Report No. ZQ-5449-V-1

TRI-LEVEL ACCIDENT RESEARCH STUDY

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MARCH 1975

FINAL REPORT
ANNUAL REPORT
January 1, 1974 – December 31, 1974

Cosponsored by
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

and

MOTOR VEHICLE MANUFACTURERS ASSOCIATION
320 New Center Building
Detroit, Michigan 48202

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16. Abstract

The Tri-Level Accident Study for the period January 1, 1974 to December 31, 1974 was conducted in the eight-county Western New York area known as the Niagara Frontier. The program was conducted by the Accident Research Branch of the Transportation Safety Department, Calspan Corporation, Buffalo, New York and was sponsored jointly by the National Highway Traffic Safety Administration, U.S. Department of Transportation, and the Motor Vehicle Manufacturers Association, Inc.

Primary emphasis in this multi-level program is placed on data collection. This report describes the data collection system, the data collected and data presentations to sponsors. An edit program developed for use with Level 2 (towaway) data also is described.

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FOREWORD

The Tri-Level Accident Study is conducted in the eight county Western New York area known as the Niagara Frontier, by the Accident Research Branch of the Transportation Safety Department, Calspan Corporation (formerly Cornell Aeronautical Laboratory, Inc.), Buffalo, New York. The program is sponsored jointly by the National Highway Traffic Safety Administration, U.S. Department of Transportation, and the Motor Vehicle Manufacturers Association, Inc.

This report is completed in partial fulfillment of Contract No. DOT-HS-053-3-609 (NHTSA) and Contract No. MVMA, CAL 7406-C4.11.

This report has been reviewed and approved by:

Edwin A. Kidd

Edwin A. Kidd, Head
Transportation Safety Department

ACKNOWLEDGMENTS

Successful operation of the Tri-Level Accident Study in the eight county Western New York area, known as the Niagara Frontier, requires the cooperation of a great many individuals and agencies in both the private and public sectors. We are indebted to them for their efforts in behalf of highway safety.

We most gratefully acknowledge the efforts of the police, hospitals, automobile dealers and service stations, state and city agencies and a host of individuals who have provided valuable assistance and information. We would like to thank all of the citizens of the study area who cooperated in this program and the personnel in the following agencies who have contributed to the Calspan Tri-Level Accident Study.

New York State Agencies

Department of Health
Department of Motor Vehicles
Department of Transportation
State Police

County		Agencies
Allegany	Genesee	Sheriff
Cattaraugus	Niagara	Medical Examiner
Chautauqua	Orleans	Highway Department
Erie	Wyoming	

City, Town and Village Police

Allegany County

Belmont P.D.
Bolivar P.D.
Cuba P.D.
Wellsville P.D.

Cattaraugus County

Cattaraugus Sheriff
Ellicottville P.D.
Franklinville P.D.
Gowanda P.D.
Olean P.D.
Salamanca P.D.

Chautauqua County

Brockton P.D.
Busti P.D.
Dunkirk P.D.
Ellicott P.D.
Fredonia P.D.
Hanover P.D.
Jamestown P.D.
Lakewood P.D.
Mayville P.D.
Silver Creek P.D.
Westfield P.D.

Erie County

Amherst P.D.
Buffalo P.D.
Cheektowaga P.D.
Depew P.D.
East Aurora P.D.
Erie County Sheriff
Evans P.D.
Gowanda P.D.
Hamburg P.D.
Kenmore P.D.
Lackawanna P.D.
Lancaster P.D.
New York Thruway
Orchard Park P.D.
Tonawanda P.D. (Town)
Tonawanda P.D. (City)
West Seneca P.D.

Genesee County

Batavia Headquarters Troop A
Batavia P.D.
Genesee County Sheriff
LeRoy P.D.

Niagara County

Lockport P.D.
Niagara County Sheriff
Niagara Falls P.D.
North Tonawanda P.D.

Orleans County

Albion P.D.
Medina P.D.
Orleans County Sheriff

Wyoming County

Arcade P.D.
Attica P.D.
Perry P.D.
Warsaw P.D.
Wyoming Sheriff

Western New York Hospital Association (39 member hospitals)
County American Medical Association Chapter

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1. INTRODUCTION

Calspan has been conducting a Tri-Level Accident Study sponsored by the National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation and the Motor Vehicle Manufacturers Association (MVMA) since 1969. The study is conducted in an eight county area of Western New York and has produced a large and comprehensive set of highway safety data for the period from November 1, 1969 to December 31, 1974.

A unique and particularly useful feature of the data described in this study is that Abbreviated Injury Scale (AIS) injury ratings are available for all occupants of applicable vehicles (See Section 2.2) who were taken to a hospital for treatment on Level 1. Over the years that data have been collected in this program this information is available for 34,988 accidents.

1.1 Background

The concept of a Tri-Level Accident Research Program was proposed by Calspan as a result of a study to develop improved methods for reduction of traffic accidents (Reference 1), conducted for the National Cooperative Highway Research Program. The Tri-Level approach basically seeks to utilize the best available data concerning the driving population, vehicles, environment and accidents. Where necessary, supplementary information is collected to augment available data, and multi-disciplinary investigations are conducted on a relatively small volume of cases to provide in-depth information. This approach was adopted by the National Highway Traffic Safety Administration and the Motor Vehicle Manufacturers Association, Inc., and the first Tri-Level program was initiated at Calspan in November 1969. Since that time, several Tri-Level programs have been initiated by NHTSA.

1.2 Study Area

The Calspan study area is shown in Figure 1. The study area encompasses approximately 6,000 square miles in eight counties. Within these counties, 65 police agencies report accident data. There are also 39 hospitals which receive and treat accident victims. Police and medical data are routinely obtained by Calspan personnel for applicable accidents.

The population residing in the study area is about one and three quarter million people and there are more than 900,000 vehicles and over 1,000,000 drivers in the area. A summary of driver, vehicle and accident data in the study area appears in Table 1.

TABLE 1

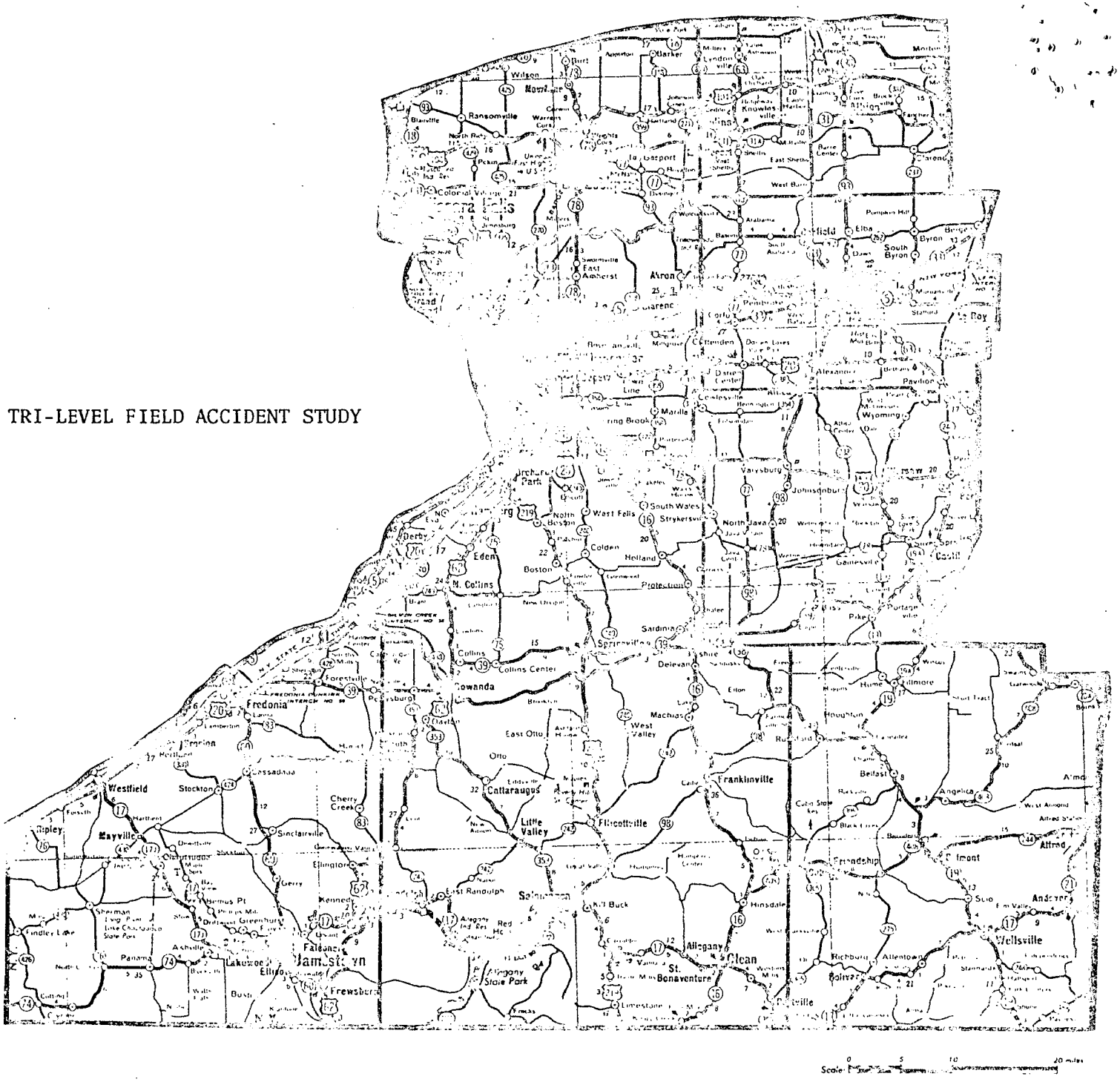
Eight-County Area of Western New York Data

(1973 Accident Records)

County	Estimated Population	Vehicle Registration	1973 Accidents	People Killed 1973	People Injured 1973
Allegany	46,458	27,436	814	24	582
Cattaraugus	81,666	46,086	1,574	22	1,176
Chautauqua	147,305	86,513	2,665	46	2,210
Erie	1,113,491	557,339	22,719	166	20,287
Genesee	58,722	37,308	1,359	21	1,053
Niagara	235,720	130,844	4,789	44	4,217
Orleans	37,305	24,366	618	20	570
Wyoming	37,688	23,769	769	24	547
TOTALS	1,758,355	933,661	35,307	367	30,642

SOURCE: "Accident Facts - 1974", New York State Department of Motor Vehicles, Albany, New York

Figure 1 TRI-LEVEL FIELD ACCIDENT STUDY



The study area includes urban, suburban and rural areas, including Buffalo, the second largest city in New York State. The topography in the study area also is varied with a wide range of weather conditions during the year. The road system includes the typical variety of expressways, highways, city streets and town and village roads. Approximately 35,000 accidents occur in the study area annually.

A description of the program, and 1974 data collection and data analysis is provided in the remaining sections of this report.

2. PROGRAM DESCRIPTION

2.1 Study Objectives

The original objectives of the Calspan Tri-Level Accident Study during the contract year were:

1. to establish and maintain a baseline of driver, vehicle and highway accident exposure and gross accident experience in the defined study "universe".

2a. to collect more detailed accident data (based on police reports) on all acceptable vehicles (as defined later in this section) within the "universe".

2b.* to maintain a closer surveillance on all the injury and non-injury acceptable vehicle accidents in the defined "universe" which are reported by selected police agencies.

3. to determine what specific portions of the occupant's body contacted various components of the acceptable vehicles which may or may not have caused an injury and to acquire injury causation information that can be studied as a statistical occurrence within the exposure contained in Objectives 1 and 2.

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* These objectives were changed during the first quarter of 1974 and, beginning on April 1, 1974 for MVMA, and May 1, 1974 for NHTSA, Level 2b data collection was modified to collect a stratified sample of towaway accidents involving 1973, 1974, and 1975 automobiles. The anticipated annual volume was approximately 2,000 cases. This modification was made in order to collect data for a restraint system study which involved a five-team data collection effort. Objective 1 was also dropped at the same time.

The new study objectives of the Calspan Tri-Level Accident Study then were:

1. to collect detailed accident data (based on police reports) on all acceptable vehicles (as defined later in this section) within the "universe".

2. to collect additional accident data on a stratified sample of acceptable vehicle towaway accidents in the defined universe involving 1973, 1974 and 1975 model cars.

3. to determine from all recorded acceptable injury producing accident cases occurring in the eight-county area the cause of occupant injury and severity, accident type, and vehicle damage severity.

The Tri-Level program is funded primarily as a data collection program. Data analysis has been limited largely to topics used in data presentations to sponsors which generally utilize Level 3 data and to papers prepared for meetings or symposia.

2.2 Applicable Accidents

Applicable accidents in the Tri-Level study* are those involving at least one of the following vehicle types and model years:

Passenger cars	current model year
Trucks (under 20,000 lb. GVW)	current model year plus last two model years
(over 20,000 lb. GVW)	current model year plus last nine model years
Multi-purpose passenger vehicles	current model year plus last two model years
Buses	current model year plus last nine model years

* Except as modified for Level 2b towaway data, Section 2.1.

Current model is defined as the manufacturer's designated model year during the coinciding calendar year. For example, 1974 model vehicles were collected throughout 1974. Early in 1974, until March 15, 1973 vehicles were also accepted. Late in 1974, all 1975 models were accepted.

2.3 Study Data

2.3.1 Level 1

The Level 1 accident file for the study period contains all police investigated accidents involving a current model (applicable) automobile or a recent model truck. Approximately 8,000 accidents are obtained annually. Calspan receives a copy of all police and driver reports for the eight counties. Medical data are obtained from hospital records prepared by the attending physician for all injured occupants. These accidents are coded by Calspan in considerably more detail than are the Level 1 accidents from state files.

Because of program modifications, these data are the same as Level 2 data from previous years.

The information available in the Level 1 data includes the following:

CALSPAN LEVEL 1 ACCIDENT CODE

(1974 Data Only)

Accident and Environmental Data

Classification
State
Year of Accident
Case Number
    Reporting Jurisdiction
    Sequential Case Number
Number of Vehicles Involved

Type of Form

Location

Type of Accident

Object Contacted

Month of Accident

Date of Accident

Day of Week

Hour of Accident

Traffic Control

Light Condition

Weather Conditions

Road Condition

Type of Road Surface

Road Character

Road Type

Total Number of Occupants Involved in Accident

Total Number of Occupants Killed or Injured in Accident

Severest Occupant Injury in Accident - Police and/
or Occupant Reported

Severest Occupant Injury in Accident - Physician Reported

Total Number of Pedestrians/Bicyclists Involved

Vehicle Data

Vehicle Number

Driver Report

Model Year of Vehicle

Make of Vehicle

Body Style

Towed Vehicle Involved

Vehicle Identification Number

Vehicle Deformation Index

- Primary Deformation Classification
- Secondary Deformation Classification
  - Direction of Principal Force at Point of Impact
  - Principal Part of Car Affected
  - Specific Horizontal Location of Damage
  - Specific Vertical Location of Damage
  - General Type of Collision
  - Damage Scale

State of Registration

Accident Configuration

Jackknife

Odometer Reading

Severity Rating

Fire or Submersion

Number of Occupants

Total Number of Occupants Killed or Injured in Subject Vehicle

Severest Occupant Injury in Subject Vehicle - Police and/or Occupant Reported

Severest Occupant Injury in Subject Vehicle - Physician Reported

Vehicle Designation and Study Level

Level 3 Case Availability

Occupant/Pedestrian/Bicyclist Data

Vehicle Occupied

Seated Position

Age

Sex

Ejection

Restraint Use

Severest Injury - Police and/or Occupant Reported

Severest Injury - Physician Reported

Apparent Condition of Driver

Driving Experience

Total Annual Mileage Driven

License Type

Traffic Violation

Medical Information

2.3.2 Level 2

The Level 2 file contains a sample of towaway accidents collected as part of the NHTSA Restraint System Study. In this program, five research teams collected data using uniform criteria in different parts of the United States. MVMA jointly sponsored the Calspan portion of this program with NHTSA. During 1974, Calspan sought to collect all applicable towaway accidents in the study area to meet data volume requirements of approximately 2,000 cases annually.

This sample differs from Level 2 data of previous years. Data collection was initiated in April 1974 for MVMA and May 1974 for NHTSA. Data collection criteria differed for the two sponsors. For MVMA, Level 2 data consisted of all police reported towaway accidents involving a 1973, 1974 or 1975 model year automobile manufactured in the U.S. or by a subsidiary of a U.S. firm. Data for all occupants in the car were recorded.

For NHTSA, Level 2 data consisted of all police reported towaway accidents involving a 1973, 1974, or 1975 model year automobile regardless of where it was manufactured. Data were recorded for only front seat occupants.

A copy of the composite form used by Calspan to record data for both sponsors is provided in the Appendix.

2.3.3 Level 3

The Level 3 file contains the accidents which are investigated by the Calspan multi-disciplinary team (approximately 350 such accidents occur and are collected annually). Each case represents a police reported accident involving a current model automobile or a recent model truck in which at least one occupant requires hospital treatment. The output of Level 3 consists of detailed case reports in which descriptions of the accident sequences are provided and causal factors are enumerated. Drivers involved in these accidents are interviewed by Calspan personnel and the interior and exterior of each case vehicle is examined and photographed extensively. Evidence at the scene is also measured and photographed. For each case, the General Motors Collision Performance and Injury Report, Revision 3, is completed, together with certain supplementary forms.

Other data included in the report are:

Police Reports
Medical Reports
Driver Abstracts
Accident Causation
Injury Causation
Evaluation of Effectiveness of Vehicle Components
Evaluation of Federal Motor Vehicle and Traffic Safety Program Standards.

Data for this study level were collected using the same criteria as in previous years and thus, are compatible with that collected in previous years. They may be used in combination with earlier data, or comparisons with earlier data may be made.

2.4 Calspan Edit Procedures for Level 2 Occupant Restraint System Study Data -- Eleanor Becker

The Level 2 Towaway Restraint System Study was sponsored jointly by NHTSA and MVMA. Although these sponsors' general objectives were similar, detailed objectives, data requirements and case reports did differ. Calspan used a composite field data collection form (See Appendix) and matching, coding and editing procedures, that were compatible with the requirements of both sponsors. Sponsor-unique data sets were then generated after all editing was completed on composite-form data.

The editing procedures are particularly important in assuring data integrity, because of the strong possibility of inadvertent manual errors during data collection and keypunching. Accident data were not entered into the permanent data base (tape or disk) until editing was completed and, when necessary, corrections were made.

Three categories of editing procedures were used: (1) operational checks, (2) illegal code checks and (3) code consistency checks. These are discussed below.

Operational Check

A check for operational errors is the only one that can be considered mandatory. This check guarantees that the correct number and types of cards required for a particular case appear in correct order. In addition, it is desirable to expect case numbers in ascending sequence for future selection of particular cases and elimination of duplicate case numbers.

For the Occupant Restraint System data base, Columns 2-11 (TYYMMDDNNN) are required to be the same for all cards in a case. The case number is a composite of Columns 3-6, 9-11 (YYMMNNN) and must be in ascending sequence.

Since sponsor requirements were slightly different, a combined form was developed to eliminate coding the same case twice. (See Appendix) After editing, a computer program generates the two data sets according to sponsor specifications. Operational rules for the combined form are as follows:

Card 1	-	General accident information
Card 2	-	Case vehicle information
Card 3	-	Case vehicle and other vehicle information
Card 4	-	Occupant information
Card 5	-	Occupant and beginning of injury pattern
Cards 6-8	-	Remaining injury pattern (if required)
Card 9	-	Occupant restraint system

Each case requires Cards 1-3 and at least a set of Cards 4, 5, and 9 for each occupant. Occupant cards must be in order by section sequence (Card 5, Columns 17-18) and the coded seated position values on each card of an occupant set must be the same (Card 4, Columns 63-64 and Cards 5-9, Columns 12-13). The number of card sets for front seated occupants must be equal to the value coded in Card 1, Column 20 and these sets must appear before those for rear or unusually seated occupants. The total number of occupant card sets must be equal to the value coded in Card 1, Column 21. No seated position may be duplicated within a vehicle and each case must have a driver. The injury pattern (OIC) begins on Card 5 and continues to Card 8 for a maximum of fifteen "blows". If on any Card 5-8, the entire field for a blow is blank, all remaining fields should be blank and the next card should be 9.

Checks for Illegal Codes

Once all operational requirements are met, the data can be used for a preliminary tabulation of accident patterns. However, data are not processed by detailed analyses programs until tested for illegal codes, i.e., codes that do not appear in the system codebook or dictionary. Calspan has now developed a package of subroutines so that an illegal code check can be performed on any data set with a minimum of programing.

Checks for Data Consistency

After a consistency check final processing by analysis programs is performed that ranks next in importance after the operational check but requires the most time to define and program. The entire data set must be examined for relationships between various fields (not necessarily on the same card). As an example, if an accident occurred at noon, then the case is checked if its light condition is not daylight. A table which lists most of the consistency checks performed on the combined form Occupant Restraint System data appears below. Except for the Force vs. Deformation table, a case had to meet all other consistency requirements before being recorded on the permanent data set.

CONSISTENCY TABLES

Light Condition Card 1 Column 57		vs.	Time of Accident Card 1 Columns 53-56
1	Daylight		0500-2059
2	Dawn		0400-0859
3	Dusk		1600-2159
4-6	Dark		0000-0859; 1700-2359
7,9	Unknown		0000-2359; 9999

Hospital Front Seat Occupant Card 1 Column 19	vs.	Treatment Card 5 Columns 21-22
1 Yes		At least one front occupant 02 Treated 03-04 Hospitalized 06-09 Fatal 99 Unknown
2 No		All front occupants 00 None 01 First Aid 05 Fatal at Scene 10-12 M.D.
Occupant Ejected (Accident) Card 1 Column 46	vs.	Ejection or Entrapment Card 4 Column 14
2 No		1 Not ejected or trapped 6 Trapped
Number of Case Vehicles Card 1 Column 41	vs.	Total Vehicles Card 1 Column 40
1-3		Greater than or equal to Column 41

Number of Case Vehicles Card 1 Column 41	vs.	Case Number Other Vehicle Card 3 Columns 30-32	vs.	Case Number 3rd Vehicle Card 3 Columns 46-48
1		Blank (none)		Blank
1		999 (N/A)		999, Blank
2		001-998 (Seq. Number)		999, Blank
2		999		001-998
3		001-998		001-998

Type of Accident Card 1 Column 37		vs.	First Object Contacted Card 2 Columns 47-48	
1	Pedestrian		70	Pedestrian
2	Pedacycle		71	Bicycle, Other Pedacycle
3	Railroad Train		68 69	Train Locomotive
4	Other Collision		72-76	On-roadway Objects
5	Motor Vehicle		01-39 40-67	Autos and Trucks Other Vehicles
6	Fixed Object		77-98 00	Off roadway Objects Unknown
7	Overturn		78-80 00 98 99	Ditch, Embankment, Ground Unknown Other None
8	Other Non-Collision		78-81 00 98 99	Ditch, Embankment, Ground, Curb Unknown Other None
9	Unknown		Any Legal Code	

Killed in Accident: Card 1 Columns 42-43	Greater than or equal to killed in case vehicle
Injured in Accident: Card 1 Columns 44-45	Greater than or equal to injured in case vehicle

Parent Manufacturer Card 1 Column 80	vs.	Make Model (Case Vehicle) Card 2 Columns 25-29
Blank - American or American American Import		11101-11103, 11105, 11108, 11120, 11203-11205, 11220, 11301-11302, 11306-11308, 11310, 11318, 11320, 11401-11405, 11405, 11408, 11420, 11501-11502, 11506-11508, 11520, 12101-12102, 12104-12106, 12108, 12118, 12120, 12201-12203, 12205-12208, 12220, 13101, 13102, 13120, 13202, 13206 13208, 13220, 13305, 13320, 13401-13402, 13406, 13408, 13420, 14101-14102, 14106, 14108, 14118, 14120, 21502, 43409, 61809, 61819, 61820, 62209, 72210, 83209
1 - Foreign		Any Legal Code Except Above

Event Producing Severest Injury to Front Occupant

Card 2 Column 80

0	No Injury	No Front Occupant May Be Injured
1-9	Event Number	At Least 1 Front Occupant Injured

Object Contacted Card 2 Columns 47-48 58-59 69-70		vs.	Collision Type Card 3 Columns 15-16 18-19 21-22		Matched by Event Number Columns 17, 20, 23
70-98	Objects		01-03	Vehicle to Other	
00	Unknown		99	Unknown	
01-69	Vehicles		11-19	Vehicle to Vehicle	
99	No object		02	Rollover	
			03	Other	
			99	Unknown	

Direction of Principal Force Card 2 Columns 49-50 60-61 71-72	vs.	Deformation Location Card 2 Column 51 62 73
00		R, L, T, U, X
01, 02		F, R
03		R
04, 05		R, B
06		B
07. 08		B, L
09		L
10, 11		F, L
12		F
99		F, R, B, L, X, 0

NOTE: Other combinations of Direction and Location print warning messages since some codes such as 12L are unusual but allowed for a sideswipe.

Number of Vehicles Contacted Card 3 Column 29	vs.	Description of Other Vehicles Card 3 Columns 30-61
0		Blank
1		Columns 30-45 any legal code except blank Columns 46-60, blank
2		Any legal code except blank

Ejection/Entrapment Card 4 Column 14		vs.	Ejection/Entrapment Card 5 Column 25
1	Not Ejected or Trapped		1
2	Ejected		4
3	Partial Ejection and Trapped		6
4	Partial Ejection		2
5	Total Ejection		3
6	Trapped		5, 7
9	Unknown		9

Sex Card 4 Column 15		vs.	Pregnancy Card 4 Column 62
1	Male		3 N/A - Male
2	Female		1 Yes 2 No 9 Unknown
9	Unknown		9 Unknown

Policy Injury Card 4 Column 23	vs.	Treatment Card 4 Column 24
1 Fatal		7 Fatal
Treatment Card 4 Column 24	vs.	Occupant Injury Classification Card 4 Columns 25-60
0 Not Injured		0's
More Than 6 Injuries? Card 4 Column 61	vs.	Occupant Injury Classification Card 4 Columns 25-30 31-36 37-42 43-48 49-54 55-60
1 Yes		None of the above groups may contain all 0's.
NHTSA Seated Position Card 4 Column 13	vs.	MVMA Seated Position Card 4 Columns 63-64
1 Left Front		01
2 Center Front		02
3 Right Front		03
4 Other		Any other legal code.

Occupant Injury Classification
Severity
Card 4 Column 29
35
41
47
53
59

Must be in equal or decreasing severity order of 8, 7, 6, 5, 4, 3, 2, 1, 9, 0

Treatment Card 4 Column 24		vs.	Treatment Card 5 Columns 21-22
0	Not Injured		00 (No Treatment)
1	First Aid		01
2	Would Consult M.D.		10
3	Directed to Consult M.D.		11
4	Did Consult M.D.		12
5	Emergency Room		02
6	Admitted to Hospital		03, 04
7	Fatal		05, 06, 07, 08, 09
8	Other		00, 09
9	Unknown		99

Injured? Card 5 Column 19		vs.	Overall Severity of Injuries Card 5 Columns 23-24
1	No		00 None 98 Unknown if Injured
2	Yes		Any Legal Code Except Above

Treatment Card 5 Columns 21-22	vs.	Overall Severity of Injuries Card 5 Columns 23-24
00 None		00, 01 (None, Minor)
01 First Aid		01, 02, 03, 99 (Minor, Non-Dangerous, Unknown)
10, 11, 12 M.D.		00, 01, 02, 03, 99 (None, Minor, Non-Dangerous, Unknown)
02 Treated, Not Admitted		00, 01, 02, 03, 99 (None, Minor, Non-Dangerous, Unknown)
03 Hospitalized, Observation		01, 02, 03, 99 (Minor, Non-dangerous, Unknown)
04 Hospitalized		01, 02, 03, 04, 05, 99 (Minor, Non-Dangerous, Dangerous, Unknown)
05, 06, 07, 08, 09 Fatal		06, 07, 08, 09, 10 (Fatal)
99 Unknown		01, 98, 99 (Minor, Unknown if Injured, Unknown)

Equipped Card 9 Column 18 Other 20 Child	vs.	Usage Card 9 Column 40 42
1 Yes		Any Legal Code Except 9 (N/A)
Blank No		Blank
9 Unknown		0 Unknown

Equipped Card 9 Column 14 Lap 16 Shoulder	vs.	Usage Card 9 Column 35 37
1 Yes		Any Legal Code Except 9 (N/A)
2 No		9 (N/A)
9 Unknown		0 Unknown

Equipment Card 9: Column 14 lap 16 shoulder	vs. Original Equipment Column 15 17	vs. Belts Operable Column 21 23	vs. Defeat Column 22 24
2 No	1 Yes 9 Unknown	Blank	Blank
2 No	2 No	Blank	2 Defeat

Restraint Usage vs. Restraint Usage Probability
Card 9 Column 60

	Lap Column 35	Shoulder Column 37	Other Column 40	Child Column 42
2 None Used	Any Legal Code Except +, 0			
3 Lap & Torso	+	+	Any Legal Code Except +	
4 Lap Only	+	Any Legal Code Except +		
5 Torso Only	Any Legal Code Except +	+	Any Legal Code Except +	
6 Child Seat	Any Legal Code Except +			+
7 Other	Any Legal Code Except +		+	Any Legal Code Except +
9 Unknown	Any Legal Code Except + Contains 0	and At Least One Column		

Maladjustment Card 9 Column 62	vs. Restraint Usage Card 9 Column 60
1 Yes 2 No	3-7 Restraint Used
3 N/A	2 None Used
9 Unknown	3-7, 9

Restraint Usage Card 9 Column 60		vs.	Belt Caused Injury Factor Card 9 Column 58
2	None Used		5 N/A
3-7	Used		Any Legal Code Except 5 (N/A)
9	Unknown		9 Unknown

Belts Operable Card 9 Column 21 Lap 23 Shoulder 25 Other 27 Child		vs.	Malfunction Card 9 Column 22 24 26 28
1 9	Yes Unknown		Blank
2	No		1 Malfunction 2 Defeat
Blank	Not Equipped		Blank N/A 2 Defeat

Buzzer Functional Card 9 Column 29 Lap 31 Shoulder 33 Other		vs.	Malfunction, Defeat Card 9 Column 30 32 34
1 9 Blank	Yes Unknown Not Equipped		Blank No Malfunction, Defeat

Belt Damaged Factor Card 9 Column 49	vs.	Equipped Card 9 Columns 14 16 18 20
5 N/A		Not Equipped With Any Device

System Defeated Factor Card 9 Column 51	vs.	Equipped and Original Equipment Card 9 Columns 14-20
5 N/A		May Not Be Equipped With Any Device and No Device Removed

3. DATA COLLECTION

3.1 Evaluation of Vehicle Damage and Personal Injury

3.1.1 Level 1

Objective:

To collect more detailed accident data on all acceptable vehicles within the "universe". These data are to consist of police reports of all accidents involving current model vehicles as defined in Section 2.2 (estimated 8,000 accident cases).

Task Accomplished:

A total of 6,871 police reports in applicable accidents were obtained. These were police reports of injury and non-injury accidents involving current model cars and specified trucks (1973 model cars were not processed after the cutoff date of March 15, 1974). This volume compares with 8,038 reports obtained during the previous year.

3.1.2 Level 2

Objective:

To collect a stratified sample of towaway accidents involving 1973, 1974, and 1975 automobiles. These data are to consist of a police report and a more detailed investigation report (See Appendix) completed by Calspan personnel who examine the vehicle, obtain a medical data, and interview the drivers (estimated volume of 2,000 accident cases per year available, desired volume 2,000 cases per year).

Task Accomplished:

Due to the different starting dates and selection criteria required by the two sponsors (See Section 2.3.2) the total number of cases collected differed slightly. A total of 1,368 towaway cases were collected for NHTSA from May 1 to December 31, 1974. A total of 1,367 towaway cases were collected for MVMA from April 1 to December 31, 1974.

3.1.3 Level 3 -- Off-Scene, In-Depth Investigation

Objective:

To determine specific portions of an occupant's body that contacted various components of the acceptable vehicles and the resulting injury, if any, and to describe the vehicle, vehicle damage, the accident and the scene.

Task Accomplished:

During 1974, a total of 354 applicable vehicle cases were investigated and reported upon by Calspan. Presentations based on these data also were made to sponsors periodically. These brief presentations are discussed in the section on Data Analysis.

4. DATA ANALYSIS

Four presentations involving specific topics of interest were presented during the year. Each presentation typically involves 15 to 20 cases selected to illustrate a specific problem. Topics reviewed during 1974 were: Windshield Separation in Vans and Pickups, Restraint System Use and Injury in Accidents, Restraint System Use Survey and a review of an early Calspan investigation of an air cushion restraint system car accident. The latter is not discussed here since reports on air cushion accidents have been issued individually. The other presentations are discussed briefly below. Presentations were prepared and presented by Donald Hendricks and Dominic Morris.

4.1 Windshield Separation in Vans

In five of the ten most recent cases (as of November 1974) involving small vans which sustained damage with a CDC extent number of at least 2, the windshield separated completely from the vehicle. Three of the five separations occurred in vehicles which sustained only relatively minor damage. A comparable sample of pickup trucks also was examined. No complete windshield separations were noted in these vehicles.

Based on an examination of the vehicles in these cases, deformation in the A-pillar area appears to be associated with the separation of the windshield. Because of the small amount of structure between the A-pillar area and the vehicle front in vans, these vehicles evidenced substantial A-pillar deformation even in relatively minor impacts. In contrast, the structure of the pickup truck is such that A-pillar deformation usually is noted only in more severe impacts.

4.2 Restraint System Use and Injury in Accidents

Data regarding injury and restraint system use was updated for this presentation. Again it was noted that use of the restraint system is generally associated with a lower degree of injury than is noted in comparable accidents in which the restraint system is not used. Benefits from use of the restraint system were particularly evident in the rollover accidents where probability of ejection is high and in accidents in which the impact is to the side of the vehicle furthest from the restrained occupant. In frontal impacts, occupants using only the lap belt still often contacted components in the front of the passenger compartments. These components include the steering assembly and instrument panel which are contacted by the head and/or face and the upper torso and, particularly in the smaller cars, the A-pillar, sunvisor, header, windshield molding and windshield which are contacted by the head and/or face. Use of both the lap and shoulder belts substantially reduced the incidence of contact with interior components in the cases presented.

4.3 Restraint System Survey

A survey is being conducted to determine the frequency of use of shoulder restraints by drivers of 1973, 1974 and 1975 passenger vehicles. Data for the entire survey period are shown in Table 2. Shoulder belt usage in 1974-75 cars showed a consistent decline during most of 1974 but appears to have asymptoted, at least temporarily, at about 26 percent (three months).

The survey will be continued in 1975 to determine if any further changes take place as time goes on.

TABLE 2: Summary of Shoulder Belt Use

	1973 MODELS		1974 MODELS	
	Shoulder Belts Used	Belts Not Used	Shoulder Belts Used	Belts Not Used
Oct./Nov.* 1973	64 (3%)	2299 (97%)	166 (58%)	122 (42%)
Dec.* 1973	8 (1%)	965 (99%)	98 (47%)	110 (53%)
Jan. 1974	31 (2%)	1387 (98%)	125 (39%)	197 (61%)
Feb.	24 (2%)	1422 (98%)	180 (43%)	243 (57%)
March	19 (1%)	1430 (99%)	242 (45%)	296 (55%)
April	24 (2%)	1436 (98%)	277 (43%)	370 (57%)
May	25 (2%)	1386 (98%)	286 (37%)	490 (63%)
June	18 (1%)	1468 (99%)	316 (31%)	716 (69%)
July	21 (1%)	1471 (99%)	335 (30%)	769 (70%)
August	14 (1%)	1499 (99%)	423 (30%)	975 (70%)
September	22 (2%)	1384 (98%)	372 (27%)	1025 (73%)
			1974/1975 MODELS	
Oct.	------	----------	428 (26%)	1198 (74%)
Nov.	------	----------	398 (26%)	1153 (74%)
Dec.	------	----------	---------	----------

*Data for Oct./Nov. and December (1973) represent the results of a preliminary survey and include data from observation sites not used in later months.

5. REFERENCES

1. Garrett, J.W. and Tharp, K.J., Development of Improved Methods for Reduction of Traffic Accidents, National Cooperative Highway Research Program, Transportation Research Board, Report No. 79, 1969.

DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Occupant Restraint System Summary Form

Part 1: — General Information — Card 1

REPORT NO.

Team | Accident Date: Yr | Mo | Day | Sequence No.

Prepared By:

Yr. 7 | Mo. | Day

2	3 4	5 6	7 8	9 10 11	12-13	14-15	16-17

Vehicle Category [18]
1. Control Vehicle
2. ACRS Vehicle

Hospitalized Sample Vehicle (Front Seat Occupants) [19]
1. Yes
2. No

Occupants
1 - 8 Actual Number
9 - Unknown
Front Seat [20] Total [21]

Accident Location
State [22 23] County [24 25 26] Municipality [27 28 29 30]

Reporting Jurisdiction [31]
1. Local/Municipal
2. County
3. State
4. Federal

Check Items Submitted (1. Yes; 2. No)
Medical Form [32] Vehicle Form [33] Photographs [34] Driver Interview [35] Police Report [36]

Type of Accident (First Harmful Event) [37]
Collision With
1. Pedestrain
2. Pedalcycle
3. RR Train
4. Other Collision
5. Motor Vehicle
6. Fixed Object
Non-Collision
7. Overturn
8. Other Non-Coll.
9. Unknown

Area [38]
1. Urban
2. Rural

Type of Impact [39]
1. Head On
2. Rear end
3. Angle
4. Side Swipe
5. Rollover
6. Other
7. Not Applicable
9. Unknown

Number of Vehicles
Total [40] Case [41]
1-7 Actual No.
8. Eight(8) or More
9. Unknown

Total Number
Killed [42 43] Injured [44 45]
00-98 Actual No.
99 Unknown
To include the Total Killed/Injured in the Accident.

Occupant Ejected [46]
1. Yes
2. No
3. Not Stated
9. Unknown

Number of Lanes
Trafficway [47 48]
01-98 Actual No.
99- Unknown/Not Stated

Limited Access [49]
1. Yes
2. No
3. Not Applicable
9. Unknown

Road Surface [50]
1. Paved
2. Unpaved
3. Not Applicable
9. Unknown

Surface Condition [51]
1. Dry
2. Wet
3. Snow
4. Ice
5. N/A
6. Other:
9. Unknown

Day of Week [52]
1. Mon
2. Tue
3. Wed
4. Thu
5. Fri
6. Sat
7. Sun
9. Unk

Time of Accident [53 54 55 56]
0000-Midnight
0615-6:15 am
1200-Noon
1815-6:15 pm
2359-11:59pm
9999-Unknown

Light Condition [57]
1. Daylight
2. Dawn
3. Dusk
4. Dark
5. Dark-Lighted
6. Dark-Not Lighted
7. Not Stated
9. Unknown

DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Occupant Restraint System Summary Form

Part 2: —Vehicle Information— Card 2/T

Prepared By: _____

Date: Yr. 7__ Mo. ____

REPORT NO.

Team	Accident Date (yr mo day)			Sequence No.
2	3 4	5 6	7 8	9 10 11

Vehicle Identification Number (Left Justify)
Omit Production Nos. 12 13 14 15 16 17 18

Odometer Reading 19 20 21 22 23 24

Vehicle Make/Model Code (Make: _____) 25 26 27 28 29
The five digit Make/Model code to be extrapolated from SECTION 5-1973 Editing Manual and Reference Information-MDAI Rpt. Automation & Utilization.

Body Style 30
1. 2dr. Hardtop
2. 2dr. Sedan/Coupe
3. 4dr. Hardtop
4. 4dr. Sedan
5. Stationwagon
8. Other
9. Unknown

Number of Cylinders 31
1. Rotary
2. 2-cyl.
4. 4-cyl.
6. 6-cyl.
8. 8-cyl.
9. Unknown

Model Year 7 32
3. 1973
4. 1974
5. 1975
9. Unknown

Transmission 33
1. Automatic
2. Standard
9. Unknown

Air Conditioned 34
1. Yes
2. No
9. Unknown

Test Buzzer/Warning Light-Ignition Interlock (Explain Details on Vehicle Field Form) 35
1. System Tested NORMAL
2. System Tested ABNORMAL
3. Unable to Test-Damage
4. Not Applicable
9. Unknown

Vehicle Towing Another Vehicle 36
1. Yes
2. No
9. Unknown

Type of Front Seat 37
1. Bench
2. Bucket
9. Unknown

Evidence of Restraint System (Details on Veh. Field Form)

	Malfunction			Defeat			Maladjustment		
	LF	CF	RF	LF	CF	RF	LF	CF	RF
	38	39	40	41	42	43	44	45	46

CODES: (1. Yes; 2. No; 3. N/A; 9. Unk:)- Code Each of the Nine Blocks.

OBJECTS CONTACTED & C.D.C.

Chronological Order	Object Contacted	Collision Deformation Classification			Inches Crush
1	47 48	49 50	51 52 53 54	55	56 57
2	58 59	60 61	62 63 64 65	66	67 68
3	69 70	71 72	73 74 75 76	77	78 79

Number of Event Producing Most Severe Injury 80
0- No Injury
1-7 Event No.
8- Pre-Crash Event
9- Unknown

DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Occupant Restraint System Summary Form

Part 3: — Restraint Usage Information Card 3/1

Prepared By:

Date: Yr. 7__ Mo.___

REPORT NO.

Team	Accident Date yr	mo	day	Sequence No.
2	3 4	5 6	7 8	9 10 11

Active Restraint System Usage

Left Front [ ] 12 Center Front [ ] 13 Right Front [ ] 14

1. No Occupant
2. None Used
3. Lap & Torso
4. Lap Only
5. Torso Only
6. Child Seat
7. Other (Desc. on Veh. Form)
8. Not Known if Occupied
9. Unknown if Restraint Used

FACTORS DETERMINING USAGE CLASSIFICATION

	Belt/Fittings Damaged by Occupant Load	Location or Condition of Belts	System Defeated	Ext. Veh. Damage or Occupant Contact Points	Police Report	Police or Witness Observation	Subject Interview	Other Interview	Occupant Injury Pattern	Belt Caused Injury	Occupant Ejected
Left Front	[ ] 15	[ ] 16	[ ] 17	[ ] 18	[ ] 19	[ ] 20	[ ] 21	[ ] 22	[ ] 23	[ ] 24	[ ] 25
Center Front	[ ] 26	[ ] 27	[ ] 28	[ ] 29	[ ] 30	[ ] 31	[ ] 32	[ ] 33	[ ] 34	[ ] 35	[ ] 36
Right Front	[ ] 37	[ ] 38	[ ] 39	[ ] 40	[ ] 41	[ ] 42	[ ] 43	[ ] 44	[ ] 45	[ ] 46	[ ] 47

1. Supported Evaluation
2. Contrary to Evaluation
3. Neither Supported or Contradicted Evaluation
4. Position Not Occupied
5. Not Applicable
9. Unknown

Reliability of Information

Left Front [ ] 48 Center Front [ ] 49 Right Front [ ] 50

1. Certain
2. Reliable
3. Unreliable
4. Unable to Estimate

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DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Occupant Restraint System Summary Form

Part 4: Occupant Information — Card 4

Complete one card for each Front Seat Occupant (N=3+Occupant No.)

REPORT NO. — Team | Accident Date (yr / mo / day) | Sequence No.
Cols 2 | 3 4 | 5 6 | 7 8 | 9 10 11

Occupant Role (12)
1. Driver
2. Passenger
9. Unknown

Seat Position (13)
1. Left Front
2. Center Front
3. Right Front
4. Other
9. Unknown

Ejection or Entrapment (14)
1. Not Ejected/ Not Trapped
2. Ejected (Degree Not Stated)
3. Partial Eject and Trapped
4. Partial Ejection
5. Total Ejection
6. Trapped
9. Unknown

Sex (15)
1. Male
2. Female
9. Unknown

Age (Years) (16 17)
00-97 Actual
98 - 98yrs. or Over
99 - Unknown

Height (Inches) (18 19)
01-98 Inches
99- Unknown

Weight (Pounds) (20 21 22)
001-998 Pounds
999- Unknown

Police Injury Code (23)
1. (K) (Fatal)
2. (A) (Incapacitating)
3. (B) (Non-incapt'g)
4. (C) Possible)
5. (O) No-Injury)
9. (U) Unknown

Treatment — Mortality (24)
0. Not Injured
1. First Aid at Scene
2. Stated-would consult MD
3. Directed to Consult MD
4. Did consult MD
5. Emer. Rm. Treatment-Rel.
6. Admitted to Hosp.-Non Fatal
7. Fatal
8. Other
9. Unknown

OCCUPANT INJURY CLASSIFICATION — Injury Details — Use O.I.C. Code

Injury Number	Body Region	Aspect	Lesion	Sys/Organ	Severity	Belt Caused
1	25	26	27	28	29	30
2	31	32	33	34	35	36
3	37	38	39	40	41	42
4	43	44	45	46	47	48
5	49	50	51	52	53	54
6	55	56	57	58	59	60

Coding for Belt Caused Criteria ONLY:
1. Possible
2. Probable
3. Definite
9. Unknown

More Than Six Injuries ? (61)
1. Yes - Note Details on Med. form
2. No
9. Unknown

Occupant Pregnant ? (62)
1. Yes
2. No
3. N/A (Male)
9. Unknown

Occupant Restraint System Summary Form

1'75 Card 3 of

REPORT NO.									ACCIDENT LOCATION		
Team	Accident Date yr		mo		day		Sequence No.		County-City/Town/Village		
2	3	4	5	6	7	8	9	10 11	12	13	14

COLLISION TYPE - CASE VEHICLE

Vehicle to Other

01 Vehicle to Object
02 Rollover
03 Other: _____
99 Unknown

Vehicle to Vehicle (moving or parked)

11 Head on (F to F)
12 Rear End (F to R)
13 Side swipe--same direction
14 Side swipe--opposite dir.
15 Intersection Type L
16 Intersection Type T
17 Intersection Type Unknown
18 Other: _____
19 Configuration Unknown

	Collision Type	Collision Event
PRIMARY	15 16	17
SECONDARY	18 19	20
TERTIARY	21 22	23

Vehicle Type-Body Style

00 Full Size
01 Intermediate
02 Compact
03 Sports Car
04 Carryall
05 Jeep type
06 Pickup/panel
07 Straight truck, Van
08 Truck-Tractor, Doubles
09 Other or Unknown
10 Pedestrian
11 Motorcycle

24 25

Police Report Vehicle No.	Shipping Weight	Number of Vehs. Contacted (Codes 0,1,2)	OTHER VEHICLE Case Seq. No.
26	27 28 00#	29	30 31 32

OTHER VEHICLE CONT'D

Police Report Vehicle No.	Model Year	Make - Model	Vehicle Type (same codes as Cols. 24-25)	Estimated Weight (Lead with Zero if necessary)
33	34 35	36 37 38 39 40	41 42	43 44 45 CO#

THIRD CONTACT VEHICLE

Case Sequential No.	Police Report Vehicle No.	Model Year	Make - Model	Veh. Type	Estimated Weight
46 47 48	49	50 51	52 53 54 55 56	57 58	59 60 61 00#

37

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Occupant Restraint System Summary Form

1/75 Card 5 1

RECORD NO.							OCC. SEATED POS.
Team	Accident Date yr		mo		day	Sequence No.	(use HSRI codes) See below.
2	3	4	5	6	7 8	9 10 11	12 13

Occupant Posture (14)
1 Normal seated position
2 Other _____
3 Not in seat
9 Unknown

Age (Mos.) (15 16)
00,01 Years
(If over 2 yrs. code 99)

Occupant Section Sequence (17 18)

Injured? (19)
1 No
2 Yes

Best Source of Injury Information (20)
1 Hospital/Doctor
2 Personal Interview w/occupant
3 Personal Interview w/non-occ.
4 Other: _____

Treatment/Mortality (21 22)
00 None
01 First Aid at Scene
Consulted Physician
10 Unknown, but "Stated Would"
11 Unknown, but "Directed To"
12 Did Consult Physician
02 Treated at Hosp/Clinic but Not Adm.
03 Hospitalized (observ. less than 24 hrs.)
04 Hospitalized over 24 hrs.or Sig. Treat.
05 Fatal-Dead at Scene
06 Fatal-DOA
07 Fatal-Within 24 Hrs.
08 Fatal-24 Hrs-1 Year
09 Fatal-Period to Death Unknown
99 Unknown

Overall Severity of Injuries (23 24)
00 None
01 Minor
02 Non-Dang./Moderate
03 Non-Dang./Severe
04 Dangerous,Serious
05 Dangerous,Critical
06 Fatal - 1 Region
07 Fatal-1 Region with 4 or 5 above
08 Fatal - 2 Regions
09 Fatal-3 or more "
10 Fatal-Details Unk.
98 Injury Unknown
99 Injured, Sev. Unk.

Ejection/Entrapment (25)
9 Unk. if Ejec.or Trapped

Ejection (No or Unk.Entrap.)
1 None
2 Partial Describe _____
3 Complete
4 Extent Unknown

Trapped With:
5 No Ejection
6 Partial "
7 Unk. "

OCCUPANT INJURY INFORMATION (cols.26-73)

Use OIC Codes:
26-Body Region
27-Apect
28-Lesion
29-System/Organ
30-Severity
Repeat for each injury, 1 Row=1 Blow

Cols 41,57,73
Code:
3 - Definite
2 - Probable
1 - Possible; 9 - Unk.

HSRI Codes for Seated Positions (cols.12-13 above)

03	05	09
01	04	07

25	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	
58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	

Occupant Restraint System Summary Form

1/75 CARDS 6, 7 and 8

RECORD NO.								OCCUPANT SEATED POS
Team	Accident Date yr		mo		day		Sequence No.	(use NSRI codes)
2	3	4	5	6	7	8	9 10 11	12 13

OCCUPANT INJURY INFORMATION

(USE SAME CODES AS PREVIOUS CARD)

	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
4th BLOW																
5th BLOW	30	31	32	33	34	25	36	37	38	39	40	41	42	43	44	45
6th BLOW	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
7th BLOW	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77

8th to 11th BLOWS - Code 7 in column 1, Repeat columns 2 through 13

	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
8th BLOW																
9th BLOW	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
10th BLOW	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
11th BLOW	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77

12th to 15th BLOWS - Code 8 in column 1, Repeat columns 2 through 13

	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
12th BLOW																
13th BLOW	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
14th BLOW	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
15th BLOW	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77

Occupant Restraint System Summary Form

1/75 Card 9 T

RECORD NO.

Team	Accident Date yr	mo	dy	Sequence No.	Occupant Seated Pos (use HSRI codes)
2	3 4	5 6	7 8	9 10 11	12 13

	DEVICE STATUS LAP BELT		SHOULDER BELT		OTHER DEVICE		CHILD SEAT	
EQUIPPED FOR THIS POSITION	14	15*	16	17*	18	19*	20	
BELTS OPERABLE	21	22	23	24	25	26	27	28
INTERLOCK BUZZER FUNCTIONAL	29	30	31	32	33	34		

Cols. 14, 16, 18, 20 - Codes: 1 - Yes, 2 - No, 9 - Unknown
21, 23, 25, 27, 29, 31, 33

*Cols. 15, 17, 19 "original equipment"? {Use same codes above

Cols. 22, 24, 26, 28, 30, 32, 34
Malfunction - code 1
Defeat - code 2
All else - leave blank

Note: If any column 14 through 34 is Not Applicable, leave blank

CONCLUSION	35	36	37	38	39	40	41	42	43

YES		NO
+3	Definite	-3
+2	Probable	-2
+1	Possible	-1
00	Unknown	
99	Not Applicable	

NOTES:
Col. 39 is always blank
Code +1 if P.R. is only "worn" reported
Code -2 if P.R. is only "not worn" rep.

INFORMATION AVAILABLE Codes: 1 - Yes, 2 - No, 7 - Unavailable

VEHICLE DATA SHEETS	INJURY DATA (MEDICALS)	OCCUPANT INTERVIEW	NON-OCCUPANT INTERVIEW	POLICE REPORT
44	45	46	47	48

RESTRAINT USAGE
1-No occ.
2-None used
3-Lap & Torso
4-Lap only
5-Torso "
6-Child Seat
7-Other
8-Unk if Occupied
9-Unknown if Used
60

INFORMATION RELIABILITY
1-Certain
2-Reliable
3-Unreliable
4-Unable to Estimate
61

RESTRAINING MAJOR SYSTEM
1-Y 3-N
2-N 9-UNK
62

FACTORS DETERMINING USAGE CLASSIFICATION

Belt/Fittings Damaged by Occupant Load	Location or Condition of Belts	System Defeated	Ext. Veh. Damage or Occupant Contact Points	Police Report	Police or Witness Observation	Subject Interview	Other Interview	Occupant Injury Pattern	Belt Caused Injury	Occupant Ejected
49	50	51	52	53	54	55	56	57	58	59

Codes:
1-Supports
2-Contradicts
3-Neither
5-N.A.
9-Unknown

40

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