.2
	CERTAIN PROBABLE OR POSSIBLE	C	8	12.7	0	0.0	8	12.7
		B	32	10.5	7	2.3	39	12.7
1. TIRES AND WHEELS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	2	.7	3	1.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	6	2.0	2	.7	8	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	6	9.5	0	0.0	6	9.5
		B	10	3.3	2	.7	12	3.9
A. INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	3	1.0	0	0.0	3	1.0
1. UNDER-INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	4	6.3	0	0.0	4	6.3
		B	2	.7	0	0.0	2	.7

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
2. OVER-INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
3. IMPROPER PRESSURE DISTRIBUTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
B. INADE-QUATE TREAD DEPTH	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	1	.3	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	1	.3	4	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	4	1.3	1	.3	5	1.6
C. BLOW-OUT SUDDEN FAILURE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
D. MISMATCH OF TIRE TYPES AND/OR SIZES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
E. WHEEL PROBLEMS (WHEEL LOSS OR FAILURE)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
F. OTHER TIRE OR WHEEL PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	1	.3	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	3	1.0	1	.3	4	1.3
2. BRAKE SYSTEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	6	2.0	1	.3	7	2.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	8	2.6	1	.3	9	2.9
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	9	2.9	1	.3	10	3.3

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. GROSS FAILURE (FRONT AND/OR REAR)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	1	.3	5	1.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	1	.3	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	1	.3	6	2.0
1. WHEEL CYLINDER FAILED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
2. BRAKE LINE FAILED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
3. MASTER CYLINDER PROBLEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. INSUFFICIENT FLUID LEVEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.3	1	.3
5. ADJUSTMENT MECHANISM LOSS OR FAILURE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
6. FAILED FOR OTHER OR UNSPECI-FIED REASONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
8. DELAYED BRAKING RESPONSE/ PUMPING REQUIRED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1. REQUIRED PUMPING DUE TO IMPROPER ADJUSTMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
2. OTHER OR UNSPECIFIED REASONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
C. IMBALANCE (PULLED LEFT OR RIGHT)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
D. BRAKES GRABED, LOCKED PREMATURE-LY, (OR WERE OVERSENSITIVE)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
E. PERFORMANCE DEGRADED FOR OTHER OR UNSPECIFIED REASONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
3. STEERING SYSTEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	3	1.0	4	1.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	4	1.3	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	3.2	0	0.0	2	3.2
		B	3	1.0	4	1.3	7	2.3
A. EXCESSIVE FREEPLAY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	3	1.0	4	1.3
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	2	.7	4	1.3	6	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	3	1.0	4	1.3	7	2.3
B. BINDING(UNDUE EFFORT REQUIRED)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
C. FREEZING OR LOCKING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
D. OTHER OR UNSPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	0	0.0	0	0.0	0	0.0
4. SUSPENSION PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
A. SHOCK ABSORBER PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(1) WEAK SHOCK ABSORBERS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) MISSING, BROKEN OR OTHER SHOCK ABSORBER PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
B. SPRING PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
(1) BROKEN MISSING OR DEFECTIVE SPRINGS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) RAISED REAR-END	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
(3) SPRING IMBALANCES(DUE TO HELPER SPRINGS, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
C. OTHER OR UN-SPECIFIED SUSPENSION PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C,	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
5. POWER TRAIN AND EXHAUST	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. POWER LOSS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(1) RAN OUT OF FUEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
B. EXHAUST SYSTEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) CO LEAKED INTO DRIVER'S COMPARTMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
6. COMMUNICATION SYSTEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	5	1.6	0	0.0	5	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	10	3.3	0	0.0	10	3.3
A. VEHICLE LIGHTS AND SIGNALS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(1) HEADLAMP PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(A) INOPERABLE HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(B) MIS-AIMED HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(C) DIRT-OBSCURED HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
(2) INOPERABLE TAILLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(3) INOPERABLE TURN SIGNALS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
(4) TAILLIGHTS OBSCURED BY DIRT, ROAD GRIME, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(5) OTHER LIGHT PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
B. VEHICLE RELATED VISION OBSTRUCTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	1.0	0	0.0	3	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	6	2.0	0	0.0	6	2.0
(1) DUE TO ICE, SNOW, FROST, WATER, OR CONDENSATION ON WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(2) DUE TO CRACKED OR OPAQUE WINDOWS (E.G., CARDBOARD OR DECALS ON WINDOWS)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) DUE TO DESIGN OR PLACEMENT OF WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) DUE TO OBJECTS IN OR ATTACHED TO VEHICLE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(5) DUE TO INOPERATIVE OR DEFICIENT VISION HARDWARE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(A) INOPERATIVE OR MISAIMED WIND-SHIELD WASHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(B) INOPERATIVE OR INEFFECTIVE WIPER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(C) INOPERABLE OR INADEQUATE DEFROSTER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
(D) ABSENCE OR CONDITION OF MIRRORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(E) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.7	0	0.0	2	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	1.3	0	0.0	4	1.3
C. AUDITORY PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) INOPERABLE OR WEAK HORN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) EXCESSIVE RADIO OR TAPE PLAYER VOLUME INSIDE CAR	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
7. DRIVER SEATING AND CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	O/O	N	O/O	N	O/O
A. DRIVER CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
(1) STEERING WHEEL PROBLEMS,(E.G., SPINNER SNAGGED CLOTHING)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3
(2) BRAKE PEDAL PROBLEM,(E.G., PEDAL BROKE OFF)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) ACCELERATOR PROBLEM,(E.G., STUCK)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) OTHER OR UN-SPECIFIED PROBLEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
B. DRIVER ANTHROPOMETRIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(1) SEAT LOOSE OR BECAME DETACHED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) DRIVER NOT POSITIONED TO ADEQUATELY REACH CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE III VEHICLE CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(3) DRIVER NOT POSITIONED TO SEE ADEQUATELY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(4) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
8.BODY, DOORS, AND ALL OTHER VEHICLE FACTORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.3	0	0.0	1	.3
	CERTAIN PROBABLE OR POSSIBLE	C	1	1.6	0	0.0	1	1.6
		B	1	.3	0	0.0	1	.3

APPENDIX F

Phase II/III Causal Result Detailed Data Tables

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. HUMAN FACTORS (DIRECT CAUSES)	CERTAIN	C	178	83.2	1	.5	179	83.6
		B	637	76.2	5	.6	642	76.8
	CERTAIN OR PROBABLE	C	207	96.7	0	0.0	207	96.7
		B	763	91.3	4	.5	767	91.7
	CERTAIN PROBABLE OR POSSIBLE	C	212	99.1	1	.5	213	99.5
		B	794	95.0	7	.8	801	95.8
1. CRITICAL NON-PERFORMANCE	CERTAIN	C	2	.9	0	0.0	2	.9
		B	8	1.0	0	0.0	8	1.0
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	9	1.1	0	0.0	9	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	10	1.2	0	0.0	10	1.2
A. BLACKOUT	CERTAIN	C	1	.5	0	0.0	1	.5
		B	7	.8	0	0.0	7	.8
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	8	1.0	0	0.0	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	9	1.1	0	0.0	9	1.1
B. DOZING	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
2. NON-ACCIDENT (SUICIDE ATTEMPT)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
3. RECOGNITION ERRORS	CERTAIN	C	103	48.1	0	0.0	103	48.1
		B	336	40.2	1	.1	337	40.3
	CERTAIN OR PROBABLE	C	127	59.3	0	0.0	127	59.3
		B	437	52.3	4	.5	441	52.8
	CERTAIN PROBABLE OR POSSIBLE	C	138	64.5	0	0.0	138	64.5
		B	462	55.3	6	.7	468	56.0
A. DRIVER FAILED TO OBSERVE AND STOP FOR STOP SIGN (SPECIAL TABULATION -- NOT EXCLUSIVE OF ANY OTHER FACTORS)	CERTAIN	C	17	7.9	0	0.0	17	7.9
		B	32	3.8	0	0.0	32	3.8
	CERTAIN OR PROBABLE	C	17	7.9	0	0.0	17	7.9
		B	39	4.7	0	0.0	39	4.7
	CERTAIN PROBABLE OR POSSIBLE	C	18	8.4	0	0.0	18	8.4
		B	41	4.9	0	0.0	41	4.9
B. DELAYS (REASONS NOTED)	CERTAIN	C	87	40.7	0	0.0	87	40.7
		B	295	35.3	1	.1	296	35.4
	CERTAIN OR PROBABLE	C	110	51.4	0	0.0	110	51.4
		B	393	47.0	3	.4	396	47.4
	CERTAIN PROBABLE OR POSSIBLE	C	122	57.0	0	0.0	122	57.0
		B	417	49.9	5	.6	422	50.5

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1. INATTENTION	CERTAIN	C	27	12.6	0	0.0	27	12.6
		B	110	13.2	1	.1	111	13.3
	CERTAIN OR PROBABLE	C	41	19.2	0	0.0	41	19.2
		B	161	19.3	4	.5	165	19.7
	CERTAIN PROBABLE OR POSSIBLE	C	50	23.4	0	0.0	50	23.4
		B	180	21.5	5	.6	185	22.1
A. TO TRAFFIC STOPPED, OR SLOW-ING AHEAD	CERTAIN	C	9	4.2	0	0.0	9	4.2
		B	46	5.5	0	0.0	46	5.5
	CERTAIN OR PROBABLE	C	15	7.0	0	0.0	15	7.0
		B	73	8.7	1	.1	74	8.9
	CERTAIN PROBABLE OR POSSIBLE	C	18	8.4	0	0.0	18	8.4
		B	77	9.2	2	.2	79	9.4
B. TO POSITION OF CAR ON ROAD	CERTAIN	C	6	2.8	0	0.0	6	2.8
		B	8	1.0	0	0.0	8	1.0
	CERTAIN OR PROBABLE	C	8	3.7	0	0.0	8	3.7
		B	14	1.7	0	0.0	14	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	9	4.2	0	0.0	9	4.2
		B	16	1.9	0	0.0	16	1.9
C. TO ROAD FEATURE SUCH AS ON-COMING CURVES, LANE NARROWINGS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	7	.8	0	0.0	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	8	1.0	0	0.0	8	1.0

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL O/O	S/I N	S/I O/O	CAUSAL OR S/I N	CAUSAL OR S/I O/O
D. TO ROAD SIGNS, SIGNALS PROVIDING DRIVER INFORMATION	CERTAIN	C	11	5.1	0	0.0	11	5.1
		B	31	3.7	0	0.0	31	3.7
	CERTAIN OR PROBABLE	C	13	6.1	0	0.0	13	6.1
		B	39	4.7	0	0.0	39	4.7
	CERTAIN PROBABLE OR POSSIBLE	C	16	7.5	0	0.0	16	7.5
		B	43	5.1	0	0.0	43	5.1
E. TO CROSS FLOW-FLOWING TRAFFIC	CERTAIN	C	2	.9	0	0.0	2	.9
		B	16	1.9	0	0.0	16	1.9
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	24	2.9	2	.2	26	3.1
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	31	3.7	2	.2	33	3.9
F. OTHER OR UNSPECIFIED	CERTAIN	C	1	.5	0	0.0	1	.5
		B	6	.7	1	.1	7	.8
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	7	.8	1	.1	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	10	1.2	1	.1	11	1.3
2. INTERNAL DISTRACTION	CERTAIN	C	13	6.1	0	0.0	13	6.1
		B	28	3.3	0	0.0	28	3.3
	CERTAIN OR PROBABLE	C	18	8.4	0	0.0	18	8.4
		B	42	5.0	1	.1	43	5.1
	CERTAIN PROBABLE OR POSSIBLE	C	22	10.3	0	0.0	22	10.3
		B	48	5.7	2	.2	50	6.0

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. EVENT IN CAR LOUD NOISE, YELL, SCREAM, ETC.	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	9	1.1	0	0.0	9	1.1
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	12	1.4	0	0.0	12	1.4
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	12	1.4	0	0.0	12	1.4
B. ADJUSTING RADIO OR TAPE PLAYER	CERTAIN	C	2	.9	0	0.0	2	.9
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	3	.4	0	0.0	3	.4
C. ADJUSTING WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
D. CONVERSATION	CERTAIN	C	6	2.8	0	0.0	6	2.8
		B	8	1.0	0	0.0	8	1.0
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	16	1.9	0	0.0	16	1.9
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	19	2.3	0	0.0	19	2.3

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
E. OTHER OR UNSPECIFIED	CERTAIN	C	2	.9	0	0.0	2	.9
		B	10	1.2	0	0.0	10	1.2
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	12	1.4	1	.1	13	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	15	1.8	2	.2	17	2.0
3. EXTERNAL DISTRACTION	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	33	3.9	0	0.0	33	3.9
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	37	4.4	0	0.0	37	4.4
	CERTAIN PROBABLE OR POSSIBLE	C	9	4.2	0	0.0	9	4.2
		B	41	4.9	0	0.0	41	4.9
A. OTHER TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	9	1.1	0	0.0	9	1.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	10	1.2	0	0.0	10	1.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	12	1.4	0	0.0	12	1.4
B. DRIVER SELECTED OUTSIDE ACTIVITY	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	14	1.7	0	0.0	14	1.7
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	15	1.8	0	0.0	15	1.8
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	15	1.8	0	0.0	15	1.8

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
C. ACTIVITY OF INTEREST	CERTAIN	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	7	.8	0	0.0	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	9	1.1	0	0.0	9	1.1
D. SUDDEN EVENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
E. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
4. IMPROPER LOOKOUT	CERTAIN	C	47	22.0	0	0.0	47	22.0
		B	137	16.4	0	0.0	137	16.4
	CERTAIN OR PROBABLE	C	54	25.2	0	0.0	54	25.2
		B	177	21.2	0	0.0	177	21.2
	CERTAIN PROBABLE OR POSSIBLE	C	55	25.7	0	0.0	55	25.7
		B	186	22.2	2	.2	188	22.5

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. PULLING OUT FROM PARKING PLACE	CERTAIN	C	2	.9	0	0.0	2	.9
		B	8	1.0	0	0.0	8	1.0
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	12	1.4	0	0.0	12	1.4
	CERTAIN, PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	13	1.6	0	0.0	13	1.6
B. ENTERING TRAVEL LANES FROM INTER-SECTING STREET, ALLEY	CERTAIN	C	33	15.4	0	0.0	33	15.4
		B	86	10.3	0	0.0	86	10.3
	CERTAIN OR PROBABLE	C	38	17.8	0	0.0	38	17.8
		B	111	13.3	0	0.0	111	13.3
	CERTAIN PROBABLE OR POSSIBLE	C	38	17.8	0	0.0	38	17.8
		B	115	13.8	1	.1	116	13.9
C. PRIOR TO CHANGING LANES OR PASSING	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	22	2.6	0	0.0	22	2.6
	CERTAIN OR PROBABLE	C	5	2.3	0	0.0	5	2.3
		B	26	3.1	0	0.0	26	3.1
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	28	3.3	0	0.0	28	3.3
D. OTHER OR UNSPECIFIED	CERTAIN	C	9	4.2	0	0.0	9	4.2
		B	21	2.5	0	0.0	21	2.5
	CERTAIN OR PROBABLE	C	13	6.1	0	0.0	13	6.1
		B	29	3.5	0	0.0	29	3.5
	CERTAIN PROBABLE OR POSSIBLE	C	14	6.5	0	0.0	14	6.5
		B	32	3.8	1	.1	33	3.9

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
C. DELAYS IN PER-CEPTION FOR OTHER OR UNKNOWN REASONS	CERTAIN	C	10	4.7	0	0.0	10	4.7
		B	28	3.3	0	0.0	28	3.3
	CERTAIN OR PROBABLE	C	16	7.5	0	0.0	16	7.5
		B	35	4.2	0	0.0	35	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	19	8.9	0	0.0	19	8.9
		B	36	4.3	0	0.0	36	4.3
1. OF TRAFFIC STOPPED	CERTAIN	C	7	3.3	0	0.0	7	3.3
		B	12	1.4	0	0.0	12	1.4
	CERTAIN OR PROBABLE	C	9	4.2	0	0.0	9	4.2
		B	17	2.0	0	0.0	17	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	9	4.2	0	0.0	9	4.2
		B	17	2.0	0	0.0	17	2.0
2. OF POSITION OF CAR ON ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
3. OF ROAD FEA-TURES	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. OF ROAD SIGNS OR SIGNALS PROVID-ING DRIVER INFO	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	7	.8	0	0.0	7	.8
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	7	.8	0	0.0	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	7	.8	0	0.0	7	.8
5. OF CROSS-FLOWING TRAFFIC, AS MERG-ING TRAFFIC	CERTAIN	C	2	.9	0	0.0	2	.9
		B	6	.7	0	0.0	6	.7
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	7	.8	0	0.0	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	7	.8	0	0.0	7	.8
6. OTHER OR UNSPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	2	.2	0	0.0	2	.2
D. UNACCOUNTED FOR DELAYS IN COMPRE-HENSION OR REACTION	CERTAIN	C	2	.9	0	0.0	2	.9
		B	6	.7	0	0.0	6	.7
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	12	1.4	2	.2	14	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	12	1.4	2	.2	14	1.7

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1. DELAYED COMPRE-HENSION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
2. DELAYED REAC-TION	CERTAIN	C	2	.9	0	0.0	2	.9
		B	5	.6	0	0.0	5	.6
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	9	1.1	2	.2	11	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	9	1.1	2	.2	11	1.3
4. DECISION ERRORS	CERTAIN	C	77	36.0	1	.5	78	36.4
		B	347	41.5	10	1.2	357	42.7
	CERTAIN OR PROBABLE	C	119	55.6	6	2.8	125	58.4
		B	443	53.0	16	1.9	459	54.9
	CERTAIN PROBABLE OR POSSIBLE	C	147	68.7	7	3.3	154	72.0
		B	480	57.4	26	3.1	506	60.5
A) MISJUDGEMENT OF DISTANCE, ETC.	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	17	2.0	0	0.0	17	2.0
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	21	2.5	0	0.0	21	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	9	4.2	0	0.0	9	4.2
		B	24	2.9	0	0.0	24	2.9

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
B) FALSE ASSUMP-TION	CERTAIN	C	12	5.6	0	0.0	12	5.6
		B	96	11.5	0	0.0	96	11.5
	CERTAIN OR PROBABLE	C	22	10.3	0	0.0	22	10.3
		B	118	14.1	4	.5	122	14.6
	CERTAIN PROBABLE OR POSSIBLE	C	26	12.1	0	0.0	26	12.1
		B	128	15.3	6	.7	134	16.0
1) ASSUMED OTHER DRIVER HAD TO STOP OR YIELD	CERTAIN	C	2	.9	0	0.0	2	.9
		B	7	.8	0	0.0	7	.8
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	9	1.1	0	0.0	9	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	12	1.4	0	0.0	12	1.4
2) ASSUMED OTHER DRIVER WOULD STOP OR YIELD WITHOUT TRF CONTROL	CERTAIN	C	1	.5	0	0.0	1	.5
		B	14	1.7	0	0.0	14	1.7
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	18	2.2	0	0.0	18	2.2
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	18	2.2	1	.1	19	2.3
3) ASSUMED ONCOMING CAR WOULD MOVE LEFT OR RIGHT, OUT OF WAY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	5	.6	0	0.0	5	.6

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
4) ASSUMED VEHICLE WAS GOING TO TURN AND DID NOT	CERTAIN	C	2	.9	0	0.0	2	.9
		B	11	1.3	0	0.0	11	1.3
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	11	1.3	0	0.0	11	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	11	1.3	0	0.0	11	1.3
5) ASSUMED NO TRAFFIC WHEN THERE WAS	CERTAIN	C	2	.9	0	0.0	2	.9
		B	28	3.3	0	0.0	28	3.3
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	34	4.1	0	0.0	34	4.1
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	38	4.5	0	0.0	38	4.5
6) OTHER OR UNSPECIFIED	CERTAIN	C	5	2.3	0	0.0	5	2.3
		B	34	4.1	0	0.0	34	4.1
	CERTAIN OR PROBABLE	C	10	4.7	0	0.0	10	4.7
		B	43	5.1	4	.5	47	5.6
	CERTAIN PROBABLE OR POSSIBLE	C	13	6.1	0	0.0	13	6.1
		B	46	5.5	5	.6	51	6.1
C. IMPROPER MANEUVER	CERTAIN	C	15	7.0	0	0.0	15	7.0
		B	61	7.3	0	0.0	61	7.3
	CERTAIN OR PROBABLE	C	19	8.9	0	0.0	19	8.9
		B	67	8.0	0	0.0	67	8.0
	CERTAIN PROBABLE OR POSSIBLE	C	19	8.9	0	0.0	19	8.9
		B	69	8.3	0	0.0	69	8.3

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1) TURNED FROM WRONG LANE	CERTAIN	C	6	2.8	0	0.0	6	2.8
		B	19	2.3	0	0.0	19	2.3
	CERTAIN OR PROBABLE	C	6	2.8	0	0.0	6	2.8
		B	21	2.5	0	0.0	21	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	22	2.6	0	0.0	22	2.6
2) DROVE IN WRONG LANE BUT CORRECT DIRECTION	CERTAIN	C	2	.9	0	0.0	2	.9
		B	11	1.3	0	0.0	11	1.3
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	12	1.4	0	0.0	12	1.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	12	1.4	0	0.0	12	1.4
3) DROVE IN WRONG DIRECTION OF TRAVEL FOR LANE	CERTAIN	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7
4) PASSED AT IMPROPER LOCATION	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	13	1.6	0	0.0	13	1.6
	CERTAIN OR PROBABLE	C	6	2.8	0	0.0	6	2.8
		B	13	1.6	0	0.0	13	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	13	1.6	0	0.0	13	1.6

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
5) OTHER OR UNSPECIFIED	CERTAIN	C	2	.9	0	0.0	2	.9
		B	14	1.7	0	0.0	14	1.7
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	17	2.0	0	0.0	17	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	18	2.2	0	0.0	18	2.2
D. IMPROPER DRIVING TECHNIQUE	CERTAIN	C	12	5.6	0	0.0	12	5.6
		B	41	4.9	0	0.0	41	4.9
	CERTAIN OR PROBABLE	C	20	9.3	0	0.0	20	9.3
		B	55	6.6	1	.1	56	6.7
	CERTAIN PROBABLE OR POSSIBLE	C	21	9.8	0	0.0	21	9.8
		B	58	6.9	2	.2	60	7.2
1) CRESTING HILLS, DRIVING IN CENTER OF ROAD	CERTAIN	C	2	.9	0	0.0	2	.9
		B	8	1.0	0	0.0	8	1.0
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	9	1.1	0	0.0	9	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	9	1.1	0	0.0	9	1.1
2) BRAKING LATER THAN SHOULD HAVE OR AT INAPPROPRIATE LOCATION	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	4	.5	0	0.0	4	.5

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
3) STOPPING TOO FAR OUT IN ROAD OR INTERSECTION	CERTAIN	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	4	.5	0	0.0	4	.5
4) DRIVING TOO CLOSE TO CENTER LINE OR EDGE OF ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	1	.1	3	.4
5) SLOWED TOO RAPIDLY	CERTAIN	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	7	.8	1	.1	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	10	1.2	1	.1	11	1.3
6) OTHER OR UNSPECIFIED	CERTAIN	C	7	3.3	0	0.0	7	3.3
		B	21	2.5	0	0.0	21	2.5
	CERTAIN OR PROBABLE	C	11	5.1	0	0.0	11	5.1
		B	29	3.5	0	0.0	29	3.5
	CERTAIN PROBABLE OR POSSIBLE	C	12	5.6	0	0.0	12	5.6
		B	30	3.6	0	0.0	30	3.6

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
E. INADEQUATE DEFENSIVE DRIVING TECHNIQUE	CERTAIN	C	8	3.7	1	.5	9	4.2
		B	23	2.8	1	.1	24	2.9
	CERTAIN OR PROBABLE	C	22	10.3	2	.9	24	11.2
		B	31	3.7	2	.2	33	3.9
	CERTAIN PROBABLE OR POSSIBLE	C	30	14.0	3	1.4	33	15.4
		B	37	4.4	3	.4	40	4.8
1) SHOULD HAVE POSITIONED CAR DIFFERENTLY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	2	.2	0	0.0	2	.2
2) SHOULD HAVE ADJUSTED SPEED	CERTAIN	C	5	2.3	1	.5	6	2.8
		B	9	1.1	1	.1	10	1.2
	CERTAIN OR PROBABLE	C	11	5.1	2	.9	13	6.1
		B	12	1.4	2	.2	14	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	15	7.0	3	1.4	18	8.4
		B	13	1.6	3	.4	16	1.9
3) SHOULD NOT HAVE TAKEN OTHER DRIVERS ACTIONS FOR GRANTED	CERTAIN	C	1	.5	0	0.0	1	.5
		B	10	1.2	0	0.0	10	1.2
	CERTAIN OR PROBABLE	C	8	3.7	0	0.0	8	3.7
		B	14	1.7	0	0.0	14	1.7
	CERTAIN PROBABLE OR POSSIBLE	C	8	3.7	0	0.0	8	3.7
		B	19	2.3	0	0.0	19	2.3

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
4) OTHER OR UNSPECIFIED	CERTAIN	C	2	.9	0	0.0	2	.9
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	3	.4	0	0.0	3	.4
F. EXCESSIVE SPEED	CERTAIN	C	21	9.8	0	0.0	21	9.8
		B	88	10.5	8	1.0	96	11.5
	CERTAIN OR PROBABLE	C	40	18.7	2	.9	42	19.6
		B	123	14.7	14	1.7	137	16.4
	CERTAIN PROBABLE OR POSSIBLE	C	46	21.5	2	.9	48	22.4
		B	136	16.3	18	2.2	154	18.4
1) FOR ROAD DESIGN REGARDLESS OF CON-DITION OR TRAFFIC	CERTAIN	C	16	7.5	0	0.0	16	7.5
		B	59	7.1	4	.5	63	7.5
	CERTAIN OR PROBABLE	C	24	11.2	2	.9	26	12.1
		B	76	9.1	7	.8	83	9.9
	CERTAIN PROBABLE OR POSSIBLE	C	26	12.1	2	.9	28	13.1
		B	84	10.0	8	1.0	92	11.0
2) ONLY IN LIGHT OF TRAFFIC, PEDES-TRIANS, ETC.	CERTAIN	C	2	.9	0	0.0	2	.9
		B	13	1.6	2	.2	15	1.8
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	20	2.4	4	.5	24	2.9
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	22	2.6	5	.6	27	3.2

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
3) SOLELY IN LIGHT OF WEATHER CONDI-TIONS	CERTAIN	C	1	.5	0	0.0	1	.5
		B	9	1.1	0	0.0	9	1.1
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	14	1.7	1	.1	15	1.8
	CERTAIN PROBABLE OR POSSIBLE	C	8	3.7	0	0.0	8	3.7
		B	15	1.8	3	.4	18	2.2
4) DUE TO COMBINA-TIONS ABOVE	CERTAIN	C	1	.5	0	0.0	1	.5
		B	6	.7	2	.2	8	1.0
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	10	1.2	2	.2	12	1.4
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	12	1.4	2	.2	14	1.7
5) OTHER OR UNSPECIFIED	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	3	.4	0	0.0	3	.4
G. TAILGATING	CERTAIN	C	1	.5	0	0.0	1	.5
		B	12	1.4	0	0.0	12	1.4
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	21	2.5	0	0.0	21	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	28	3.3	0	0.0	28	3.3

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
H. INADEQUATE SIGNAL	CERTAIN	C	2	.9	0	0.0	2	.9
		B	7	.8	0	0.0	7	.8
	CERTAIN OR PROBABLE	C	8	3.7	0	0.0	8	3.7
		B	15	1.8	2	.2	17	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	17	7.9	0	0.0	17	7.9
		B	26	3.1	4	.5	30	3.6
1) FAILURE TO SIGNAL FOR TURN	CERTAIN	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	7	.8	1	.1	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	16	1.9	2	.2	18	2.2
2) FAILURE TO USE HORN TO WARN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	5	2.3	0	0.0	5	2.3
		B	3	.4	1	.1	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	14	6.5	0	0.0	14	6.5
		B	5	.6	2	.2	7	.8
3) OTHER OR UNSPECIFIED	CERTAIN	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
I. FAILURE TO TURN ON HEADLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	3	.4	0	0.0	3	.4
J. EXCESSIVE ACCELERATION	CERTAIN	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7
K. PEDESTRIAN RAN INTO TRAFFIC	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	6	.7	0	0.0	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	6	.7	0	0.0	6	.7
L. IMPROPER EVASIVE ACTION	CERTAIN	C	19	8.9	1	.5	20	9.3
		B	58	6.9	5	.6	63	7.5
	CERTAIN OR PROBABLE	C	36	16.8	3	1.4	39	18.2
		B	106	12.7	11	1.3	117	14.0
	CERTAIN PROBABLE OR POSSIBLE	C	53	24.8	2	.9	55	25.7
		B	120	14.4	25	3.0	145	17.3

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
1) LOCKED BRAKES/ COULD NOT STEER	CERTAIN	C	7	3.3	0	0.0	7	3.3
		B	16	1.9	2	.2	18	2.2
	CERTAIN OR PROBABLE	C	13	6.1	0	0.0	13	6.1
		B	31	3.7	3	.4	34	4.1
	CERTAIN PROBABLE OR POSSIBLE	C	18	8.4	1	.5	19	8.9
		B	31	3.7	3	.4	34	4.1
2) ABOVE DOES NOT APPLY, BUT DRIVER COULD HAVE STEERED BUT DID NOT	CERTAIN	C	9	4.2	0	0.0	9	4.2
		B	27	3.2	1	.1	28	3.3
	CERTAIN OR PROBABLE	C	15	7.0	0	0.0	15	7.0
		B	52	6.2	9	1.1	61	7.3
	CERTAIN PROBABLE OR POSSIBLE	C	25	11.7	0	0.0	25	11.7
		B	63	7.5	17	2.0	80	9.6
3) DRIVER COULD HAVE ACCELERATED OUT OF DANGER, BUT DID NOT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	6	.7	2	.2	8	1.0
	CERTAIN OR PROBABLE	C	3	1.4	1	.5	4	1.9
		B	8	1.0	2	.2	10	1.2
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	1	.5	7	3.3
		B	13	1.6	5	.6	18	2.2
4) OTHER OR UNSPECIFIED	CERTAIN	C	8	3.7	0	0.0	8	3.7
		B	12	1.4	0	0.0	12	1.4
	CERTAIN OR PROBABLE	C	13	6.1	1	.5	14	6.5
		B	20	2.4	1	.1	21	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	15	7.0	2	.9	17	7.9
		B	21	2.5	6	.7	27	3.2

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
5. PERFORMANCE ERRORS	CERTAIN	C	17	7.9	0	0.0	17	7.9
		B	26	3.1	1	.1	27	3.2
	CERTAIN OR PROBABLE	C	24	11.2	0	0.0	24	11.2
		B	39	4.7	7	.8	46	5.5
	CERTAIN PROBABLE OR POSSIBLE	C	25	11.7	0	0.0	25	11.7
		B	49	5.9	7	.8	56	6.7
A) OVERCOMPENSATION	CERTAIN	C	10	4.7	0	0.0	10	4.7
		B	15	1.8	0	0.0	15	1.8
	CERTAIN OR PROBABLE	C	14	6.5	0	0.0	14	6.5
		B	20	2.4	2	.2	22	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	14	6.5	0	0.0	14	6.5
		B	25	3.0	2	.2	27	3.2
B) PANIC OR FREEZING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	5	.6	1	.1	6	.7
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	11	1.3	6	.7	17	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	15	1.8	6	.7	21	2.5
C) INADEQUATE DIRECTIONAL CONTROL	CERTAIN	C	9	4.2	0	0.0	9	4.2
		B	9	1.1	0	0.0	9	1.1
	CERTAIN OR PROBABLE	C	13	6.1	0	0.0	13	6.1
		B	11	1.3	0	0.0	11	1.3
	CERTAIN PROBABLE OR POSSIBLE	C	14	6.5	0	0.0	14	6.5
		B	12	1.4	0	0.0	12	1.4

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1) ON CURVE-ALLOWED CAR TO ENTER OPPOS-ING LANE OF TRAVEL	CERTAIN	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	6	.7	0	0.0	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	6	.7	0	0.0	6	.7
2) ON STRAIGHT-ALLOWED CAR TO ENTER OPPOSING LANE OF TRAVEL	CERTAIN	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
3) ON STRAIGHT OR CURVE ALLOWED CAR TO GO OFF EDGE OF ROAD	CERTAIN	C	6	2.8	0	0.0	6	2.8
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	3	.4	0	0.0	3	.4
4) OTHER	CERTAIN	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4

PHASE II AND III HUMAN CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
6. OTHER HUMAN CAUSAL FACTORS	CERTAIN	C	2	.9	0	0.0	2	.9
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	8	1.0	0	0.0	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	9	1.1	0	0.0	9	1.1

PHASE II AND III HUMAN CONDITIONS BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. PHYSICAL/ PHYSIOLOGICAL	CERTAIN	C	5	2.3	0	0.0	5	2.3
		B	33	3.9	0	0.0	33	3.9
	CERTAIN OR PROBABLE	C	15	7.0	0	0.0	15	7.0
		B	60	7.2	3	.4	63	7.5
	CERTAIN PROBABLE OR POSSIBLE	C	24	11.2	0	0.0	24	11.2
		B	78	9.3	5	.6	83	9.9
1. ALCOHOL IMPAIRMENT	CERTAIN	C	2	.9	0	0.0	2	.9
		B	27	3.2	0	0.0	27	3.2
	CERTAIN OR PROBABLE	C	8	3.7	0	0.0	8	3.7
		B	43	5.1	2	.2	45	5.4
	CERTAIN PROBABLE OR POSSIBLE	C	10	4.7	0	0.0	10	4.7
		B	58	6.9	2	.2	60	7.2
2. OTHER DRUG IMPAIRMENT	CERTAIN	C	2	.9	0	0.0	2	.9
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	5	2.3	0	0.0	5	2.3
		B	8	1.0	0	0.0	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	9	4.2	0	0.0	9	4.2
		B	9	1.1	2	.2	11	1.3
3. FATIGUE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	5	.6	0	0.0	5	.6

PHASE II AND III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
4. PHYSICAL HANDICAP	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
5. REDUCED VISION	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	4	.5	1	.1	5	.6
6. CHRONIC ILLNESS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
8. MENTAL/ EMOTIONAL	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	9	1.1	0	0.0	9	1.1
	CERTAIN OR PROBABLE	C	9	4.2	0	0.0	9	4.2
		B	22	2.6	0	0.0	22	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	14	6.5	0	0.0	14	6.5
		B	29	3.5	2	.2	31	3.7

PHASE II AND III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1. EMOTIONALLY UPSET	CERTAIN	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	6	.7	0	0.0	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	9	1.1	0	0.0	9	1.1
2. PRESSURE FROM OTHER DRIVERS	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	6	.7	0	0.0	6	.7
3. 'IN-HURRY'	CERTAIN	C	2	.9	0	0.0	2	.9
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	13	1.6	0	0.0	13	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	14	1.7	2	.2	16	1.9
4. MENTAL DEFICIENCY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
C. EXPERIENCE/ EXPOSURE	CERTAIN	C	2	.9	0	0.0	2	.9
		B	26	3.1	0	0.0	26	3.1
	CERTAIN OR PROBABLE	C	5	2.3	0	0.0	5	2.3
		B	65	7.8	2	.2	67	8.0
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	81	9.7	4	.5	85	10.2
1. DRIVER INEXPERIENCE	CERTAIN	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	20	2.4	2	.2	22	2.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	22	2.6	3	.4	25	3.0
2. VEHICLE UNFAMILIARITY	CERTAIN	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	8	1.0	0	0.0	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	12	1.4	2	.2	14	1.7
3. ROAD OVER-FAMILIARITY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4

PHASE II AND III HUMAN CONDITIONS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. ROAD/AREA UNFAMILIARITY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	18	2.2	0	0.0	18	2.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	35	4.2	0	0.0	35	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	47	5.6	0	0.0	47	5.6

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. ENVIRONMENTAL FACTORS, INCLUDING SLICK ROADS	CERTAIN	C	35	16.4	2	.9	37	17.3
		B	195	23.3	28	3.3	223	26.7
	CERTAIN OR PROBABLE	C	67	31.3	4	1.9	71	33.2
		B	308	36.8	40	4.8	348	41.6
	CERTAIN PROBABLE OR POSSIBLE	C	88	41.1	4	1.9	92	43.0
		B	392	46.9	47	5.6	439	52.5
1. SLICK ROADS	CERTAIN	C	10	4.7	1	.5	11	5.1
		B	54	6.5	27	3.2	81	9.7
	CERTAIN OR PROBABLE	C	15	7.0	3	1.4	18	8.4
		B	83	9.9	45	5.4	128	15.3
	CERTAIN PROBABLE OR POSSIBLE	C	18	8.4	3	1.4	21	9.8
		B	91	10.9	57	6.8	148	17.7
A. ROAD WET	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	27	3.2	23	2.8	50	6.0
	CERTAIN OR PROBABLE	C	5	2.3	0	0.0	5	2.3
		B	48	5.7	34	4.1	82	9.8
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	51	6.1	43	5.1	94	11.2
B. ROAD SNOW AND/ OR ICE COVERED	CERTAIN	C	6	2.8	0	0.0	6	2.8
		B	19	2.3	1	.1	20	2.4
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	22	2.6	3	.4	25	3.0
	CERTAIN PROBABLE OR POSSIBLE	C	8	3.7	0	0.0	8	3.7
		B	24	2.9	4	.5	28	3.3

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
C. GRAVEL AND/ OR SAND ON PAVEMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	5	.6	5	.6	10	1.2
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	8	1.0	10	1.2	18	2.2
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	11	1.3	12	1.4	23	2.8
D. ROAD SLICK DUE TO TRAFFIC POLISHING	CERTAIN	C	0	0.0	1	.5	1	.5
		B	0	0.0	1	.1	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	2	.9	2	.9
		B	0	0.0	1	.1	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	2	.9	2	.9
		B	0	0.0	1	.1	1	.1
E. WET AND TRAFFIC POLISHED ASPHALT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	1	.5	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	1	.5	2	.9
		B	2	.2	0	0.0	2	.2
F. GRAVEL ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	1	.1	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	1	.1	3	.4

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
G. OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	3	.4	1	.1	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	4	.5	1	.1	5	.6
B. ENVIRONMENTAL FACTORS(EXCLUDING 'SLICK ROADS')	CERTAIN	C	27	12.6	1	.5	28	13.1
		B	147	17.6	7	.8	154	18.4
	CERTAIN OR PROBABLE	C	55	25.7	1	.5	56	26.2
		B	240	28.7	13	1.6	253	30.3
	CERTAIN PROBABLE OR POSSIBLE	C	74	34.6	1	.5	75	35.0
		B	324	38.8	19	2.3	343	41.0
1. HIGHWAY RELATED	CERTAIN	C	23	10.7	1	.5	24	11.2
		B	111	13.3	7	.8	118	14.1
	CERTAIN OR PROBABLE	C	46	21.5	1	.5	47	22.0
		B	185	22.1	11	1.3	196	23.4
	CERTAIN PROBABLE OR POSSIBLE	C	54	25.2	1	.5	55	25.7
		B	240	28.7	19	2.3	259	31.0
A. CONTROL HINDRANCES(E.G., PAVEMENT EDGE DROP-OFF)	CERTAIN	C	4	1.9	1	.5	5	2.3
		B	18	2.2	6	.7	24	2.9
	CERTAIN OR PROBABLE	C	7	3.3	1	.5	8	3.7
		B	28	3.3	7	.8	35	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	8	3.7	1	.5	9	4.2
		B	32	3.8	9	1.1	41	4.9

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
(1) DROP-OFF AT PAVEMENT EDGE	CERTAIN	C	2	.9	0	0.0	2	.9
		B	9	1.1	0	0.0	9	1.1
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	11	1.3	1	.1	12	1.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	12	1.4	1	.1	13	1.6
(2) EXCESSIVE ROAD CROWNS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
(3) IMPROPERLY BANKED CURVES	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
(4) SOFT SHOULDERS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(5) DITCHES, EMBANKMENTS, AND OTHER ROADSIDE FEATURES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.5	6	.7	10	1.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	7	.8	6	.7	13	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	8	1.0	6	.7	14	1.7
(6) UNEXPECTED WET OR SLICK SPOTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
(7) OTHER OR UN-SPECIFIED CONTROL HINDRANCES	CERTAIN	C	1	.5	1	.5	2	.9
		B	3	.4	1	.1	4	.5
	CERTAIN OR PROBABLE	C	2	.9	1	.5	3	1.4
		B	6	.7	1	.1	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	1	.5	3	1.4
		B	7	.8	2	.2	9	1.1
8. INADEQUATE SIGNS AND SIGNALS	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	19	2.3	0	0.0	19	2.3
	CERTAIN OR PROBABLE	C	9	4.2	0	0.0	9	4.2
		B	40	4.8	1	.1	41	4.9
	CERTAIN PROBABLE OR POSSIBLE	C	13	6.1	0	0.0	13	6.1
		B	71	8.5	6	.7	77	9.2

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(1) STOP SIGN NEEDED BUT NOT PROVIDED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	8	1.0	0	0.0	8	1.0
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	13	1.6	0	0.0	13	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	17	2.0	0	0.0	17	2.0
(2) STOP SIGN PRESENT BUT NOT ADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	6	.7	0	0.0	6	.7
(3) CURVE WARNING SIGNS NEEDED	CERTAIN	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	9	1.1	2	.2	11	1.3
(4) CURVE SIGN PRESENT BUT NOT ADEQUATE	CERTAIN	C	2	.9	0	0.0	2	.9
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	0	0.0	1	.1	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	3	.4	1	.1	4	.5

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(5) SIGNAL LIGHT POORLY PLACED AND/OR NOT ADE-QUATELY VISIBLE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	1	.1	5	.6
(6) POOR SIGNAL TIMING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
(7) CENTER OR LANE LINES NOT PRESENT OR INADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	6	.7	0	0.0	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	13	1.6	0	0.0	13	1.6
(8) EDGE LINES NOT PRESENT OR INADEQUATE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(9) OTHER OR UNSPECIFIED	CERTAIN	C	1	.5	0	0.0	1	.5
		B	7	.8	0	0.0	7	.8
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	15	1.8	0	0.0	15	1.8
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	25	3.0	2	.2	27	3.2
C. VIEW OBSTRUCTIONS	CERTAIN	C	12	5.6	0	0.0	12	5.6
		B	61	7.3	0	0.0	61	7.3
	CERTAIN OR PROBABLE	C	25	11.7	0	0.0	25	11.7
		B	106	12.7	2	.2	108	12.9
	CERTAIN PROBABLE OR POSSIBLE	C	29	13.6	1	.5	30	14.0
		B	143	17.1	6	.7	149	17.8
(1) HILLCRESTS, DIPS, ETC.	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	10	1.2	0	0.0	10	1.2
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	17	2.0	0	0.0	17	2.0
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	23	2.8	1	.1	24	2.9
(2) ROADSIDE EMBANKMENTS, ESCARPMENTS, ETC.	CERTAIN	C	2	.9	0	0.0	2	.9
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	5	.6	0	0.0	5	.6
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	10	1.2	0	0.0	10	1.2

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(3) ROADSIDE STRUCTURES AND GROWTH	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	22	2.6	0	0.0	22	2.6
	CERTAIN OR PROBABLE	C	11	5.1	0	0.0	11	5.1
		B	34	4.1	1	.1	35	4.2
	CERTAIN PROBABLE OR POSSIBLE	C	11	5.1	0	0.0	11	5.1
		B	51	6.1	3	.4	54	6.5
(4) STOPPED TRAFFIC	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	11	1.3	0	0.0	11	1.3
	CERTAIN OR PROBABLE	C	6	2.8	0	0.0	6	2.8
		B	21	2.5	0	0.0	21	2.5
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	23	2.8	0	0.0	23	2.8
(5) PARKED TRAFFIC	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	17	2.0	0	0.0	17	2.0
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	30	3.6	2	.2	32	3.8
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	1	.5	8	3.7
		B	36	4.3	2	.2	38	4.5
(6) OTHER OR UN-SPECIFIED VIEW OBSTRUCTIONS	CERTAIN	C	2	.9	0	0.0	2	.9
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	8	1.0	0	0.0	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	11	1.3	1	.1	12	1.4

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
D. DESIGN PROBLEMS	CERTAIN	C	5	2.3	0	0.0	5	2.3
		B	19	2.3	0	0.0	19	2.3
	CERTAIN OR PROBABLE	C	10	4.7	1	.5	11	5.1
		B	34	4.1	2	.2	36	4.3
	CERTAIN PROBABLE OR POSSIBLE	C	13	6.1	1	.5	14	6.5
		B	37	4.4	6	.7	43	5.1
(1) ACCESSES NOT SUFFICINTLY LIMITED OR IMPRO-PERLY PLACED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
(2) INTERSECTION DESIGN PROBLEMS	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	7	.8	0	0.0	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	9	1.1	1	.1	10	1.2
(3) ROAD OVERLY NARROW, TWISTING, ETC.	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	10	1.2	0	0.0	10	1.2
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	15	1.8	0	0.0	15	1.8
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	16	1.9	2	.2	18	2.2

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(4) TREES AND OTHER OBJECTS TOO CLOSE TO ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	1	.1	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	1	.1	3	.4
(5) OTHER OR UN-SPECIFIED DESIGN PROBLEMS	CERTAIN	C	0	0.0	1	.5	1	.5
		B	6	.7	0	0.0	6	.7
	CERTAIN OR PROBABLE	C	0	0.0	2	.9	2	.9
		B	8	1.0	1	.1	9	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	2	.9	3	1.4
		B	8	1.0	2	.2	10	1.2
E. MAINTENANCE PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	2	.2	3	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	3	.4	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	3	.4	7	.8
(1) SIGNALS INOPERATIVE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) TRAFFIC CONTROL SIGN MISSING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) TRAFFIC CONTROL SIGN OR SIGNAL OBSCURED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
(4) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	2	.2	3	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	3	.4	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	3	.4	4	.5
2. AMBIENCE RELATED	CERTAIN	C	6	2.8	0	0.0	6	2.8
		B	43	5.1	0	0.0	43	5.1
	CERTAIN OR PROBABLE	C	13	6.1	0	0.0	13	6.1
		B	64	7.7	2	.2	66	7.9
	CERTAIN PROBABLE OR POSSIBLE	C	28	13.1	0	0.0	28	13.1
		B	99	11.8	2	.2	101	12.1

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
A. SPECIAL HAZARDS	CERTAIN	C	5	2.3	0	0.0	5	2.3
		B	34	4.1	0	0.0	34	4.1
	CERTAIN OR PROBABLE	C	9	4.2	0	0.0	9	4.2
		B	48	5.7	0	0.0	48	5.7
	CERTAIN PROBABLE OR POSSIBLE	C	16	7.5	0	0.0	16	7.5
		B	56	6.7	0	0.0	56	6.7
(1) ANIMAL IN ROAD	CERTAIN	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	4	.5	0	0.0	4	.5
(2) OBJECT IN ROAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
(3) NON-CONTACT VEHICLE CAUSED PROBLEM	CERTAIN	C	4	1.9	0	0.0	4	1.9
		B	23	2.8	0	0.0	23	2.8
	CERTAIN OR PROBABLE	C	7	3.3	0	0.0	7	3.3
		B	32	3.8	0	0.0	32	3.8
	CERTAIN PROBABLE OR POSSIBLE	C	13	6.1	0	0.0	13	6.1
		B	39	4.7	0	0.0	39	4.7

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
(4) STOPPED VEHICLE IN ROAD	CERTAIN	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	6	.7	0	0.0	6	.7
(5) OTHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	5	.6	0	0.0	5	.6
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	7	.8	0	0.0	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	8	1.0	0	0.0	8	1.0
B. AMBIENT VISION LIMITATIONS	CERTAIN	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	12	1.4	0	0.0	12	1.4
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	26	3.1	1	.1	27	3.2
(1) RAIN	CERTAIN	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) SNOW	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) FOG	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(4) DARKNESS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	5	.6	0	0.0	5	.6
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	10	1.2	0	0.0	10	1.2
(5) GLARE FROM SUN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	6	.7	0	0.0	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	11	1.3	1	.1	12	1.4

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(6) GLARE FROM HEADLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
(7) OTHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
C. AVOIDANCE OBSTRUCTIONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	3	.4	2	.2	5	.6
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	5	.6	2	.2	7	.8
(1) PARKED OR STOPPED TRAFFIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) TREES AND OTHER FIXED OBJECTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.1	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.1	1	.1
(3) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	1	.1	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	1	.1	3	.4
D. RAPID WEATHER CHANGE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(1) SUDDENLY-ENCOUNTERED FOG	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) SUDDENLY-ENCOUNTERED SLICK ROADS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
E. CAMOUFLAGE EFFECT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	4	.5	0	0.0	4	.5
(1) MOTOR VEHICLE BLENDED IN WITH BACKGROUND	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5

PHASE II AND III ENVIRONMENTAL CAUSATION BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(2) OTHER OR UN-SPECIFIED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	0	0.0	0	0.0	0	0.0
F. ENVIRONMENTAL OVERLOAD	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
G. OTHER AMBIENCE RELATED FACTORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	11	1.3	0	0.0	11	1.3

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL O/O	S/I N	S/I O/O	CAUSAL OR S/I N	CAUSAL OR S/I O/O
A. VEHICLE FACTORS	CERTAIN	C	9	4.2	1	.5	10	4.7
		B	48	5.7	10	1.2	58	6.9
	CERTAIN OR PROBABLE	C	26	12.1	3	1.4	29	13.6
		B	83	9.9	19	2.3	102	12.2
	CERTAIN PROBABLE OR POSSIBLE	C	47	22.0	2	.9	49	22.9
		B	128	15.3	34	4.1	162	19.4
1. TIRES AND WHEELS	CERTAIN	C	0	0.0	1	.5	1	.5
		B	8	1.0	4	.5	12	1.4
	CERTAIN OR PROBABLE	C	7	3.3	2	.9	9	4.2
		B	21	2.5	10	1.2	31	3.7
	CERTAIN PROBABLE OR POSSIBLE	C	15	7.0	2	.9	17	7.9
		B	33	3.9	20	2.4	53	6.3
A. INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	1	.1	3	.4
	CERTAIN OR PROBABLE	C	5	2.3	1	.5	6	2.8
		B	5	.6	2	.2	7	.8
	CERTAIN PROBABLE OR POSSIBLE	C	12	5.6	1	.5	13	6.1
		B	7	.8	2	.2	9	1.1
1. UNDER-INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	1	.1	3	.4
	CERTAIN OR PROBABLE	C	5	2.3	1	.5	6	2.8
		B	4	.5	2	.2	6	.7
	CERTAIN PROBABLE OR POSSIBLE	C	10	4.7	1	.5	11	5.1
		B	6	.7	2	.2	8	1.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
2. OVER-INFLATION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	0	0.0	0	0.0	0	0.0
3. IMPROPER PRESSURE DISTRIBUTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
B. INADE-QUATE TREAD DEPTH	CERTAIN	C	0	0.0	1	.5	1	.5
		B	6	.7	3	.4	9	1.1
	CERTAIN OR PROBABLE	C	3	1.4	2	.9	5	2.3
		B	16	1.9	8	1.0	24	2.9
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	2	.9	7	3.3
		B	25	3.0	18	2.2	43	5.1
C. BLOW-OUT SUDDEN FAILURE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
D. MISMATCH OF TIRE TYPES AND/OR SIZES	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
E. WHEEL PROBLEMS (WHEEL LOSS OR FAILURE)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
F. OTHER TIRE OR WHEEL PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	2	.2	1	.1	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	4	.5	1	.1	5	.6
2. BRAKE SYSTEM	CERTAIN	C	6	2.8	1	.5	7	3.3
		B	19	2.3	1	.1	20	2.4
	CERTAIN OR PROBABLE	C	10	4.7	3	1.4	13	6.1
		B	23	2.8	2	.2	25	3.0
	CERTAIN PROBABLE OR POSSIBLE	C	13	6.1	3	1.4	16	7.5
		B	34	4.1	8	1.0	42	5.0

TABLE 4.6 PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
A. GROSS FAILURE (FRONT AND/OR REAR)	CERTAIN	C	3	1.4	1	.5	4	1.9
		B	15	1.8	1	.1	16	1.9
	CERTAIN OR PROBABLE	C	5	2.3	2	.9	7	3.3
		B	17	2.0	1	.1	18	2.2
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	2	.9	8	3.7
		B	19	2.3	4	.5	23	2.8
1. WHEEL CYLINDER FAILED	CERTAIN	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	1	.5	2	.9
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	1	.5	2	.9
		B	2	.2	1	.1	3	.4
2. BRAKE LINE FAILED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
3. MASTER CYLINDER PROBLEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
4. INSUFFICIENT FLUID LEVEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	3	.4	1	.1	4	.5
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	1	.1	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	1	.1	4	.5
5. ADJUSTMENT MECHANISM LOSS OR FAILURE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
6. FAILED FOR OTHER OR UNSPECI-FIED REASONS	CERTAIN	C	2	.9	1	.5	3	1.4
		B	7	.8	0	0.0	7	.8
	CERTAIN OR PROBABLE	C	5	2.3	1	.5	6	2.8
		B	9	1.1	0	0.0	9	1.1
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	1	.5	7	3.3
		B	10	1.2	2	.2	12	1.4
8. DELAYED BRAKING RESPONSE/ PUMPING REQUIRED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	3	.4	6	.7

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
1. REQUIRED PUMPING DUE TO IMPROPER ADJUSTMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	1	.1	3	.4
2. OTHER OR UNSPECIFIED REASONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	2	.2	3	.4
C. IMBALANCE (PULLED LEFT OR RIGHT)	CERTAIN	C	3	1.4	0	0.0	3	1.4
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	5	2.3	0	0.0	5	2.3
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	6	2.8	0	0.0	6	2.8
		B	5	.6	0	0.0	5	.6
D. BRAKES GRABED, LOCKED PREMATURE-LY, (OR WERE OVERSENSITIVE)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
E. PERFORMANCE DEGRADED FOR OTHER OR UNSPECI-FIED REASONS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	1	.5	1	.5
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	1	.5	1	.5
		B	7	.8	1	.1	8	1.0
3. STEERING SYSTEM	CERTAIN	C	1	.5	0	0.0	1	.5
		B	2	.2	3	.4	5	.6
	CERTAIN OR PROBABLE	C	4	1.9	0	0.0	4	1.9
		B	7	.8	8	1.0	15	1.8
	CERTAIN PROBABLE OR POSSIBLE	C	9	4.2	0	0.0	9	4.2
		B	16	1.9	14	1.7	30	3.6
A. EXCESSIVE FREEPLAY	CERTAIN	C	1	.5	0	0.0	1	.5
		B	1	.1	3	.4	4	.5
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	5	.6	8	1.0	13	1.6
	CERTAIN PROBABLE OR POSSIBLE	C	4	1.9	0	0.0	4	1.9
		B	12	1.4	14	1.7	26	3.1
B. BINDING(UNDUE EFFORT REQUIRED)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
C. FREEZING OR LOCKING	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	2	.2	0	0.0	2	.2
D. OTHER OR UNSPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	1	.1	0	0.0	1	.1
4. SUSPENSION PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	3	1.4	0	0.0	3	1.4
		B	2	.2	4	.5	6	.7
A. SHOCK ABSORBER PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	1	.1	2	.2

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) WEAK SHOCK ABSORBERS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	1	.1	2	.2
(2) MISSING, BROKEN OR OTHER SHOCK ABSORBER PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	0	0.0	0	0.0
B. SPRING PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	2	.2	3	.4
(1) BROKEN MISSING OR DEFECTIVE SPRINGS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.1	1	.1

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) RAISED REAR-END	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	1	.1	2	.2
(3) SPRING IMBALANCES(DUE TO HELPER SPRINGS, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
C. OTHER OR UN-SPECIFIED SUSPENSION PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	1	.1	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	0	0.0	2	.2	2	.2
5. POWER TRAIN AND EXHAUST	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL O/O	S/I N	S/I O/O	CAUSAL OR S/I N	CAUSAL OR S/I O/O
A. POWER LOSS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
(1) RAN OUT OF FUEL	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
(2) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
B. EXHAUST SYSTEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) CO LEAKED INTO DRIVER'S COMPARTMENT	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
6. COMMUNICATION SYSTEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	9	1.1	0	0.0	9	1.1
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	20	2.4	0	0.0	20	2.4
	CERTAIN PROBABLE OR POSSIBLE	C	9	4.2	0	0.0	9	4.2
		B	33	3.9	2	.2	35	4.2
A. VEHICLE LIGHTS AND SIGNALS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	5	.6	0	0.0	5	.6
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	8	1.0	0	0.0	8	1.0
	CERTAIN PROBABLE OR POSSIBLE	C	7	3.3	0	0.0	7	3.3
		B	12	1.4	0	0.0	12	1.4

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(1) HEADLAMP PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(A) INOPERABLE HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(B) MIS-AIMED HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(C) DIRT-OBSCURED HEADLAMPS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
(2) INOPERABLE TAILLIGHTS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	5	.6	0	0.0	5	.6
(3) INOPERABLE TURN SIGNALS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	1	.5	0	0.0	1	.5
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	5	.6	0	0.0	5	.6
(4) TAILLIGHTS OBSCURED BY DIRT, ROAD GRIME, ETC.	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
(5) OTHER LIGHT PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	2	.9	0	0.0	2	.9
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	3	.4	0	0.0	3	.4

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
B. VEHICLE RELATED VISION OBSTRUCTION	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	12	1.4	0	0.0	12	1.4
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	19	2.3	3	.4	22	2.6
(1) DUE TO ICE, SNOW, FROST, WATER, OR CONDENSATION ON WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	4	.5	0	0.0	4	.5
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	5	.6	2	.2	7	.8
(2) DUE TO CRACKED OR OPAQUE WINDOWS (E.G., CARDBOARD OR DECALS ON	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
(3) DUE TO DESIGN OR PLACEMENT OF WINDOWS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) DUE TO OBJECTS IN OR ATTACHED TO VEHICLE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
(5) DUE TO INOPERATIVE OR DEFICIENT VISION HARDWARE	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	2	.9	0	0.0	2	.9
		B	2	.2	0	0.0	2	.2
(A) INOPERATIVE OR MISAIMED WINDSHIELD WASHER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(B) INOPERATIVE OR INEFFECTIVE WIPER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(C) INOPERABLE OR INADEQUATE DEFROSTER	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
(D) ABSENCE OR CONDITION OF MIRRORS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
(E) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	3	.4	0	0.0	3	.4
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	7	.8	1	.1	8	1.0
C. AUDITORY PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	O/O	N	O/O	N	O/O
(1) INOPERABLE OR WEAK HORN	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	2	.2	0	0.0	2	.2
(2) EXCESSIVE RADIO OR TAPE PLAYER VOLUME INSIDE CAR	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
7. DRIVER SEATING AND CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL 0/0	S/I N	S/I 0/0	CAUSAL OR S/I N	CAUSAL OR S/I 0/0
A. DRIVER CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	3	.4	0	0.0	3	.4
(1) STEERING WHEEL PROBLEMS, (E.G., SPINNER SNAGGED CLOTHING)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	1	.5	0	0.0	1	.5
		B	1	.1	0	0.0	1	.1
(2) BRAKE PEDAL PROBLEM, (E.G., PEDAL BROKE OFF)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(3) ACCELERATOR PROBLEM, (E.G., STUCK)	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL		S/I		CAUSAL OR S/I	
			N	0/0	N	0/0	N	0/0
(4) OTHER OR UN-SPECIFIED PROBLEM	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	1	.1	0	0.0	1	.1
B. DRIVER ANTHROPOMETRIC	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(1) SEAT LOOSE OR BECAME DETACHED	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(2) DRIVER NOT POSITIONED TO ADEQUATELY REACH CONTROLS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0

PHASE II AND III VEHICULAR FACTORS BY ACCIDENT

(CONTINUED)

	DEGREE OF CERTAINITY	LEVEL OF INVESTI-GATION	CAUSAL N	CAUSAL %	S/I N	S/I %	CAUSAL OR S/I N	CAUSAL OR S/I %
(3) DRIVER NOT POSITIONED TO SEE ADEQUATELY	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
(4) OTHER OR UN-SPECIFIED PROBLEMS	CERTAIN	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN OR PROBABLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
	CERTAIN PROBABLE OR POSSIBLE	C	0	0.0	0	0.0	0	0.0
		B	0	0.0	0	0.0	0	0.0
8.BODY, DOORS, AND ALL OTHER VEHICLE FACTORS	CERTAIN	C	2	.9	0	0.0	2	.9
		B	8	1.0	1	.1	9	1.1
	CERTAIN OR PROBABLE	C	3	1.4	0	0.0	3	1.4
		B	10	1.2	2	.2	12	1.4
	CERTAIN PROBABLE OR POSSIBLE	C	5	2.3	0	0.0	5	2.3
		B	15	1.8	6	.7	21	2.5

APPENDIX G

Baseline Sampling Instruments

Table G-1 GENERAL DESCRIPTION OF ACCIDENT AND CONTROL SAMPLES

Comparison Variable	Parent Population Accident Control	Data Collection Period	Method of Collection (Agency)	Method of Selection	Sample Size	Data Collection Level
Sex (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	January, 1972 to December, 1972	Interview (Ind. State Police)	Selective	5767	Baseline
	1972 Monroe County Drivers License Applications	29 May, 1973	List Samples (IRPS)	Systematic Sampling from a List	1000	Baseline
Age (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	January, 1972 to December, 1972	Interview (Ind. State Police)	Selective	5370	Baseline
	1972 Monroe County Drivers License Applications	29 May, 1973	List Sampling (IRPS)	Systematic Sampling from a List	1000	Baseline
Marital Status (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	428	In-depth
	General Population Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	300	Baseline
Education (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	430	In-depth
	General Population Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	300	Baseline

Table G-1 (cont'd)

Comparison Variable	Parent Population Accident Control	Data Collection Period	Method of Collection (Agency)	Method of Selection	Sample Size	Data Collection Level
Annual Family Income (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	365	In-depth
	General Population Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	295	Baseline
Major Occupation (Motor Vehicle Operators	Driver Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	420	In-depth
	General Population Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	300	Baseline
Years Driving Experience (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	1920	On-site
	General Population Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	300	Baseline
Most Recent Yearly Mileage (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	1338	On-site

Table G-1 (cont'd)

Comparison Variable	Parent Population Accident Control	Data Collection Period	Method of Collection (Agency)	Method of Selection	Sample Size	Data Collection Level
	General Population, Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	297	Baseline
Vehicle Familiarity in Months Driving Experience (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	1920	On-site
	General Population Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	299	Baseline
Driver Training (Motor Vehicle Operators)	Drivers Involved in Accidents Within Monroe County	October, 1970 to July, 1973	Interview (IRPS)	Investigator Selection	428	In-depth
	General Population Monroe County Drivers	29 April, 1973 to 3 June, 1973	Interview (IRPS)	Quota Sampling	300	Baseline
Vehicle Make (Passenger Vehicles)	Passenger Vehicles Involved in Accidents Within Monroe County	July, 1972 to July, 1973	Investigation (IRPS)	Investigator Selection	490	On-site
	1973 Monroe County Passenger Vehicle Registrations	6 June, 1973	List Samples (IRPS)	Systematic Sampling from a List	2000	Baseline

Table G-1 (cont'd)

Comparison Variable	Parent Population Accident Control	Data Collection Period	Method of Collection (Agency)	Method of Selection	Sample Size	Data Collection Level
Vehicle Model Year (Passenger Vehicles)	Passenger Vehicles Involved in Accidents Within Monroe County	July, 1972 to July, 1973	Investigation (IRPS)	Investigator Selection	490	On-site
	1973 Monroe County Passenger Vehicle Registrations	6 June, 1973	List Sampling (IRPS)	Systematic Sampling from a List	2000	Baseline

FIGURE G-1: VEHICLE INFORMATION COLLECTION AND CODING FORM

Identification					
Project Number	Array	Case Number	Model Year	Vehicle Make	IRPS Vehicle Make Code
1	2 3 4 5	6	7 8 9 10	11 12 13 14 15	16 17 18 19 20

Identification					
Project Number	Array	Case Number	Model Year	Vehicle Make	IRPS Vehicle Make Code
1	2 3 4 5	6	7 8 9 10	11 12 13 14 15	16 17 18 19 20

Level A Data Collection TAC-31

Make and Model Year of

Monroe County Vehicles 6/6/73

FIGURE G-2: DRIVER INFORMATION COLLECTION AND CODING FORM

Identification					
Project Number	Array	Case Number	Initial	Sex	Date of Birth: Month / Year
1 2 3 4 5	6 7 8 9 10		11	12	13 14 15 16

Identification					
Project Number	Array	Case Number	Initial	Sex	Date of Birth: Month / Year
1 2 3 4 5	6 7 8 9 10		11	12	13 14 15 16

Level A Data Collection TAC-30
Age and Sex of
Monroe County Drivers 29/5/73

PARKING LOT SURVEY FORM

Project Number 0 2 4 (1 2 3)	Time of Interview _____ AM PM	DOS Only: Date Rec'd. _____
Array Number 0 9 (4 5)	Date of Interview _____	
Case Number: __ __ __ __ __ __ (6 7 8 9 10 11)	Interviewer _____	Coded_____
Card Number 0 1 (12 13)	Location _____	Punched_____

DRIVER DESCRIPTION	Punch Code	Card Col.
1. Sex __(1) Male __(2) Female	__	14
2. Age: _____	__ __	15-16
3. Education __(1) Less than H/S grad __(2) High school grad __(3) Voca. or tech. school __(4) Attended college __(5) College degree __(6) Grad. or professional	__	17
4. Marital Status __(1) Single __(2) Married __(3) Divorced __(4) Divorced & Remarried __(5) Separated __(6) Widowed __(7) "Living together" __(8) Other:_____	__	18
5. Major Occupation __(1) Farmer __(2) Laborer __(3) Semi-skilled __(4) Skilled __(5) White collar __(6) Professional __(7) Student __(8) Housewife __(9) Other:_____	__ __	19-20
6. Left Handed? __(1) Yes __(2) No	__	21
7. Annual Family Income __(1) Under $3,000 __(2) $3,000 - $5,999 __(3) $6,000 - $7,999 __(4) $8,000 - $11,999 __(5) $12,000 - $14,999 __(6) $15,000 - $19,999 __(7) $20,000 - $24,999 __(8) $25,000 or more	__	22
8. Years Driving Experience: _____	__ __	23-24

DRIVER DESCRIPTION	Punch Code	Card Col.
9. Most Recent Yearly Mileage: _____	__ __ __ __ __ (25 26 27 28 29)	25-29
10. Number of months you have driven this vehicle: _____	__ __ __ (30 31 32)	30-32
11. Have you ever taken a course in driver training? __(1) yes, completed __(2) yes, not completed __(3) no	__	33
12. Total number of accidents you have ever been involved in while driving:_____	__ __	34-35
13. Total number that were your fault: _____	__ __	36-37
14. Number of accidents you have been involved in while driving in the last five years: _____	__ __	38-39
15. Of these how many were your fault:_____	__ __	40-41
16. Percent driving on city streets __(1) 0% __(2) 1-25% __(3) 26-50% __(4) 51-75% __(5) 76-99% __(6) 100%	__	42
17. Percent driving at night __(1) 0% __(2) 1-25% __(3) 26-50% __(4) 51-75% __(5) 76-99% __(6) 100%	__	43
18. Percent driving on gravel, sand, or dirt roads __(1) 0% __(2) 1-25% __(3) 26-50% __(4) 51-75% __(5) 76-99% __(6) 100%	__	44

PARKING LOT SURVEY FORM

Place a check beside the one statement that best answers each question.

DRIVER KNOWLEDGE	Punch Code	Card Col.
19. If there are no painted lines on the road you: __(1) May drive anywhere on your side of the road. __(2) Should drive as if there were lines. __(3) Should drive wherever traffic is moving the fastest. __(4) May drive in the center of the road.	__	45
20. If you know that you will soon be making a turn you should: __(1) Look well ahead to locate the turning point. __(2) Blow the horn several hundred feet before the turn. __(3) Flash your bright lights to warn other traffic __(4) Speed up so as to avoid making other vehicles wait.	__	46
21. When you want to make a right turn into a driveway you should: __(1) Avoid stopping on the road. __(2) Swing to the left before making the turn. __(3) Signal after you begin to turn. __(4) Signal the traffic behind you to pass.	__	47
22. If you come to an intersection that is hard to see around because of trees or buildings: __(1) Proceed as if there was a Yield sign at the intersection. __(2) Stop near the center of the intersection and then continue when it is safe. __(3) Slow down and blow your horn to warn drivers who cannot see you. __(4) Stop at the intersection and edge forward slowly.	__	48
23. When passing a vehicle you should return to the right side of the road when: __(1) You are 50 feet in front of the passed vehicle. __(2) The other driver signals you to do so. __(3) You have cleared the front bumper by a vehicle length. __(4) You can see both its headlights in your rearview mirror	__	49

	Punch Code	Card Col.
24. If your brakes are not holding because they are wet, you should: __(1) Continue driving and they will dry off. __(2) Keep one foot on the gas and one lightly on the brake until dry. __(3) Stop on the side of the road and wait for them to dry. __(4) Not use your brakes until they are dry.	__	50
25. When driving through fog at night, you should use your: __(1) High beam headlights. __(2) Parking lights. __(3) Low beam headlights. __(4) 4-way flashers.	__	51
26. If the rear of your vehicle is skidding to the left you should: __(1) Move the steering wheel back and forth in a zig-zag pattern. __(2) Turn the top of your steering wheel to the left. __(3) Hold your steering wheel from moving until out of the skid. __(4) Turn the top of your steering wheel to the right.	__	52
27. Before leaving the road to avoid a head-on crash you should slow down by: __(1) Pumping the brakes. __(2) Applying constant presure on the brakes. __(3) Turning off the engine. __(4) Shifting into neutral.	__	53
28. If you cannot stop in time before hitting another vehicle it is best to: __(1) Gradually slow down then hit the other vehicle. __(2) Blow the horn and continue at normal speed. __(3) Try to steer around the vehicle & avoid braking hard. __(4) Remove your foot from the gas and put on the brake as hard as possible.	__	54
29. At night you should drive slow enough to be able to stop within: __(1) 5 car lengths. __(2) The distance lighted by your headlights. __(3) The time it takes for a light to change from yellow to red. __(4) 10 seconds from the time you hit the brake.	__	55
30. Enter Test Score:_____	__ __	56-57

VEHICLE DESCRIPTION

Duplicate columns 1-5 from preceding Card

Case Number ___ (6 7 8 9 10 11)

Card Number 0 2 (12 13)

31. Make: _____

Code to be inserted by data reduction ___ (14 15 16)

32. Model Year 19___ (17 18)

33. Odometer Reading ___ (19 20 21 22 23 24)

Date of Field Interview:

__ __/__ __/7 3

34. Julian Calendar Date: ___

Code to be inserted by data reduction ___ (25 26 27)

Date of State Inspection:

__ __/__ __/__ __

35. Julian Calendar Date:

Code to be inserted by data reduction ___ (28 29 30)

36. Inspection Mileage:

___ (31 32 33 34 35 36)

Tread Depths:	Punch Code	Card Col.
Indicate the depth of tread in 32nds of an inch at the thinnest point of the circumference or width of the tire. For readings between values, round to the lower value.		
37. Right Front ____/32"	__ __	37-38
38. Left Front ____/32"	__ __	39-40
39. Left Rear ____/32"	__ __	41-42
40. Right Rear ____/32"	__ __	43-44
41. Windshield Washer Function: If the washers fail to function for any reason, including that the reservior is empty, the system fails. __ (1) Pass __ (2) Fail	____	45
42. Horn Function: If the horn(s) works normally it passes. If one or more are weak, or if some parts of the circumference of the horn switch do not work, it fails. __ (1) Pass __ (2) Fail	____	46
43. Stop Lamp Function: If the lamp function is not entirely normal, the system fails (Ignore lens condition and cleanliness). __ (1) Pass __ (2) Fail	____	47

APPENDIX H

- **Accident/Control Sample Comparisons**
- **Involvement Ratio Plots**

TABLE H-1

Comparison of sex of accident-involved drivers with control sample distributions.

SEX	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Male	3977	69.0	573	57.3
Female	1790	31.0	427	42.7
TOTAL	5767	100.0	1000	100.0
X^2	Chi-square = 320.5 with 1 d.f. ***			

Sources: Accident-involved -- Indiana State Police Accident Statistics, 1972; Control Sample -- 1972 Monroe County Drivers License Applications.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-2

Comparison of age of accident-involved drivers with control sample distributions.

AGE	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Under 20	979	18.2	157	15.7
20-24	1534	28.6	234	23.4
25-34	1215	22.6	257	25.7
35-44	623	11.6	128	12.8
45-54	496	9.2	113	11.3
55-64	298	5.6	72	7.2
Over 64	225	4.2	39	3.9
TOTAL	5370	100.0	1000	100.0
x^2	Chi-square = 151.08 with 6 d.f. ***			

Sources: Accident-involved -- Indiana State Police Accident Statistics, 1972; Control Sample -- 1972 Monroe County Drivers License Applications

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-3

Comparison of marital status of accident-involved drivers with control sample distributions.

MARITAL STATUS	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Single	202	47.2	105	35.0
Married	188	43.9	181	60.3
Divorced	20	4.7	3	1.0
Divorced and Remarried	7	1.6	3	1.0
Separated	5	1.2	1	0.3
Widowed	6	1.4	7	2.4
TOTAL	428	100.0	300	100.0
X^2	Chi-square = 109.14 with 5 d.f. ***			

Sources: Accident-involved -- Phase I, II, and III In-depth Investigated Accidents; Control Sample -- General Population, Monroe County Drivers

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-4

Comparison of educational level of accident-involved drivers with control sample distributions.

EDUCATION	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Less than High School Graduate	108	25.1	44	14.7
High School Graduate	116	27.0	80	26.7
Vocational or Technical School	12	2.8	11	3.6
Attended College	111	25.8	78	26.0
College Degree	50	11.6	45	15.0
Graduate Degree or Professional	33	7.7	42	14.0
TOTAL	430	100.0	300	100.0
X^2	Chi-square = 48.09 with 5 d.f. ***			

Sources: Accident-involved - Phase I, II, and III In-depth Investigated Accidents; Control Sample - General Population Monroe County Drivers.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-5

Comparison of annual family income of accident-involved drivers with control sample distributions

ANNUAL FAMILY INCOME	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Under $3,000	20	5.6	27	9.2
3,000 - 5,999	52	14.6	29	9.8
6,000 - 7,999	65	18.3	34	11.5
8,000 - 11,999	87	24.4	61	20.7
12,000 - 14,999	69	19.4	51	17.3
15,000 - 19,999	34	9.6	55	18.7
20,000 - 24,999	11	3.1	19	6.4
25,000 or more	18	5.0	19	6.4
TOTAL	356	100.0	295	100.0
X^2	Chi-square = 53.82 with 7 d.f. ***			

Sources: Accident-involved - Phase I, II, and III In-depth Investigated Accidents; Control Sample - General Population Monroe County Drivers.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-6

Comparison of major occupation of accident-involved drivers with control sample distributions

MAJOR OCCUPATION	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Farmer	3	0.7	4	1.3
Laborer	60	14.3	20	6.7
Semi-skilled	30	7.2	15	5.0
Skilled	39	9.3	25	8.3
White Collar	35	8.3	34	11.3
Professional	48	11.4	46	15.3
Student	156	37.1	89	29.7
House-wife	31	7.4	50	16.7
Other	18	4.3	17	5.7
TOTAL	420	100.0	300	100.0
X^2	Chi-square = 80.05 with 8 d.f. ***			

Sources: Accident-involved - Phase I, II, and III In-depth Investigated Accidents; Control Sample - General Population Monroe County Drivers.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-7

Comparison of years driving experience of accident-involved drivers with control sample distributions.

YEARS DRIVING EXPERIENCE	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Under 5	621	31.3	59	19.7
5-9	494	24.9	76	25.3
10-19	362	18.2	77	25.7
20-29	216	10.9	30	10.0
30-39	125	6.3	30	10.0
40-49	106	5.3	19	6.3
Over 49	62	3.1	9	3.0
TOTAL	1986	100.0	300	100.0
X^2	Chi-square = 210.04 with 6 d.f.***			

Sources: Accident-involved -- Phase I, II, and III On-site Investigated Accidents; Control Sample -- General Population Monroe County Drivers

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-8

Comparison of most recent yearly mileage of accident-involved drivers with control sample distributions.

MOST RECENT YEARLY MILEAGE	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Under 6,000	206	15.4	70	23.6
6,000 - 10,999	394	29.5	95	32.0
11,000 - 15,999	323	24.1	53	17.8
16,000 - 20,999	174	13.0	32	10.8
21,000 - 25,999	75	5.6	18	6.1
26,000 - 30,999	60	4.5	14	4.7
Over 30,999	106	7.9	15	5.0
TOTAL	1338	100.0	297	100.0
x^2	Chi-square = 100.65 with 6 d.f.***			

Sources: Phase I, II, and III On-site Investigated Accidents; Control Sample -- General Population Monroe County Drivers.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-9

Comparison of vehicle familiarity (measured in months driving experience) of accident-involved drivers with control sample distributions

VEHICLE FAMILIARITY IN MONTHS DRIVING EXPERIENCE	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Under 7	701	36.5	90	30.1
7 - 12	380	19.8	91	30.4
13 - 24	359	18.7	56	18.7
25 - 36	222	11.6	22	7.4
37 - 48	92	4.8	16	5.4
49 - 60	65	3.4	10	3.3
61 - 72	53	2.7	8	2.7
Over 72	48	2.5	6	2.0
TOTAL	1920	100.0	299	100.0
X^2	Chi-square = 146.04 with 7 d.f. ***			

Sources: Accident-involved - Phase I, II, and III On-site Investigated Accidents; Control Sample - Sample of General Population Monroe County Drivers.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-10

Comparison of driver training of accident-involved drivers with control sample distributions.

DRIVER TRAINING	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Driver Training Course Taken and Completed	267	62.4	168	56.0
Driver Training Course Taken and not Completed	2	0.5	2	0.7
Driver Training Course Not Taken	159	37.1	130	43.3
TOTAL	428	100.0	300	100.0
x^2	Chi-square = 7.18 with 2 d.f. *			

Sources: Accident-involved -- Phase I, II, and III In-depth Investigated Accidents; Control Sample -- General Population Monroe County Drivers.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-11

Comparison of make of accident-involved passenger vehicles with control sample distributions

VEHICLE MAKE	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
Chevrolet	116	23.7	408	20.4
Ford	102	20.8	349	17.4
Oldsmobile	42	8.6	203	10.1
Volkswagen	22	4.5	172	8.6
Pontiac	31	6.3	148	7.4
Buick	28	5.7	131	6.6
Plymouth	32	6.5	123	6.1
Mercury	29	5.9	114	5.7
Dodge	24	4.9	96	4.8
American	10	2.0	39	2.0
Chrysler	8	1.7	35	1.8
Cadillac	8	1.7	30	1.5
Opel	4	.8	29	1.4
Lincoln	2	.4	16	.8
Other	32	6.5	107	5.4
TOTAL	490	100.0	2000	100.0
X^2	Chi-square ≐ 21.73 with 14 d.f. (NS)			

Sources: Accident-involved - Phase III On-site Investigated Accidents; Control Sample - 1973 Monroe County Passenger Car Registrations.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

TABLE H-12

Comparison of model year of accident-involved passenger vehicles with control sample distributions

MODEL YEAR	ACCIDENT-INVOLVED		CONTROL SAMPLE	
	n	%	n	%
1973	24	4.9	156	7.8
1972	57	11.6	250	12.5
1971	54	11.0	190	9.5
1970	61	12.4	187	9.3
1969	41	8.4	165	8.2
1968	41	8.4	217	10.8
1967	55	11.2	183	9.1
1966	45	9.2	171	8.5
1965	48	9.8	177	8.8
1964	20	4.1	91	4.5
1963	18	3.7	85	4.2
1962 and older	26	5.3	128	6.4
TOTAL	490	100.0	2000	100.0
x^2	Chi-square = 19.15 with 11 d.f. (NS)			

Sources: Accident-involved -- Phase III On-Site Investigated Accidents; Control Sample - 1973 Passenger Car Registrations.

(NS) Not Significant
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Figure H-1

INVOLVEMENT RATIOS

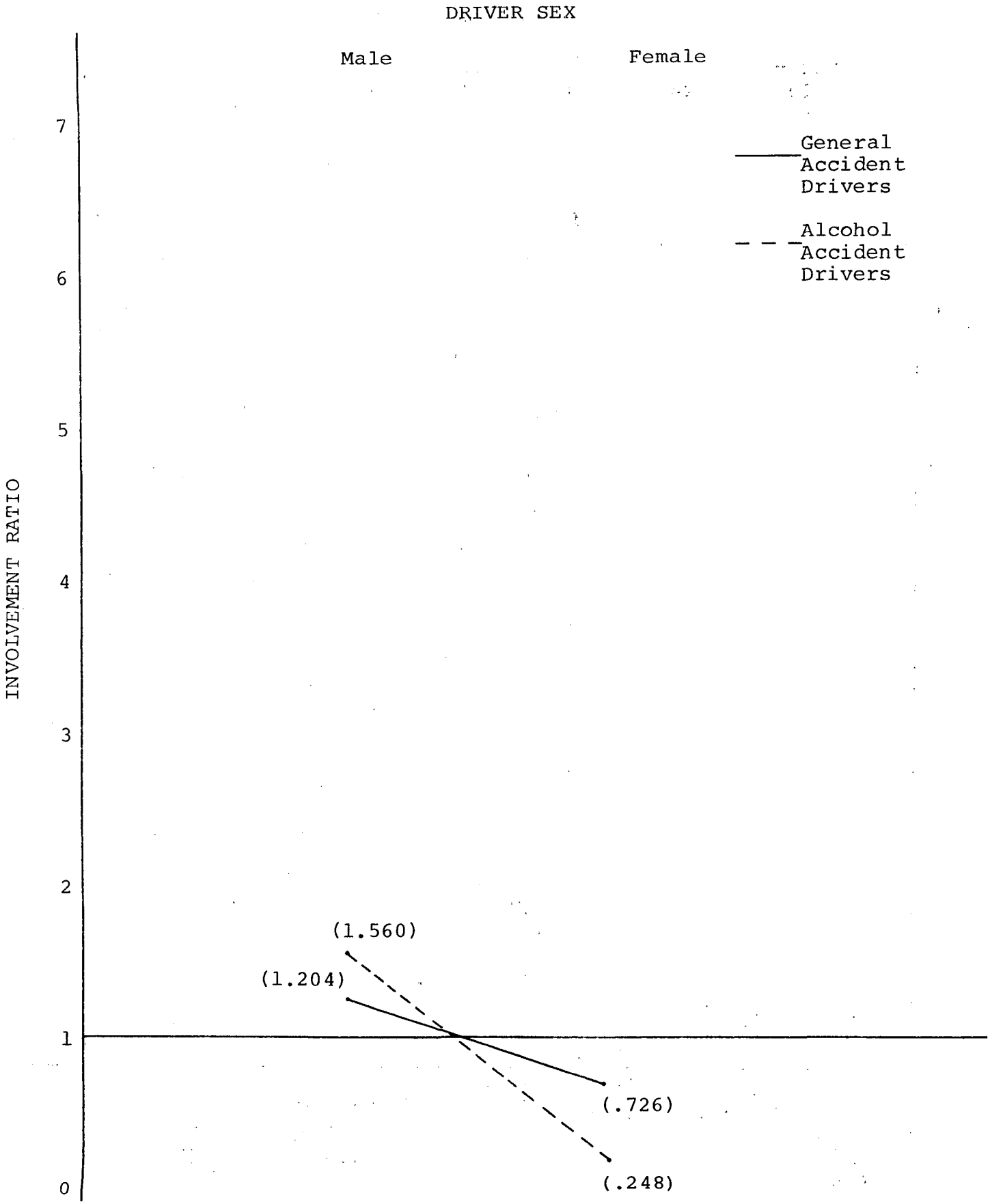


Figure H-2

INVOLVEMENT RATIOS

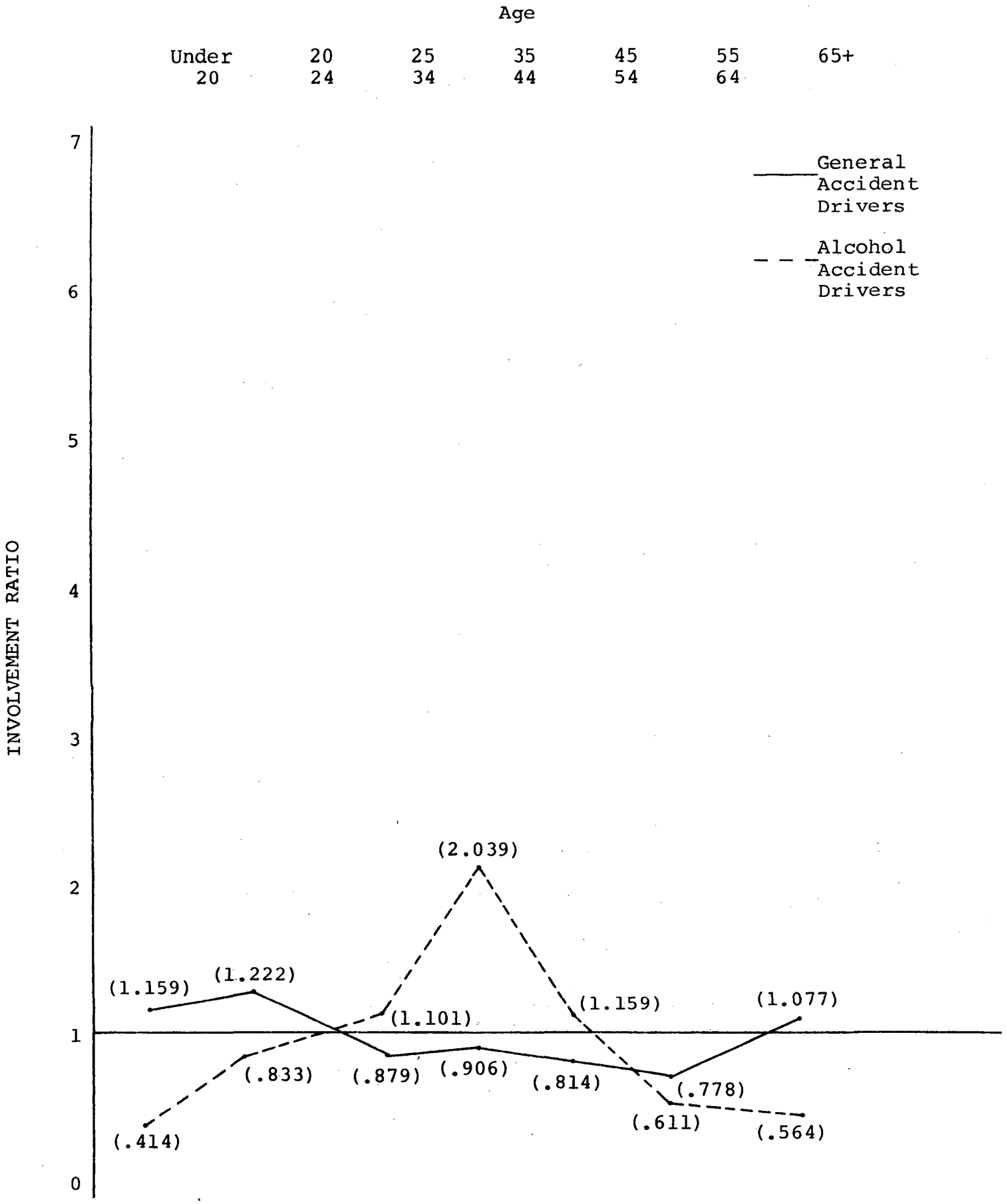


Figure H-3

INVOLVEMENT RATIOS

MARITAL STATUS

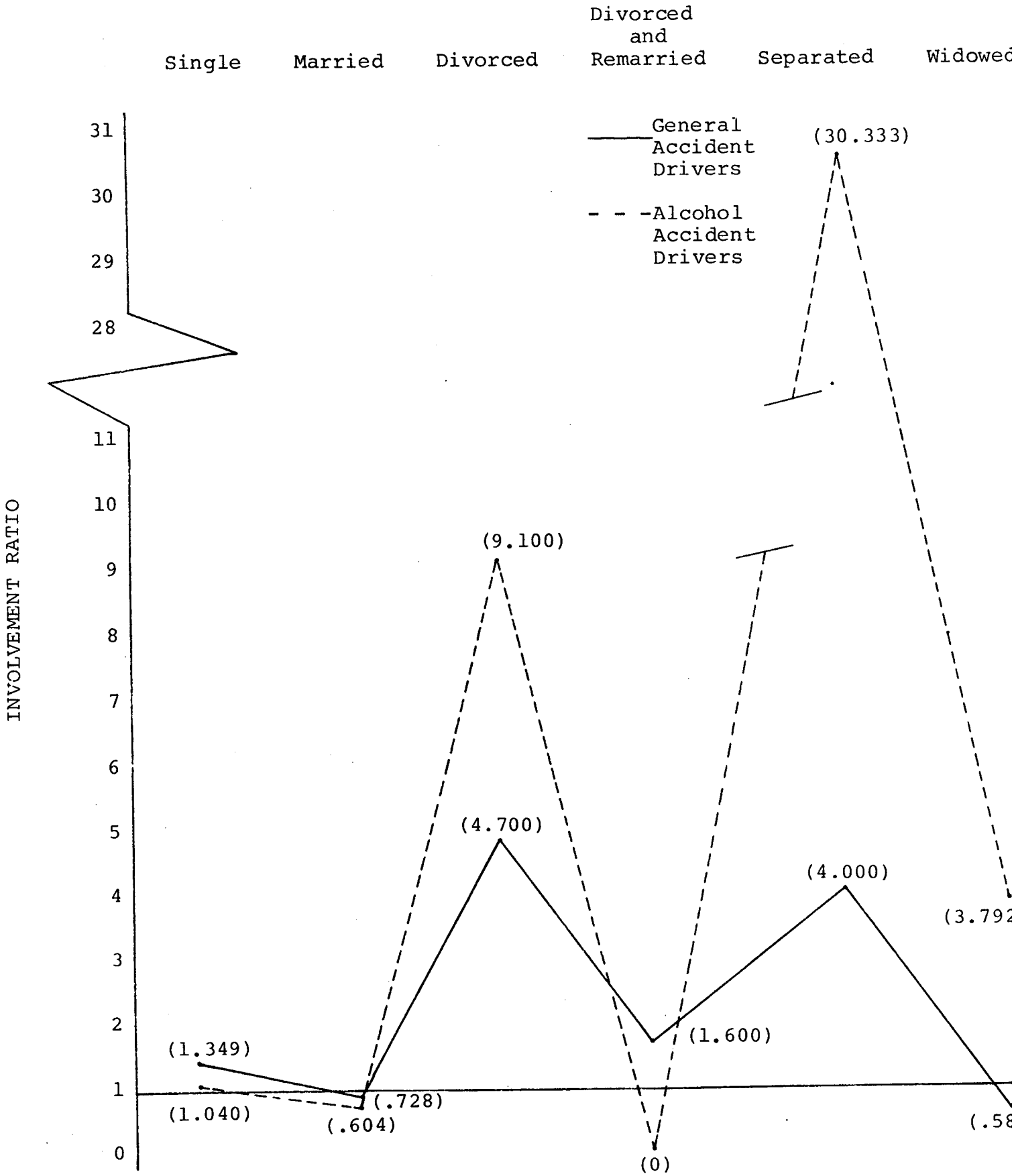


Figure H-4

INVOLVEMENT RATIOS

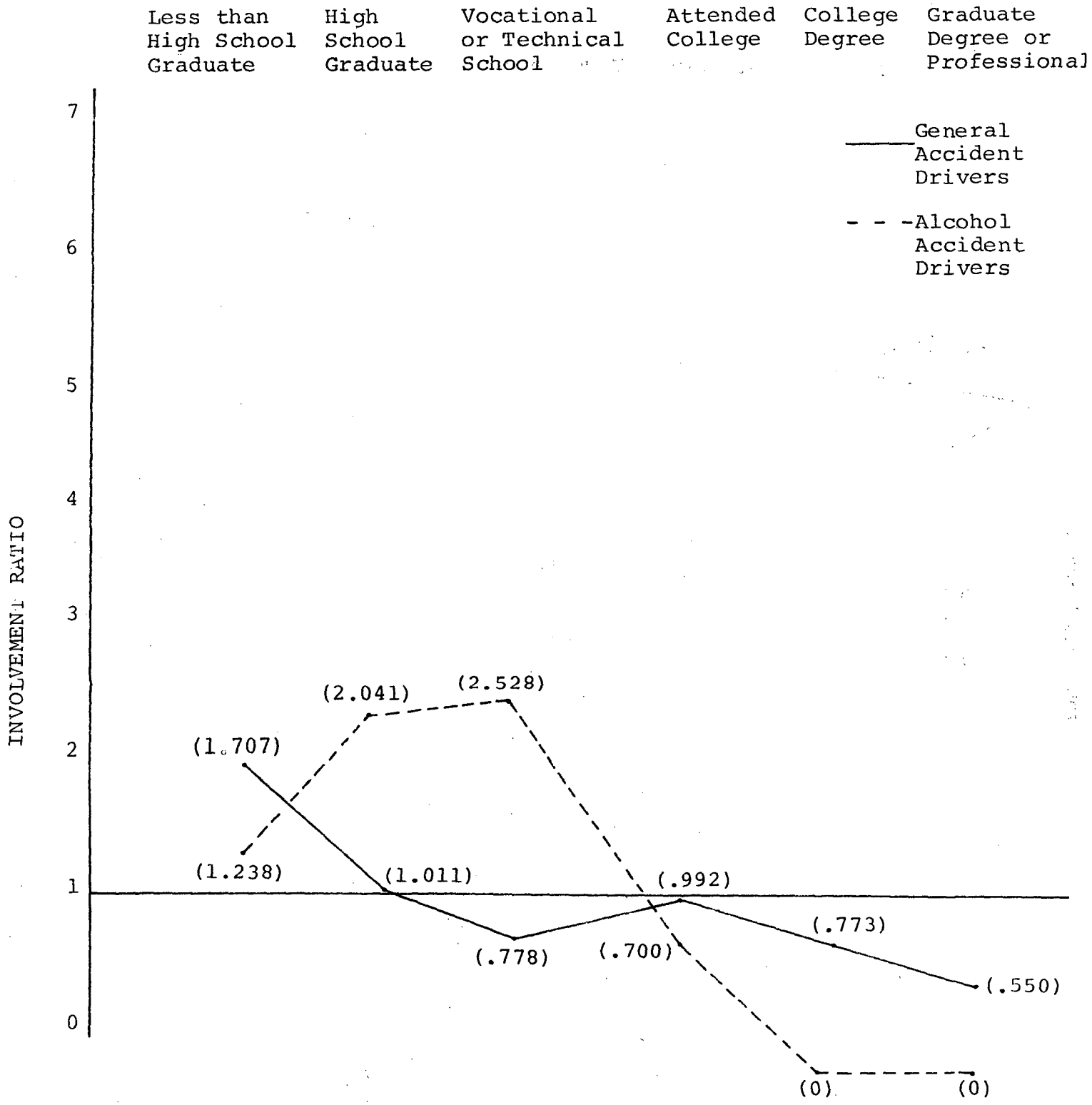


Figure H-5

INVOLVEMENT RATIOS

ANNUAL FAMILY INCOME

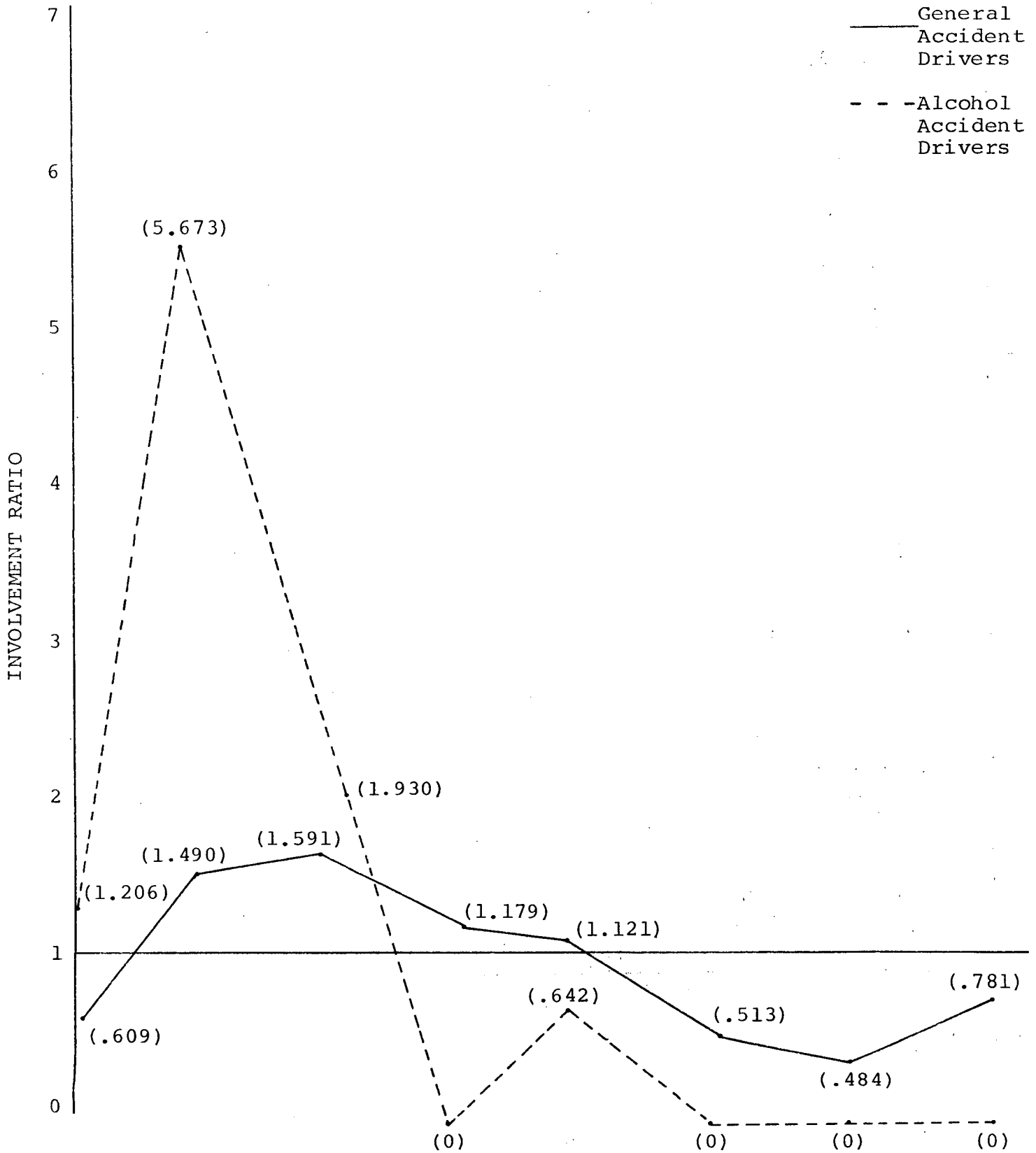


Figure H-6

INVOLVEMENT RATIOS

MAJOR OCCUPATION

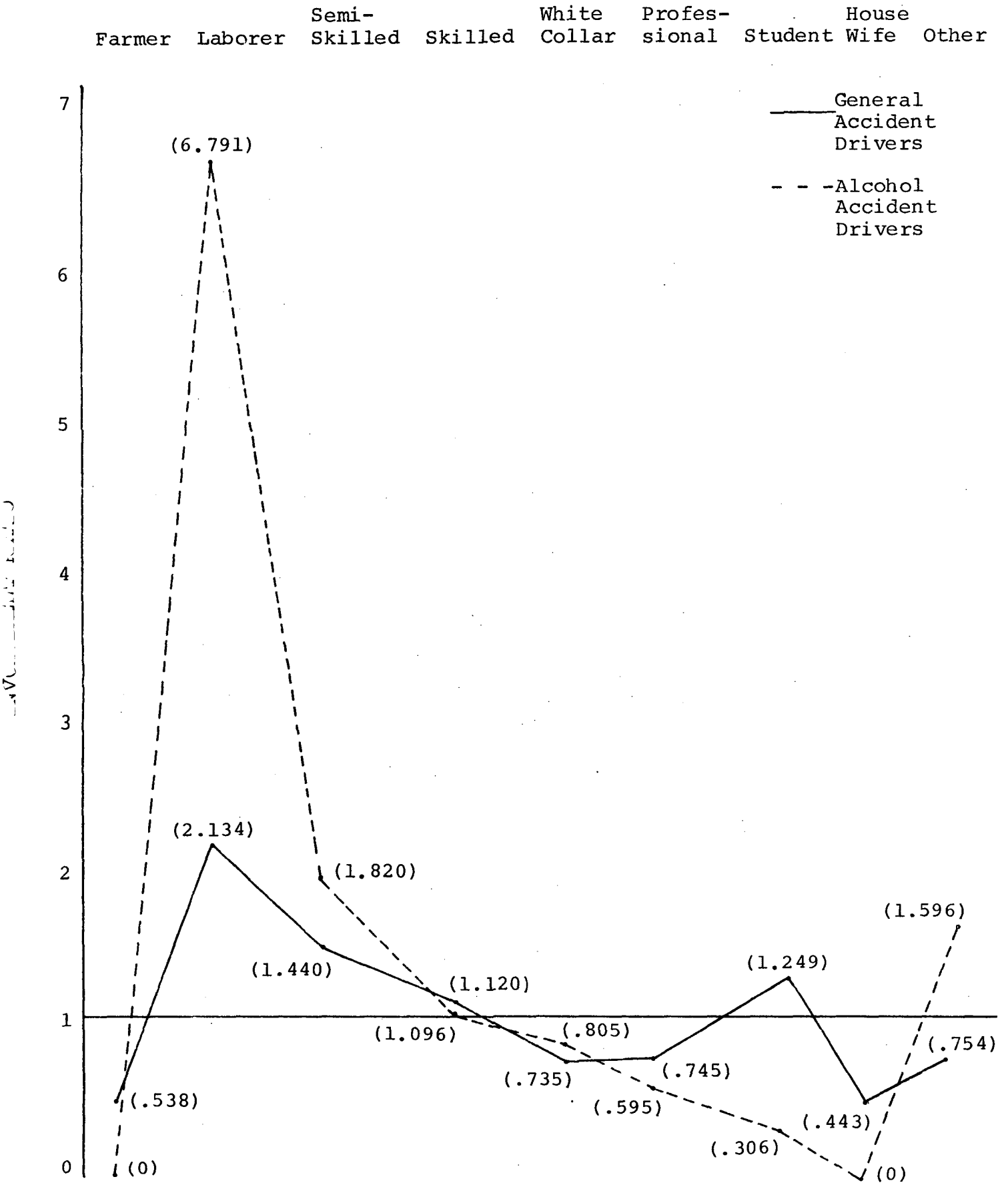


Figure H-7

INVOLVEMENT RATIOS

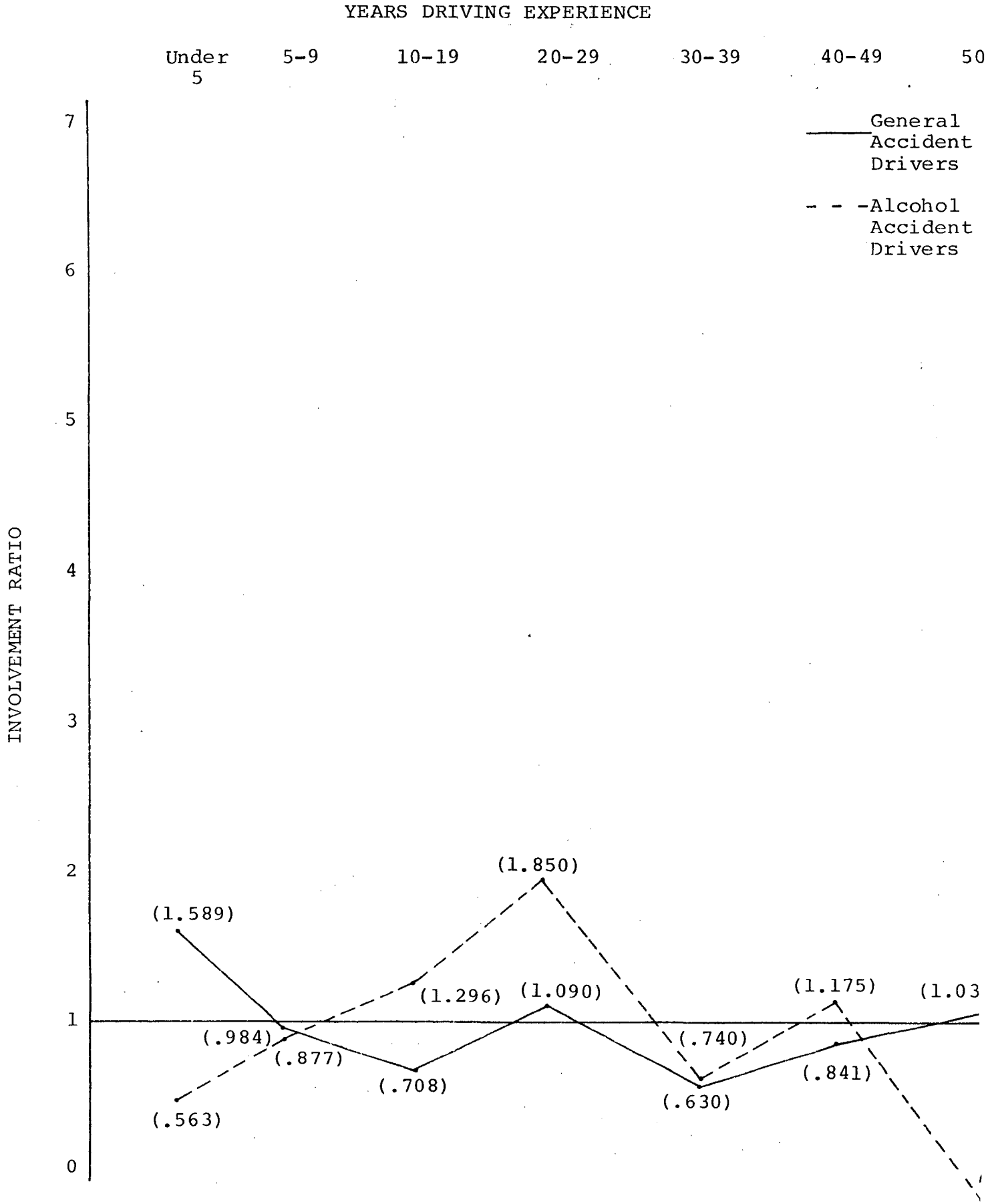


Figure H-8

INVOLVEMENT RATIOS

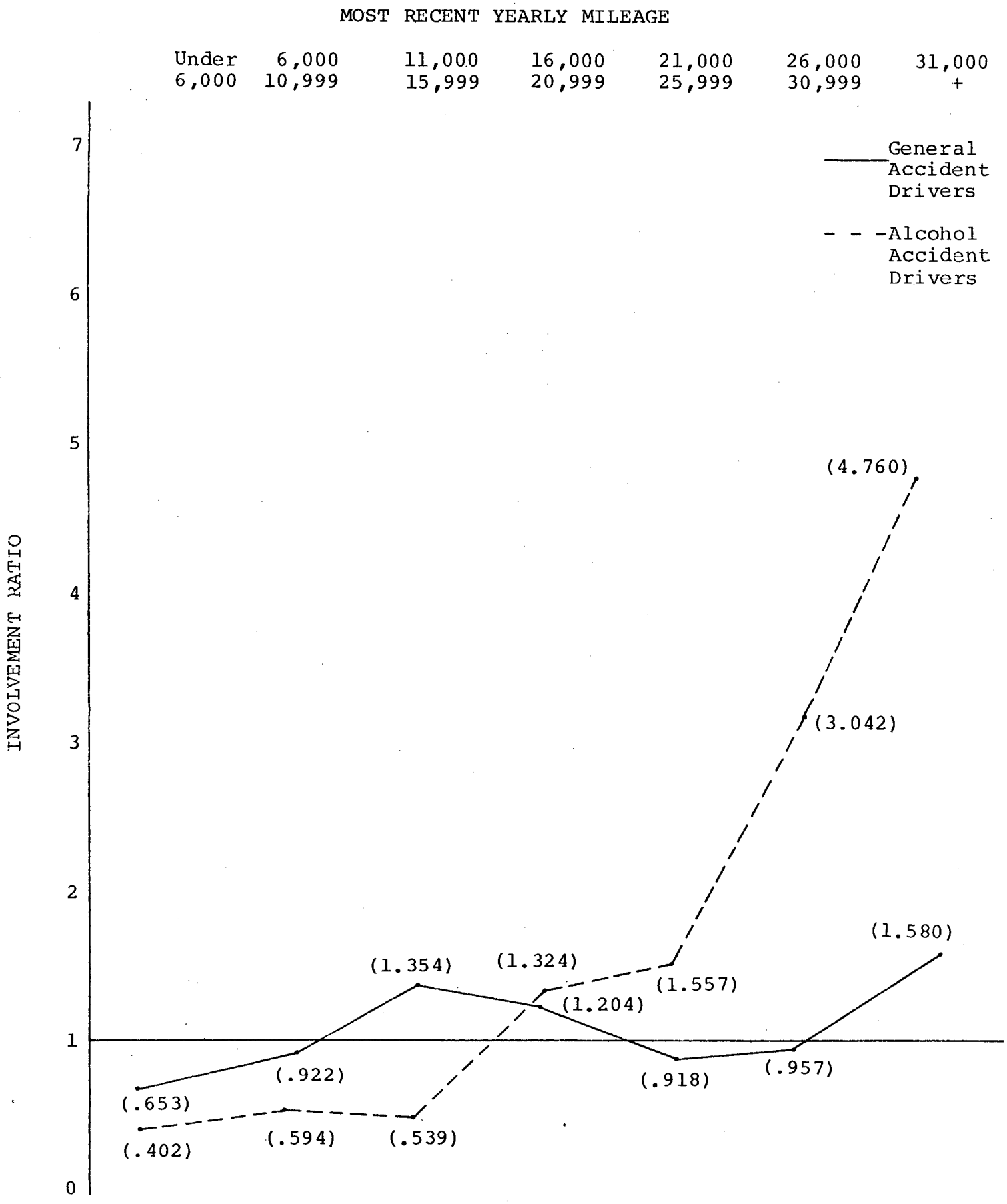


Figure H-9

INVOLVEMENT RATIOS

VEHICLE FAMILIARITY
(MONTHS DRIVING ACCIDENT VEHICLE)

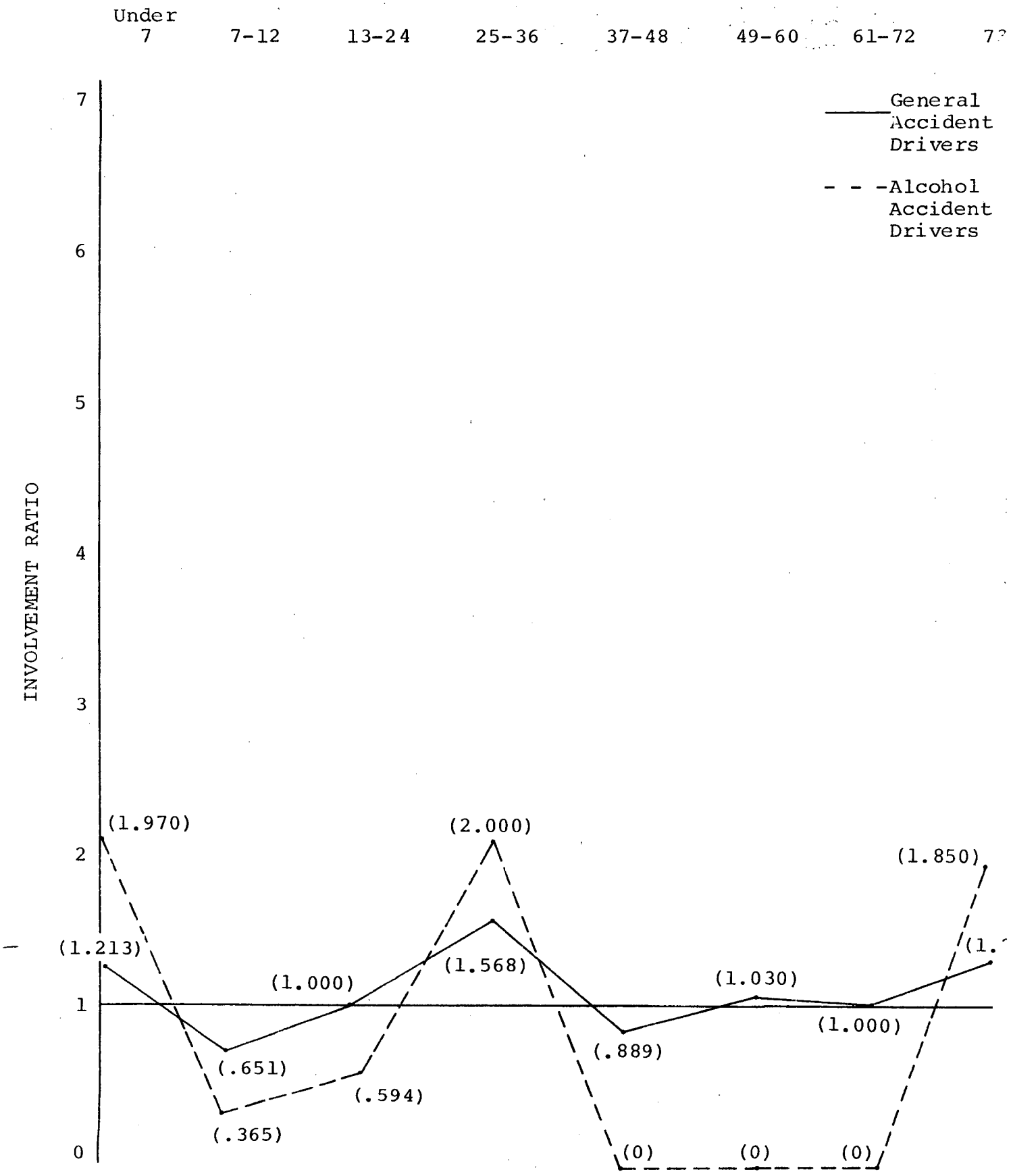


Figure H-10

INVOLVEMENT RATIOS

DRIVER TRAINING

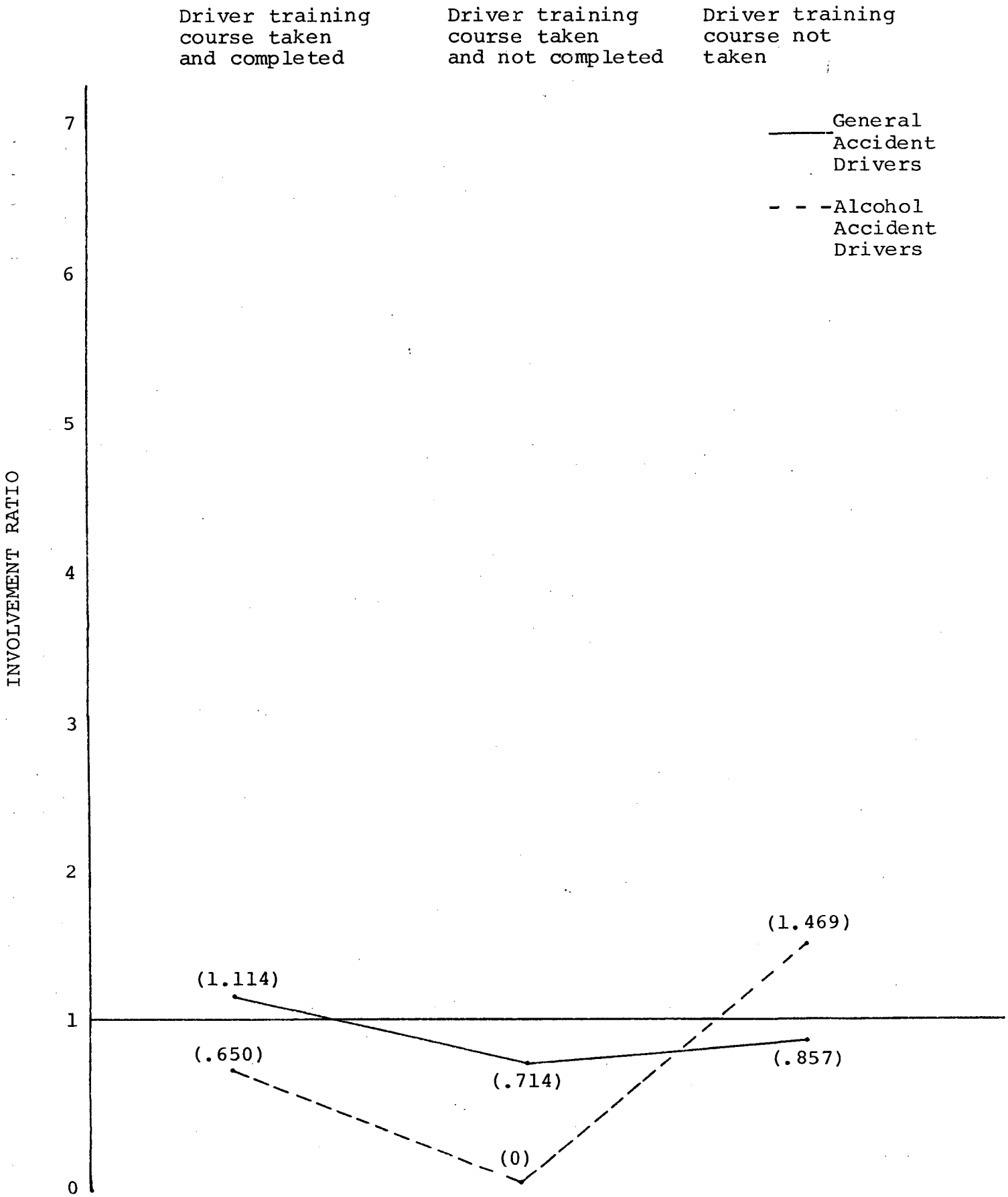


Figure H-11

INVOLVEMENT RATIOS

VEHICLE MAKE

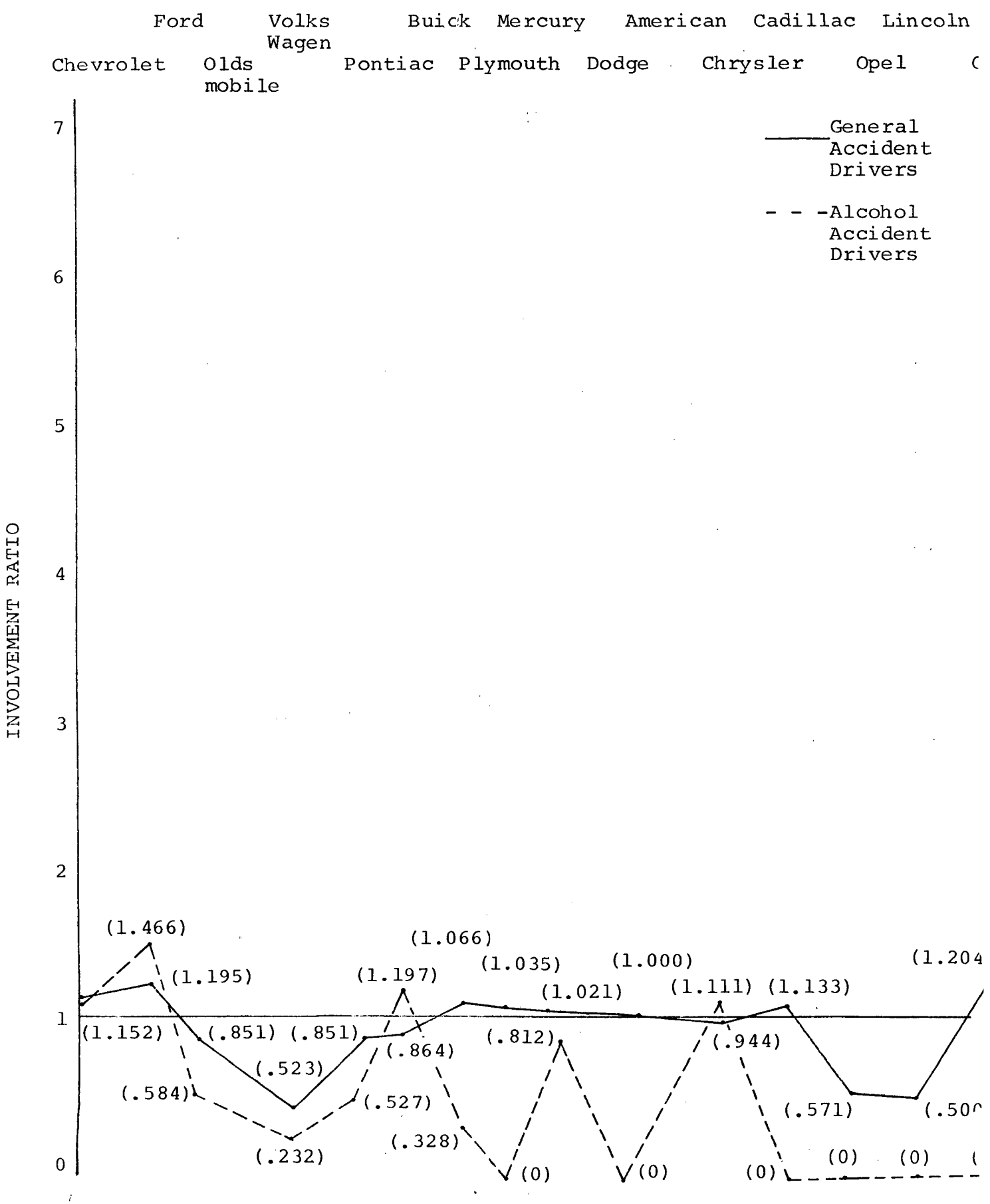
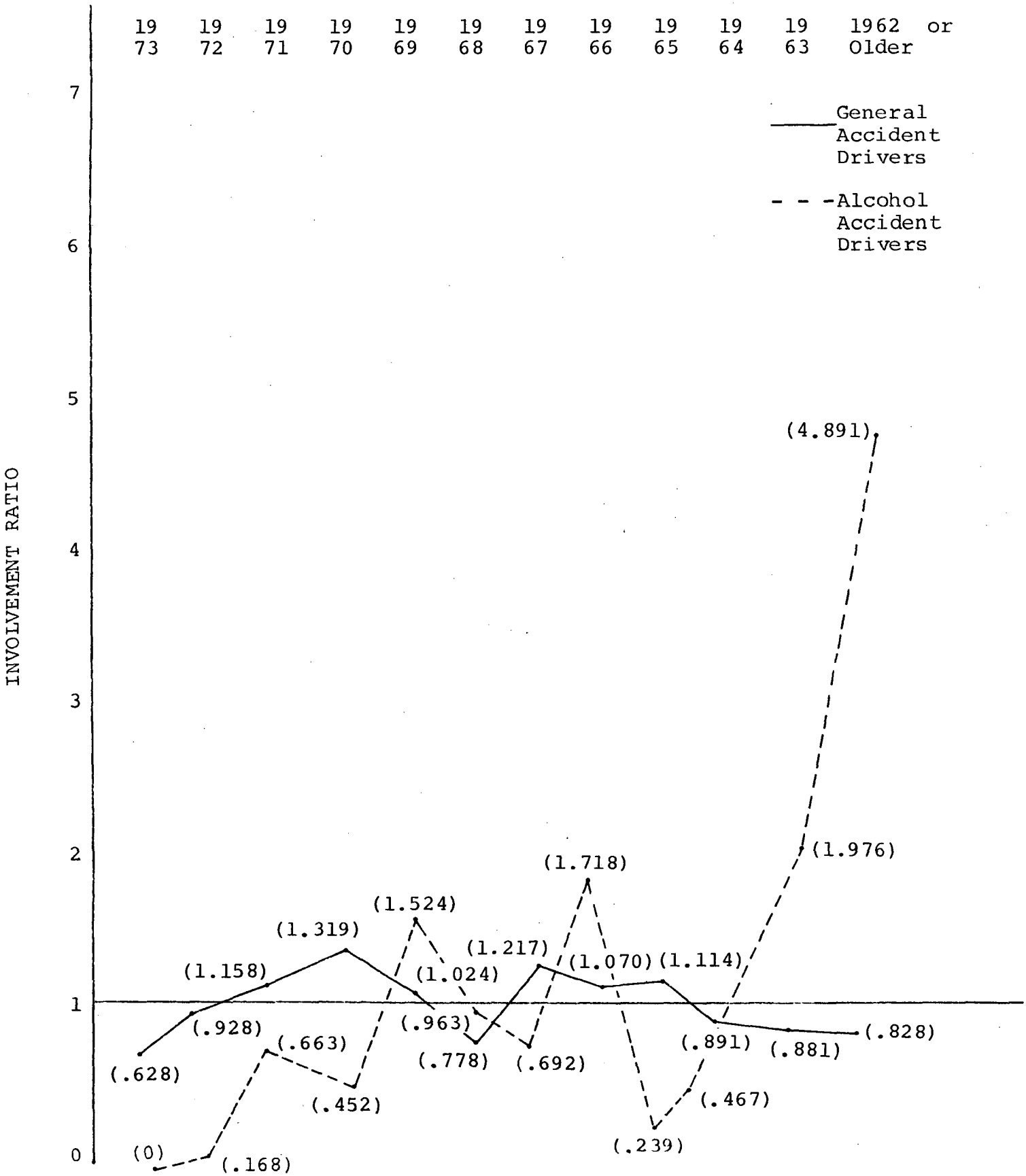


Figure H-12

INVOLVEMENT RATIOS

VEHICLE MODEL YEAR



APPENDIX I
Cluster Analysis

Appendix I-1: Cluster Analysis Software

Cluster Analysis Software

(Circled numbers refer to Section 5.0, Figure 5-1).

The program allowed different subgroups or clusters to be identified simultaneously, i.e., within the same program run. In each run, all attributes ultimately joined into one comprehensive cluster, usually at a zero level of similarity (i.e., virtual non-copresence. Russell and Rao's coefficient of similarity was employed(1), together with Spearman's sums of variables formula(2) for determining attribute and cluster weights. (Details of the computational procedures employed by this program are provided in Appendix I-2). The program was designed to allow up to 100 attributes to be examined simultaneously in any run, with no limitation of number of cases.

Clusters identified using the program thus reflect both the degree to which certain accident attributes were observed to be copresent in the same cases, and to some extent, the relative frequency with which these same attributes were observed across all cases. The resulting clusters are in this sense different from factors which might be identified in a factor analysis, in that attribute clusters are based upon discrete-valued rather than continuous variables, copresence or "similarity" measures rather than product-moment correlation coefficients, and number of cases represented rather than amounts of variance accounted for.

During early stages of the analysis it was determined that when all 61 attributes were examined simultaneously, resulting clusters tended either to be "top-level," i.e., to be composed for the most part of high-frequency attributes, or to be spurious, i.e., at the "noise" level, accounting for any cases left over. Cluster of intermediate strength (and potentially greater interest) were usually overshadowed in such comprehensive, all-attribute runs. There was therefore reason to believe that a more representative picture of accident types would result from separate examinations of various attribute subgroups, by themselves and in combination with other subgroups. Clusters obtained during such subgroup runs could then be compared with those obtained during comprehensive runs. Particular clusters showing high "resilience" when exposed to other subsets of attributes would be identified, and would accordingly be these upon which greatest emphasis would be placed as inputs to an initial accident taxonomy. Subgroups of attributes were compared with each other in program runs according to the scheme indicated in Table I-1. Note that run #17 on this table represents the "comprehensive" or all-attribute run, where all 61 attributes were examined simultaneously.

A special output program was required (12) to display clusters identified during each run of the cluster analysis program (11). This display program, written by an IRPS programmer, sorted and arrayed attributes on the printouts so as to show with greatest

intelligibility the manner in which individual clusters developed from initial attribute pairs, according to the relative amounts of similarity displayed by these clusters as each new attribute was added. An example of the cluster display outputs (13) produced by this program is provided in Figure I-1.

Clusters were then selected by inspection (14) from the program printouts, on the basis of strength of similarity, relative amount of "similarity" distance from other, more conglomerate (and weaker) clusters, and consistency of appearance across program runs. Lists of clusters selected were drawn up for subsequent reassessment and ranking on the basis of additional measures, as discussed below.

Whereas the "similarity" coefficient for each cluster reflects gross degree of interrelationship among the attributes in the cluster, it was felt that this coefficient did not go far enough in separating out those clusters which might be of more importance than others. The similarity coefficient is analogous to a correlation/coefficient, in that it indicates for pairs of attributes the degree to which they were copresent in cases. It goes further, again for pairs, insofar as it also reflects the relative frequency with which each attribute in the pair occurs in the population of cases examined. But when more than two attributes appear in a cluster having a high similarity coefficient, it is difficult to assess the true significance of the cluster on the basis of its similarity coefficient alone.

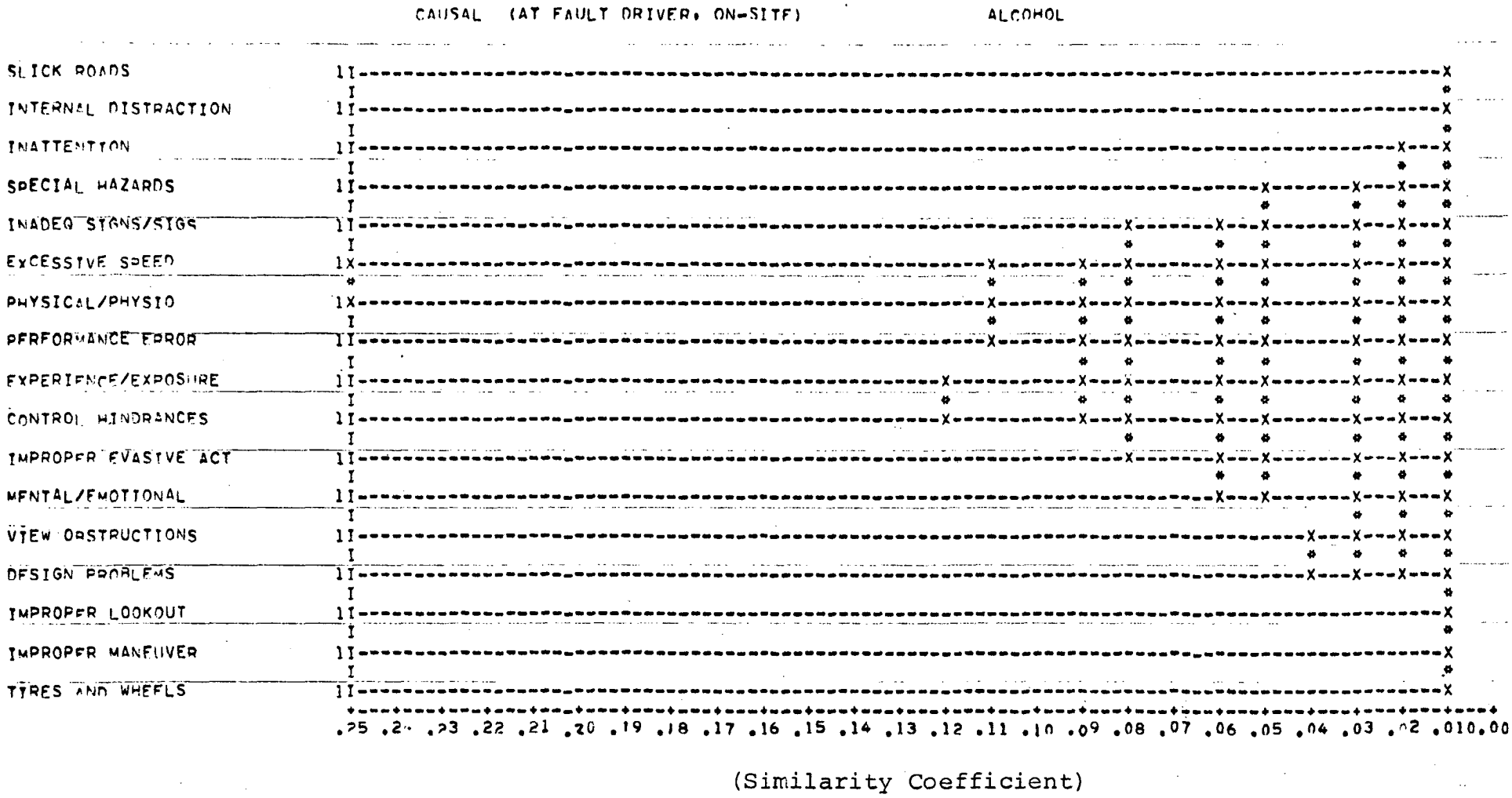
Table I-1:

CLUSTER ANALYSIS PROGRAM RUNS

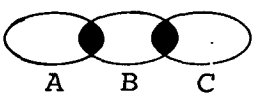
Run No.	ATTRIBUTE SUBGROUPS EXAMINED				
	Accident (A)	Descriptive Human (DH)	Descriptive Vehicular (DV)	Descriptive Environmental (DE)	Causal (C)
1	√				
2		√			
3			√		
4				√	
5					√
6	√	√			
7	√		√		
8	√			√	
9	√				√
10		√	√		
11		√		√	
12		√			√
13			√	√	
14					√
15				√	√
16		√	√	√	
17	√	√	√	√	√

A includes Human, Vehicular, and Environmental Causal Factors.

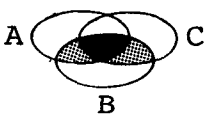
FIGURE I-1: SAMPLE CLUSTER ANALYSIS PRINTOUT



For this reason, IRPS devised two additional measures to be applied in comparing individual clusters. The first, "cohesiveness," measured the relative tightness of the cluster, i.e., the amount of overlap among cases for which the specific attributes were copresent. This measure made it possible to distinguish, at the same level of similarity, "chain" (weaker, low-cohesiveness) clusters:



from "bundle" (stronger, high-cohesiveness) clusters:



regardless of the actual number of cases represented in the cluster. In the diagrams, A, B, and C depict sets of cases involved in a hypothetical three-attribute cluster.

The second measure, "prevalence," reflects instead the actual number of cases represented by the cluster. It is simply the proportion of total cases in the analysis for which half or more of the attributes in a cluster are present simultaneously.

Each of these three measures, similarity, cohesiveness, and prevalence, can range in value between zero and one. Detailed definitions of each measure are provided in Appendix I-2.

It was presumed that the average of all three measures would, for a particular cluster, indicate its relative "importance," i.e., the degree to which it was composed of strongly interrelated

attributes, and the extent to which it pertained to a significant proportion of cases in the accident sample. Programs are written (16) to compute the cohesiveness and prevalence measures for each cluster selected, and "importance" was computed for each cluster by averaging these three values.

Clusters were then ranked according to the "importance" value of each, within the general accident (17) and alcohol subfile (18) runs, respectively.

Appendix I-2: Computation Procedures

Computation Procedures Used in Cluster Analysis

1) Similarity Measure:

Computed as a two-stage process. First, for each pair of variables (attributes), a similarity coefficient developed by Russell and Rao(1) was used, representing the ratio of all positive "matches" (cases for which the attributes in question were presently simultaneously) to the total number of cases (accidents) examined.

A clustering procedure was then applied to resulting matrices of similarity coefficients, utilizing Spearman's sums-of-variables method for determining variable or cluster weights. The procedure finds the mutually highest similarity coefficients for pairs of variables (attributes) within a matrix. A reduced matrix of similarity coefficients is then produced, in which pairs of attributes with mutually highest coefficients are considered as single attributes. This iterative, matrix-reduction procedures continues until the resulting similarity coefficient matrix is reduced to 2 x 2 size, at which point the procedure terminates.

Resulting clusters are stored as each is formed, ready for display in a dendrogram or similar method of illustrating how individual variables clustered, and how individual clusters grow and merge in the process.

Spearman's formula(2,3) for the case of two two-variable clusters is:

$$SqQ = \frac{\square qQ}{\sqrt{q + 2\Delta q}\ \sqrt{Q + 2\Delta Q}}$$

where $\square qQ$ = is the sum of all similarity coefficients obtaining between all pairings of variables between the clusters

Δq = is the sum of all similarity coefficients obtaining among all pairs of variables in the first cluster

ΔQ = is similar sum obtaining among all pairs of variables in the second cluster

q = is the number of variables in the first cluster

Q = is the number of variables in the second cluster

In cases where only a single variable is combined with a pair of variables, Spearman's formula reduces to:

$$r_{xq} = \frac{\sum r\,xq}{\sqrt{q + 2\Delta q}}$$

where the numerator represents the sum of all similarity coefficients for the single variable and variables in the pair. (Reference: Sokol, R.R., and Sneath, P.H.A., Principles of Numerical Taxonomy, W. Freeman & Co., San Francisco, 1963).

2) Cohesiveness Measure:

For each cluster, computed as:

$$\frac{T}{V \times C}$$

where C = number of cases (for which none of the attribute values are missing)

V = number of variables (attributes) in the cluster

T = total number of instances in which any attribute in the cluster is present in any case.

3) <u>Prevalence Measure</u>:

For each cluster, computed as:

$$\sum_{i=\frac{V+2}{2}}^{i=V} P_i$$

when the number of attributes in the cluster is <u>even</u>. Here

C = number of cases (as above)

V = number of attributes (as above)

i = number of attributes in the cluster copresent within particular cases

P_i = proportion of cases, C within which <u>i</u> attributes are copresent.

When the number of attributes is <u>odd</u>, computed as:

$$1/2\ P_{\frac{V+1}{2}} + \sum_{i=\frac{V+3}{2}}^{i=V}$$

where $P_{\frac{V+1}{2}}$ = proportion of cases, C within which $\frac{V+1}{2}$ attributes are copresent.